COMPETE·GR

COUNCIL ON COMPETITIVENESS OF GREECE

GLOBAL COMPETITIVENESS INDEX IN GREECE

PRIORITIES & KEY POINTS

For the last 40 years World Economic Forum (WEF), in order to evaluate countries' competitiveness around the globe, has been using a consistent methodology called The Global Competitiveness Index (GCI).

It started with the evaluation of 58 countries and then more countries have been added annually to arrive to 140 in 2018. Competitiveness is evaluated against 12 pillars each one containing a number of indexes which are modified and updated in order to produce meaningful results in the light of global trends such as globalization, demographic shifts and the 4th industrial revolution. A main modification in the GCI presentation happened in 2018 in order to better encapsulate the changes brought by the 4th Industrial Revolution.

Following recent reviews of the results of the GCI it has been observed that thanks to the technological evolutions smaller countries have been able to get promoted in the GCI without having the big GDP of western economies. For better understanding of this new global environment the 12 pillars have been divided into four thematic sets, namely Enabling Environment, Human Capital, Markets and Innovation Ecosystem.

However, the main focus of the annual competitiveness comparison remains productivity as productivity is considered the primary driver of every economy and determines its prosperity level.

Comparing Greece's trajectory for the last decade and pausing at 2014 we sadly observe a continuous decline in the country's productivity in half of the sectors and irrespective of the financial recession. It is self-evident that the deterioration of competitiveness undermines the overall potential of the country's economy for a sustainable growth, as it negatively influences investors (both local and foreign) and consists a major barrier to the substantial upgrade and reform of the economy. However, this can be reversed in condition that we will all together decide to try to change our course of action and do it fast. No more delays are allowed.

Paraphrasing Roubini the prolonged crisis has indeed created huge obstacles and did not favored productivity increases, because

a) It created vast numbers of long-term unemployed, who not only lost their skills but also their determination to keep up trying, and
b) It discouraged investors along with the state-of-the art technology bringing with them.

In addition, there are a lot of competitiveness distortions at all institutional levels which are due, among others, to our obsession to follow the same modus operandi, our introvert and risk avert culture, the lack of trust of civilians towards politicians and government efficiency, which in turn prohibits the establishment of result driven collectivities and multi-stakeholder partnerships.

All functions and sectors of the economy, including the legal and the education system, the institutions and the markets (products, financial and labor) are deprived of a modern approach to processes and procedures. Such inefficiencies influence negatively the innovation capacity of a country and they delay the creation of an ecosystem and the enhancement of an entrepreneurial culture. Improvement of this kind of indexes would positively influence Greece's competitiveness ranking and thus, attract investment.

Since 2008, Greece has been showing a constant deterioration of its competitiveness in most pillars with the exception of a limited improvement in the labor market pillar in terms of flexibility and the infrastructure pillar. Since 2008 Greece lost 16 ranks and in 2016 landed at the 86th rank.

In 2008 1/4th of the indexes (32) considered in the Report presented a competitive advantage while 8 years later, in 2016, they decreased to only 18[1].

Table 1. Annual Evolution of Competitiveness Index in Greece

	2008	2009	2014	2015	2016	2018
Total Country	71	83	81	86	87	
Basic Requirements[2]	56	67	74	80	70	
Institutions	70	84	81	81	87	87
Infrastructure	47	42	34	37	38	38
Macroenvironment	103	123	132	131	117	83
Health & Primary Education	41	40	41	46	48	21
Efficiency Enablers	57	59	62	67	77	
Higher Education & Training /SKILLS	43	42	43	45	44	49
Goods Market Efficiency	75	94	89	89	93	63
Labour Market Functioning	116	125	116	114	110	107
Financial Market Development	83	93	131	136	133	114
Technology Adaptation	53	46	36	42	50	57
Market Size	34	39	52	56	58	58
Innovation Factors	66	73	77	70	71	
Business Dynamism	66	74	74	69	73	72
Innovation Capacity	65	79	77	72	75	44

Source: adapted from The Global Competitiveness Report of relevant years.

As the Competitiveness report is a tool for policy makers, we will underline that apart from ranking we also to examine the scores evolution of Greece, as scores give us a better understanding of the focus we need to put. Better or equal scores do not necessarily improve ranking position.

[1] For an index to be competitive it has to be ranked below 50.

Greece has presented a stable score of 4.00 (1.00 - 7.00 scale) throughout the period under consideration, yet she lost 16 ranks (from 71st to 87th) as already said. This means that, 16 other countries have improved their scores more than Greece. In the VUCA[3] world where change is a constant factor to be competitive one needs to be constantly agile and adaptive.

It is interesting to note that according to 2018 modified GCI Greece ranked in the 57th position, having lost 4 places since 2017 and at the same time her score has won +0.3 value points compared to 2017.

New technologies adoption is another example describing that we were not fast enough comparatively to other countries; we improved slightly our scores but we lost 16 places in ranking. Technology moves faster than other sectors.

Comparison of scores after 2016 is not possible as the values changed from 1-7 to 1-100. Speed is imperative so that an economy remains competitive. But is it possible for anyone to run without focus? Probably not.

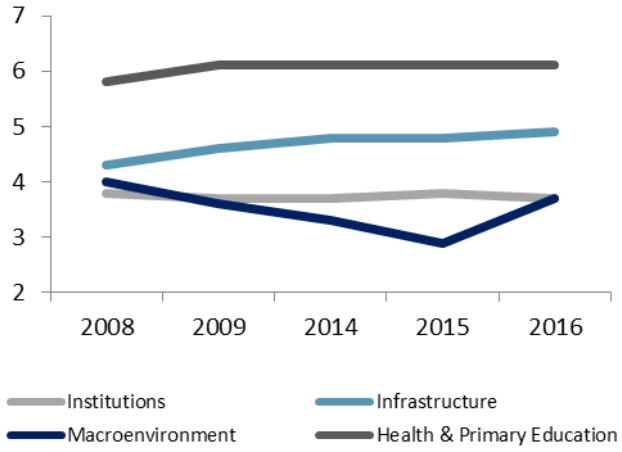
Table 2. Scores Evolution

	2008	2009	2014	2015	2016
Total Country	4.0	4.0	4.0	4.0	4.0
Basic Requirements	4.5	4.5	4.5	4.4	4.6
Institutions	3.8	3.7	3.7	3.8	3.7
Infrastructure	4.3	4.6	4.8	4.8	4.9
Macroenvironment	4.0	3.6	3.3	2.9	3.7
Health & Primary Education	5.8	6.1	6.1	6.1	6.1
Efficiency Enablers	4.1	4.1	4.1	4.1	4.0
Higher Education & Training /SKILLS	4.4	4.7	4.8	4.9	4.9
Goods Market Efficiency	4.1	3.9	4.2	4.2	4.1
Labour Market Functioning	3.8	3.7	3.7	3.8	3.7
Financial Market Development	4.0	3.9	2.8	2.5	2.5
Technology Adaptation	3.9	4.1	4.9	5.0	4.8
Market Size	4.6	4.5	4.3	4.2	4.3
Innovation Factors	3.6	3.4	3.5	3.6	3.6
Business Dynamism	4.0	3.8	3.8	3.9	3.9
Innovation Capacity	3.1	3.0	3.2	3.3	3.3

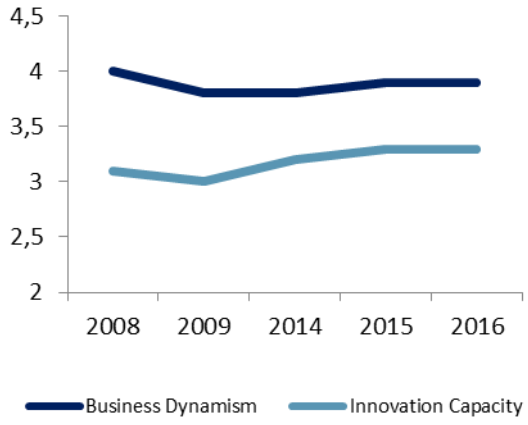
Source: The Global Competitiveness Report of relative years.

[3] VUCA=Volatile, Uncertain, Complex, Ambiguous

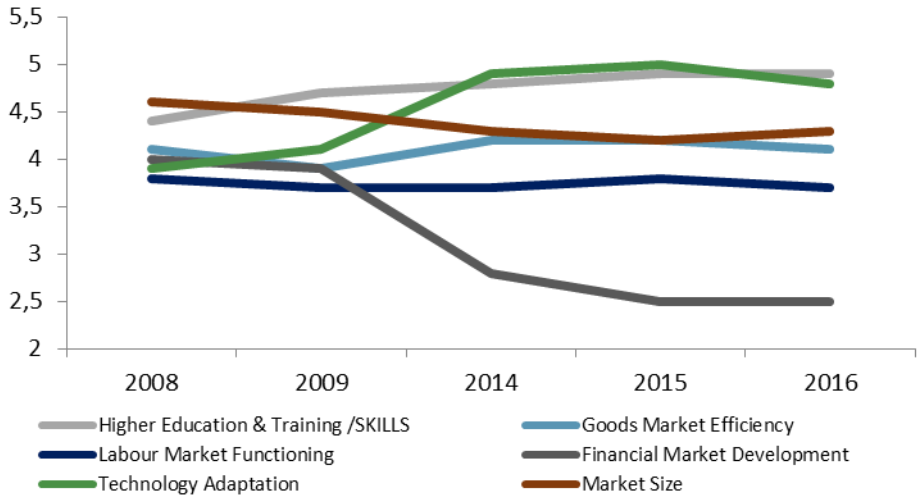
Graph 1. Scores Evolution - Basic Requirements Factors



Graph 2. Scores Evolution - Innovation



Graph 3. Scores Evolution - Efficiency Enablers



Source: The Global Competitiveness Report of relative years.

ENABLING ENVIRONMENT

FOR EVERY COUNTRY TO GROW AND DEVELOP WITHIN THE 4TH INDUSTRIAL REVOLUTION ERA THERE IS A SET OF 4 PILLARS WHICH ARE CONSIDERED AS THE FOUNDATION OF THE ECONOMY. THESE FOUNDING PILLARS ARE: A) THE INSTITUTIONS, B) THE INFRASTRUCTURE, C) THE ICT ADOPTION AND D) THE MACROECONOMIC STABILITY.

PILLAR 1 - INSTITUTIONS

At first, we see that during the decade ranking of Institutions in average present a considerable deterioration losing 17 ranks since 2008.

Since 2017, Institutions are divided into 7 sub-indexes with the following order and review a total of 20 indexes:

a. Security
b. Social Capital
c. Checks & Balances
d. Public Sector Performance
e. Transparency
f. Property Rights
g. Corporate Governance

Except a "competitive" homicide rate (24th/140, with another 9 countries being best performers) and a competitive shareholder governance (15th/140, where Kazakhstan is the best performer), all other 18 indexes are non-competitive; 8 of them being above 100. Last but not least, we have been ranked only 85th in **social capital[4].** Since low values in Social Capital mean that prosperity is held back even in countries with higher competitive and growth rates than Greece, we need to pay special attention. This deficit is related to incomplete economic reforms and concern lack of accountability, higher levels of corruption, and cronyism. Technology has modified the nature of the workplace, social interaction and political activism and has created a lot of inequalities in other Western economies but Greece has been mostly affected.

[4]Social Capital measures national performance in the following three areas: a. Social cohesion and engagement (bridging Social capital), b. Community and family networks (bonding Social Capital), and c. Participation and institutional trust (linking social capital).

a. Security

Terrorism Incidence 107th

b. Public Sector Performance

Efficiency of Legal Framework in Challenging Regulations 127th

Burden of Government Regulation 131st

Efficiency of Legal Framework in Settling Disputes 133rd

Future Orientation of the Government 135[5]

c. Property Rights

Quality of Land Administration 135th

Property Rights 107th

d. Corporate Governance

Strength of Auditing and Reporting Standards 119th

[5]This new index is actually the average of responses to the following four EOS questions:
1. "In your country, how fast is the legal framework of your country in adapting to digital business models, such as e-commerce, sharing economy, fintech, etc.?";
2) "In your country to what extent does the government ensure a stable policy environment for doing business?";
3) "In your country, to what extent does the government respond effectively to change (e.g. technological changes, societal and demographic trends, security and economic challenges?"; and
4) "In your country, to what extent does the government have a long-term vision in place?"

Table 3. Institutions evolution

			2008	2009	2014	2015	2016	2018
		Institutions	70	84	81	81	87	87
	A	**Security**						
1.15	1.01	Organized Crime	55	56	52	50	55	69
	1.02	Homicide Rate						24
	1.03	Terrorism Incidence						107
1.16	1.04	Reliability of Police Services	80	92	57	54	68	79
	B	**Social Capital**						
	1.05	Social Capital						85
	C	**Checks & Balances**						
	1.06	Budget Transparency						90
	1.07	Judicial Independence						78
1.11	1.08	Efficiency of Legal Framework in Challenging Regulations	84	94	86	84	114	127
	1.09	Freedom of Press						61
	D	**Public Sector Performance**						
1.09	1.1	Burden of Government Regulation	125	129	131	129	130	131
1.1	1.11	Efficiency of Legal Framework in Settling Disputes	90	98	132	130	133	133
	1.12	E-participation						33
	1.13	Future Orientation of the Government						135
	E	**Transparency**						
	1.14	Incidence of Corruption						52
	F	**Property Rights**						
1.01	1.15	Property Rights	47	53	86	89	98	107
1.02	1.16	Intellectual Property Protection	42	50	60	61	61	68
	1.17	Quality of Land Administration						135
	G	**Corporate Governance**						
1.18	1.18	Strength of Auditing and Reporting Standards	56	71	101	105	109	119
	1.19	Conflict of Interest						84
	1.2	Shareholder Governance						15

Source: data adapted from The Global Competitiveness Report of relevant years.

PILLAR 2 – INFRASTRUCTURE

The infrastructure of a country determines its ability to become a hub for industrial products or provide administrative and accounting services to other companies or serve as a supply chain gate given its geographical location, such as bridging east with west.

The Pillar consists of 2 sub-indexes, namely a) Transport infrastructure (Roads, Rail, Air, Sea) and b) Utility Infrastructure (electricity and water).

Although Greece's overall ranking of this pillar is 38th out of the 140 countries there is a clear need for improvement in the **efficiency of the train services** – currently ranking 77th worsened 20 ranks since 2008. This will assist our efforts to position the country as a real hub in the South East Europe.

Table 4. Infrastructure evolution

			2008	2009	2014	2015	2016	2018
		Infrastructure	47	42	34	37	38	38
		Transport Infrastructure						
		Road						
	2.01	Road Connectivity Index						63
2.02	2.02	Quality of Roads	52	57	56	59	44	36
		Rail						
	2.03	Railroad Density						45
2.03	2.04	Quality of Railroad Infrastructure	57	64	59	62	66	77
		Air						
	2.05	Airport Connectivity						27
2.05	2.06	Efficiency of Air Transport Services	39	45	37	43	53	37
		Sea						
	2.07	Liner Shipping Connectivity						30
2.04	2.08	Efficiency of Seaport Services	66	74	48	47	52	38
		Utility Infrastructure						
		Electricity						
	2.09	Electricity Access						1
2.07	2.10	Quality of Electricity Supply	68	65	57	55	54	49
		Water						
	2.11	Exposure to Unsafe Drinking Water						17
	2.12	Reliability of Water Supply						37

Source: data adapted from The Global Competitiveness Report of relevant years.

Additionally, discussing competitiveness we need to have a view on alternative channels of energy and we should not leave out the **Energy Architecture Performance Index (EAPI)** and, in particular for this Pillar's considerations, the part of Energy Access and Security; there are some indicators such as **Energy imports** which are high (in 2017 we were 102nd/127) and which should be taken under consideration when mapping the priorities.

The other parameters such as **Environmental Sustainability** (77th) should also get improved as they also hold back the Travel & Tourism Competitive Index[6].

Table 5. The Energy Architecture Performance Index (EAPI)

	2013	2014	2015	2016	2017
Energy Architecture Performance Index	33	42	41	43	38
Economic Growth and Development	14	31	46	50	35
Environmental Sustainability	77	84	64	75	77
Energy Access and Security	51	47	35	33	36

Source: data adapted from The Energy Architecture Performance Index in relative years.

PILLAR 3 – ICT ADOPTION

First of all, we need to note that the 3rd Pillar of the GCI, as an enabler of competitiveness, is from now the ICT Adoption in front of the macroeconomic stability. Technology is not considered any more as innovation but rather as a means to an end. In the era of the 4th Industrial Revolution, readiness of a country to incorporate and capitalize technology and state-of-the-art communication into everyday life and business operations is considered as the third enabler of increasing its competitiveness.

We need to incentivize **subscriptions both in the fiber internet (92nd) and the mobile broadband (80th)** so that connectivity and collaboration is enhanced among the various stakeholders.

Table 6. Technological Adoption Evolution

			2008	2009	2014	2015	2016	2018
		ICT Adoption	53	46	36	42	50	57
2.09	3.01	Mobile Telephone Subscriptions	n/a	37	66	74	80	76
9.07	3.02	Mobile-Broadband Subscriptions	n/a	n/a	72	75	80	80
9.05	3.03	Fixed-Broadband Internet Subscribers	35	37	22	19	17	18
	3.04	Fiber Internet Subscriptions						92
9.04	3.05	Internet Users	52	50	51	54	55	56

Source: data adapted from The Global Competitiveness Report of relative years.

PILLAR 4 – MACROECONOMIC STABILITY

In today's volatile and globalized world inflation and government's debt are the two stability drivers. Inflation ranks Greece along with another 74 countries as best performers (low inflation) but **Government Debt positions us in the 99th place** (with 36 countries challenging the best performer's position). There is plenty of room to do better with the Government Debt and try to understand from other countries the way they operate.

[6] Examined later under Travel Competitiveness Index

Table 7.Macro-economic Stability Evolution

			2008	2009	2014	2015	2016	2018
		Macroeconomic Stability	103	123	132	131	117	83
3.03	4.01	Inflation	27	42	96	92	57	1
3.05	4.02	Government Debt	127	133	139	137	136	99

Source: data adapted from The Global Competitiveness Report of relative years.

HUMAN CAPITAL

IN THE HUMAN AGE THE COMPANIES AND THE ECONOMIES WHICH WILL BE ABLE TO ENGAGE THEIR PEOPLE TO UNLEASH THEIR POTENTIAL WILL HAVE AN UNBEATABLE COMPETITIVE ADVANTAGE. THIS IS WHY IN THE LIGHT OF DEMOGRAPHIC EVOLUTIONS AND THE PROGRESS IN THE MEDICAL SCIENCE THE TWO PILLARS DESCRIBING THE HUMAN CAPITAL OF EACH COUNTRY HAVE BEEN VASTLY MODIFIED.

PILLAR 5 – HEALTH

Up to 2016 the GCI has been including Primary Education and Health indexes in the same pillar. In Health they were trying to assess the business impact of various contagious diseases (tuberculosis, malaria and HIV) as well as infant mortality and Primary education as the main mandatory level of all people. This has changed for all countries, irrespective of their development and Growth rate.

Since 2017, Health Pillar evaluates only Life Expectancy as it influences both business outcomes and social and insurance systems; Greece in 2018 is ranked 20th having fallen 5 places since 2008.

On the other hand, since 2017 education is considered as an input in the equation of producing the right set of skills, all levels of education are assessed in Pillar 6th which has been renamed to Skills, stressing the higher need for skilled and not just graduated people.

Table 8. Health Evolution

			2008	2009	2014	2015	2016	2017	2018
4.08	5.01	Life Expectancy	15	20	24	21	21	21	20

Source: data adapted from The Global Competitiveness Report of relative years.

PILLAR 6 - SKILLS

As the human capital is determining the competitive advantage of an economy the GCI 4.0 assesses countries in terms of their capacity to produce through education – a competitive current and future workforce. For this reason, the 6th pillar is divided to

a. Current workforce (education and skills)

b. Future workforce (education and skills)

The Mean years of schooling along with the Extent of staff training (99th) and the Quality of Vocational Training (111th) determines the capacity of current workforce. We definitely need to improve our ranking.

Future workforce evaluates School Life expectancy but also the **Critical Thinking in Teaching for the first time and the ranking at the 119th position** requires a different culture in the whole education system to produce teachers with critical thinking. Our efforts up to now have been limited in achieving a high pupil to teacher ratio in primary education (6th) but with another 6 countries fighting as best performers.

As the pillar has been almost totally reconstructed, we provide herewith two tables with the ranking of Greece in terms of the Global Talent Competitiveness Index (GTCI) which can give us an idea of the areas we need to focus in order to improve. One example could be the brain attraction which in 2016 has been as low as in the 133rd position.

Table 9. Skills

		2018
	Skills	39
A	**Current Workforce**	
I	**Education of Current Workforce**	
6.01	Mean Years of Schooling	44
II	**Skills of Current Workforce**	
6.02	Extent of Staff Training	99
6.03	Quality of Vocational Training	111
6.04	Skillset of Graduates	46
6.05	Digital Skills Among Active Population	72
6.06	Ease of Finding Skilled Employees	52
B	**Future Workforce**	
I	**Education of Future Workforce**	
6.07	School Life Expectancy	15
II	**Skills of Future Workforce**	
6.08	Critical Thinking of Schooling	119
6.09	Pupil to Teacher Ratio in Primary Education	6

Source: The Global Competitiveness Report 2018. Data are not available for previous years.

Table 9a. The Global Talent Competitiveness Index (GTCI)

	2013	2014	2015-2016	2017	2018
Total Greece	56	50	49	43	42
Input					
Enable	72	62	62	70	75
Attract	92	86	88	57	74
Grow	63	64	54	49	47
Retain	25	30	30	26	29
Output					
Labour & Vocational Skills	80	60	62	40	49
Global Knowledge	51	42	44	33	31

Source: adapted from GTCI of relative years.

MARKETS

FOLLOWING THE EVALUATION OF THE ENABLING ENVIRONMENT AND THE HUMAN CAPITAL THEN THE GCI EXAMINES HOW THE MARKETS ARE FUNCTIONING. IT EXAMINES ANALYTICALLY THE

a. PRODUCT MARKET
b. LABOR MARKET
c. FINANCIAL SYSTEM
d. MARKET SIZE

PILLAR 7. PRODUCT MARKET

Another parameter of competitiveness is clarity and simplicity prevalence in the market. The simpler the tax and tariffs processes and the wider the services trade openness the higher the efficiency of the goods market.

The two sub-indexes refer to

a. Domestic Market Competition and
b. Trade Openness

We observe two highly problematic areas for Greece; the first one is the **Effect of Taxation on Incentives to Invest (118th)** and the second is the **Complexity of Tariffs (112th).**

The cost of doing business and the commercialization along with the entrepreneurial culture parameters have all been moved to Pillar 11 assessing the Business Dynamism of an economy.

Table 10. Product Markets Efficiency Evolution

			2008	2009	2014	2015	2016	2018
		Goods Market Efficiency	75	94	89	89	93	63
	A	**Domestic Competition**						
6.04	7.01	Effect of Taxation on Incentives to Invest	78	99	136	136	137	118
6.02	7.02	Extent of Market Dominance	61	67	62	61	58	50
	7.03	Competition in Services						64
	B	**Trade Openness**						
6.09	7.04	Prevalence of Non-Tariff Barriers	32	26	31	55	27	24
	7.05	Trade Tarrifs						23
	7.06	Complexity of Tarrifs						112
	7.07	Efficiency of Clearance Process						48
	7.08	Services Trade Openess						31

Source: data adapted from The Global Competitiveness Report of relative years.

The evolution of **Travel & Tourism Competitive Index shows** an improvement of Greece by 7 positions in 2017 vs. 2016 achieving the 24th place but still worse since 2008 where it was in the 22nd place. In addition we need to stress the problematic areas in the **Business Environment** (103rd/136) where we are 42 positions behind 2008 and the **Price Competitiveness in T&T (90th/136**) where despite the improvement we have many miles to cover.

Table 10a. Travel & Tourism Competitiveness Index Evolution

	2008	2009	2011	2013	2015	2017
Travel & Tourism Competitiveness Index	22	24	29	32	31	24
Business Environment	61	57	82	98	104	103
Safety and Security	31	47	73	69	57	53
Health and Hygiene	16	19	20	13	9	11
Human Resources and Labour Market	43	44	59	50	45	49
ICT Readiness	39	40	39	33	49	51
Prioritization of Travel & Tourism	1	3	17	28	24	15
International Openness	n/a	n/a	n/a	n/a	25	32
Affinity for Travel & Tourism	39	35	47	55	n/a	n/a
Price Competitiveness	120	114	123	127	113	90
Environmental Sustainability	40	47	68	72	61	39
Air Transport Infrastructure	20	19	19	20	27	26
Ground and Port Infrastructure	46	43	61	58	51	48
Tourist Service Infrastructure	9	5	5	3	12	18
Natural Resources	75	74	61	40	46	32
Cultural Resources and Business Travel	16	23	25	25	32	27

Source: data adapted from Travel & Tourism Competitiveness Index of relative years.

PILLAR 8. LABOR MARKET

Από τις πιο προβληματικές περιοχές ακόμη κι όταν τα πράγματα πήγαιναν καλύτερα για την Labor market continues to be one of the most problematic pillars that is influencing almost the total functioning of the Greek economy. Even when the economy was growing the labor market was not well functioning. On the contrary, this might be one of the causes why many businesses did not survive the financial crisis and relocated or closed down.

The root cause of the problem is that it is a market strictly regulated by legislation and not lead by the market. Regulations are obsessed with protectionist and polarizing methods rather than embracing technology and innovation and favoring the creation of modern safety nets along with the promotion of active population employability and inclusion.

Rankings in both sub-indexes of this pillar, i.e. a) Flexibility and b) Meritocracy & Incentivization are clearly showing that the functioning of the Greek labor market (107th in 2018 improved 10 places in ten years' time 116th in 2008) is seriously ill.

The active population of Greece is less and less participating in the labor market for various reasons (demographics, brain drain, depression, taxation) resulting in huge lack of talents above European averages (almost 60%) and consequently depriving business from growing. **Excessive Labor taxation** (119th/140) reinforces informal labor and weakens **workers' rights (**116th/140) in and out of the labor market. Poor cooperation and relations between **Labor and Employer** and lack of flexibility in **wage determination** along with **poor internal mobility** increase social gaps and lead professionals to search their career enhancement outside Greece. In addition, high value adding services investors search for talent destinations, such as Ireland, where easiness of firing and hiring along with STEM skills are more affluent.

Last but not least our policies for fighting unemployment cannot be considered as successful since we rank only **87th** in terms of **Active Labor Market Policies**.

Table 11. Labor Market Evolution

			2008	2009	2014	2015	2016	2018
		Labor Market Efficiency	116	125	116	114	110	107
		Flexibility						
7.04	8.01	Redundancy Costs	40	44	72	69	69	69
7.03	8.02	Hiring and Firing Practices	113	126	91	99	93	97
7.01	8.03	Cooperation in Labor-Employer Relations	120	127	107	105	97	105
7.02	8.04	Flexibility of Wage Determination	128	133	115	122	108	110
	8.05	Active Labor Market Policies						87
	8.06	Workers' Rights						116
	8.07	Ease of Hiring Foreign Labor						43
	8.08	Internal Labor Mobility						120
		Efficient Use of Talent						
7.07	8.09	Reliance on Professional Management	94	98	101	95	81	84
7.06	8.10	Pay and Productivity	120	118	103	86	98	111
7.10	8.11	Female Participation in Labor Force	88	91	89	78	78	59
	8.12	Labor Tax rate						119

Source: data adapted from The Global Competitiveness Report of relative years.

PILLAR 9. FINANCIAL SYSTEM

Both the Depth and the Stability of the financial system are evaluated by a big number of reliable institutions as they consist the foundation of today's business system.

The Depth is replacing the previous so-called efficiency measurements. Greek business face a serious problem in **Venture Capital Availability** (129th /140) and in **financing SMEs** (137th/ 140). From the excessive if not irrational generosity of the past we have been facing extreme conservatism and lack of understanding of the sound business plans and the managerial and entrepreneurial capacity and culture of the applicants.

The 2nd sub-index evaluates the Stability which in turn creates trustworthiness and confidence to the market and yes, you guessed it right we do have a huge problem with the % of Non-**Performing Loans** in the banks' portfolio (137th/140) and **Banks' Soundness** (137th/140).

How are we going to boost entrepreneurship without rational financing and without forward looking independent Banks boards?

Table 12. Financial System Evolution

			2008	2009	2014	2015	2016	2018
		Financial System	83	93	131	136	133	114
	A	**Depth**						
	9.01	Domestic Credit to private sector (% to GDP)						23
	9.02	Financing to SMEs						137
8.05	9.03	Venture Capital Availability	75	87	136	135	134	129
	9.04	Market Capitalization (% to GDP)						74
	9.05	Insurance Premiums						56
	B	**Stability**						
8.06	9.06	Soundness of Banks	45	70	134	134	134	137
	9.07	Non-performing Loans (% of loan portfolio value)						137
	9.08	Credit Gap						10
	9.09	Banks' regulatory capital ratio						93

Source: data adapted from The Global Competitiveness Report of relative years.

PILLAR 10. MARKET SIZE

This pillar measures growth of an economy in terms of **GDP**; and still our GDP is not growing despite the fact that unemployment rate is showing an official decrease; and despite the fact of accumulating a net surplus (probably not with the right recipe). This pillar also measures **imports as a % of GDP** and in Greece imports are still fluctuating around the 102nd -105th position. The GDP is a sign of growth and the positive balance of trade is an indicator of the sovereignty of an economy. Consequently, size matters but growth matters more.

Table 13. Market Size Evolution

			2008	2009	2014	2015	2016	2018
		Market Size	34	39	52	56	58	58
	10.01	GDP	n/a	n/a	51	53	55	54
6.14	10.02	Imports as a Percentage of GDP	n/a	n/a	99	105	102	89

Source: data adapted from The Global Competitiveness Report of relative years.

INNOVATION ECOSYSTEM

THE 4TH INDUSTRIAL REVOLUTION MADE INNOVATION A MANDATORY PREREQUISITE FOR THE SURVIVAL OF ECONOMIES AND PUT THE WORD IN THE EVERYDAY VOCABULARY OF MODERN BUSINESS. INNOVATE OR DIE! BUT TO BE INNOVATIVE IS DIFFERENT THAN BEING CREATIVE. SINCE 2017 GCI 4.0 EVALUATES THE ABILITY OF EVERY COUNTRY TO CREATE AND NURTURE AN INNOVATION ECOSYSTEM.

THIS ECOSYSTEM IS THE OUTCOME OF THE FOLLOWING TWO PILLARS: BUSINESS DYNAMISM AND INNOVATION CAPACITY.

PILLAR 11. BUSINESS DYNAMISM

The meaning of this pillar has also been greatly reconstructed and now consists of two very important sub-indexes

a. Administrative Requirements, meaning the cost and the easiness of doing business

b. Entrepreneurial Culture, meaning the people's culture towards risk

It is very disappointing to observe the figures which prove that we are a risk averse population and our entrepreneurial culture has a huge distance from Israel, which is the best performer globally both in terms of **attitudes toward entrepreneurial risk** (Greece ranks 90th) and in **growth of innovative companies** (Greece ranks 126th).

Greeks are **not willing to delegate authority** (100th) as they are not willing to rely on professional Management (see Labor Market Functioning Pillar 8) and **companies' willingness to embrace disruptive ideas** is ranking as low to 126th.

Table 14. Business Dynamism Evolution

			2008	2009	2014	2015	2016	2018
		Business Dynamism	66	74	74	69	73	72
	A	**Administrative Requirements**						
	11.01	Cost of Starting a Business						45
6.07	11.02	Time Required to Start a Business	56	68	74	77	77	77
	11.03	Insolvency Recovery Rate						80
	11.04	Insolvency Regulatory Framework						28
	B	**Entrepreneurial Culture**						
	11.05	Attitudes toward Entrepreneurial Risk						90
11.09	11.06	Willingness to Delegate Authority	94	102	91	90	93	100
	11.07	Growth of Innovative Companies						120
	11.08	Companies Embracing Disruptive Ideas						126

Source: data adapted from The Global Competitiveness Report of relative years.

PILLAR 12. INNOVATION CAPABILITY

Once the processes and the cultural bases are set then we evaluate the capability of an economy with the following three sub-indexes:

a. Interaction and Diversity

b. Research & Development

c. Commercialization

The ability of an economy to attract talent and operate with **diverse workforce (123rd)** offers a unique tool to capitalize on the accumulated Global Knowledge, in condition that we have invested in **cluster development**, which Greece has not (127th) and we are committed to create **multi-stakeholder collaborations** (123rd) to produce synergies where 1+1=11.

Greece needs also to improve its constantly deteriorating **buyer sophistication,** which lost 44 ranks comparing the decade (2008 – 2018) and ranked at the 94th/140.

Table 15. Innovation Capability

			2008	2009	2014	2015	2016	2018
		Innovation Capability	65	79	77	72	75	44
	A	**Interaction & Diversity**						
	12.01	Diversity of Workforce						123
11.03	12.02	State of Cluster Development	87	99	125	117	121	127
	12.03	International Co-inventions						39
	12.04	Multistakeholder Collaboration						123
	B	**Research & Development**						
12.02	12.05	Scientific Publications	77	88	66	67	65	30
12.07	12.06	PCT Patents Applications	37	37	38	38	37	36
12.03	12.07	Company Spending on R&D	101	126	113	90	87	40
	12.08	Research Institutions Prominence Index	77	88	66	67	65	31
	C	**Commercialisation**						
6.16	12.09	Buyer Sophistication	50	58	73	71	83	94
	12.10	Trademark Applications						n/a

Source: data adapted from The Global Competitiveness Report of relative years.

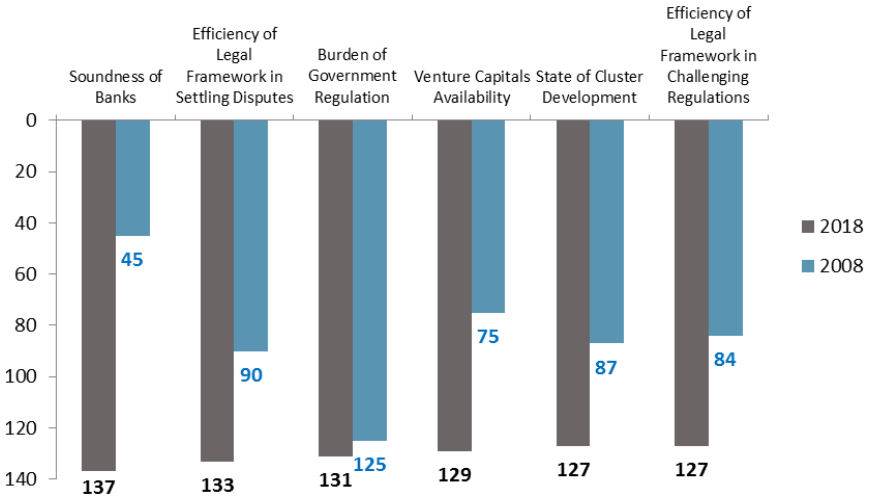
CONCLUSIONS AND PRIORITIES

From the above concise analysis, it is evident that we should and we need to do better both the Public and the Private Sector.

Table 16. The 10 most Problematic Indexes in 2018, in Terms of Ranking

	Θέση στις 140
Financing of SMEs	137
Soundness of Banks	137
Non Performing Loans	137
Future Orientation of Government	135
Quality of Land Administration	135
Efficiency of Legal Framework in Settling Disputes	133
Burden of Government Regulation	131
Venture Capitals Availability	129
State of Cluster Development	127
Efficiency of Legal Framework in Challenging Regulations	127

Graph 4. The evolution of the 10 most Problematic Indexes in 2008 - 2018, in Terms of Ranking



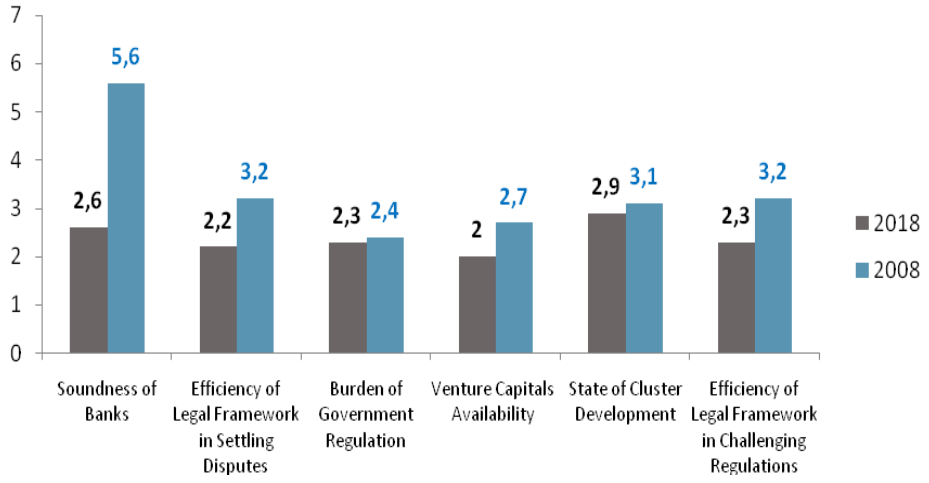
Source: adapted from The Global Competitiveness Report, 2018

Table 17. The 10 Most Problematic Indexes in 2018, in Terms of Scores

1 – 7

Venture Capitals Availability	2,0
Efficiency of Legal Framework in Settling Disputes	2,2
Future Orientation of Government	2,2
Burden of Government Regulation	2,3
Efficiency of Legal Framework in Challenging Regulations	2,3
Financing SMEs	2,4
Soundness of Banks	2,6
Critical Thinking of Teachers	2,7
Active Labor Market Policies	2,9
State of Cluster Development	2,9

Graph 5. The evolution of the 10 Most Problematic Indexes in 2008 - 2018, in Terms of Scores



Source: adapted from The Global Competitiveness Report, 2018

Businesses should focus on establishing the right-for-them organization structure and develop performance management systems to **attract and develop the talent** needed to rise in the value chain. They should also make the deliberate choice to work within a **corporate governance** framework even if they are not listed. Quality and standards **of audits and meaningful reporting should be developed along with a culture from companies that they see auditors and other reporting mechanisms as facilitators of their development efforts. Moreover,** in order to achieve sustainable growth with prudency for all the stakeholders involved in their environment the Boards should be enriched with a diversity of Independent Non-Executive Directors. This also will increase companies willingness to delegate authority and their reliance on professional managers especially in the succession of family business. Last but not least, companies should **embrace disruptive ideas** and seek multi-stakeholder collaborations to increase their **global knowledge**.

As far as the Public Sector is concerned and in order to increase trust towards the Greek financial system and overall economy the Public sector should focus on creating an enabling the creation of a really **future oriented environment** where **Security** will prevail, **Property Rights** will be enforced through adaptation of the legal framework to adapt digital business, clarity of Government Regulations and long-term vision of the Government to effectively respond to change. These efforts will spread a feeling of fairness and respect expecting thus to see an improvement in the social capital and an intergenerational Equity & Sustainability.

The creation of an **innovation ecosystem** greatly depends upon the development of leaner administrative processes and empowerment of an entrepreneurial culture among all generations. However, nothing will happen without proper **financing to SMEs and Venture Capital to startups**. This will create possibilities for inclusive leadership of diverse workforce, opportunities for international co-inventions, cluster development, collaboration between Universities R&D and business and last but not least will increase the buyer sophistication which leads to higher value offerings; we all know demand drives supply.

1. Talent (comparing input vs. output)
2. Ease of doing business (to eliminate administrative barriers and modify the risk aversion culture)
3. Inclusive development Growth by monitoring selected rural vs. urban areas which try to promote intergenerational equity & sustainability.
4. Innovation index (comparing input vs. output)

Our aim is to find the parameters that can have a noticeable and sustainable impact in a short time and capitalize on quick wins to encourage and incentivize the various stakeholders to participate more actively so that competitiveness really impacts positively our social capital and minimizes inequalities which have been accentuated during the last decade.

The road to prosperity passes through the forest of competitiveness, so we need to stay focused, be agile and fast and work together.