The South African Index Investor Newsletter

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The South African Economy: How do we measure up?

Part 1

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The **Global Competitiveness Index** (GCI) is conducted by the World Economic Forum (WEF) in partnership with leading academics and a global network of research institutes, and calculates its rankings from publicly available data and a poll of more than 13 000 business leaders in 139 economies. The main goal of the report is to evaluate countries' economic environment and their ability to achieve sustained levels of prosperity and growth.

The WEF defines competitiveness 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 sustainable level of prosperity that can be earned by an economy. In other words, more competitive economies tend to be able to produce higher levels of income for their citizens. The productivity level also determines the rates of return obtained by investments (physical, human, and technological) in an economy. Because the rates of return are the fundamental drivers of the growth rates of the economy, a more competitive economy is one that is likely to grow faster in the medium to long run.

While there are many determinants driving productivity and competitiveness in an economy - ranging from Adam Smith's focus on specialization and the division of labour to neoclassical economists' emphasis on investment in physical capital and infrastructure, and, more recently, education and training, technological progress, macroeconomic stability, good governance, firm sophistication, and market efficiency - they are not mutually exclusive. This open-endedness is captured within the GCI by including a weighted average of many different components, each measuring a different aspect of competitiveness.

Methodology:

The GCI is based on 12 "pillars of competitiveness", namely: institutions; infrastructure; macroeconomic stability; health and primary education; higher education and training; goods market efficiency; labour market efficiency; financial market sophistication; technological readiness; market size; business sophistication; and innovation.

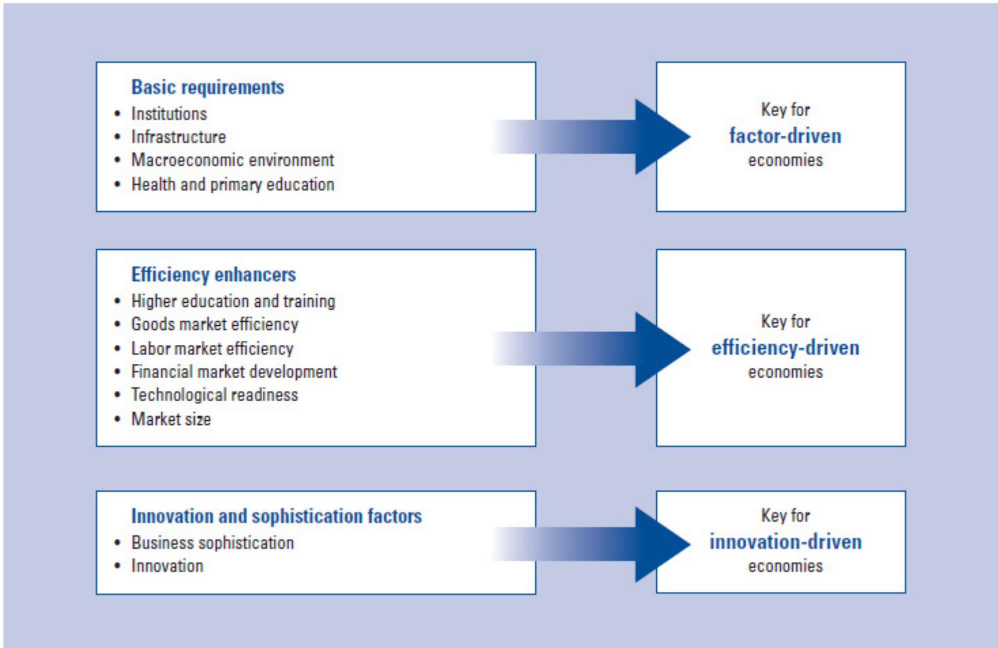


Chart 1: The twelve pillars of competiveness

While all of the pillars described above will matter to a certain extent for all economies, it is clear that they will affect them in different ways: the best way for a third world economy, like Rwanda to improve its competitiveness is not the same as the best way for Germany to do so. This is because Rwanda and Germany are in different stages of economic and social development: as countries move along the development path, wages tend to increase and, in order to sustain this higher income, labour productivity must improve.

The GCI assumes that, in the first stage, the economy is *factor-driven* and countries compete based on their factor endowments: primarily unskilled labour and natural resources. Companies compete on the basis of price and sell basic products or commodities, with their low productivity reflected in low wages.

Thus, maintaining competitiveness at this stage of development rests primarily on well-functioning public and private institutions (pillar 1), well-developed infrastructure (pillar 2), a stable macroeconomic environment (pillar 3), and a healthy workforce that has received at least a basic education (pillar 4).

As a country becomes more competitive, productivity will increase and wages will rise with advancing development. Countries will then move into the *efficiency-driven* stage of development, when they must begin to develop more efficient production processes and increase product quality because wages have risen and they cannot increase prices. At this point, competitiveness is increasingly driven by higher education and training (pillar 5), efficient goods markets (pillar 6), well-functioning labour markets (pillar 7), developed financial markets (pillar 8), the ability to harness the benefits of existing technologies (pillar 9), and a large domestic or foreign market (pillar 10).

Finally, as countries move into the *innovation-driven* stage, wages will have risen by so much that they are able to sustain those higher wages and the associated standard of living only if their businesses are able to compete with new and unique products. At this stage, companies must compete by producing new and different goods using the most sophisticated production processes (pillar 11) and through innovation (pillar 12).

The GCI takes the stages of development into account by attributing higher relative weights to those pillars that are more relevant for an economy given its particular stage of development. That is, although all 12 pillars matter to a certain extent for all countries, the relative importance of each one depends on a country's particular stage of development. To implement this concept, the pillars are organized into three subindexes, each critical to a particular stage of development, namely: basic requirements, efficiency enhancers and innovation and sophistication factors.

For example, a higher allocation of relative weights (60%) will be made to pillars 1 to 4 for a factor-driven stage economy compared to a well-developed and advanced economy (20%). In the latter economy, however, those factors that will contribute and enhance efficiency and innovation will be much more important to sustain economic growth and development.

Subindex	Factor-driven stage (%)	Efficiency-driven stage (%)	Innovation-driven stage (%)
Basic requirements	60	40	20
Efficiency enhancers	35	50	50
Innovation and sophistication factors	5	10	30

Chart 2: Different weights allocated according to economic state of development

Categorising countries:

Two criteria are used to allocate countries into the various stages of economic development. The first is the level of GDP per capita at market exchange rates and is used as a proxy for wages. A second criterion measures the extent to which countries are factor driven. This is measured by the share of exports of mineral goods in total exports (goods and services), assuming that countries that export more than 70 percent of mineral products (measured using a five-year average) are to a large extent factor driven.

Stage of development	GDP per capita (in US$)
Stage 1: Factor driven	< 2,000
Transition from stage 1 to stage 2	*2,000–3,000*
Stage 2: Efficiency driven	3,000–9,000
Transition from stage 2 to stage 3	*9,000–17,000*
Stage 3: Innovation driven	> 17,000

Chart 3: GDP per capita criteria

Any countries falling in between two of the three stages are considered to be "in transition." For these countries, the weights change smoothly as a country develops, reflecting the smooth transition from one stage of development to another.

Stage 1	Transition from 1 to 2	Stage 2	Transition from 2 to 3	Stage 3
Bangladesh	Algeria	Albania	Bahrain	Australia
Benin	Angola	Argentina	Barbados	Austria
Bolivia	Armenia	Bosnia and Herzegovina	Chile	Belgium
Burkina Faso	Azerbaijan	Brazil	Croatia	Canada
Burundi	Botswana	Bulgaria	Estonia	Cyprus
Cambodia	Brunei Darussalam	Cape Verde	Hungary	Czech Republic
Cameroon	Egypt	China	Latvia	Denmark
Chad	Georgia	Colombia	Lithuania	Finland
Côte d'Ivoire	Guatemala	Costa Rica	Oman	France
Ethiopia	Guyana	Dominican Republic	Poland	Germany
Gambia, The	Indonesia	Ecuador	Puerto Rico	Greece
Ghana	Iran, Islamic Rep.	El Salvador	Slovak Republic	Hong Kong SAR
Honduras	Jamaica	Jordan	Taiwan, China	Iceland
India	Kazakhstan	Lebanon	Trinidad and Tobago	Ireland
Kenya	Kuwait	Macedonia, FYR	Uruguay	Israel
Kyrgyz Republic	Libya	Malaysia		Italy
Lesotho	Morocco	Mauritius		Japan
Madagascar	Paraguay	Mexico		Korea, Rep.
Malawi	Qatar	Montenegro		Luxembourg
Mali	Saudi Arabia	Namibia		Malta
Mauritania	Sri Lanka	Panama		Netherlands
Moldova	Swaziland	Peru		New Zealand
Mongolia	Syria	Romania		Norway
Mozambique	Ukraine	Russian Federation		Portugal
Nepal	Venezuela	Serbia		Singapore
Nicaragua		South Africa		Slovenia
Nigeria		Thailand		Spain
Pakistan		Tunisia		Sweden
Philippines		Turkey		Switzerland
Rwanda				United Arab Emirates
Senegal				United Kingdom
Tajikistan				United States
Tanzania				
Timor-Leste				
Uganda				
Vietnam				
Zambia				
Zimbabwe				

Chart 4: Categorising countries in various stages of economic development

The Most Competitive Economies:

Switzerland is regarded by the WEF as the most competitive economy, characterized by an excellent capacity for innovation and a very sophisticated business culture, ranked 4th for its business sophistication and 2nd for its innovation capacity. Switzerland's scientific research institutions are among the world's best, and the strong collaboration between the academic and business sectors, combined with high company spending on R&D, ensures that much of this research is translated into marketable products and processes, reinforced by strong intellectual property protection and government support of innovation through its procurement processes.

This strong innovative capacity is captured by the high rate of patenting (158.95 per million inhabitants) in the country, for which Switzerland ranks 7th worldwide on a per capita basis. Public institutions in Switzerland are among the most effective and transparent in the world (5th). Governance structures ensure a level playing field, enhancing business confidence; these include an independent judiciary, strong rule of law, and a highly accountable public sector. Competitiveness is also supported by excellent infrastructure (6th), a well-functioning goods market (4th), and a highly developed financial market (8th) as well as a labour market that is among the most efficient in the world (2nd, just behind Singapore's).

Sweden benefits from the world's most transparent and efficient public institutions, with very low levels of corruption and undue influence and a government that is considered to be one of the most efficient in the world: public trust of politicians is ranked a high 3rd. Private institutions also receive excellent marks (ranked 3rd), with firms that demonstrate the utmost ethical behaviour (ranked 1st), strong auditing and reporting standards, and well-functioning corporate boards. Goods and financial markets are also very efficient, although labour markets lack flexibility. Combined with a strong focus on education over the years (ranked 2nd for higher education and training) and the world's strongest technological adoption (ranked 1st in the technological readiness pillar), Sweden has developed a very sophisticated business culture (2nd) and is one of the world's leading innovators (ranked 5th).

Singapore is the highest-ranked country from Asia. The country's institutions continue to be assessed as the best in the world, ranked 1st for both the lack of corruption in the country and government efficiency. Singapore places 1st for the efficiency of its goods and labour markets and 2nd for its financial market sophistication, ensuring the proper allocation of these factors to their best use. Singapore also has world-class infrastructure (ranked 5th), with excellent roads, ports, and air transport facilities. In addition, the country's competitiveness is buttressed by a strong focus on education, providing individuals with the skills needed for a rapidly changing global economy.

The **United States** is in the 4th position. While many structural features that make its economy extremely productive, a number of escalating weaknesses have lowered the US ranking over the past two years. US companies are highly sophisticated and innovative, supported by an excellent university system that collaborates strongly with the business sector in R&D. Combined with the scale opportunities afforded by the sheer size of its domestic economy—the largest in the world by far—these qualities continue to make the United States very competitive. Labour markets are ranked 4th, characterized by the ease and affordability of hiring workers and significant wage flexibility.

On the other hand, there are some weaknesses - institutions declined, falling from 34th to 40th this year. The public does not demonstrate strong trust of politicians (54th), and the business community remains concerned about the government's ability to maintain arms-length relationships with the private sector (55th) and considers that the government spends its resources relatively wastefully (68th). There is also increasing concern related to the functioning of private institutions, with a measurable weakening of the assessment of auditing and reporting standards (down from 39th last year to 55th this year), as well as corporate ethics (down from 22nd to 30th). Measures of financial market development have also continued to decline, dropping from 9th two years ago to 31st overall this year in that pillar.

A lack of macroeconomic stability is the United States' greatest area of weakness (ranked 87th). Prior to the crisis, the United States had been building up large macroeconomic imbalances, with fiscal deficit leading to burgeoning levels of public indebtedness; this has been exacerbated by significant stimulus spending. In this context it is clear that mapping out a clear exit strategy will be an important step in reinforcing the country's competitiveness going into the future.

Germany is in 5th position. Germany is ranked 2nd for the quality of its infrastructure, with particularly good marks for its transport and telephony and electricity infrastructure. Its goods market is efficient (21st), with intense local competition (2nd) and effective antitrust policy. Germany has very sophisticated businesses, ranked 3rd, just behind Japan and Sweden; German businesses are also aggressive in adopting technologies for productivity enhancements (10th). These attributes allow Germany to benefit greatly from its significant market size (5th). On the other hand, Germany's labour market remains rigid (126th for the labour market flexibility subpillar), where a lack of flexibility in wage determination and the high cost of firing provide a hindrance to job creation.

	OVERALL INDEX		SUBINDEXES: Basic requirements		SUBINDEXES: Efficiency enhancers		SUBINDEXES: Innovation and sophistication factors	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Switzerland	1	5.63	2	6.05	4	5.41	2	5.71
Sweden	2	5.56	4	5.98	5	5.32	3	5.67
Singapore	3	5.48	3	6.05	1	5.49	10	5.07
United States	4	5.43	32	5.21	3	5.46	4	5.53
Germany	5	5.39	6	5.89	13	5.11	5	5.51
Japan	6	5.37	26	5.35	11	5.17	1	5.72
Finland	7	5.37	5	5.97	14	5.09	6	5.43
Netherlands	8	5.33	9	5.82	8	5.24	8	5.16
Denmark	9	5.32	7	5.86	9	5.20	9	5.15
Canada	10	5.30	11	5.77	6	5.32	14	4.95
Hong Kong SAR	11	5.30	1	6.12	2	5.48	24	4.46
United Kingdom	12	5.25	18	5.58	7	5.28	12	4.98
Taiwan, China	13	5.21	19	5.58	16	5.05	7	5.23
Norway	14	5.14	17	5.65	12	5.13	17	4.83
France	15	5.13	16	5.67	15	5.09	16	4.83
Australia	16	5.11	12	5.74	10	5.20	22	4.54
Qatar	17	5.10	13	5.73	26	4.68	23	4.48
Austria	18	5.09	15	5.67	19	4.93	13	4.97
Belgium	19	5.07	22	5.45	17	5.01	15	4.91
Luxembourg	20	5.05	10	5.81	20	4.92	19	4.76
Saudi Arabia	21	4.95	28	5.32	27	4.67	26	4.41
Korea, Rep.	22	4.93	23	5.42	22	4.81	18	4.81
New Zealand	23	4.92	14	5.71	18	4.97	28	4.30
Israel	24	4.91	39	5.12	23	4.75	11	5.05
United Arab Emirates	25	4.89	8	5.82	21	4.82	27	4.37
Malaysia	26	4.88	33	5.19	24	4.72	25	4.45
China	27	4.84	30	5.27	29	4.63	31	4.13
Brunei Darussalam	28	4.75	20	5.48	67	4.05	72	3.42
Ireland	29	4.74	35	5.18	25	4.68	21	4.55
Chile	30	4.69	37	5.15	35	4.51	44	3.91
Iceland	31	4.68	41	5.05	31	4.57	20	4.61
Tunisia	32	4.65	31	5.25	50	4.28	34	4.09
Estonia	33	4.61	25	5.38	34	4.52	45	3.90
Oman	34	4.61	24	5.41	48	4.30	47	3.87
Kuwait	35	4.59	36	5.16	68	4.03	60	3.57
Czech Republic	36	4.57	44	4.91	28	4.66	30	4.19
Bahrain	37	4.54	21	5.48	33	4.54	55	3.67
Thailand	38	4.51	48	4.82	39	4.41	49	3.78
Poland	39	4.51	56	4.69	30	4.62	50	3.76
Cyprus	40	4.50	29	5.28	36	4.46	36	4.07
Puerto Rico	41	4.49	43	5.01	40	4.39	29	4.24
Spain	42	4.49	38	5.13	32	4.56	41	3.96
Barbados	43	4.45	27	5.34	52	4.22	52	3.69
Indonesia	44	4.43	60	4.62	51	4.24	37	4.06
Slovenia	45	4.42	34	5.18	46	4.33	35	4.08
Portugal	46	4.38	42	5.01	43	4.36	39	3.98
Lithuania	47	4.38	52	4.77	49	4.28	48	3.79
Italy	48	4.37	46	4.84	45	4.33	32	4.11
Montenegro	49	4.36	45	4.90	64	4.08	56	3.67
Malta	50	4.34	40	5.08	47	4.31	46	3.88
India	51	4.33	81	4.30	38	4.42	42	3.96
Hungary	52	4.33	59	4.65	41	4.38	51	3.71
Panama	53	4.33	49	4.79	62	4.08	54	3.68
South Africa	54	4.32	79	4.35	42	4.37	43	3.93
Mauritius	55	4.32	47	4.82	66	4.05	59	3.61
Costa Rica	56	4.31	62	4.59	58	4.13	33	4.11
Azerbaijan	57	4.29	58	4.67	75	3.97	66	3.50
Brazil	58	4.28	86	4.26	44	4.35	38	4.03
Vietnam	59	4.27	74	4.39	57	4.16	53	3.69
Slovak Republic	60	4.25	53	4.77	37	4.43	63	3.54
Turkey	61	4.25	68	4.49	55	4.18	57	3.63
Sri Lanka	62	4.25	73	4.42	69	4.01	40	3.97
Russian Federation	63	4.24	65	4.52	53	4.19	80	3.36
Uruguay	64	4.23	51	4.77	74	3.98	70	3.46
Jordan	65	4.21	57	4.67	73	3.98	65	3.50
Mexico	66	4.19	66	4.51	61	4.09	69	3.46
Romania	67	4.16	77	4.36	54	4.18	91	3.24
Colombia	68	4.14	78	4.35	60	4.09	61	3.56
Iran, Islamic Rep.	69	4.14	63	4.58	90	3.76	82	3.34

Chart 5: Global Competitiveness Index

South Africa ranked:

Out of 139 countries

Number	Pillar	Subindex	Rank
1	Institutions	Basic requirements	47
2	Infrastructure		63
3	Macroeconomic environment		43
4	Health & primary education		129
5	Higher education & training	Efficiency enhancers	75
6	Goods market efficiency		40
7	Labour market efficiency		97
8	Financial market development		9
9	Technological readiness		76
10	Market size		25
11	Business sophistication	Innovation factors	38
12	Innovation		44

South Africa is considered a stage 2 economic development state (efficiency-driven) and ranked 54th overall out of 139 countries. It is the highest ranked country in sub-Saharan Africa. South Africa benefits from the large size of its economy, particularly by regional standards (it is ranked 25th in the market size pillar). It also does well on measures of the quality of institutions and factor allocation, such as intellectual property protection (27th), property rights (29th), the accountability of private institutions (3rd), and goods market efficiency (40th). Particularly impressive is the country's financial market development (ranked 9th), indicating high confidence in South Africa's financial markets at a time when trust has been eroded in many other parts of the world. South Africa also does reasonably well in more complex areas such as business sophistication (38th) and innovation (44th), benefiting from good scientific research institutions (ranked 29th) and strong collaboration between universities and the business sector in innovation (ranked 24th).

While a number of attributes therefore make South Africa the most competitive economy in the region, in order to further enhance its competitiveness it will need to address some weaknesses. The country ranks 97th in labour market efficiency, with inflexible hiring and firing practices (135th), a lack of flexibility in wage determination by companies (131st), and poor labour-employer relations (132nd). Efforts must also be made to increase the university enrollment rate of only 15 percent, which places the country 99th overall, in order to better develop the country's innovation potential. In addition, South Africa's infrastructure, although good by regional standards, requires upgrading (ranked 63rd) beyond what has been achieved in the preparations for the 2010 World Cup. The poor security situation remains another important obstacle to doing business in South Africa.

The business costs of crime and violence (137th) and the sense that the police are unable to provide protection from crime (104th) do not contribute to an environment that fosters competitiveness. Another major concern remains the health of the workforce, ranked 127th out of 139 countries, the result of high rates of communicable diseases and poor health indicators more generally. Improvements in these areas will enhance South Africa's productivity and competitiveness.

Synopsis:

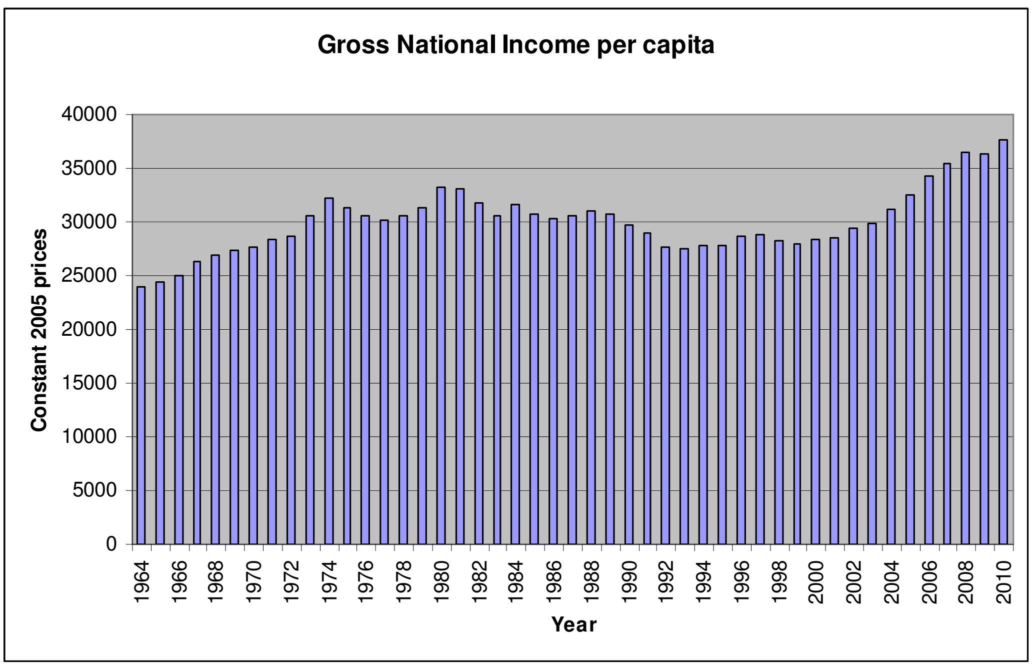


Chart 6: South Africa's Gross National Income on per capita basis

Over the past decade South Africa has successfully escaped from the trough of declining real income per capita it experienced from the backlash of the political and economic turmoil of the 1980s. Arguably, buoyant global economic growth probably had as much to do with the revival than the structural improvement of the South African economy. Notwithstanding, we are performing "above-average" in the GCI survey, although there is a huge gap between the best and the rest. Concerning, however, is that South Africa is losing its relative competitiveness (rank) in the GCI survey over the past couple of years.

Sustainable economic growth is a prerequisite to meet the aspirations of any nation to raise living standards over time. Sustainable growth, however, will not be achieved by raising the cost of living through currency weaknesses or when doing business in a climate of sharp escalations in administered prices (energy costs, rates and taxes). Moreover, it will not be achieved by rapidly increasing the public sector workforce and offering (promising) unaffordable social grants, thereby ever-increasing our budget deficits and debt.

In fact, it can be argued that South Africa is now at a critical juncture of economic development where (continued) erroneous or misplaced economic policies may lead to a regression in economic development. While we have achieved a world class financial regulatory environment and corporate governance culture – which is an essential building block for sustainable and competitive economic growth – we face some serious challenges in transforming basic education, higher education, training and the labour market. For these challenges we need our best minds at work to engineer innovative solutions, but free from idealistic or populist political motives.

That is obviously much easier said than done, probably as difficult as putting the nation's interest before one's own (or political party's) interest. The rational voices, however, must be heard loud and clear. A survey like the *Global Competitive Index* highlights the reasons for the success stories and failures of nations. There are no shortcuts but doing the hard yards to improve infrastructure, basic education and services first and foremost. Then, and only then, we will progress towards a prosperous society and competitive economy.

Source:

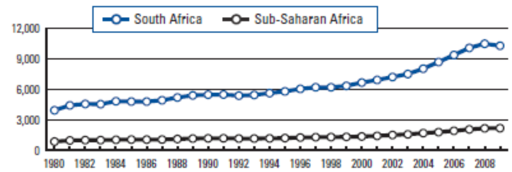
The Global Competitiveness Report 2010-2011, World Economic Forum.

South Africa

Key indicators, 2009

Population (millions)	50.1
GDP (US$ billions)	287.2
GDP per capita (US$)	5,824
GDP (PPP) as share (%) of world total	0.70

GDP (PPP) per capita (int'l $), 1980–2009

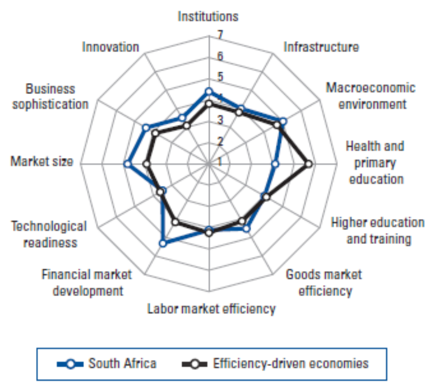


Global Competitiveness Index

	Rank (out of 139)	Score (1–7)
GCI 2010–2011	**54**	**4.3**
GCI 2009–2010 (out of 133)	45	4.3
GCI 2008–2009 (out of 134)	45	4.4
Basic requirements	**79**	**4.4**
1st pillar: Institutions	47	4.4
2nd pillar: Infrastructure	63	4.0
3rd pillar: Macroeconomic environment	43	5.0
4th pillar: Health and primary education	129	4.1
Efficiency enhancers	**42**	**4.4**
5th pillar: Higher education and training	75	4.0
6th pillar: Goods market efficiency	40	4.5
7th pillar: Labor market efficiency	97	4.1
8th pillar: Financial market development	9	5.3
9th pillar: Technological readiness	76	3.5
10th pillar: Market size	25	4.8
Innovation and sophistication factors	**43**	**3.9**
11th pillar: Business sophistication	38	4.4
12th pillar: Innovation	44	3.5

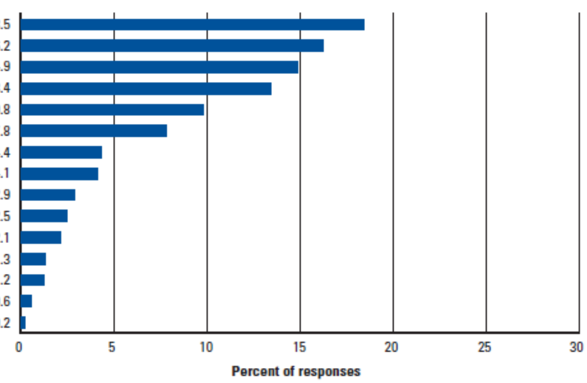
Stage of development

1	Transition 1–2	**2**	Transition 2–3	3
Factor driven		**Efficiency driven**		Innovation driven



The most problematic factors for doing business

Inefficient government bureaucracy	18.5
Inadequately educated workforce	16.2
Crime and theft	14.9
Restrictive labor regulations	13.4
Corruption	9.8
Inadequate supply of infrastructure	7.8
Poor work ethic in national labor force	4.4
Access to financing	4.1
Policy instability	2.9
Poor public health	2.5
Foreign currency regulations	2.1
Inflation	1.3
Tax rates	1.2
Tax regulations	0.6
Government instability/coups	0.2



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

South Africa

The Global Competitiveness Index in detail

1st pillar: Institutions

	INDICATOR	RANK/139
1.01	Property rights	29
1.02	Intellectual property protection	**27**
1.03	Diversion of public funds	82
1.04	Public trust of politicians	86
1.05	Irregular payments and bribes	**49**
1.06	Judicial independence	**44**
1.07	Favoritism in decisions of government officials	102
1.08	Wastefulness of government spending	60
1.09	Burden of government regulation	94
1.10	Efficiency of legal framework in settling disputes	**19**
1.11	Efficiency of legal framework in challenging regulations	**20**
1.12	Transparency of government policymaking	27
1.13	Business costs of terrorism	42
1.14	Business costs of crime and violence	137
1.15	Organized crime	114
1.16	Reliability of police services	104
1.17	Ethical behavior of firms	**50**
1.18	Strength of auditing and reporting standards	**1**
1.19	Efficacy of corporate boards	**2**
1.20	Protection of minority shareholders' interests	**6**
1.21	Strength of investor protection*	**10**

2nd pillar: Infrastructure

	INDICATOR	RANK/139
2.01	Quality of overall infrastructure	56
2.02	Quality of roads	**43**
2.03	Quality of railroad infrastructure	**47**
2.04	Quality of port infrastructure	**49**
2.05	Quality of air transport infrastructure	**18**
2.06	Available airline seat kilometers*	**24**
2.07	Quality of electricity supply	94
2.08	Fixed telephone lines*	98
2.09	Mobile telephone subscriptions*	73

3rd pillar: Macroeconomic environment

	INDICATOR	RANK/139
3.01	Government budget balance*	**27**
3.02	National savings rate*	98
3.03	Inflation*	109
3.04	Interest rate spread*	**34**
3.05	Government debt*	**47**
3.06	Country credit rating*	51

4th pillar: Health and primary education

	INDICATOR	RANK/139
4.01	Business impact of malaria	105
4.02	Malaria incidence*	91
4.03	Business impact of tuberculosis	135
4.04	Tuberculosis incidence*	138
4.05	Business impact of HIV/AIDS	138
4.06	HIV prevalence*	136
4.07	Infant mortality*	109
4.08	Life expectancy*	127
4.09	Quality of primary education	125
4.10	Primary education enrollment rate*	109

5th pillar: Higher education and training

	INDICATOR	RANK/139
5.01	Secondary education enrollment rate*	**41**
5.02	Tertiary education enrollment rate*	99
5.03	Quality of the educational system	130
5.04	Quality of math and science education	137
5.05	Quality of management schools	**21**
5.06	Internet access in schools	100
5.07	Local availability of research and training services	**49**
5.08	Extent of staff training	**26**

6th pillar: Goods market efficiency

	INDICATOR	RANK/139
6.01	Intensity of local competition	63
6.02	Extent of market dominance	**43**
6.03	Effectiveness of anti-monopoly policy	**12**
6.04	Extent and effect of taxation	**31**
6.05	Total tax rate*	**29**
6.06	Number of procedures required to start a business*	**34**
6.07	Time required to start a business*	75
6.08	Agricultural policy costs	**43**
6.09	Prevalence of trade barriers	61
6.10	Trade tariffs*	71
6.11	Prevalence of foreign ownership	**43**
6.12	Business impact of rules on FDI	71
6.13	Burden of customs procedures	55
6.14	Degree of customer orientation	75
6.15	Buyer sophistication	**29**

7th pillar: Labor market efficiency

	INDICATOR	RANK/139
7.01	Cooperation in labor-employer relations	132
7.02	Flexibility of wage determination	131
7.03	Rigidity of employment*	86
7.04	Hiring and firing practices	135
7.05	Redundancy costs*	**44**
7.06	Pay and productivity	112
7.07	Reliance on professional management	**19**
7.08	Brain drain	62
7.09	Female participation in labor force*	64

8th pillar: Financial market development

	INDICATOR	RANK/139
8.01	Availability of financial services	**7**
8.02	Affordability of financial services	**43**
8.03	Financing through local equity market	**7**
8.04	Ease of access to loans	**41**
8.05	Venture capital availability	**39**
8.06	Restriction on capital flows	99
8.07	Soundness of banks	**6**
8.08	Regulation of securities exchanges	**1**
8.09	Legal rights index*	**6**

9th pillar: Technological readiness

	INDICATOR	RANK/139
9.01	Availability of latest technologies	51
9.02	Firm-level technology absorption	**35**
9.03	FDI and technology transfer	**37**
9.04	Internet users*	105
9.05	Broadband Internet subscriptions*	93
9.06	Internet bandwidth*	106

10th pillar: Market size

	INDICATOR	RANK/139
10.01	Domestic market size index*	**24**
10.02	Foreign market size index*	**36**

11th pillar: Business sophistication

	INDICATOR	RANK/139
11.01	Local supplier quantity	**35**
11.02	Local supplier quality	**22**
11.03	State of cluster development	**39**
11.04	Nature of competitive advantage	87
11.05	Value chain breadth	91
11.06	Control of international distribution	**23**
11.07	Production process sophistication	**39**
11.08	Extent of marketing	**28**
11.09	Willingness to delegate authority	**31**

12th pillar: Innovation

	INDICATOR	RANK/139
12.01	Capacity for innovation	**47**
12.02	Quality of scientific research institutions	**29**
12.03	Company spending on R&D	**40**
12.04	University-industry collaboration in R&D	**24**
12.05	Gov't procurement of advanced tech products	103
12.06	Availability of scientists and engineers	116
12.07	Utility patents per million population*	**43**

Notes: Ranks of notable competitive advantages are **highlighted**. An asterisk (*) indicates that data are from sources other than the World Economic Forum. For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.