



## Determinants of international competitiveness

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### HIGHLIGHTS:

1. International competitiveness are influenced by both government policies and culture of a country
2. International competitiveness is essential in creating well-paying jobs
3. Government policies are crucial to a sustainable economic growth more than culture
4. Cultural model alone cannot explain economic growth in many countries
5. There are very specific and well defined policies that government should pursue to engineer international competitiveness

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### ABSTRACT

International competitiveness is a main source of economic advancement which results in higher standards of living. This paper examines the determinants of international competitiveness as it defines international competitiveness and discusses two common conceptions that are required to achieve higher level of economic competitiveness: government policies and culture. It further explains a research methodology which is known as "Innovation Matrix". Data is collected from two areas: competitiveness and culture. After describing two sets of data, the researcher tests two hypotheses: (1) long-term economic growth is a function of government policies and (2) culture plays an insignificant role in gaining competitiveness and economic growth. In conclusion, the paper makes recommendations as how a country can improve its economic competitiveness.

### JEL Classification:

A13; M00; Z10.

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## 1.0 Introduction

One of the main goals of policy makers is to improve international competitiveness which will result in more foreign investments and export. Both of which will result in development of the country managerial skills, introduction of new technology and creation of well-paying jobs. The question is that whether competitiveness is one of the cultural traits of the country or can be formed by developing certain governmental policies. This article attempts to ascertain that question.

Competitiveness is defined as the set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the level of prosperity that can be earned by an economy. The productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates. In other words, a more competitive economy is one that is likely to grow faster over time. The concept of competitiveness thus involves static and dynamic components: although the productivity of a country determines its ability to sustain a high level of income, it is also one of the central determinants of its returns to investment, which is one of the key factors explaining an economy's growth potential.

The recent Global Competitiveness Report comes out amid multiple challenges to the global economy. After a number of difficult years, a recovery from the economic crisis is tentatively emerging, although it has been very unequally distributed: much of the developing world is still seeing relatively strong growth, despite some risk of overheating, while most advanced economies continue to experience sluggish recovery, persistent unemployment, and financial vulnerability, with no clear horizon for improvement. In addition, rising commodity prices are eroding the purchasing power of consumers and are likely to slow the pace of recovery. Such uncertainties are being exacerbated by growing concerns about the sustainability of public debt amidst the slow growth of some advanced economies. The damage that would be wrought by the first sovereign defaults among advanced economies since the 1940s is impossible to gauge, although the mere possibility of this eventuality has already hit investor confidence, put the very viability of the euro into question, and further undermined the US dollar's value and its place as the world's preferred reserve currency.<sup>1</sup>

The complexity of today's global economic environment has made it more important than ever to recognize and encourage the qualitative as well as the quantitative aspects of growth, integrating such concepts as inclusiveness and environmental sustainability to provide a fuller picture of what is needed and what works.

In the current challenging economic environment, our work is a critical reminder of the importance of taking into account the consequences of our present actions on future prosperity based on sustained growth. Since 2005, the World Economic Forum has based its competitiveness analysis on the Global Competitiveness Index (GCI), a comprehensive tool that measures the microeconomic and macroeconomic foundations of national competitiveness.

There are many determinants driving productivity and competitiveness. Understanding the factors behind this process has occupied the minds of economists for hundreds of years, engendering theories ranging from Adam Smith's focus on specialization and the division of labor to neoclassical economists' emphasis on investment in physical capital and infrastructure, and more recently, to interest in other mechanisms such as education and training, technological progress, macroeconomic stability, good governance, firm sophistication, and market efficiency, among others. While all of these factors are likely to be important for competitiveness and growth, they are not mutually exclusive - two or more of them can be significant at the same time, and in fact that is what has been shown in the economic literature.

## 2.0 The theoretical model: innovation matrix

Innovation Matrix combines cultural traits and social institutions to yield a growth model which leads to improve international competitiveness of countries.

### 2.01 Institutions and policy dimension

Institution and policy dimension can be defined with the help of Global Competitiveness Index (GCI). GCI is a weighted average of many different institutional components, each measuring a different aspect of country competitiveness. These components are grouped into 12 pillars of competitiveness:

**First pillar:** Institutions -The institutional environment is determined by the legal and administrative framework within which individuals, firms, and governments interact to generate wealth. The importance of a sound and fair institutional environment became even more apparent during the economic crisis and is especially important for solidifying the fragile recovery given the increasing role played by the state at the international level and for the economies of many countries.

**Second pillar:** Infrastructure - Extensive and efficient infrastructure is critical for ensuring the effective functioning of the economy, as it is an important factor determining the location of economic activity and the kinds of activities or sectors that can develop in a particular instance.

**Third pillar:** Macroeconomic environment -The stability of the macroeconomic environment is important for business and, therefore, is important for the overall competitiveness of a country.

**Fourth pillar:** Health and primary education - A healthy workforce is vital to a country's competitiveness and productivity. Workers who are ill cannot function to their potential and will be less productive. Poor health leads to significant costs to business, as sick workers are often absent or operate at lower levels of efficiency. Investment in the provision of health services is thus critical for clear economic, as well as moral considerations.

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<sup>1</sup> World Economic Forum, Global Competitiveness Report. (2012): [www.weforum.org/docs/WEF\\_GlobalCompetitivenessReport\\_2012-13.pdf](http://www.weforum.org/docs/WEF_GlobalCompetitivenessReport_2012-13.pdf)

**Fifth pillar:** Higher education and training - Quality higher education and training is crucial for economies that want to move up the value chain beyond simple production processes and products.

**Sixth pillar:** Goods market efficiency - Countries with efficient goods markets are well positioned to produce the right mix of products and services given their particular supply-and-demand conditions, as well as to ensure that these goods can be most effectively traded in the economy.

**Seventh pillar:** Labor market efficiency - The efficiency and flexibility of the labor market are critical for ensuring that workers are allocated to their most efficient use in the economy and provided with incentives to give their best effort in their jobs. Labor markets must therefore have the flexibility to shift workers from one economic activity to another rapidly and at low cost, and to allow for wage fluctuations without much social disruption.

**Eighth pillar:** Financial market development - The recent economic crisis has highlighted the central role of a sound and well-functioning financial sector for economic activities. An efficient financial sector allocates the resources saved by a nation's citizens, as well as those entering the economy from abroad, to their most productive uses.

**Ninth pillar:** Technological readiness - In today's globalized world, technology is increasingly essential for firms to compete and prosper. The technological readiness pillar measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries, with specific emphasis on its capacity to fully leverage information and communication technologies (ICT) in daily activities and production processes for increased efficiency and competitiveness.

**Tenth pillar:** Market size - The size of the market affects productivity since large markets allow firms to exploit economies of scale. Traditionally, the markets available to firms have been constrained by national borders.

**Eleventh pillar:** Business sophistication - There is no doubt that sophisticated business practices are conducive to higher efficiency in the production of goods and services. Business sophistication concerns two elements that are intricately linked: the quality of a country's overall business networks and the quality of individual firms' operations and strategies.

**Twelfth pillar:** Innovation - The final pillar of competitiveness is technological innovation. Although substantial gains can be obtained by improving institutions, building infrastructure, reducing macroeconomic instability, or improving human capital, all these factors eventually seem to run into diminishing returns.

While we report the results of the 12 pillars of competitiveness separately, it is important to keep in mind that they are not independent: they tend to reinforce each other, and a weakness in one area often has a negative impact on other areas. For example, a strong innovation capacity (pillar 12) will be very difficult to achieve without a healthy, well-educated and trained workforce (pillars 4 and 5) that is adept at absorbing new technologies (pillar 9), and without sufficient financing (pillar 8) for R&D or an efficient goods market that makes it possible to take new innovations to market (pillar 6).

Although the pillars are aggregated into a single index, measures are reported for the 12 pillars separately because such details provide a sense of the specific areas in which a particular country needs to improve.

## 2.02 Cultural dimensions

Countries having a more individualist culture and weaker uncertainty avoidance (risk takers) have enjoyed higher long-run growth than countries with a more collectivist culture and stronger uncertainty avoidance (risk avoiders).

Individualist culture attaches social status rewards to personal achievements and thus, provides not only monetary incentives for innovation but also social status rewards, leading to higher rates of innovation and economic growth, hence more national competitiveness. Also, weak uncertainty avoidance cultural traits encourage entrepreneurial and business formation activities which will lead to more innovation which in turn increase productivity and national competitiveness. The idea that culture is a central ingredient of economic development goes back to at least Max Weber, who, in his classical work "The Protestant Ethic and the Spirit of Capitalism," argued that the Protestant ethic of Calvinism was a powerful force behind the development of capitalism in its early phases.

Yuriy Gorodnichenko and Gerard Roland in their research proposed both a theoretical model and empirical evidence showing that countries with a more individualist culture have more innovation, higher productivity and higher long-run growth than countries with a more collectivist culture.<sup>2</sup>

<sup>2</sup> Gorodnichenko, Y., Roland, G. (2010). Culture, Institutions and the Wealth of Nations. Retrieved from <http://www.nber.org/papers/w16368>.

According to Gorodnichenko and Roland (2010), the main tenets of their theory are as follows: "Individualism emphasizes personal freedom and achievement. Individualist culture, therefore, awards social status to personal accomplishments such as important discoveries, innovations, or great artistic achievements. However, individualism can make collective action more difficult, because individuals pursue their own interest without internalizing collective interests. Collectivism, in contrast, makes collective action easier in the sense that individuals internalize group interests to a greater degree. However, it also encourages conformity and discourages individuals from standing out. This framework implies that individualism should encourage innovation more, but collectivism should have an advantage in coordinating production processes and various forms of collective action."

This paper added uncertainty avoidance cultural traits to this relationship to include entrepreneurs into the process on innovation. Entrepreneurs derive utility not only from consumption but also from social prestige associated with producing a higher than average quality of intermediate products and reap the wealth and income which comes with a successful commercialization of their ideas.

As a result, the higher innovation rate in an individualist and weak uncertainty avoidance culture eventually leads to higher levels of productivity and output in the long run than a collectivist and strong uncertainty avoidance culture. In other words, the advantages of these two cultural traits improve competitiveness and long-run growth.

The Innovation Matrix postulates an interesting relationship between long-term growth rate of a country with both culture and institutions. In societies with negative institutions and policies (low scores in the above 12 pillars), a predatory government can seize the monetary returns from innovation, create monopolies, impose too much taxes and regulations, and repress ideas. These policies lead to less innovation and less economic growth.

On the other hand, societies with positive institutions and policies, there are no blockage of ideas, more democratic, less taxes and regulations, less corruptions, and more competitive industries. These policies lead to more innovations and a higher rate of growth.

We have already discussed the effects of cultural traits on innovation and economic growth. Therefore, Table 1 presents a summary of the Theory of Innovation Matrix.

Table 01: Innovation matrix

Culture	Positive Traits	1	2
	Negative Traits	3	4
		Negative	Positive
	Institutions and Policies		

Where, positive cultural traits include weak uncertainty avoidance and individualism, negative cultural traits include strong uncertainty avoidance and collectivism, positive institutions and policies is represented by having high GCI score, and negative institutions and policies is represented by having low GCI score.

### 3.0 Description of data

Three fastest growing countries in 15 regions of the world are shown in Table 2. All together, GDP growth rate of 45 countries are presented.

Table 02: Global competitiveness index for the fastest growing economies

Country	GDP Growth Rate	GCI Ranking	GCI	Institutions & Policies in Innovation Matrix (Based in GCI Index)	Culture in Innovation Matrix (Based on Hofstede Cultural Values)
Algeria	2.90%	87	3.96	Neutral	Negative
Argentina	8.80%	85	3.99	Neutral	Neutral
Austria	3.30%	19	5.14	Positive	Positive

Bhutan	8.10%		NA	Neutral	Neutral
Botswana	6.20%	80	4.05	Neutral	Negative
Cambodia	6.70%	97	3.85	Neutral	Neutral
Chile	6.50%	31	4.7	Positive	Neutral
China	9.50%	26	4.9	Positive	Positive
Congo	6.50%		NA	Neutral	Negative
Dominican Rep.	4.50%	110	3.73	Negative	Negative
Egypt	1.20%	94	3.88	Neutral	Negative
Equatorial Guinea	7.10%		NA	Neutral	Neutral
Eritrea	12.05%		NA	Neutral	Negative
Estonia	6.50%	33	4.62	Positive	Positive
Ethiopia	7.50%	106	3.76	Negative	Neutral
Gabon	5.60%		NA	Neutral	Neutral
Ghana	13.50%	114	3.65	Negative	Neutral
Haiti	6.10%	141	2.9	Negative	Neutral
Hong Kong	6.00%	11	5.36	Positive	Positive
Iceland	2.40%	30	4.75	Positive	Positive
India	7.80%	56	4.3	Neutral	Neutral
Iraq	9.60%		NA	Neutral	Neutral
Kosovo	5.3 %		NA	Neutral	Positive
Kyrgyzstan	7.00%		NA	Neutral	Negative
Laos	8.30%		NA	Neutral	Neutral
Liberia	6.90%		NA	Neutral	Negative
Lithuania	6.00%	44	4.41	Positive	Positive
Luxembourg	3.60%	23	5.03	Positive	Positive
Moldova	7.00%	93	3.89	Neutral	Neutral
Mongolia	11.5 %	96	3.86	Neutral	Neutral
Morocco	4.60%	73	4.16	Neutral	Positive
Mozambique	7.20%	133	3.31	Negative	Negative
Nigeria	6.90%	127	3.45	Negative	Neutral
Panama	7.40%	49	4.35	Positive	Neutral
Paraguay	6.40%	122	3.53	Negative	Negative
Poland	3.80%	41	4.46	Positive	Neutral
Qatar	18.70%	14	5.24	Positive	Negative
Rwanda	7.00%	70	4.19	Neutral	Neutral
Sri Lanka	8.30%	52	4.33	Neutral	Neutral
Sweden	4.40%	3	5.61	Positive	Positive
Timor-Leste	7.30%	131	3.35	Negative	Neutral
Turkey	8.50%	59	4.28	Neutral	Neutral
Turkmenistan	9.90%		NA	Neutral	Negative
Uzbekistan	7.10%		NA	Neutral	Negative
Zambia	6.70%	113	3.67	Negative	Negative

Sources: 2012 Global Competitiveness Report & Bureau of Economic Analysis, [www.bea.gov](http://www.bea.gov)

#### 4.0 Testing the hypothesis

Now that the data are presented showing the fastest growing countries in 15 regions of the world, using the above table, we can answer the following questions: (1) what countries had the right culture for the high GDP growth

rate?; (2) what countries had the right policies and institutions for the high GDP growth rate?; (3) what countries had both the right culture and policies for the high GDP growth rate?; (04) what countries had neither the right culture nor the right policies for the high GDP growth rate? The answer to these questions is achieved with the following postulated hypothesis.

Hypothesis 1: GDP growth rate is a function of government policies (presented by its GCI)

Hypothesis 2: Culture plays a significant role in country's competitiveness

A linear regression was run on the data. Here is the regression result between these two variables.

Y = GDP Growth Rate		X = GCI			
<i>Regression Statistics</i>					
Multiple R	0.0178				
R Square	0.0003				
Adjusted R Square	-0.0229				
Standard Error	0.0302				
Observations	45				
ANOVA	df	SS	MS	F	Significance F
Regression	1	1.25683E-05	1.26E-05	0.0137	0.9071
Residual	43	0.0392	0.0009		
Total	44	0.0392			
	Coefficients	Standard Error	t Stat	P-value	Lower 95%
Intercept	0.0745	0.0334	2.2267	0.0312	0.0070
X Variable 1	-0.0009	0.0080	-0.1173	0.9071	-0.0171

The regression results show no significant relationship between GDP growth rate and GCI. Because of lack of times series data, this type of data analysis is not going to lead us with a meaningful conclusion. Therefore, a cross tabulation table was developed based on the Innovation Matrix model, as shown in Table 4.

		Institutions and Policies			Total
		Positive	Neutral	Negative	
Culture	Positive Traits	8	2	0	10 (22%)
	Neutral	3	13	4	20 (44%)
	Negative Traits	2	9	5	16 (34%)
Total		13 (28%)	24 (52%)	9 (20%)	46 (100%)

An overwhelming majority of the countries (80%) with high growth rate have positive or neutral policies and institutions. Therefore, we can accept the first hypothesis that policies and institutions have direct effects on the long term prosperity of countries. On the cultural side, only 22 percent of the countries in this sample have both positive cultural traits and high economic growth. That leaves 78 percent of the countries with high growth rate with having either neutral or negative cultural traits. Therefore, the second hypothesis is rejected. The culture does not have a long-term effect on economic prosperity.

<sup>3</sup> The most current version of the data is available at <http://www.geert-hofstede.com/>.

## 5.0 Conclusion and policy implications

It appears that Innovation Matrix model is not a good predictor of long-term economic growth in mineral-rich countries. For these countries, long-term economic growth depends more on Chinese demand for their commodities (Qatar, GDP growth rate of 18.7%) and Chinese investment in their countries (Ghana, GDP growth rate of 13.5%) than their culture and government policies. For other countries, sustainable economic growth depends more on government policies and institutions or GCI than culture; e.g., Turkey, Sri Lanka, India, and Guinea.

To make this firm conclusion, we only have to look at the economic performances of member countries in the European Union. While culturally they are similar, unemployment rates are not: Spain at 25% and Greece at 22% while the German rate is below 7%. This variation can be explained by the degree of their competitiveness not their culture. Competitiveness is driven by the kind of policies that foster innovation.

Another example for proving this point is the case of South Korea with \$30,000 per capita income versus \$1,900 for North Korea. Can this variation be explained by having different culture or different government policies and institutions?

To make a country more international competitive, the following policies should be developed. First, legal and administrative policies should become transparent to attract foreign direct investment and reduce domestic corruption; second, infrastructure should become more efficient to reduce the cost of doing business; Third, macroeconomic policies must be consistent and stable to reduce uncertainty for investment; fourth, health system has to improve to produce healthy workforce which is vital to a country's competitiveness and productivity; fifth, quality higher education and training should be improved via a critical assessment regime which is crucial for the labor market; sixth, efficiency of goods markets should be improved to produce and trade the right mix of products and services in the country; seventh, labor market should become more flexible to shift workers from one economic activity to another rapidly growing one; eighth, financial sector should become more efficient to allocate the resources saved by a nation's citizens, as well as those entering the economy from abroad, to their most productive uses; ninth, introduction of new technology and innovation should be encouraged and subsidized to reduce cost of production and improve productivity of labor; tenth, cross border alliances by private sector and commencement of regional trade agreements should be formed to take advantage of economies of scale in production; eleventh, quality of business networks should be improved to develop a fertile ground for formulation and implementation of winning operations and strategies.

## References

- World Economic Forum, Global Competitiveness Report. (2012) Retrieved from: [http://www3.weforum.org/docs/WEF\\_GlobalCompetitivenessReport\\_2012-13.pdf](http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2012-13.pdf), (Accessed Date: 14 November 2013)
- Gorodnichenko, Y., Roland, G. (2010). Culture, Institutions and the Wealth of Nations. Retrieved from <http://www.nber.org/papers/w16368>. (Accessed Date: 14 November 2013) <http://dx.doi.org/10.2139/ssrn.1682575>
- Gorodnichenko, J and Roland, G (2011). Which Dimensions of Culture Matter for Long Run Growth? (P.5), Retrieved from: [http://emlab.berkeley.edu/~ygorodni/GorodnichenkoRoland\\_AEAPP.pdf](http://emlab.berkeley.edu/~ygorodni/GorodnichenkoRoland_AEAPP.pdf) (Accessed Date: 20 October 2012)