

Culture shapes up institutions

See beyond
the obvious





Motivation

Culture and institutions are among the primary levers that maintain sustainability and effectiveness within a country. Institutions frame a formal logic of the country's goals and orient people around them. Culture expresses collective goals through values and beliefs, and guides activity through shared assumptions and group norms.

How do culture and institutions interact?

Culture and institutions are inextricably related. As per Douglas North, an economic historian of the late 20th century, institutions are created by the polity, whereas culture is part of a country's heritage. Institutions are "the rules of the game" that provide clarity and promote collective action and decision-making through a set of values, spanning from the efficiency of government policies, the ability to formulate and implement sound regulations, to the effectiveness of the judiciary system, and the control of corruption.

Culture, though, is a more subtle lever acting equally on an individual as well as on a social level. Sociologists and anthropologists consider the organisation of society to be a reflection of its culture. Culture is attached to behaviours, beliefs

Our motive was to study the relationship between the two sets of values and discern their effect in a nation's economy. Robust institutional quality is strongly related to a country's wealth. A society with strong institutions, exhibiting clear and concise policies, low level of corruption, free practice of political rights and civil liberties and individuals abide to the established rules of society, has a high level of wealth expressed in terms of GDP per capita. Similarly, cultural values such as intolerance or acceptance of ambiguity, continuous questioning or reception of historically established norms, personal drive or collective action as well as a short-term or long-term societal orientation can realistically alter the way institutions are organised and either accelerate or impede growth opportunities.

In the long run, cultural shifts can have a momentous effect on the way institutions are structured, in the number and quality of proposed reforms and in the way society perceive sustainable outcomes. Cultural variables frame institutions and thus the economic development of a country. This relationship becomes even more important for Greece which may seem ready to shake off the burdens of the recent financial crisis but it remains culturally divided and institutionally hesitant. Greece, needs to move towards a more rigid and strong institutional structure that focuses on sustainable growth rather than short-term gains. This can only be initiated through the change of her social behaviours; thus her culture.



“

Culture eats strategy for breakfast

Peter Drucker
Management consultant and writer

Institutional Dimensions - Definitions

Institutional strength is measured by the World Bank Governance Indicators and by Transparency International, while they can be summarised into six dimensions.

*Institutional dimensions are highly correlated and appear not to describe anything more than different facets of the institutions, therefore they can be aptly collapsed to a single "Composite Institutions Index**"*

1

Government Effectiveness



Government Effectiveness measures the ability of the government to formulate and implement "sound" policies. This includes high quality of public services, minimal bureaucracy and competent civil services

2

Political Stability



Political Stability reflects the people's perceptions of the likelihood that existing governments will be overthrown by unconstitutional or violent means

3

Regulatory Quality



Regulatory Quality measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development, thus laying down uniform rules of economic engagement

4

Rule of Law



Rule of Law measures the extent to which agents abide the established rules of society. Examples include perceptions of crime, and effectiveness and predictability of the judiciary system, as well as the enforceability of contracts

5

Voice & Accountability



Voice & Accountability measures the extent to which citizens in a country are able to take part in political processes. The indicator includes measures about political inclusion, civil liberties, political rights and independence of the media

6

Corruption Perception



Corruption Perception Index measures perceived levels of corruption. In general, corruption can be described as the "abuse of entrusted power for private gain"

* Composite Institutions Index should not be mixed with the simple average. For a complete methodology please refer to the Appendix

Cultural Dimensions - Definitions

In 1980, Geert Hofstede, first articulated the theory that national culture can be described along six dimensions. Cultures cannot be self arranged on a single dimension as their features are descriptive of various aspects of human behavior. Instead, they could be ordained only through the use of an external factor, against which their contribution can be measured

1 Power Distance

The extent to which the less powerful members of society accept and expect that power is distributed unequally



A high score explains that the formal social hierarchy is clearly established and executed in the culture of the country. On the other hand, in the low power distance countries, people strive to equalise the power distribution in such country and they tend to demand justification for such unequal power distribution.

2 Indulgence

The degree of freedom that societal norms give to citizens in fulfilling their human desires



Indulgent countries allow relatively free gratification of basic and natural human desires related to enjoying life and having fun. In contrary, restraint countries tend to control gratification of needs and regulate it by means of strict social norms.

3 Long-Term Orientation

How the past of a society is connected with the current and future actions/challenges



Countries that score low on this dimension, are generally past and present oriented, and they value traditions and social obligations. On the other hand, countries that score high on this dimension take a more pragmatic approach: they are future oriented and encourage thrift as a way to be better prepared for the future.

4 Individualism

The degree to which people in a society are integrated into groups



On the individualist side (high scores) lie cultures in which the ties between individuals are loose: everyone is expected to look after herself and her immediate family. On the collectivist side (low scores) lie cultures in which people are integrated into strong, cohesive intra-groups that generally think and act collectively.

5 Uncertainty Avoidance

How tolerant a society is towards uncertainty and ambiguity



Countries with high Uncertainty Avoidance maintain rigid codes of belief and behaviour and are intolerant of unorthodox ideas, whereas countries that score low maintain a more relaxed attitude in which practice counts more than principles, tolerance for ambiguity is accepted and the need for rules to constrain uncertainty is minimal.

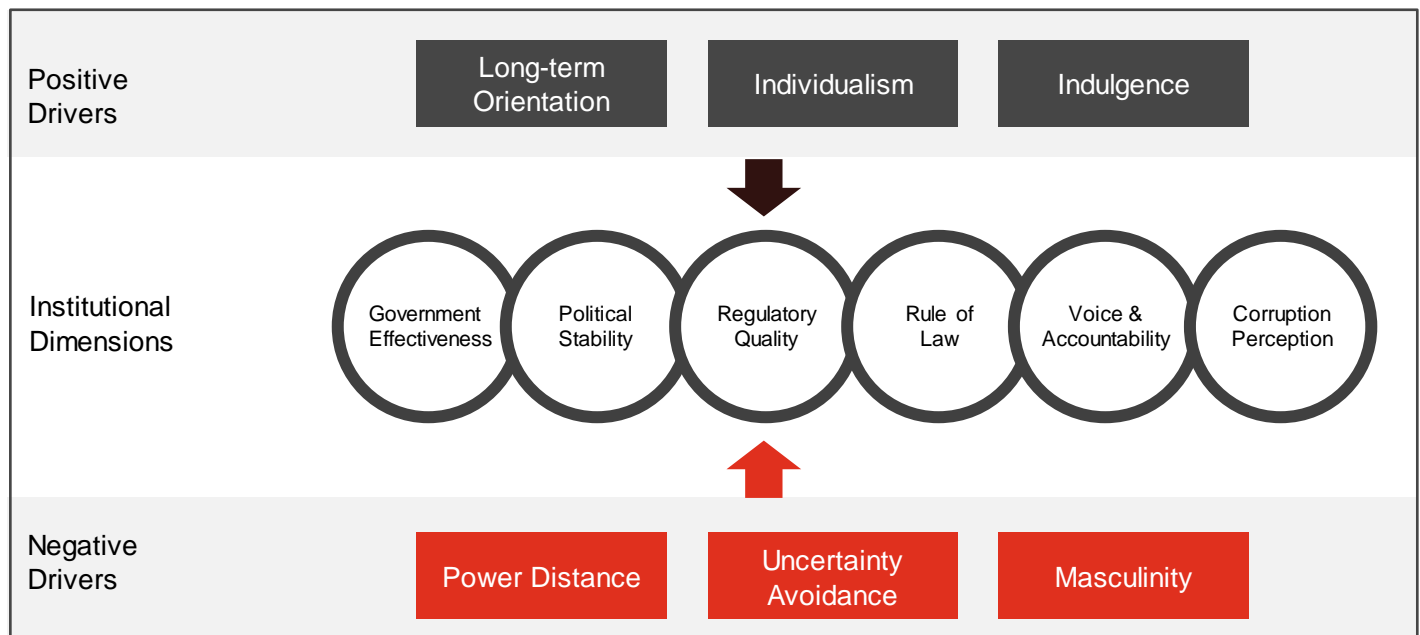
6 Masculinity

The preference in society for achievement, heroism, assertiveness and material rewards for success



Higher values of the dimension demonstrate stronger egos, feelings of pride and emphatic behaviours. Alternatively, low values represent the preference for modesty and cooperation and a focus on quality of life

Institutions draw on certain cultural dimensions in a positive or negative way



Positive Drivers



Long Term orientation primarily affects the ability of the government to formulate and implement policies that seek to incorporate all future possible exogeneities affecting their general efficiency but also the extent to which people abide to laws as well as the enforceability and predictability of the judiciary system is clearly communicated



Individualism affects the extent to which people are able to express their individual initiatives, to take part in political processes and to be politically included. It also decreases the probability of corruptive behaviours in society as people do not depend on collective thinking but they are able to personally assess and weigh different environments



Indulgence is a driver of happiness in society allowing relatively free gratification of human desires related to enjoying life. Happier societies generally have a lower tendency towards corruptive demeanor as personal impulses and desires are encouraged and supported. Indulgence is also linked to the way policies and regulations promote private sector development and encourage economic engagement

Negative Drivers



Power Distance primarily affects the structure of laws in society. Countries with flatter organisations and institutions are able to better communicate rules and policies, as well as the enforceability of contracts. Secondly, power distance is linked to lower levels of corruption as smaller distances between social hierarchies make it easier for people to pinpoint and isolate distortive behaviours



Uncertainty Avoidance affects the efficacy and social value of institutional processes. Societies with lower levels of uncertainty avoidance are more tolerant to change, therefore they are more sensitive and receptive to government policies. Furthermore, adaptive societies have a sharp sense of their economic and political surroundings thus becoming less prone to corruption



Masculinity is negatively related to corruption perceptions. Societies with lower levels of masculinity promote and encourage policies that actively support quality of life and equal distribution of roles, which lower the level of societal frictions and pose barriers to distortive behaviours. More “feminine” societies tend to abide more easily to rules.

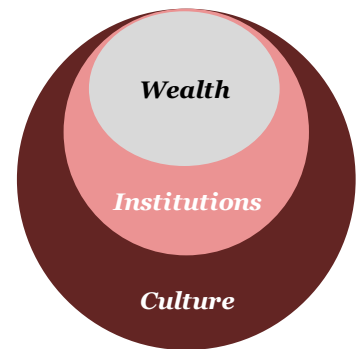


Culture is the connective grid upon which institutions are build up and promote growth

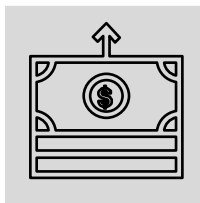


Culture comprises of the beliefs, behaviors, objects, and other characteristics, common to the members of a particular group or society. Through culture, people and groups define themselves, conform to society's shared values, and contribute to society.

Culture includes many societal aspects: language, customs, values, norms, mores, rules, tools, technologies, products, organizations, and institutions.

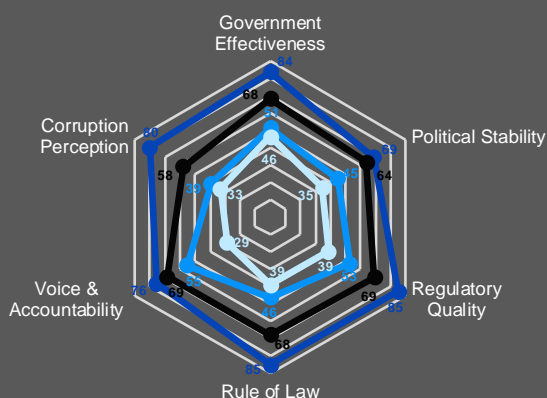


Institutions refer to clusters of rules, which are related to cultural characteristics and are widely associated with specific social activities. Institutions express a coercive system of values, policies and mechanisms by which society manages economic, political and social affairs through interactions within and among the state, civil society and the private sector.



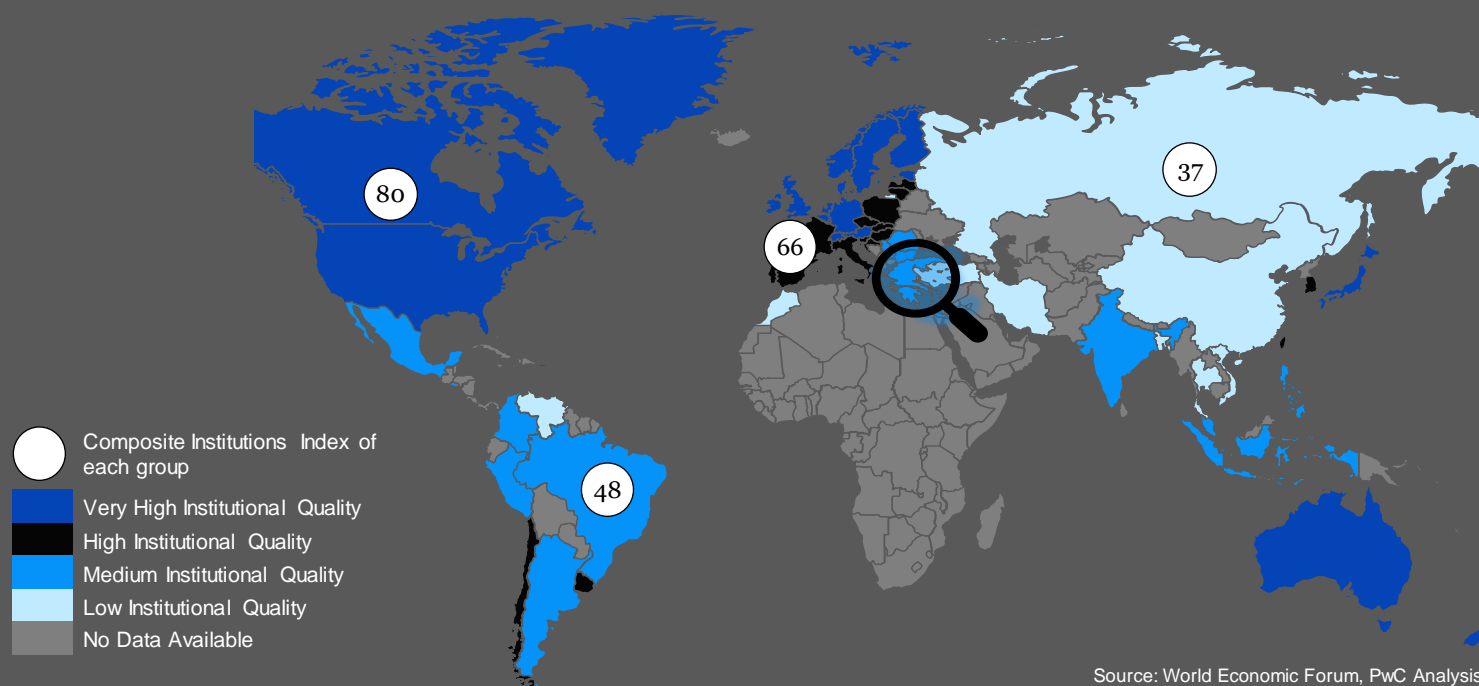
Wealth is intrinsically linked with institutional quality. The prosperity, development and independence of a country are strongly related to the quality of its institutions, which provide the incentives and disincentives for the behavior of citizens and politicians. Naturally, strong institutions require strong state mechanisms and a universal societal acceptance in order to increase the potential and speed of economic development and to reduce corruption.

The culture of a nation affects collective thinking, as well as the way it is implemented in the recognition and problem solving, while it is crystalised through laws, institutions and decision making mechanisms



There are four country groupings with distinct institutional characteristics

Institutional Quality country groupings



Source: World Economic Forum, PwC Analysis

Very High Institutional Quality

Mainly Scandinavian, Northern European countries and ex-colonies like USA, Australia and New Zealand. It is a quite homogenous group with the majority of the countries protestant. Very strong ability to formulate policies and regulations that support the private sector and stir economic engagement. Effective judiciary system and uniform enforceability of contracts

High Institutional Quality

Baltic, Central & Southern European, and a small representation of Asian and South American countries. Fairly uniform institutional strength among countries with the exception of France and Taiwan which stands out, exhibiting a very high ability to formulate sound policies with minimal bureaucracy. In general, the group is characterized by policies and regulations that promote individual initiatives, political inclusion, civil liberties and political rights

Medium Institutional Quality

Geographically mixed group, mainly represented by South American countries but also including countries from the Balkans and Asia. **Greece resides in this group.** The countries of this group are characterised by institutions that face difficulties in addressing corruptive behaviours. Additionally, governments face problems in organising an effective and stable judiciary system

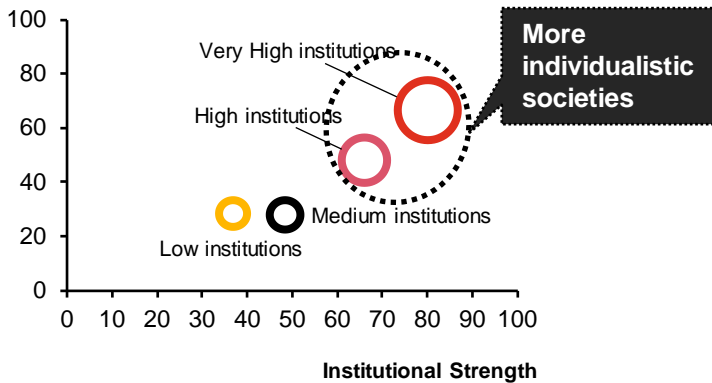
Low Institutional Quality

Represented by Asian countries, with the exceptions of Russia, Turkey, Morocco and Venezuela. Countries of this group generally fail to institutionally adjust and regulate corruptive behaviours. Decreased perception of political inclusion and moderately constrained property rights

In general, institutional groups are related to specific cultural traits

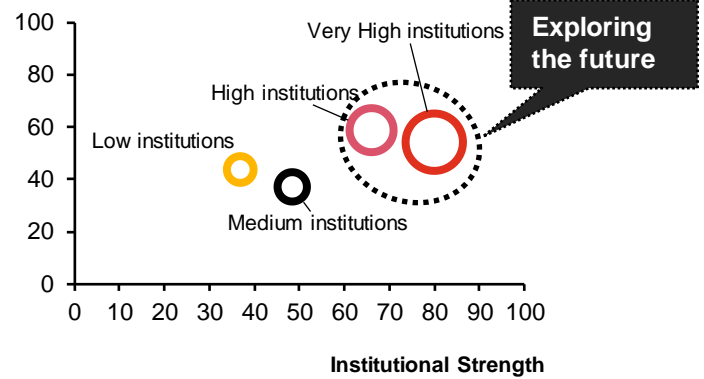
Individualism: They provide space and incentives for individual expression

Individualism



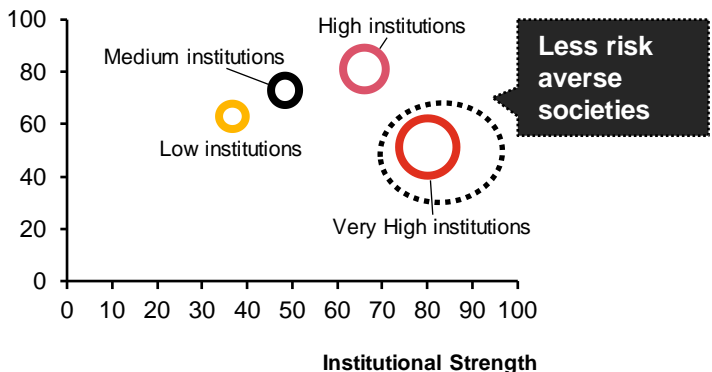
Long-term orientation: They contain mechanisms to explore and manage the future

Long-Term Orientation



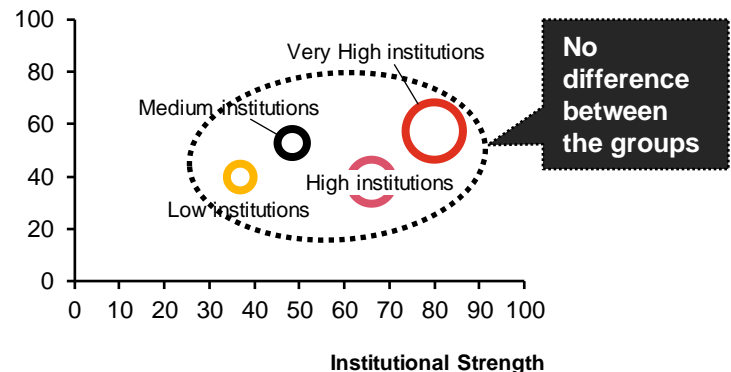
Uncertainty avoidance: They offer the framework that facilitates a fast change of the status quo

Uncertainty Avoidance



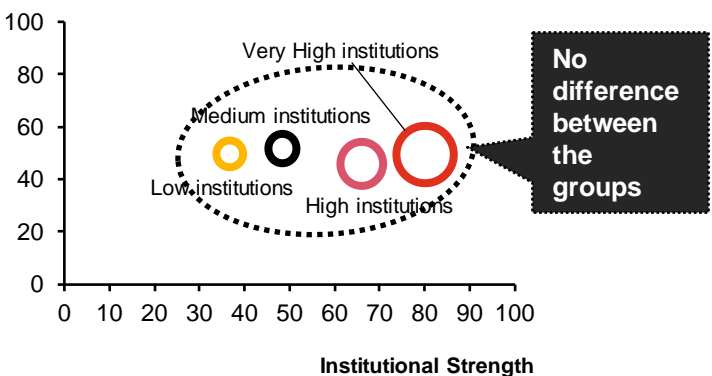
Indulgence: They nurture behaviours that support the natural human drive to gratify impulsion and adopt more control-free social norms

Indulgence



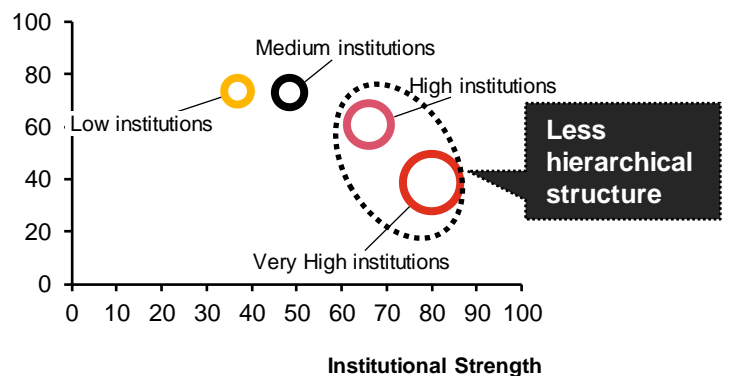
Masculinity: They view the functioning of the economy and society in terms of competition, achievement and material rewards

Masculinity



Power distance: They recognize hierarchies of different types and devolve power on them

Power Distance


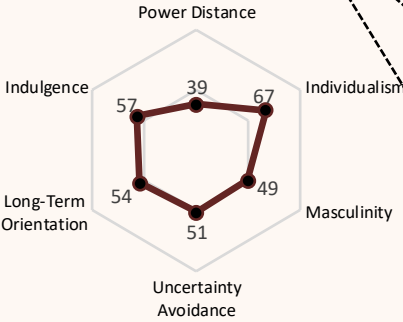

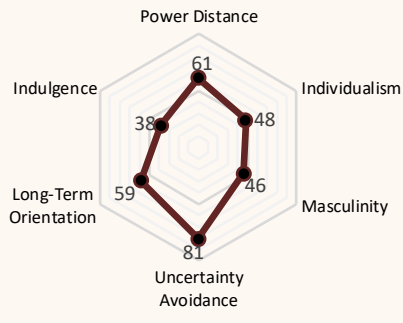

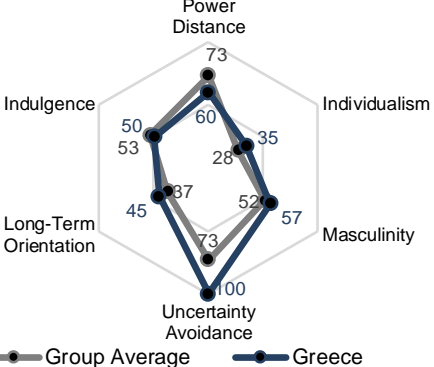

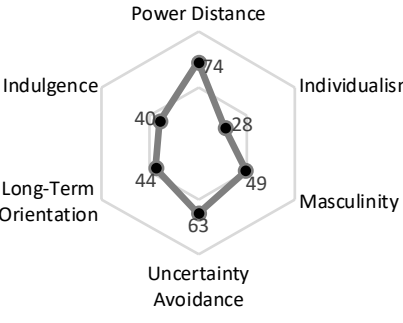


Bubble size :GDP per capita 2018

Each institutional group can be defined by different cultural characteristics

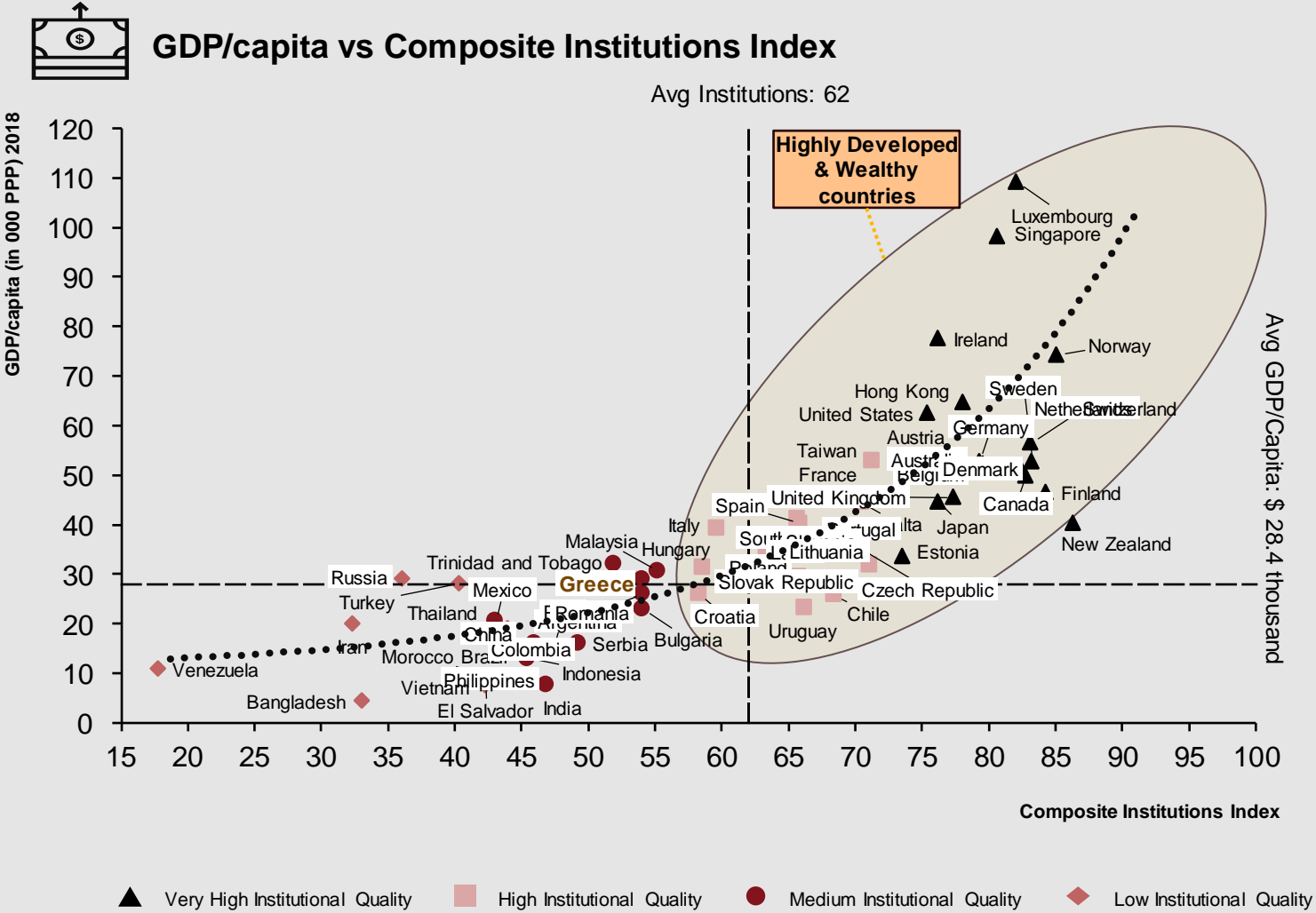
From a statistical point of view, the two highly developed clusters have been grouped into one supra-group; the “Highly Developed & Wealthy” countries

Highly Developed & Wealthy countries: Comprised mainly from high growth, wealthy western countries (United States, Canada, Australia etc.), north European countries (Germany, Sweden, Denmark etc.) and some niche Asian countries like Singapore, Taiwan and Hong Kong.
Average group GDP per capita stands 48.3k \$PPP*

Institutional Group	Current cultural traits	Description
 Very High Institutional Quality		<p>Societies that are primarily characterised by individualism, self progress and personal initiative. Highly indulgent, valuing gratification of natural human drives and social freedom. The countries residing in this group are generally very tolerant of societal change adopting a more pragmatic, future oriented approach</p> <p>Average GDP per capita: 58.9k \$PPP</p>
 High Institutional Quality		<p>Highly individualistic and competitive societies that are however, characterised by a strong maintenance of rigid codes governing beliefs and behaviours and being relatively intolerant of unorthodox structures and ideas. Despite their adherence to traditions they encourage societal thrift as a way to prepare for the future</p> <p>Average GDP per capita: 35.8k \$PPP</p>
 Medium Institutional Quality		<p>Countries that have an inclination towards collectivism rather than individualism, exhibiting a rather strong acceptance of hierarchical order in society. Their primary cultural characteristic is very rigid societal norms with strong maintenance of time-honoured traditions while their view of society tends to be rather short-termed. They are comparatively quite indulgent societies</p> <p>Average GDP per capita: 18.8k \$PPP</p>
 Low Institutional Quality		<p>Mainly characterised by distinct power distance patterns in society, accepting societal hierarchies. Highly rigid, with time-honoured traditions being preserved with resilience. They exhibit strong preference for a tightly-knit societal framework which is generally based on collectivism rather than individualistic behaviours</p> <p>Average GDP per capita: 16.3k \$PPP</p>

* In order to perform analysis between countries of different national currencies, all values are expressed in 2018 Purchasing Power Parity US dollars

Increases in institutional strength have a multiplying effect on the wealth of a country



- Wealth, measured in GDP/capita, is linked with institutional quality, as institutions determine the quality of objective decision making and through that the competitiveness and economic output of a country
- **On average, a 1 unit increase in overall strength of institutions, translates into an average 3% increase in GDP/capita revealing a rather high sensitivity of wealth to institutional quality**
- Increases in the institutional strength of highly developed countries, appear to have a higher impact than in the low institutional quality group

$\ln[\text{GDP per capita}] = \alpha + \beta_1 * \text{Composite Institutions Index}$			
	Coefficient	t-stat	Adj. R ²
Intercept	8.199	45.694	71.0%
Composite Institutional Index	0.031***	12.162	
α=95%	Sample of 37 countries		*** 99% significance

Greece's cultural orientation and institutional identity lies far from countries residing in the highly developed and wealthy country group



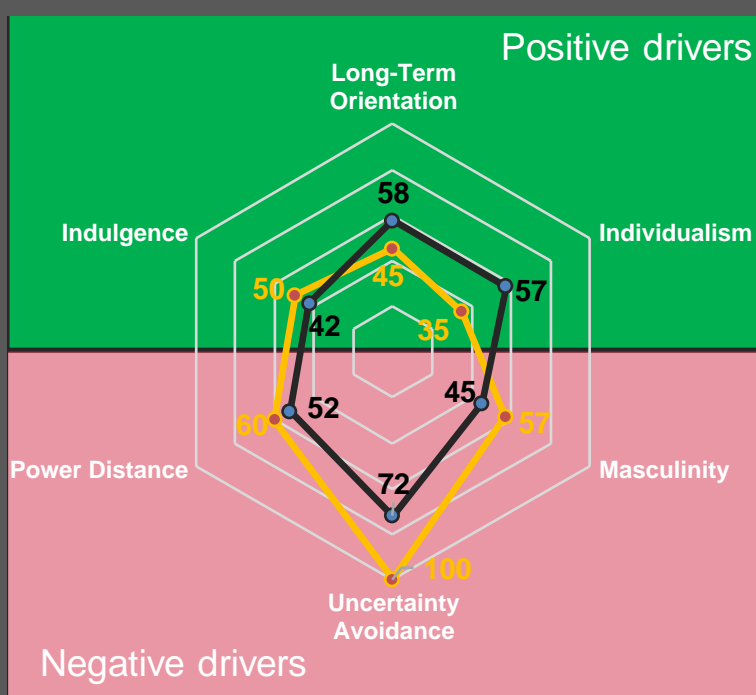
The distinctive cultural characteristic of Greece is the high intolerance towards change and a very rigid adherence to time-honoured traditions (uncertainty avoidance). Societal hierarchies (power distance) are clearly established and executed, goals tend to be more short-termed (long term orientation), while individual initiatives are very rare (individualism)



Greece lags institutionally compared to countries residing in "Highly Developed & Wealthy countries" supra-group. The general effectiveness of government policies is hindered by red tape and a low digitalization of frameworks and state procedures; signs of overregulation. The general performance of the judiciary system is impeded by legislative complexity and legal fragmentation

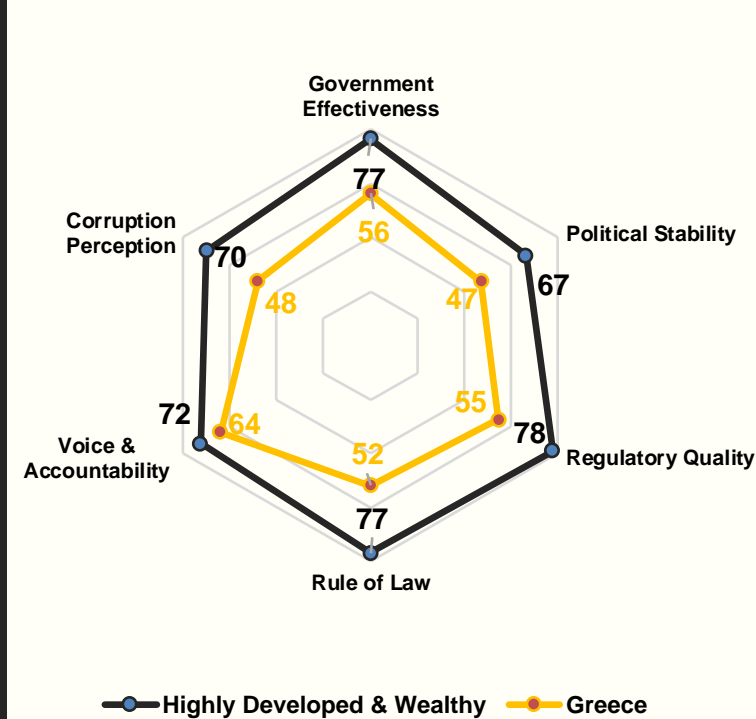
Greece's cultural characteristics

	Power Distance	Clearly established societal hierarchies
	High	
	Indulgence	Driven by desires and impulses
	Medium	
	Long-Term Orientation	Goals tend to be more short-termed
	Low	
	Individualism	Individual initiatives are very rare and society is group and family driven
	Very Low	
	Uncertainty Avoidance	Intolerance towards change and adherence to time-honoured traditions
	Very High	
	Masculinity	More assertive and competitive society
	Medium	



Greece's Institutional characteristics

	Government Effectiveness	Low technological integration in state run organisations, increased bureaucracy and red tape
	Medium	
	Political Stability	Sporadic political tensions, volatility in electoral politics
	Medium	
	Regulatory Quality	Overregulation, final policy decisions are not likely to reach a consensus among affected parties
	Low	
	Rule of Law	Legislative complexity, legal fragmentation, poor execution of laws
	Medium	
	Voice & Accountability	Freedom of speech is protected and citizens have free access to information. Media are generally independent
	Medium	
	Corruption Perception	Poor enforcement of anti-corruption legislation. Tax administration and public procurement are the sectors most affected by corruption
	Medium	



How can Greece benefit from a possible cultural re-mapping?

We have conducted econometric analysis in order to identify which cultural traits drive the institutions of wealthy and highly developed countries

$Composite\ Institutions\ Index = \alpha + \sum_1^6 (\beta_i * Cultural\ Dimension_i)$			
	Coefficient	t-stat	Adj. R ²
Intercept	95.051	17.476	98.3%
Power Distance	-0.315***	-6.323	
Individualism	0.072***	2.134	
Masculinity	-0.065	-3.461	
Uncertainty Avoidance	-0.045	-2.241	
Long-Term Orientation	0.114***	5.371	
Indulgence	-0.150	-4.005	
α=95%	Sample of 37 countries		

A shift towards the cultural characteristics of highly developed countries could **increase the Greek composite institutions index by 8 units on average long term**

*** 99% significance

What are the main cultural determinants that can increase the quality of institutions in Greece?



Taking a long term perspective, a cultural shift towards the highly developed and wealthy group can redirect and strengthen Greece's institutions. Three cultural values appear to have the highest impact on its institutions in the long run.



Acceptance of equal distribution of power (power distance) by promoting flatter organisations, limit the distance from the decision making organisms, constrain the hierarchy in the society and decentralise state authorities.

This will improve the efficiency of the judicial system, reduce its current legal complexity, secure a non-arbitrary form of government, and reduce the likelihood of crime or violence



Focus on the future (long term orientation) by stimulating adaptation, promoting social mobility, enhancing evolution strategies to steadfast and support investment.

A long-term oriented government will focus on the effectiveness and sustainability of the country's policies, encourage knowledge dispersion through a digital transformation plan for state-run organisations and decrease existing bureaucracy and red tape. Also, a long-term planning perspective will reduce conflict at the stage of policy implementation, focusing on regulations that enhance private sector development, and limit overregulation



Enhance individual accountability and strengthen personal independence (Individualism), by stimulating private initiative, promote and reward entrepreneurship, research and innovation.

Personal independence will enhance freedom of expression, freedom of association, increase social inclusion and promote private development. The shift of the Greek society from a collectivistic culture of family driven/in-group behaviours to an individualistic structure which prizes personal control, autonomy and individual accomplishments, will limit corruptive behavior



Conclusion

- There is a virtuous cycle between culture, institutions and wealth. Institutions frame the formal logic of the country's goals and orient people around them, whereas, culture expresses collective goals through values and beliefs, and guides activity through shared assumptions and group norms
- Institutions, in general, are driven by cultural behaviours like collective thinking long-term orientation, individualism and indulgence and restrained by power distance, uncertainty avoidance and masculinity
- The wealth of a nation, reflected in the GDP per capita, is directly linked to its institutional quality, as institutions determine the quality of objective decision making, and through that the economic development of a country
- Countries can be aptly grouped into four groups by their institutional strength, demonstrating distinct cultural and wealth characteristics. Countries with high institutional strength are mainly European, Baltic, ex colonies like USA and Scandinavian countries. They are mainly individualistic societies, with low hierarchical structure, low risk-aversion, focusing on the future. On the contrary, countries with medium and low institutional strength, represented mainly by South American countries, the Balkans and Asia, are driven by collectivism, high risk aversion, strong hierarchical structure, while they are more short term oriented.
- Each institutional group is characterised by a different cultural footprint. Societies with strong institutions, for instance, are primarily characterised by individualism, self progress and personal initiative. They are highly indulgent, valuing gratification of natural human drives and social freedom. The countries residing in this group are generally very tolerant of societal change adopting a more pragmatic, future oriented approach
- On the other side, Greece, resides in the medium institutional group where countries have an inclination towards collectivism, exhibiting a rather strong acceptance of hierarchical order in society. Their primary cultural characteristic is the very rigid societal norms with strong maintenance of time-honoured traditions, while their view of society tends to be rather short-termed.
- There are major wealth differences between the groups, with the two highest reporting an average € 40k, while the groups with the lower institutional strength share around the same low average GDP per capita (€ 13k)
- In general, a unit increase in institutional quality, expressed through the composite institutions index, could increase GDP per capita by around 3%. However, each institutional group reacts differently to changes in its institutions; increases in the institutional strength of highly developed countries, appear to have a higher impact in wealth, than in the low institutional quality group



The case of Greece

- Greece significantly lags in terms of wealth and institutional strength when compared to highly developed and wealthy countries.
- Greece's cultural identity can be summarised by high acceptance of hierarchy within society, low expression of individuality and extreme reliance on time-honoured traditions. On an institutional level, Greece exhibits low technological integration, excessive bureaucracy, overregulation, legislative complexity and legal fragmentation, as well as poor enforcement of anti-corruption legislation
- The country could achieve higher and sustainable growth by altering the society's value set. Focusing on managed change, the removal of rigidities and constraints, battling with conservatism, fueling individual efforts linked to gratification will lead to sustainable growth.
- Greece should devise a long-term strategy that will bring the country closer to developed countries and help reshape the institutional impediments that hold the country back. The country's proposed cultural re-mapping includes:
 - ❑ **Acceptance of equal distribution of power (power distance)** by promoting flatter organisations, limit the distance from the decision making organisms, constrain the hierarchy in the society and decentralise state authorities. This will improve the efficiency of the judicial system, reduce its current legal complexity, secure a non-arbitrary form of government, and reduce the likelihood of crime or violence
 - ❑ **Focus on the future (long term orientation)** by stimulating adaptation, promoting social mobility, enhancing evolution strategies to steadfast and support investment. A long-term oriented government will focus on the effectiveness and sustainability of the country's policies, encourage knowledge dispersion through a digital transformation plan for state-run organisations and decrease existing bureaucracy and red tape. Also, a long-term planning perspective will reduce conflict at the stage of policy implementation, focusing on regulations that enhance private sector development, and limit overregulation
 - ❑ **Enhance individual accountability** and strengthen personal independence (Individualism), by stimulating private initiative, promote and reward entrepreneurship, research and innovation. Personal independence will enhance freedom of expression, freedom of association, increase social inclusion and promote private development. The shift of the Greek society from a collectivistic culture of family driven/in-group behaviours to an individualistic structure which prizes personal control, autonomy and individual accomplishments, will limit corruptive behavior

The benefits of a Greek cultural re-programming will improve institutions and increase country's wealth by bridging the gap with the highly developed countries

Thank you!

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Appendix

Cultural and institutional dimensions are explicitly and analytically linked

- In order to assess the strength of the relationships between institutional and cultural dimensions we conducted Multivariate Multiple Least Squares Regression
- The results suggest that institutional variables link similarly to the cultural dimensions, with Government Effectiveness representing the strongest fit and Political Stability the weakest**

Multivariate Multiple Least Squares Model

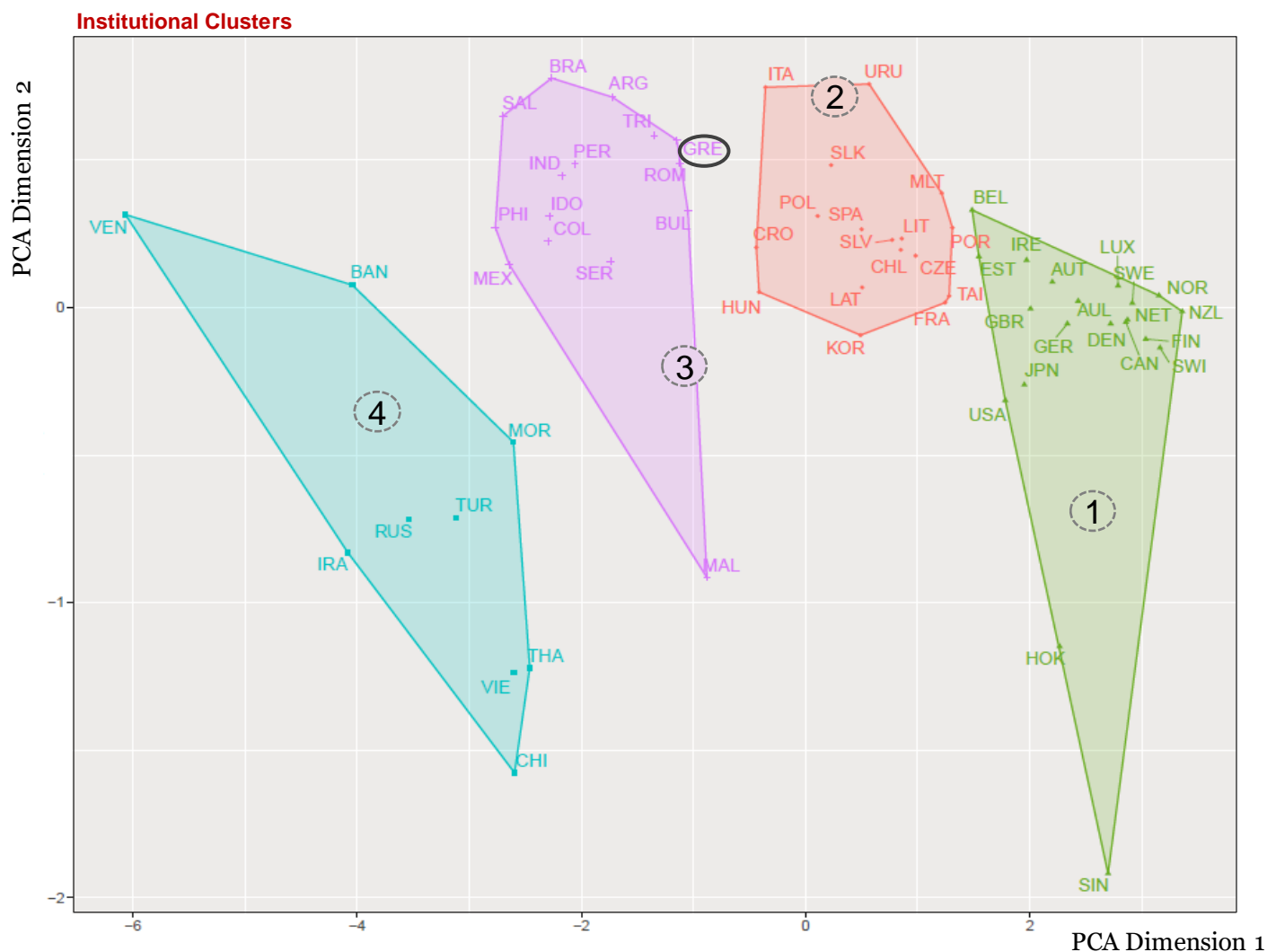
$$\begin{pmatrix} \text{Institutional Dimension}_{1,c1} \\ \vdots \\ \text{Institutional Dimension}_{i,ci} \end{pmatrix} = \begin{pmatrix} b_{1,c1} & \cdot & \cdot & \cdot & b_{i,c1} \\ \vdots & & & & \vdots \\ b_{i,ck} & \cdot & \cdot & \cdot & b_{i,ck} \end{pmatrix} \times \begin{pmatrix} \text{Cultural Dimension}_{1,c1} \\ \vdots \\ \text{Cultural Dimension}_{i,ci} \end{pmatrix}$$

I = dimension, c = country

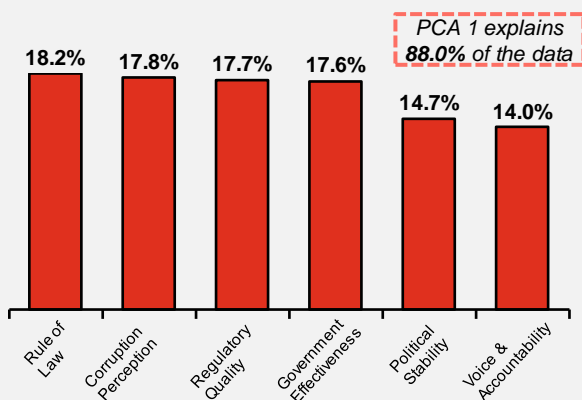
Institutional Variables Dimensions = $\alpha + \beta_1 \cdot \text{Cultural Variables Dimensions}_i$									
	Government Effectiveness			Political Stability			Regulatory Quality		
	Coefficient	t-stat	Adj. R ²	Coefficient	t-stat	Adj. R ²	Coefficient	t-stat	Adj. R ²
Power Distance	-0.167	-2.215	61.9%	-0.268	-2.189	40.0%	-0.204	-1.787	48.9%
Individualism	0.150	2.914		0.093	1.114		0.187	2.405	
Masculinity	-0.052	-1.235		-0.036	-0.523		-0.052	-0.817	
Uncertainty Avoidance	-0.124	-2.384		-0.044	-0.517		-0.086	-1.091	
Long-Term Orientation	0.211	4.151		0.201	2.435		0.256	3.332	
Indulgence	0.108	1.875		0.063	0.672		0.094	1.077	
$\alpha=95\%$	Sample of 61 countries								

Institutional Variables Dimensions) = α + $\beta_1 \cdot$ Cultural Variables Dimensions _i									
	Rule of Law			Voice & Accountability			Corruption Perception		
	Coefficient	t-stat	Adj. R ²	Coefficient	t-stat	Adj. R ²	Coefficient	t-stat	Adj. R ²
Power Distance	-0.253	-1.870	52.2%	-0.229	-2.025	48.7%	-0.286	-2.886	60.3%
Individualism	0.265	2.875		0.211	2.730		0.219	3.239	
Masculinity	-0.075	-0.999		-0.066	-1.043		-0.071	-1.295	
Uncertainty Avoidance	-0.132	-1.407		0.178	2.283		-0.124	-1.810	
Long-Term Orientation	0.272	2.986		0.164	2.146		0.238	3.573	
Indulgence	0.033	0.322		0.171	1.983		0.140	1.856	
$\alpha=95\%$	Sample of 61 countries								

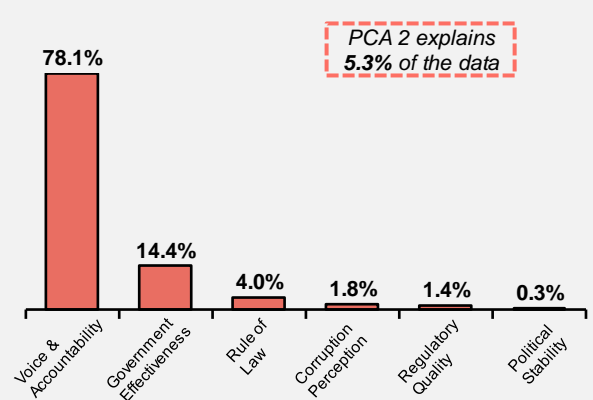
There are four distinct country groupings which differ considerably in terms of institutional quality



Principal Component's 1 Variable Contribution



Principal Component's 2 Variable Contribution



- Based on the latest World Bank Governance Indicators, as well as, Transparency International Corruption Perceptions Index we used k-means clustering to test for natural groupings

- We performed principal component analysis (PCA). PCA replaces original variables with new variables, called principal components, which are the result of linear combinations of the original variables

Building a Composite Institutions Index

Institutional strength dimensions, as measured by the World Bank, are highly correlated and do not really describe anything more than different facets of the institutions. They can be aptly collapsed into a single ordinal index reflecting the strength /stability of the underlying institutions

Following Christodoulakis (2019)¹, we employ the variable contribution of Dimension 1 in the Principal Component Analysis, however we also consider Dimension's 2 contribution. We then combine the two dimensions by using their explanatory power of the data as weights*, thus obtaining the **PCA weights for the Composite Institutions Index**:

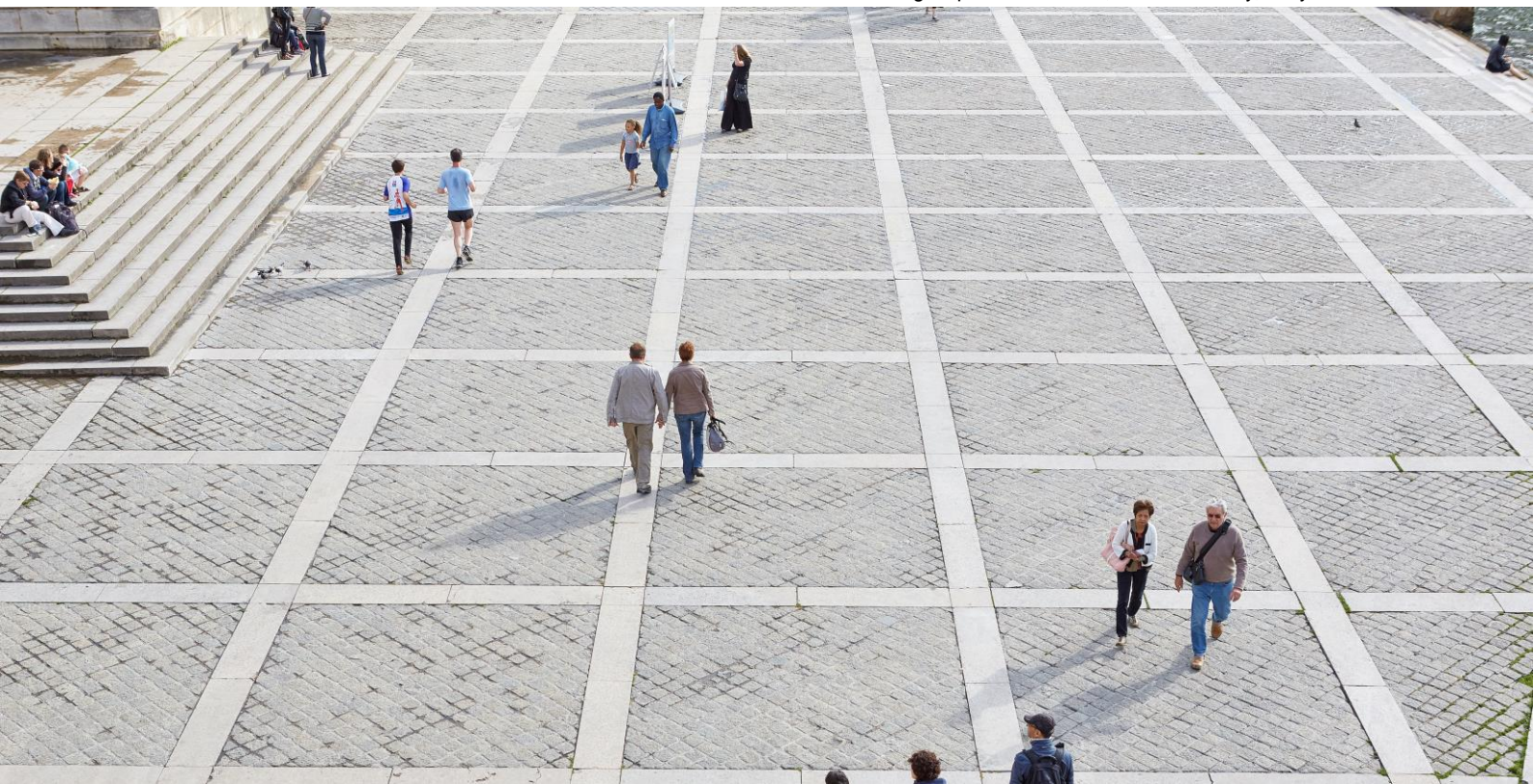
PCA 1 Variable Contribution				PCA 2 Variable Contribution				Institutional Weights	
		+	$\frac{w_2}{w_1 + w_2}$			→	Weighted Average		
$\frac{w_2}{w_1 + w_2}$	Rule of Law			Voice & Accountability	78.1%			Voice & Accountability	17.7%
	Corruption Perception			Government Effectiveness	14.4%			Government Effectiveness	17.4%
	Regulatory Quality			Rule of Law	4.0%			Rule of Law	17.4%
	Government Effectiveness			Corruption Perception	1.8%			Corruption Perception	16.9%
	Political Stability			Regulatory Quality	1.4%			Regulatory Quality	16.8%
	Voice & Accountability			Political Stability	0.3%			Political Stability	13.9%
	Total			Total	100.0%			Total	100.0%

The **Composite Institutions Index** is given as the weighted average of all six dimensions:

$$= 0.177 * \text{Voice \& Accountability} + 0.174 * \text{Government Effectiveness} + 0.174 * \text{Rule of Law} + 0.169 * \text{Corruption Perception} + 0.168 * \text{Regulatory Quality} + 0.139 * \text{Political Stability}$$

* w1=88.0%, w2=5.3%

¹ Christodoulakis N., "Greece and the Euro Area: The cost of weak institutions", CGK Working Paper no. 2019-05, Tufts University, May 2019



Institutional Dimensions – Full Country List

A/A	Country	Composite Institutions Index	Institutional Cluster	Government Effectiveness	Political Stability	Regulatory Quality	Rule of Law	Voice & Accountability	Corruption Perception
1	New Zealand	86	Very High	85	82	92	88	81	89
2	Norway	85	Very High	90	73	86	90	84	85
3	Switzerland	85	Very High	91	74	88	89	81	85
4	Finland	84	Very High	89	71	86	91	81	85
5	Sweden	83	Very High	87	70	86	89	82	84
6	Netherlands	83	Very High	87	68	91	87	81	82
7	Canada	83	Very High	87	72	88	86	80	82
8	Denmark	82	Very High	86	67	82	87	80	88
9	Luxembourg	82	Very High	84	77	84	85	80	82
10	Singapore	81	Very High	94	82	92	86	47	84
11	Australia	80	Very High	81	68	89	84	78	77
12	Germany	79	Very High	84	62	86	82	78	81
13	Hong Kong	78	Very High	88	67	93	84	59	76
14	Austria	78	Very High	79	71	79	86	77	75
15	United Kingdom	77	Very High	78	55	84	84	77	82
16	Japan	76	Very High	82	72	77	81	70	73
17	Ireland	76	Very High	76	70	82	79	76	74
18	United States	75	Very High	81	56	83	83	71	75
19	Estonia	74	Very High	72	63	83	76	74	71
20	Belgium	73	Very High	74	58	75	77	78	75
21	France	72	High	77	54	73	79	73	70
22	Taiwan	71	High	75	68	77	73	70	63
23	Portugal	71	High	77	72	68	73	74	63
24	Malta	70	High	70	75	76	73	73	56
25	Czech Republic	69	High	70	70	75	72	69	57
26	Chile	68	High	67	58	77	70	70	67
27	Lithuania	68	High	70	66	73	70	70	59
28	Slovenia	67	High	73	68	62	70	70	61
29	Uruguay	66	High	58	71	63	62	73	70
30	Spain	66	High	71	55	69	70	71	57
31	Latvia	66	High	68	59	73	69	66	58
32	South Korea	66	High	72	56	72	73	65	54
33	Slovak Republic	63	High	66	68	66	61	69	50
34	Poland	63	High	63	60	68	59	66	60
35	Italy	60	High	60	55	64	56	71	50
36	Hungary	59	High	60	66	63	61	57	45
37	Croatia	58	High	62	65	58	57	60	49
38	Malaysia	55	Medium	67	53	64	58	42	47
39	Bulgaria	54	Medium	55	57	63	49	58	43
40	Romania	54	Medium	47	51	60	58	60	48
41	Greece	54	Medium	56	47	55	52	64	48
42	Trinidad & Tobago	52	Medium	55	56	51	48	61	41
43	Argentina	49	Medium	53	54	44	45	61	39
44	Serbia	49	Medium	54	52	50	46	52	41
45	Peru	47	Medium	47	45	58	40	55	37
46	India	47	Medium	52	33	45	50	58	40
47	Brazil	46	Medium	44	42	48	44	59	37
48	Colombia	46	Medium	49	34	57	43	52	37
49	Indonesia	45	Medium	51	40	48	43	53	37
50	Thailand	44	Low	58	35	53	51	29	37
51	Mexico	43	Medium	49	37	54	39	48	29
52	Morocco	43	Low	47	42	45	47	37	40
53	Philippines	43	Medium	49	25	50	42	52	34
54	China	43	Low	58	45	47	45	20	41
55	Vietnam	42	Low	50	56	42	51	22	35
56	El Salvador	42	Medium	43	45	47	33	53	33
57	Turkey	40	Low	51	14	51	45	36	40
58	Russia	36	Low	48	37	40	34	28	29
59	Bangladesh	33	Low	35	25	34	37	38	28
60	Iran	32	Low	46	31	26	36	24	30
61	Venezuela	18	Low	22	26	11	5	26	18

Cultural Dimensions – Full Country List

A/A	Country	Power Distance	Masculinity	Uncertainty Avoidance	Individualism	Long-Term Orientation	Indulgence
1	New Zealand	22	58	49	79	33	75
2	Norway	31	8	50	69	35	55
3	Switzerland	34	70	58	68	74	66
4	Finland	33	26	59	63	38	57
5	Sweden	31	5	29	71	53	78
6	Netherlands	38	14	53	80	67	68
7	Canada	39	52	48	80	36	68
8	Denmark	18	16	23	74	35	70
9	Luxembourg	40	50	70	60	64	56
10	Singapore	74	48	8	20	72	46
11	Australia	38	61	51	90	21	71
12	Germany	35	66	65	67	83	40
13	Hong Kong	68	57	29	25	61	17
14	Austria	11	79	70	55	60	63
15	United Kingdom	35	66	35	89	51	69
16	Japan	54	95	92	46	88	42
17	Ireland	28	68	35	70	24	65
18	United States	40	62	46	91	26	68
19	Estonia	40	30	60	60	82	16
20	Belgium	65	54	94	75	82	57
21	France	68	43	86	71	63	48
22	Taiwan	58	45	69	17	93	49
23	Portugal	63	31	99	27	28	33
24	Malta	56	47	96	59	47	66
25	Czech Republic	57	57	74	58	70	29
26	Chile	63	28	86	23	31	68
27	Lithuania	42	19	65	60	82	16
28	Slovenia	71	19	88	27	49	48
29	Uruguay	61	38	98	36	26	53
30	Spain	57	42	86	51	48	44
31	Latvia	44	9	63	70	69	13
32	South Korea	60	39	85	18	100	29
33	Slovak Republic	100	100	51	52	77	28
34	Poland	68	64	93	60	38	29
35	Italy	50	70	75	76	61	30
36	Hungary	46	88	82	80	58	31
37	Croatia	73	40	80	33	58	33
38	Malaysia	100	50	36	26	41	57
39	Bulgaria	70	40	85	30	69	16
40	Romania	90	42	90	30	52	20
41	Greece	60	57	100	35	45	50
42	Trinidad & Tobago	47	58	55	16	13	80
43	Argentina	49	56	86	46	20	62
44	Serbia	86	43	92	25	52	28
45	Peru	64	42	87	16	25	46
46	India	77	56	40	48	51	26
47	Brazil	69	49	76	38	44	59
48	Colombia	67	64	80	13	13	83
49	Indonesia	78	46	48	14	62	38
50	Thailand	64	34	64	20	32	45
51	Mexico	81	69	82	30	24	97
52	Morocco	70	53	68	46	14	25
53	Philippines	94	64	44	32	27	42
54	China	80	66	30	20	87	24
55	Vietnam	70	40	30	20	57	35
56	El Salvador	66	40	94	19	20	89
57	Turkey	66	45	85	37	46	49
58	Russia	93	36	95	39	81	20
59	Bangladesh	80	55	60	20	47	20
60	Iran	58	43	59	41	14	40
61	Venezuela	81	73	76	12	16	100