INTERNATIONAL COMPETITIVENESS – A SOUTH AFRICAN PERSPECTIVE

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2.1 Introduction

In Macroeconomic theory, the concept of competitiveness is easily defined. In the analysis of the causal interrelationships of this concept, however, it has become clear over a period of several decades that macroeconomic theory, on its own, cannot explain the variety of reasons for international and inter-industry variances in competitiveness and productivity levels.

Competitiveness has a universal appeal. It is by no means an issue that is limited to developing countries that are attempting to close the welfare gap with high-income countries. The largest economy in the world, the US, which possesses a high degree of international competitiveness, has established the Competitiveness Policy Council through the US Congress, which seeks to develop national strategies to enhance the productivity and international competitiveness of US industries.

Since the impetus on global economic reach that was provided by tariff reform and the move towards a *Pax Democratica*, the concepts of competitiveness and globalisation have moved beyond being buzzwords in the business fraternity to representing a dichotomous reality: Harsh to countries that cannot compete and a boon to countries that enlarge their national output by penetrating new export markets.

To fully understand the nature of competitiveness and also South Africa's international standing in this regard, it is necessary to briefly define and analyse the concepts related to competitive advantage, which have become considerably more complex than expounded in the early writings by the classical economists.

2.2 Competitiveness defined

2.2.1 Competition

First and foremost, it is important to recognise the role played by competition itself. When the foundations of economic theory surrounding free enterprise were being built in 1776 (with the publication of Adam Smith's *Wealth of Nations*), competition had become a motivating force behind the diffusion of labour, capital accumulation, technological development and entrepreneurship.

Competition soon became a part of normative economics: a standard of efficiency to which economic systems should aspire. In studying the way in which markets worked, including the formation of demand, supply, prices and increased output, the classical economists realised that competition was the central force behind the transformation of societies that eventually leads to both a widening and a deepening of international prosperity.

The advantages of competition have remained intact, and include the following:

- Efficient allocation of resources via the price mechanism, which signals the desires of consumers and producers
- Continual pressure on producers to lower production costs and prices
- A varying degree of dynamic efficiency through a constant search for innovation in marketing and in production.

For a firm to be able to exist, it is necessary to have some form of competitive advantage, which is traditionally related to price, but is very often also related to qualitative aspects of the particular product or service and also product differentiation.

2.2.2 Comparative advantage

The basic economic law governing both inter-regional domestic trade and international trade is related to the theory of comparative advantage. It is easily stated in terms of two countries producing two goods: each country will specialise in the production and export of the product that it can produce at a relatively lower cost and, conversely, each country will import the product which it produces at a relatively higher cost.

During the 1950s, most developing countries found an easy method to manipulate comparative advantage by imposing high tariffs on selected imported goods or by raising existing tariff levels. Over the past four decades, the world has been highly successful in lowering tariff levels, but many governments have simply substituted lower tariffs for a variety of non-tariff barriers to trade, mostly in the form of subsidies to domestic producers and a host of technical and administrative regulations (e.g. health standards for food products).

2.2.3 International competitiveness – an economic definition

Competitiveness, as a macroeconomic phenomenon, is defined simply as the relative price of foreign goods versus domestic goods. In relative terms, it is necessary to include the exchange rate in this equation, which is stated as follows:

Competitiveness = ER (Pf)/Pd…… **(2.1)**

Where: ER = the price of the domestic currency in terms of one unit of foreign currency

Pf = the price index of foreign goods (imports), and

Pd = the price index of domestic goods (exports)

Dornbusch and Fischer (1994) and Walters and De Beer (1999) point out the following characteristics inherent in this equation:

- It represents the inverse of the concept “terms of trade“, which is defined as the price ratio of a country’s exports relative to it’s imports.

- Any single factor that increases the absolute value of ER (PF)/Pd represents an improvement in competitiveness.

- It is implicitly assumed that traded goods are not perfect substitutes and that market imperfections are present in international trade (both are realistic). In the absence of these assumptions, purchasing power parity would hold at all times and competitiveness indicators would be unnecessary.

In practice, a country’s real effective exchange rate (REER) provides a fair indication of relative price competitiveness in international trade and this indicator is widely used for this purpose. During the period 2002 to 2004, a significant strengthening of the REER of the rand occurred, much to the dismay of South African exporters. Note that a strengthening of ER in equation 2.1 leads to a lower absolute value and a deterioration of international competitiveness.

Not surprisingly, therefore, the financial media devoted much attention during this period to articles and reports that suggested the appropriateness of policies that would act to weaken the domestic currency. At the beginning of 2005, the monetary authorities had not heeded any of this advice and the REER of the rand was in fact higher in January 2005 than in 1985.

2.2.4 International competitiveness – a comprehensive definition

It is abundantly clear that the narrow macroeconomic definition of competitiveness needs to be augmented by a fuller explanation of the range of factors that determine a country’s international competitiveness. Modern versions of defining competitiveness have been expanded to include the following elements:

- Maximising efficiency
- Taking cognisance of global developments
- Sustainable growth in living standards
- Fairness in income distribution
- Employment creation
- Consideration of the welfare of future generations

The Swiss-based International Institute for Management Development (IMD) regularly publishes competitiveness reports that compare different countries.

Eight major determinants were originally utilised by the IMD to gauge the international competitiveness of different countries. These are listed in table 2.1. Since 2001, however, the IMD has reclassified these determinants into only four categories, with each containing a set of five different sub-indicators. The new classification is provided in the following sub-section.

Table 2.1: The IMD's original determinants of international competitiveness

1. **Domestic economic strength:** an overall evaluation of a country's economic performance.
2. **Internationalisation:** the extent to which a country participates in international trade and investment flows.
3. **Government:** the nature of government policies and the extent to which they hinder or enhance competitiveness.
4. **Finance:** the performance of capital markets and the equality of financial services.
5. **Infrastructure:** the adequacy of resources and systems to meet the basic needs of business.
6. **Management:** the extent to which firms are managed in an innovative, profitable and responsible manner.
7. **Science and technology:** the extent of scientific and technological research capacity, with regard to both basic and applied research.
8. **People:** the availability and qualifications of human resources.

2.3 An assessment of international competitiveness rankings

2.3.1 Defining country competitiveness

Since this section aims, amongst other things, to evaluate methodologies used to quantify the international competitiveness of countries, it is appropriate to consider what the term "national (or country) competitiveness" actually means. While the term "competitiveness" incorporates a widely accepted definition when used in the microeconomic context of a firm, there is considerable controversy, and a high level of confusion, over the appropriateness, use and definition of the term "national (or country) competitiveness".

This arises partly as a result of the substantial progress that has been made in integrating regional economies and in reducing or eliminating barriers to the mobility of goods, capital and services – which implies that corporations are forced to take account of their global (and not just their local) competition. It is, ultimately, firms that compete with one another for shares of particular markets – so many economists question the validity of the macroeconomic

approach to competitiveness (which focuses on the competitiveness of countries and regions rather than individual companies).

Others argue that despite the clear problems associated with definition, country competitiveness is critical to company competitiveness because the quality of institutions and the stability and appropriateness of macroeconomic policy have a profound impact on the level of transactions costs facing firms, and hence on their ability to compete in global markets.

In past decades, a number of different measures of country competitiveness have been advocated. Some economists have interpreted national competitiveness to simply mean labour productivity. On this basis, "country competitiveness" became a euphemism for a term that was (and perhaps still is) perceived in some quarters to be associated with the exploitation of labour. Using this definition, competitiveness-enhancing measures can simply be regarded as any interventions that, directly or indirectly, succeed in enhancing the productivity of labour.

Other economists focussed on price competitiveness using measures such as the real effective exchange rate and unit labour costs. However this approach is fraught because of the lack of accurate data needed to measure unit labour costs, and the need to choose a common currency unit in order to undertake inter-country comparisons. Also, rising unit labour costs relative to that in other countries (which should theoretically lead to a decline in that country's competitiveness, and a lower global market share) often move together with longer term rising export market shares.

In addition, innovation, flexibility and a reputation for the production of high-quality goods can give rise to simultaneous increases in both real effective exchange rates and unit costs, and in economic performance. Finally, countries can also seek to artificially manipulate real effect exchange rates (though usually only for relatively short periods) by devaluing their currencies.

Another methodology that has sometimes been used to measure competitiveness (though typically at an industry, rather than a national, level) is Balassa's index of revealed comparative advantage. This assesses the share of a commodity group's exports of a country's total exports in relation to the corresponding share of that commodity group's world exports of total world exports.

Essentially, if a country's share is higher than the global market share for that product, the country is regarded as having a revealed comparative advantage in that product group.

The fact is that all of the above measures reflect only aspects of competitiveness. This, together with the growing recognition that has been given to the role of institutions in the development of countries and regions,

has led increasingly to the use of composite indices to reflect a country's state of competitiveness.

In 1965, R. Farmer and B. Richman, made an early attempt to characterize competitiveness when they suggested using a matrix approach. They attempted to match up four broad areas of so-called "stand-alone variables" - political and legal, educational, socio-cultural and economic - with business functions such as planning, marketing, or production. Although the results were complex and unworkable, the matrix concept provided the basis for ranking methodologies developed and used by others.

Two of these – what started out as the "*World Competitiveness Report*", and which subsequently split to form the "*Global Competitiveness Report*" and the "*World Competitiveness Yearbook*" – are the focus of this study.

As the understanding of what constitutes country competitiveness has evolved (and broadened) so the definition of this macroeconomic form of competitiveness has also changed. For example President Reagan's Commission on Industrial Competitiveness used the following definition (which appears to have subsequently been adopted by the OECD):

> *"Competitiveness is the degree to which a nation can, under free and fair market conditions, produce goods and services that meet the test of international markets while simultaneously maintaining or expanding the real incomes of its citizens."*

Interestingly, the requirement of "free and fair market conditions" is seldom an explicit element of definitions of national competitiveness that have evolved since the Reagan era (although the emphasis placed on sustainability in many definitions may be regarded as an implicit rejection of artificial support measures). A common theme of more recent definitions is reference to the ability of the nation's citizens to achieve a high and rising standard of living.

This latter definition creates a substantial link between a nation's competitiveness and continual productivity improvements – since a "high and rising standard of living can be sustained only by continual improvements in productivity , either through achieving higher productivity in existing businesses or through successful entry into higher productivity businesses"[1].

In this context, the key indicators of a country's competitiveness would be growth in the standard of living (which may typically be measured by measures of real gross domestic product per capita, or real household disposable incomes), the level and growth of aggregate or total factor productivity, and the ability of a country's companies to increase their

[1] Franziska Blunk, 2006. "What is Competitiveness", The Competitiveness Institute, 26.06.2006

penetration of world markets (measured by their growth in market share), and their share of inward foreign direct investment.

In 1996, the Institute for Management Development (IMD) in Lausanne, Switzerland – which publishes the *World Competitiveness Yearbook* - defined national competitiveness as:

> *The ability of a country to create added value and thus increase national wealth by managing assets and processes, attractiveness and aggressiveness, globality and proximity and by integrating these relationships into an economic and social model.*

In 2003 the same organisation put forward another definition of competitiveness, namely:

> *A field of economic knowledge, which analyses the facts and policies that shape the ability of a nation to create and maintain an environment that sustains more value creation for its enterprises and more prosperity for its people.*

The European Union's Competitiveness Advisory Group also included reference to rising living standards in its definition:

> *Competitiveness implies elements of productivity, efficiency and profitability. But it is not an end in itself or a target. It is a powerful means to achieve rising living standards and increasing social welfare, - a tool for achieving targets. Globally, by increasing productivity and efficiency in the context of international specialisation, competitiveness provides the basis for raising peoples' earnings in a non-inflationary way.*[2]

Surprisingly, one aspect that most of these definitions do not explicitly include (but which is a feature of the rankings in both the *World Competitiveness Yearbook* and the *Global Competitiveness Report*) is an acknowledgement that competitiveness is, ultimately, a relative term. The mere fact that a country has improved in many (or even all) the diverse aspects that influence competitiveness does not automatically imply that that country will be more competitive. If the rate of improvement, and their collective impact, is less than that of other competing countries, then the competitiveness of the country in question might actually deteriorate in relative terms.

This is probably particularly true in South Africa's case, where the country appears to have slipped in competitiveness rankings, despite a perceived improvement in many areas regarded as relevant to national competitiveness. In this context, the following definition by Antonio Roversi may be appropriate:

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[2] Competitiveness Advisory Group, (Ciampi Group). "Enhancing European Competitiveness". First report to the President of the Commission, the Prime Ministers and the Heads of State. June 1995

Competitiveness is the ability to run not faster than the grizzly bear but to run faster than your fellows, friends or your competition….

2.3.2 Methodologies used by the IMD and the World Economic Forum to assess national competitiveness

It was noted above that what are now known as the *World Competitiveness Yearbook* and the *Global Competitiveness Report* were originally a single entity titled the *World Competitiveness Report*. This was published jointly by the IMD and the World Economic Forum from 1980 until 1996, after which reputed disputes over definition and methodology led the two organisations to produce their own, competing publications.

The methodologies employed by each organisation have evolved over time in response to various (and numerous) criticisms, and as a better understanding of the dynamics of the global market have emerged. However, it is probably safe to claim that both current methodologies have their origins in the 1992 *World Competitiveness Report*, which introduced the concept of the so-called "softer side of competition" in order to try to reflect the shift towards knowledge-based economies.

It is beyond the scope of the brief for this programme to analyse how the respective methodologies have changed over time. Such changes are relevant to the literature review of criticisms contained below, however, since both the IMD and the WEF have adopted some changes to their methodologies in the past two years.

Some of the criticisms levelled against them prior to these changes may therefore be redundant.

The methodology used in the World Competitiveness Yearbook

The methodology employed by the IMD to determine and rank the competitiveness of participating countries and regions can be summarised as follows:

i) The national/regional environment is divided into four main categories
- Economic performance;
- Government efficiency;
- Business efficiency; and
- Infrastructure.

ii) Each of the above factors is, in turn, divided into 5 sub-factors – making 20 sub-factors in total. The sub-factors associated with each main category are as follows:

Economic Performance	Government Efficiency	Business Efficiency	Infrastructure
Domestic economy	Public finance	Productivity	Basic infrastructure
International trade	Fiscal policy	Labour market	Technological infrastructure
International investment	Institutional framework	Finance	Scientific infrastructure
Employment	Business legislation	Management practices	Health and environment
Prices	Societal framework	Attitudes and values	Education

iii) A number of "criteria" are linked to each of the above sub-factors, although each sub-factor does not necessarily have the same number of criteria associated with it. These criteria can be hard data sourced from official statistics, or soft data arising from an executive survey. In total 323 criteria were taken into account for the 2007 rankings, of which 246 are used for actual calculation purposes and the remaining 77 for background information.

iv) Each of the 246 criteria is assessed for each country using the standard deviation method. This entails first calculating the average value for all participating countries/regions for that criterion, and then determining the standard deviation. Each country's standardised value for that criterion is then determined by subtracting the average value of the participating economies from the country's actual value, and then dividing the result by the standard deviation. On the basis of these results each country can be ranked in relation to other participating countries/regions for each criterion.

v) Irrespective of the number of criteria associated with it, each sub-factor only carries a weight of 5% in the final country score – making a potential total of 100. In other words, the score for the domestic economy carries the same weight as education or management practices. Each sub-factor's standardised score is determined by adding the weighted score for each criterion associated with that sub-factor – with hard data criteria carrying a weight of 1 and soft data criteria carrying a weight of 0.5.

vi) A relatively recent feature of the *World Competitiveness Yearbook* is to use the scores received by each participating country and region in various sub-rankings that are based on factors such as population size, GDP per capita, and regional location.

The most recent *World Competitiveness Yearbook* ranked 55 countries, but also included assessments of 6 regions (parts of countries).

The methodology employed in the Global Competitiveness Report

The World Economic Forum, which publishes the *Global Competitiveness Report*, defines competitiveness as …

> *… the set of institutions, policies, and factors that determine the level of productivity of a country.*

As currently published the *Global Competitiveness Report* includes two main indexes (the Growth Competitiveness Index and the Business Competitiveness Index) and several sub-indexes.

2.3.3 The Growth Competitiveness Index

The Growth Competitiveness Index (GCI) is based on estimates of each participating country's ability to grow over the next five to ten years.

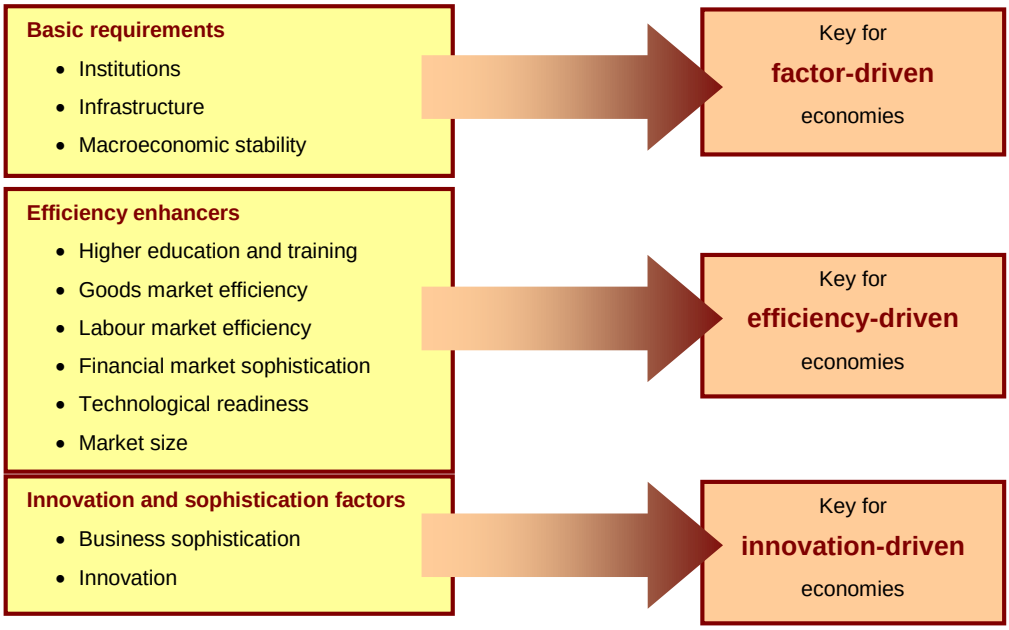
These estimates are, in turn, based on each country's economic conditions and institutions - which are assessed on the basis of a number of criteria incorporated into "12 pillars of competitiveness". These are:

i) Institutions
ii) Infrastructure
iii) Macro economy
iv) Health and primary education
v) Higher education and training
vi) Goods market efficiency
vii) Labour market efficiency
viii) Financial market sophistication
ix) Technological readiness
x) Market size
xi) Business sophistication
xii) Innovation

A relatively recent innovation of the *Global Competitiveness Report* is to classify participating countries in accordance with their "stage of development" and to weight the different pillars listed above in accordance with their perceived importance to that country's stage of development.

A country's stage of development is based on the level of GDP per capita at market exchange rates, and on the share of primary goods exports to total exports. On the basis of these indicators, participating countries are regarded as being factor driven, efficiency driven or innovation driven economies.

The classification of countries, and the relative importance of the different pillars listed above to the different stages of development is illustrated in the figure below:



Source: *Global Competitiveness Report 2007- 2008*

The weighting given to the various pillars for each stage of development is as follows:

Pillar group	% weighting given to different pillars		
	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

Source: *Global Competitiveness Report 2007- 2008*

Certain countries are regarded as being “in transition” between the different development stages. This is based on their GDP per capita in US$ in the latest period. So countries with a GDP per capita of less than US$2 000 are regarded as factor-driven; countries with GDP per capita of between US$3 000 and US$9 000 are classified as efficiency-driven; and countries with a GDP per capita of above US$17 000 are classed as innovation-driven.

Countries with GDP per capita of between US$2 000 and US$3 000 would be in transition from the factor-driven stage to the efficiency-driven stage, while those with GDP per capita of between US$9 000 and US$17 000 would be in transition from the efficiency-driven to the innovation-driven stage.

On the above basis South Africa is classified as an efficiency-driven economy.

In the 2007 – 2008 edition, 113 different criteria were used to "measure" each participating country's performance in relation to the 12 different pillars. Of these, 79 come from the Executive Opinion Survey conducted annually by the World Economic Forum. In this latest edition, the survey results were "smoothed" by averaging the 2006 and 2007 results. However, the 2007 survey results were accorded a higher weighting.

2.3.4 The Business Competitiveness Index

The rationale for the Business Competitiveness Index (BCI) is that while an appropriate macroeconomic and institutional environment improves the opportunity of a country to create wealth, productivity "ultimately depends on the microeconomic capability of the economy, rooted in the sophistication of companies (both local and subsidiaries of multinationals), the quality of the national business environment, and the externalities arising from the presence of clusters of related and supporting industries"[3].

The basis for the BCI is therefore firmly rooted in Michael Porter's "Competitiveness Diamond" – which is not surprising, given his involvement in the index's construction.

The BCI incorporates a combination of hard data and survey responses into a fixed model structure that was, in turn, derived from pooled country data relating to the period 2001 to 2006. The participating countries were segmented into income groups using 2005 figures at purchasing power parity.

Countries with a GDP per capita of less than $4 000 were designated as low income countries, while the cut-off level separating middle and high income countries was $17 000. This means that there were 38 low income countries, 53 middle income countries, and 36 high income countries incorporated into the BCI analysis in the 2007 – 2008 *Global Competitiveness Report*.

The authors claim that an average of 88 responses was received from each participating country, which might suggest that some countries had substantially fewer respondents and others significantly more. Responses to each question were ranked into eight different "cells" – reflecting different company sizes and differing degrees of foreign ownership – and then averaged. Once again, the results were smoothed by adding the 2006 survey results (weighted at 40%) to the 2007 survey results (weighted at 60%). Despite these efforts at "stabilising the data" some countries exhibited high levels of within-country variation - which suggests that their results should be interpreted with caution.

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[3] Michael Porter, Christian Ketels and Mercedes Delgado. 2007. "The microeconomic foundations of prosperity: Findings from the Business Competitiveness Index", Global Competitiveness Report 2007 - 2008

Major similarities and differences between the two methodologies

In light of the above exposition of the methodologies employed by the IMD and the World Economic Forum in assessing national competitiveness, it is appropriate to summarise the similarities and differences between the two.

Major Similarities	Major Differences
1. Both construct composite indexes and rankings that cover a number of different countries 2. Both use a combination of hard data (sourced from official and recognised data sources) and soft data (generated by executive surveys) 3. Both incorporate a large number of criteria that are used to assess a wide variety of aspects related to competitiveness 3. Both group participating countries according to income levels (as measured by GDP per capita) 4. Changes in methodology are generally applied to prior years' rankings as well, so that a consistent view of a country's performance can be gauged	1. The GCR incorporates 131 countries into its analysis, whereas the WCY only covers 55 countries and 6 sub-regions. 2. The WCY is released earlier in the year (around May), and reflects the competitiveness status for a calendar year, whereas the GCR is only released later in the year (November) and straddles calendar years. 3. The WCY makes greater use of (and accords greater weight to) hard data. This serves to limit the number of countries that can be included in its analysis. By contrast, the GCR relies heavily on "soft" survey responses for its analysis 4. The WCY claims 3 700 respondents to its survey – which amounts to an average of about 67 per participating country. The GCR claims to have more than 11 000 responses, averaging around 88 per country 5. The WCY incorporates a greater number of criteria (more than 300) into its analysis, whereas the GCR includes 113 variables 6. The WCY identifies 20 important sub-factors in its analysis, while the GCR has 12 pillars in its GCI 7. Although the WCY rankings can be grouped in different ways, the analysis and weighting is consistent for all countries. By contrast, the GCR has both a current competitiveness analysis (the BCI) and a longer term competitiveness indicator (the GCI), and it weights criteria on the basis of the stage of development of each participating country.

2.3.5 Criticisms of the methodologies used

Indicators of global competitiveness such as those published by the IMD and World Economic Forum can play an important role in business decisions regarding foreign direct investment (FDI) flows, as well as in the determination of country risk profiles. It is therefore prudent to scrutinise the methodologies used by each organisation – both collectively and individually.

Some critics - such as Lall (2001) – believe that both approaches incorporate an implicit view that liberal environments for business are the only criteria of good policy, and that free markets are always optimal. The possibility that markets may be deficient, and that interventions may enhance competitiveness is not appropriately accommodated. In addition, the emphasis on current macroeconomic factors and perceptions tends to make the indexes and rankings volatile – which is in contradiction with the general view that competitiveness is a structural, rather than a cyclical phenomenon.

Lall also argues that economic growth emanates from many factors apart from an increase in exports. If national competitiveness is interpreted in very broad terms (as both methodologies do) so as to encompass total output growth, it simply becomes a development or growth strategy, and there is no need to consider it (competitiveness) separately. As a result, not all policies associated with an acceleration of economic growth should be classified as strategies to increase competitiveness – as both methodologies tend to do.

It is an acknowledged (but often overlooked) limitation of statistical analysis that bigger samples will generate better correlations – even in totally unrelated variables. Econometric analysis often regards correlation as a substitute for causation, with the result that the inclusion of any variable can be justified if it leads to a “better statistical fit” – even if there is no apparent link between the dependent and independent variables.

While both the IMD and the World Economic Forum acknowledge that national competitiveness is a broad, multi-dimensional concept, there is a danger that this could be used as a pretext for the inclusion of any (and almost every) economic, social, political, institutional and infrastructural indicator available – without due regard to statistical cross-correlations and causalities. This danger is increased when the variables are all accorded the same weight.

The large number of variables included in both methodologies (especially in the case of the IMD where criteria all carry similar weights) puts developing countries at a severe disadvantage, because they often do not have the institutional, financial and other resources necessary to simultaneously address the numerous factors that are regarded as being important to their competitiveness.

This is especially true because, in order for their competitiveness rankings to improve, they not only require improvements across a broad front of variables, but the extent of such improvements also has to be sufficient for them to "leapfrog" their competitors. In the case of many developing countries, this is likely to result in significant improvements in a small number of areas, simultaneously accompanied by slippage in other areas – and no discernible improvement in their ranking. This could lead to increasing disillusionment with both the competitiveness ranking processes and with globalisation.

There is also an inherent bias against developing countries in universal comparisons, particularly with regard to the use of aggregate indicators (as opposed to *per capita* indicators). Emerging market economies are not particularly well represented in the upper echelons of most indicators of global competitiveness, despite the fact that, in terms of both progress in enhancing productivity and high future growth prospects in a variety of industries, these economies are often more attractive from the perspective of FDI.

In a globalising world, one of the crucial elements of competitiveness is related to the returns that are yielded by particular investments. Lack of "competitiveness" in developing and emerging markets can be compensated for by higher returns on investment – but if potential investors afford too much credence to competitiveness rankings, they may not even consider such investments.

While it is acknowledged as a problem by both the IMD and the World Economic Forum, the valuation of absolute indicators using a common exchange rate (usually the US$) can give rise to severe distortions. Although a weaker exchange rate should make a country's exports more competitive, it simultaneously increases the cost of capital and other inputs – thereby undermining competitiveness. The IMD in particular makes substantial use of US$ exchange rates to value various indicators, such as GDP, final consumption expenditure of households, gross capital formation, gross savings and many others.

In the context of the substantial weakening of the US$ on world markets in recent years, this can give rise to unjustified strengthening of these indicators, while the weakening of a currency (such as occurred in South Africa in 2001/2) would have the opposite effect. The *Global Competitiveness Report* tries to address this by using a purchasing power parity (PPP) valuation method, but it does not appear to always be consistent in the use of PPP values.

From a statistical relevance point of view, the quantity of survey responses received by both ranking organisations appears to be too limited to be valid. An average of 88 respondents per country to the World Economic Forum survey, and 67 per country to the IMD survey implies that some countries receive substantially more respondents, and others substantially fewer. It

seems likely that many countries may not have enough respondents to make the results statistically valid.

There is also a danger that the subjective elements of the surveys could be manipulated by vested interests, or even that executives give their opinions on variables about which they know relatively little. While a limited sample of executive responses may reasonably reflect the characteristics of the business environment, they are unlikely to accurately reflect criteria such as Internet use, or sufficiency of educational finance.
Although both organisations claim to "rework" historical scores and rankings in the event of methodological changes, it is difficult to compare a specific country's rankings over time – particularly since participating countries continually change.

Apart from the common criticisms highlighted above, the biggest problems associated with the IMD's approach are related to the very large number of criteria (more than 300) that are incorporated into their rankings, and to the extensive use of economic aggregates that are valued in US$ at current market rates.

In addition, many economic aggregates are accounted for in a number of different ways – often including a US$ value, a share of GDP value, and a real growth in local currency value. Since each criterion carries the same weight, it is possible that real growth in local currency in a variable could be cancelled out by a decline in the US$ value of the same variable.

The lack of weighting of different criteria accords all 300-plus criteria the same importance in relation to the country's competitiveness. So GDP per capita (which is regarded as the ultimate indicator of a country's competitiveness based on the definitions discussed in 4.1 above) has the same weighting as internet costs, and the number of listed domestic companies. In addition, the lower weighting accorded to all (soft) surveyed criteria is somewhat arbitrary.

It could be that some "soft" data aspects should be accorded relatively higher weights, and others substantially lower ones. Instead, the arbitrary weighting appears to support suspicions that the level of response to the survey is in many cases low enough to suggest problems with the statistical validity of the results. The IMD attempts to address this by more limited use of survey responses in the construction of its rankings, and by affording such indicators a lower weighting than so-called hard data.

The current account balance is treated in a static way, without regard to time-series trends. Furthermore, a current account deficit is treated as a negative, whilst an emerging market which is importing machinery and equipment as part of increased domestic capital formation could, in fact, be enhancing its international competitiveness on the back of a temporary current account deficit.

The use of stock market capitalisation (in absolute US$ terms) could be regarded as misleading. Sheer size is not necessarily an indicator of competitiveness, and this indicator should, perhaps, be expressed as a ratio of GDP.

In the category for infrastructure, the density of the road network is used as a criterion, without due regard to the differences in density between rural and urban areas, whilst the efficiency and time-effectiveness with which goods are transported by road is not accounted for at all.

2.3.6 A comparison of the latest results

Before focussing on South Africa's performance, it is worth comparing the results of the top twenty-ranked countries as reflected in the latest editions of both the *World Competitiveness Yearbook* and the *Global Competitiveness Report*. These are shown in the table below.

2007 World Competitiveness Yearbook (WCY) Ranking	Ranking	2007 – 2008 Global Competitiveness Report (GCR) Ranking
USA	**1**	USA
Singapore	**2**	Switzerland
Hong Kong	**3**	Denmark
Luxembourg	**4**	Sweden
Denmark	**5**	Germany
Switzerland	**6**	Finland
Iceland	**7**	Singapore
Netherlands	**8**	Japan
Sweden	**9**	United Kingdom
Canada	**10**	Netherlands
Austria	**11**	Korea
Australia	**12**	Hong Kong
Norway	**13**	Canada
Ireland	**14**	Taiwan
China	**15**	Austria
Germany	**16**	Norway
Finland	**17**	Israel
Taiwan	**18**	France
New Zealand	**19**	Australia
United Kingdom	**20**	Belgium

The most noteworthy differences in these rankings are:

a. While Luxembourg ranks 4th in the WCY rankings, it is only ranked 25th in the GCR rankings.
b. China is ranked 15th in the WCY, but only 34th in the GCR.

c. Japan is ranked 8th in the GCR, but only 24th in the WCY.
d. Korea is ranked 11th in the GCR, but only 29th in the WCY.

2.3.7 An analysis of South Africa's performance in the rankings

South Africa has consistently ranked lower (better) in the *Global Competitiveness Report* rankings than it has in the *World Competitiveness Yearbook* rankings, in spite of the fact that the latter includes less than half the number of countries than are included in the former.

Nevertheless, the trends over time are consistent for both indexes, and point to a fairly substantial deterioration in competitiveness in the past year. Both these indexes are supposed to indicate growth potential over the next five years and more.

The Business Competitiveness Index (where South Africa's performance has traditionally been better, and more on par with its GDP size ranking) is supposed to provide an indicator of current competitiveness. This too indicates a deterioration in the country's relative position over the past three years.

In the context of the above it is worth investigating which factors have contributed to South Africa's decline in competitiveness. According to the latest *Global Competitiveness Report*'s Executive Opinion Survey, the "most problematic factors for doing business" are:

- Inadequately educated workforce;
- Crime and theft;
- Inefficient government bureaucracy;
- Restrictive labour regulations;
- Inadequate supply of infrastructure;
- Poor work ethic in national labour force;
- Foreign currency regulations;
- Access to financing;
- Corruption;
- Tax rates;
- Policy instability;
- Tax regulations;
- Government instability/coups;
- Inflation.

The same publication identifies the following factors as contributing towards South Africa's competitive disadvantage. This is based on the fact that the country's ranking for each of the indicators listed was lower (worse) than its overall ranking.

Indicator	South Africa's Rank out of 131 Countries
Diversion of public funds	49
Public trust of politicians	48
Favouritism in decisions of public officials	53
Burden of government regulation	101
Business costs of crime and violence	126
Organised crime	112
Reliability of police services	104
Quality of port infrastructure	48
Quality of electricity supply	83
Telephone lines	87
Government surplus/deficit	48
National savings rate	103
Inflation	70
Government debt	49
Business impact of malaria	109
Malaria incidence	86
Business impact of tuberculosis	124
Tuberculosis incidence	125
Business impact of HIV/Aids	129
HIV prevalence	126
Infant mortality	99
Life expectancy	120
Quality of primary education	99
Primary enrolment	93
Secondary enrolment	51
Tertiary enrolment	90
Quality of educational system	104
Quality of math and science education	128
Internet access in schools	86
Intensity of local competition	52
Number of procedures to start a business	52
Time required to start a business	70
Trade-weighted tariff rate	65
Prevalence of foreign ownership	56
Business impact of rules on FDI	79
Burden of customs procedures	68
Degree of customer orientation	64
Cooperation in labour-employer relations	120
Flexibility in wage determination	121
Rigidity of employment	70
Hiring and firing practices	129
Pay and productivity	92

Brain drain	69
Female participation in the labour force	102
Ease of access to loans	44
Restriction on capital flows	111
Legal rights index	47
Mobile telephone subscribers	47
Internet users	73
Personal computers	62
Broadband internet subscribers	74
State of cluster development	45
Nature of competitive advantage	70
Value chain breadth	79
Production process sophistication	47
Government procurement of advanced technology products	52
Availability of scientists and engineers	104

Source: 2007 – 2008 Global Competitiveness Report

On a similar basis, the factors that contributed to South Africa's competitive disadvantage according to the *World Competitiveness Yearbook* are:

Indicator	**South Africa's Rank out of 61 Countries**
Gross domestic investment as % of GDP	58
Gross domestic savings as % of GDP	52
GDP per capita (US$)	45
Exports of commercial services as % of GDP	49
Exports of commercial services % change in US$	57
Trade to GDP ratio	47
Direct investment flows abroad US$ bn	53
Direct investment flows abroad as % of GDP	53
Direct investment stocks abroad - growth	50
Employment % of population	60
Unemployment rate	61
Youth unemployment	50
Real short-term interest rates	49
Country credit rating	46
Exchange rate policy	47
Exchange rate stability	49
Government decisions	45
Public service	50
Customs authority	46
International transactions	50
Investment incentives	51

Labour regulations	53
Immigration laws	58
Personal and private property protection	55
Discrimination	61
Gender income ratio	45
Harassment	50
Overall productivity – real growth	57
Unit labour costs in manufacturing	51
Labour relations	54
Worker motivation	52
Labour force % of population	59
Labour force growth	58
Skilled labour	61
Finance skills availability	54
Brain drain	61
Competent senior manager availability	52
Investment risk	45
Customer satisfaction	50
Urbanisation	47
Dependency ratio	57
Energy infrastructure	45
Energy intensity	60
Fixed line telephones	57
Mobile tel. subscribers/1000 inhabitants	49
Communications technology	60
Computers per capita	48
Internet users	52
Internet costs	61
Broadband subscribers per 1000 inhabitants	60
IT skills	54
High tech exports	49
Total expenditure on R&D	45
Total R&D personnel per 1000 people	47
Science in schools	53
Youth interest in science	60
Health infrastructure	53
Life expectancy at birth	61
Medical assistance	50
Human development index	58
Health problems	61
Carbon dioxide emissions	58
Pupil: teacher ratio	56
Higher education achievement	52
Educational system	53
Illiteracy	59
Economic literacy	59

Education in finance	55
Qualified engineers	60

It is worth noting that the rankings shown in the graph above are not strictly comparable because the number of participating countries (and regions in the case of the *World Competitiveness Yearbook*) continually changes.

The results of data analysis in the following table indicate that in relation to this sample group of countries, South Africa's ranking has remained relatively static, while other emerging markets (with the exception of Chile) have tended to improve their rankings. The relative gap between South Africa's ranking and that of these other emerging markets has widened over time – suggesting that they have managed to maintain, and even improve, their rankings despite the inclusion of additional participating countries, while South Africa has not.

Although both the IMD and the World Economic Forum stress that their overall rankings are supposed to indicate growth potential over the medium-to-long term (the next five to ten years) there is no apparent correlation between the average ranking of the group of countries shown above, and their average economic growth rate.

While all of the countries shown here have achieved relatively high average economic growth rates over the past five years, the rate of such growth is in a number of cases inversely correlated with their average ranking by the Global Competitiveness Report. This might indicate that the sustainability of the higher growth rates of some countries – such as China, South Africa and Thailand – is questionable.

Country	Average GCR Ranking 2002 to 2007	Average Annual GDP Growth Rate 2001 to 2006 (%)
Chile	24.3	4.3
Korea	20.0	4.8
Malaysia	26.3	5.6
Thailand	32.7	5.6
South Africa	41.0	4.3
China	43.3	9.5

Sources: Global Competitiveness Report, various editions. IMF International Financial Statistics. SA Reserve Bank

2.3.8 Conclusions

It must be acknowledged that the methodologies employed by both the IMD and the World Economic Forum can be criticised. However, such short-comings should not be used as a pretext for the country's withdrawal from either evaluation. A perceived bias against developing countries does not provide a justification for not participating in either process. After all, competitiveness, by its very nature, is not fair!

Instead, less attention should be focussed on the overall rankings, and more on the major factors that are causing the deterioration in South Africa's competitiveness. Problems in the health, education and skills development sectors are common cause, and emerge as obvious focal points. The need to improve infrastructure is another.

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