

# **Lifting the Veil of Gross Domestic Product (GDP) and Redefining Developing Countries in the Context of Accounting**

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## **Abstract**

This paper discusses the anomaly in the Gross Domestic Product (GDP) as a measure of development for accounting purpose and puts into perspective other measure of development proposed by Nobes (1998). 29 countries are ranked using the GDP and then ranked using three other measures of development (number of public companies deflated by population, market capitalisation by population size and market capitalisation by GDP). This paper reports that the GDP is not the right indicator of development for the purpose of accounting in a country by virtue of the fact that GDP does not provide some key specific information when compared with the accounting indicators of development. Under the accounting indicators of development, some countries which are classified as 'developing' become classified as 'developed' countries for accounting purpose.

Key words: Developing countries, Developed countries, Gross National Product, Accounting Indicators.

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## 1. Introduction

*'A developing country is a country characterised by low levels of gross domestic product and income per head, dominated by a large primary sector and where majority of the population exists at or near subsistence levels..., whereas a developed country is characterised by large manufacturing and service sectors and high levels of income per head'* (Pass & Lowes)

There are various definitions of the term 'Developing Countries' ranging from the pure economic concept to institutional definitions, such as that of the World Bank, United Nations etc. These definitions are based on a range of economic and social indicators, such as, gross domestic product (GDP), inflation rate, surplus or deficit on the balance of payments and so on. They are used to assess the economic development of a country. However, these indicators are problematic in the context of accounting due to the fact that they do not provide any basis of information to determine the financial accounting and reporting system of a country. The extant literature on accounting and financial reporting systems and practices in developing countries had concentrated on the relevance, applicability and importance of IAS using the economist concept of developing countries (see Perera, 1989; Briston, 1978; Van de Tas, 1988 Cairns, 1990, 1997; Larson, 1993; Chamisa, 2000;etc). For relevance and applicability of IAS, see Boolaky, 2003)

It is, therefore, argued in this paper that using the economist's definition of developing countries to determining their accounting system is the wrong premise. The need for a contextual definition of developing country for accounting purposes has been left aside. Nobes (1998) argued that the level of GDP per head or other general economic indicators may not be the most relevant factors to define a developing economy in the context of accounting.

*'On the contrary there may be other, but equally relevant factors, such as, number of public companies, market capitalization, number of trained accountants, and so on that can be used to determine whether a country is 'developed or developing'*  
(Nobes 1998)

This paper discusses the economists' definition of 'development' taking as examples a number of developed and developing countries and then the accounting indicators are applied to the same list of countries to determine their status of development. Twenty-nine countries, including fourteen developed and fifteen developing countries, are redefined in the accounting context and then ranked on that basis. Finally, a comparison of these two schools of thought is made in order to establish whether there is a link between them. This study reveals that a few countries, which are developing countries in the eyes of the economists are in fact classified as developed countries in the context of accounting and financial reporting.

## 2 Definition of Developing Countries

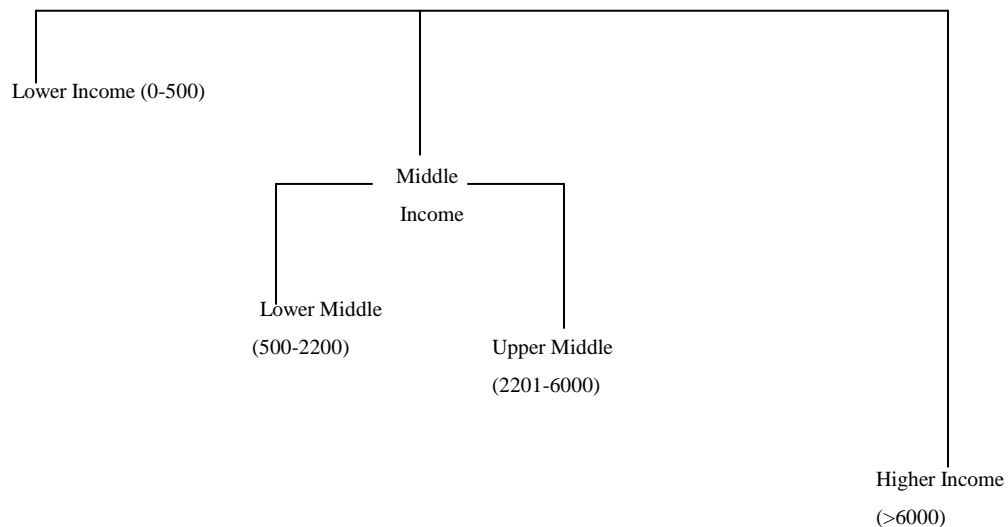
## 2.1 The economist argument

In the field of development economics, the difference between the term ‘developed economies’ and ‘developing economies’ is very important. Usually developed economies are also called ‘industrial economies’ due to the close association between development and industrialisation, whereas developing economies refer basically to the third world and fourth world countries, that is, less developed countries and poor countries (Perkins and Snodgrass, 1992).

Nowadays the terms ‘backward’ and ‘advanced’ economies are not common because in most countries economic and social relationships are changing significantly. Many countries in strategic regions are integrated to consolidate their economic standing in the competitive world. SADC, IOC, COMESA, ASEAN etc can be cited as examples, thus suggesting that the term ‘backward economy’ is arguably out of date. For regionalism and multilateralism (see Bhagwati, 1993). The United Nations has used the term ‘less developed countries’ to designate countries with lowest income per capita. The World Bank Development Report 1988, on the other hand, refined the term ‘developed and developing countries’ by initially making a three-part classifications, namely; *lower income economies, middle income economies and higher income economies*. *The higher income economies are basically developed economies*. This is illustrated in chart 1 below:

**Chart 1**

(Values are in US\$)



Source: World Bank Development Report, 1988

In 1992 the World Bank has discovered a range of economic and social indicators for developing and developed countries. These indicators range from the Gross National

Product per capita to the urban population as a percent of total population. Table 1 gives a list of the economic indicators that the World Bank uses to measure development in a country. Clearly, the ranges for the two types of countries on many of the indicators overlap extensively. This limits the use of the indicators as a way of distinguishing developing countries from developed countries.

**Table 1**

Indicators based	Developing countries	Developed countries
GNP per capita(US\$)	80 to 33,000	9,550 to 32,680
Average yearly GNP growth rate, 1965-1990 (%)	-3.3 to 7.1	1.1to 4.1
Average annual inflation rate%	-6.9 to 432.3	1.5 to 10.5
Life expectancy (years)	39 to 78	7 to 79
Adult illiteracy%	4 to 82	Under 6
Agriculture as % of GDP	0 to 67	2 to 9
Manufacturing as % of GDP	4 to 43	15 to 29
Services as % of GDP	18 to 30	56 to 67
Gross International reserves, in months of import coverage	0.1to 17	1.3 to 6.4
Total external debt as% of GNP	0 to -384.5	0
Total debt service as % of total exports	0 to 59.4	0
Average annual population growth	0.6 to 4.7	0 to 1.5
Population per physician	350 to 78,780	230 to 700
Population per nursing person	110 to 8530	60 to 260
Infant mortality rate (per 1000's birth)	7 to 166	5 to10
Urban population as % of total population	5 to100	57 to 97

Source:World Development Report, 1992

On the other hand, the United Nations Development Programme (UNDP) refers to the human development index (HDI) as a basis to determine the level of development of a country. The HDI is based on real income, social indicators of life expectancy, adult literacy and years of schooling. It is obvious that ranking by HDI would differ from ranking by income per capita. The HDI measure goes beyond conventional growth and considers that economic growth is not only vital to sustain people welfare, but also an essential means of human development. It may be argued here that continued economic growth would require more qualified human resources to keep pace with development, including qualified accountants. Therefore, more trained accountants may be required to meet the challenge of wider information needs from a larger portfolio of users.

## *2.2 The Economic Indicators to Measure Development*

In this section, the GDP and the HDI is used to measure development in 15 African countries. Table 2 illustrates the average population, share of manufacturing sector (%) to the GDP and GDP per capita of these African countries for the period 1992 to 1998.

On the basis of the figures described in the table below, Botswana and Mauritius would be classified as ‘Upper Middle Income Economies’ because they have an average GDP per capita greater than the cut-off point listed in chart 1 above.

**Table 2: Average GDP per Capita in US\$**

<b>AFRICAN COUNTRIES</b>	<b>Pop(m)</b>	<b>AVERAGE GDP PER CAPITA (1998)</b>	<b>Income Level</b>	<b>RANK</b>
ANGOLA	11	447	<b>LM</b>	9
BOTSWANA	1.5	3175	<b>U</b>	3
CONGO REP	49	119	<b>L</b>	15
LESOTHO	2.1	396	<b>L</b>	10
MALAWI	10	156	<b>L</b>	12
MAURITIUS	1.1	3664	<b>UM</b>	2
MOZAMBIQUE	16	134	<b>L</b>	13
NAMIBIA	1.7	1865	<b>LM</b>	5
SEYCHELLES	.075	7087	<b>H</b>	1
SOUTH AFRICA	40	2819	<b>UM</b>	4
SWAZILAND	0.9	1203	<b>LM</b>	6
TANZANIA	27	256	<b>LM</b>	11
ZAMBIA	9	409	<b>L</b>	10
ZIMBABWE	11	565	<b>LM</b>	8
MADAGASCAR	N/A	756	<b>L</b>	7

Source: SADC Annual Report on Trade, Industry and Investment Review, 2000

N/A= Not available in the report

Table 3 illustrates the developing countries by HDI and their rank. Seychelles is ranked first when compared to the other countries both in terms of HDI and GDP per capita. The HDI of this country therefore indicates that more than 75 % of the people in Seychelles is literate.

**Table 3: HDI for 1998**

COUNTRY	HDI	Rank
ANGOLA	.405	12
BOTSWANA	.593	6
CONGO REPUBLIC OF	.507	9
LESOTHO	.569	7
MALAWI	.385	13
MAURITIUS	.761	2
MOZAMBIQUE	.341	14
NAMIBIA	.632	5
SEYCHELLES	.786	1
SOUTH AFRICA	.697	3
SWAZILAND	.655	4
TANZANIA	.415	11
ZAMBIA	.420	10
ZIMBABWE	.555	8

Source World Bank Human Development Report, Year 2000

In fact, there are also many other macro-economic indicators that the World Bank uses to determine whether a country is a developing economy (see table 1 above). Among these indicators, the Human Development Index could be relevant in the context of accounting system because it indicates the level of literacy and human development in the country. It may assume that in an economy where the HDI is high, the people may be interested with more information, including financial information for control and decision- making purpose. But the HDI on its own would not be sufficient because the type of accounting and reporting system is influenced by other factors.

### *2.3 The anomalous taxonomy*

There are still anomalies in the taxonomy of developing countries. There are countries that the UN considers as developing countries despite their per capita income falling in the category of high-income economies. In 1988 Singapore and Hong Kong, among others, were classified as developing economies by the United Nations although income per capita were over \$8000. In practice these terms and classifications have their exceptions and inconsistencies. As such, there is no system that can capture all the dimensions of development and provide a specific framework.

Moreover, none of the indicators in table 1 above provide information to determine the financial accounting and reporting requirement of a country. For instance, the economic indicators do not provide information on the types of business enterprises, number of listed companies and market capitalisation. These are fundamental indicators for accounting and for the financial reporting development of a country. In the absence of these indicators, any debate on the relevance of accounting and financial reporting system

of developing countries will remain futile. It is, therefore, more relevant to consider accounting indicators when determining, whether a country is classified as 'developing or developed' for the purpose of designing, developing and even harmonising accounting and reporting systems and practices.

With the accounting indicators of development, the participation of the different sectors, both private and public, in the economy will be known. Backed with this type of information, the determination of the accounting and reporting system of a country will become less difficult. For example, in the countries where economic activities are still under the ownership and control of the government, a cash accounting system may be suitable. This was the case in the Eastern Europe. By referring to such measures as market capitalisation, it would already be obvious how much the private sector, both local and foreign, is contributing to the development of a country. If this index is on the high side, it implies that a large part of the economic activities in the country is under private investment and as such, external financial reporting becomes important. In other words, the size and scope of the private sector business intervention will obviously require the practice of commercial accounting, (see *Accounting in Developing Economies*, pp 30, Nobes, 1998)<sup>1</sup>. For example in the last decade, a number of the developing countries is orientating towards a capital-market-based economy through the setting up of the stock market (SADC, report, 2000, pp 226). Between 1987 up to now, Mauritius, Namibia, Zambia, Swaziland etc have already established their stock exchanges. Madagascar was also on the way to set up its capital market, but the political crisis of 2002 in this country has frozen all government decisions. Many government-owned enterprises are being wholly or partly privatised and therefore the financial reporting requirements should definitely change. In Mozambique, for example, 840 companies were privatised out of a total of 1248 between the years 1989 to 1997. Lambdin (1999) argued that Botswana has built physical and human infrastructure so that it has been the fastest growing economy in the African region since 1966. The training of accountants was one of the priorities of this country.

Larson (1993) has argued that, when an economy grows, it has to have a system of accounting suitable to meet the challenge of this development. In his studies, Larson attempted to show the relationship between economic growth and the accounting and reporting process and concluded that countries with high growth rates have adopted IAS with modification. In turn, Samuels (1993) has criticised the work of Larson on the ground that there is no indication of causality between the variables used in his study. Belkaoui (1988) argued that growth rates and economic development are to some extent connected to the adequacy of the accounting system and development process of a country. Some other researchers have argued that a national accounting system should be developed in response to the economic and political needs of a country (see Hagigi & William, 1993). Peasnell (1993) points out the risk of drawing general conclusions

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<sup>1</sup> Leaving aside management accounting, Financial reporting requirements in a country should be designed to serve the country's important user/uses as appropriately as possible, and should bear in mind the context in which accounting operates.

about accounting in developing countries on the ground that business environment and thus accounting needs differ significantly among countries.

Neither Larson nor other writers on accounting have been able to set down exactly the accounting system suitable to developing countries because they were utilising the inadequate benchmark to determine economic development for the choice of accounting and reporting system. GDP, life expectancy, number of doctors deflated by population size do not give any indications on the type of accounting system that a country would need.

In fact the economic indicators do not provide information on the business environment of a country; they solely give an indication of the overall state of the economy. Given these shortcomings in the economic and social indicators as bases to determine the type of accounting and reporting system of a country, it is, therefore, imperative that the term 'developing countries' be revisited, so that a more focus definition is found for the context of accounting. This will be discussed in section 3, where the Nobes' definitional factors are considered and compared with those of the economists.

### **3 Developing Countries:**

#### *3.1 The Accountants' Argument and the Indicators of Development*

It must also be recognised that the national environment is dynamic. For instance, over the past 15 years there are many countries that have already transitioned from the central-planned system to a market-based system. Government enterprises have been privatised and more so many developing countries in close areas have joined in economic blocs. There are many regional blocs today all over the world. Many of these countries have set up their stock exchanges which have obviously changed their business environment. In some other countries, multinational companies have set up their businesses. This will, therefore, mean that there is a need to review their system of accounting. But to be able to do so, indicators other than the macro-economic ones, should be considered. In this context, Nobes (1998) pointed out that there are six factors<sup>2</sup> more likely to suit the definition of 'developing countries' in the context of accounting. By now these factors have not been studied. This paper is putting 3 of the 6 factors into perspective whereas the other three factors are left for a separate study. A list of the 3 factors taken on board in this paper is given below:

- Number of public companies;

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<sup>2</sup> The six factors proposed by Nobes (1998) are (1) number of public companies, (2) number of listed companies deflated by the size of the economy, (3) value of market capitalisation, (4) number of trained accountants, (5) degree to which the audit profession is independent and (6) the efficiency of the tax system of a country.



- Number of public companies deflated by the size of the economy;
- Value of stock market capitalisation deflated by the size of the economy;

### *3.2 Number of listed companies deflated by size of population*

Nobes (1998) pointed out that if a country has a large number of public companies in relation to its size, this is one signal that it may be a developed country for accounting purposes. On the other hand, if there is no public company in a country (so a developing country) external financial reporting to investors for financial decision-making purpose is not important. By 'public' Nobes means companies whose shares are publicly traded, which is a sub-category of those called 'public limited company' in the laws of UK and some commonwealth countries. The 'publicly traded' meaning is also adopted here. Reference to the UK company law is, therefore, relevant for this discussion because there are many ex-British Colonies whose company law is based on that of the UK.

Under the UK company law a public company is any company whose shares may be transferred freely among and owned by members of the public. The law does not clearly state that these companies should have their shares floated on the stock exchange (Companies Act 1985). There are many countries where public companies exist but they are not listed companies because there is no stock exchange in place. Nevertheless their shares may be bought and sold to members of the public through a broker. So a country of this type would fail to qualify as a developed country in this test, although it has a number of non-listed public companies.

Table 4 is an illustration of the number of listed public companies deflated by size of population of 15 African countries and 14 developed countries. From this table it can be inferred that there are few countries which are classified as developing countries from the economic and social indicators but are under this index ranked before the developed countries. It may be argued here that the number of listed companies in a country is more relevant to determine the financial accounting and reporting system than the GDP.

Table 5 describes the change in the rank of the countries when using number of listed companies deflated by size of population, to measure development. In this table the sign + means that the rank of the developing countries have climbed up the ladder. There are five African countries that have outperformed Italy and 2 going before France in the rank. These are Mauritius, South Africa, Botswana, Namibia and even Swaziland. For example, Botswana is ranked before Italy by 5 numbers whereas South Africa by 8 numbers. The performance of Mauritius is quite significant and the latter is ranked even before the US and the UK, among others.

If these countries were classified in term of the GDP, obviously they would lag behind countries like Italy, France, United Kingdom and even the United States. As such, they would remain classify as countries not yet mature for external financial reporting purposes.

**Table 4: Countries ranked by the number of listed companies deflated by population size**

<b>Column 1 (Rb) Rank of Countries</b>	<b>Column 2 (PS) Population size(m)</b>	<b>Column 3 (nolico) Number of domestic Listed companies</b>	<b>Column 4 nolico/PS Listed companies per million of population (Rb)</b>
1 Singapore	3.89	417	107.0
2 Australia	18.97	1330	70.1
3 Canada	30.49	1353	44.4
4 Norway	4.43	191	43.1
5 Denmark	5..32	225	42.3
6 Mauritius	1.17	48	41.0
7 Sweden	8.86	292	33.0
8 United Kingdom	58.74	1926	32.9
9 Spain	39.42	1019	25.8
10 Unite States	279.13	6461	23.1
11 Korea	46.88	702	15.0
12 South Africa	41.4	583	14.1
13 France	59.10	808	13.7
14 Netherlands	15.81	191	12.0
15 Botswana	1.61	16	9..94
16 Germany	82.09	742	9
17 Namibia	1.7	13	7.6
18 Swaziland	1	6	6
19 Zimbabwe	13.08	69	5.3
20 Italy	57.34	291	5.1
21 Zambia	10.41	8	.8
22 Malawi	10.64	7	.7
23 Tanzania	32.79	4	.12
24 Angola	11.3	0	0
24 Congo	49	0	0
24 Lesotho	2..2	0	0
24 Mozambique	16.1	0	0
24 Seychelles	.075	0	0
24 Madagascar	15.07	0	0

Source: IFC, Fact book 2001, International Financial Statistics, 2000

(population figures are for 1999, except Norway, 1998).

**Table 5: Difference in Rank of African countries with a selection of developed countries.**

<b>Countries</b>	<b>Denmark Rank 5</b>	<b>Sweden Rank 7</b>	<b>UK Rank 8</b>	<b>US rank 10</b>	<b>Spain Rank 9</b>	<b>Netherlands Rank 14</b>	<b>France Rank 13</b>	<b>Italy Rank 20</b>
<b>Mauritius Rank 6</b>	Df. -1	+ 1	+ 2	+ 4	+ 3	+ 8	+ 7	+ 14
<b>South Africa Rank 12</b>	- 7	-5	-5	-2	-3	+2	+1	+8
<b>Botswana Rank 15</b>	-10	-9	- 8	- 6	- 5	- 4	-2	+ 5
<b>Namibia Rank 17</b>	-12	-10	-10	-7	-8	-3	-4	+3
<b>Swaziland Rank 18</b>	- 13	-11	-11	-8	-9	-4	-5	+
<b>Zambia Rank 20</b>	-15	-13	-13	-10	-11	-6	-7	0
<b>Seychelles Rank 24</b>	-19	-17	-17	-14	-15	-10	-11	-4
<b>Madagascar Rank 24</b>	-19	-17	-17	-14	-15	-10	-11	-4
<b>Mozambique Rank 24</b>	-19	-17	-17	-14	-15	-10	-11	-4

**Key:** Df means difference in rank. Where the df figure is positive in the cell, it implies that the developing countries are preceding the developed countries by this ranking difference.

### *3.2.1 Comparing GDPpc and Number of listed companies deflated by population size*

The method of measuring development using the GDP per capita with the number of listed companies per million of population reveals that the ranking of these countries change among themselves as well as when comparing them with the developed countries. For this purpose the Spearman rank correlation is used. See analysis in table 6. As per the calculation below, there is 54.0% agreement between the countries performance when ranking by GDP and by using the number of domestic listed companies per million of population.

<b>Table 6 COMPARING ACCOUNTING INDEX RANKING WITH GDP RANKING</b>				
<b>SADC COUNTRIES</b>	<b>a</b> <b>COMPO</b> <b>RANK</b>	<b>b</b> <b>GDP RANK</b>	<b>DIFFERENCE(d)</b>	<b>d<sup>2</sup></b>
ANGOLA	10	9	1	1
BOTSWANA	3	3	0	0
CONGO REP	10	15	-5	25
LESOTHO	10	10	0	0
MALAWI	7	12	-5	25
MAURITIUS	1	2	-1	1
MOZAMBIQUE	10	13	-3	9
NAMIBIA	4	5	-1	1
SEYCHELLES	10	1	9	81
SOUTH AFRICA	2	4	-2	4
SWAZILAND	5	6	-1	1
TANZANIA	9	11	-2	4
ZAMBIA	8	10	-2	4
ZIMBABWE	6	8	-2	4
MADAGASCAR	10	7	3	9
			Total	169
Spearman rho: Comparing a with b		Correlation coefficient		.540*
		N		15
		Significant (2 tailed)		.038

\*Correlation is significant at .05 level (2 tailed)

### 3.3 Using Market Capitalisation as an Indicator for Development in a Country.

According to the IFC Factbook, (1999, p 2) emerging market means a stock market that is in transition, increasing in size, activity or level of sophistication. Most frequently, the term is defined by a number of parameters that attempt to assess a stock market's relative level of development and or an economy's level of development. This statement supports the argument that the performance of the stock market can, therefore, be used as a basis to define whether a country is developed or developing.

The World Bank's definition has more recently proved to be less satisfactory by virtue of the wide fluctuations in dollar-based GNP or GDP per capita figures. This is supported by the fact that exchange rates suffer from severe swings. Secondly, the GNP figures take a long time to prepare such that, when they are released, they are often out-of-date. For this reason, the International Finance Corporation uses other index to determine the term 'emerging market'. Market capitalisation is one of the indices that can be used to define 'emerging market'. Given that capitalisation is a parameter to assess the development in country, it can be treated as a relevant factor to characterise 'developing country'. Therefore, any country that falls within the World Bank's classification of 'lower and

middle' income economy based on the GNP per capita and has a relatively small investable market capitalisation relative to gross domestic product could be classified as a developing economy. Below is a definition of investable market capitalisation:

Investable market capitalisation is a market's capitalisation after deducting holdings not truly "in the market" for foreign portfolio investors whereas non-investable holdings include large block holdings and parts of companies that are inaccessible due to foreign investment limits, (IFC.Factbook,1999,pp2)

In table 7 column 1 (Rc) ranks the countries by using market capitalisation deflated by size of population. In this analysis, there is again a change in the ranking position of the countries. For example, the United States of America ranked 10 in table 4 and is now ranked 1 and the UK which ranked 8 in the same table now ranks 2.

### *3.3.1 Comparing GDPpc and market capitalisation*

Market capitalisation as a percentage to GDP indicates the participation of private investment in the economy of a country. If this indicator is high it, therefore, means that there are more businesses in a country. The market capitalisation as a percentage of GDP is shown in the table 8. From the table, it is revealed that Mauritius, Zimbabwe, Zambia, Namibia, and Botswana fall in the first 20 from a list of 29 countries. Namibia is on the same level playing field as Denmark and Korea whereas Mauritius is even before Korea.

**Table 7: Countries ranked by market capitalisation deflated by population size and no of listed companies**

<b>Column 1 (Rc) Rank of Countries</b>	<b>Column 2 (PS) Population Size</b>	<b>Column 3 (MC) Market Capitalisation (US\$bn)</b>	<b>Column 4 MC/PS in US\$ 000's</b>
1 United States	279.13	15214.6	54.50
2 United Kingdom	58.74	2612..2	44.47
3 Netherlands	15.81	640.5	40.51
4 Singapore	3.89	155.1	39.87
5 Sweden	8.86	328.3	37.05
6 France	59.10	1446.6	24.48
7 Canada	30.49	770.1	25.25
8 Denmark	5..32	111.8	21.01
9 Australia	18.97	372.8	19.65
10 Germany	82.09	1270.2	15.47
11 Norway	4.43	65.8	14.85
12 Italy	57.34	768.4	13.40
13 Spain	39.42	504.2	12.79
14 South Africa	41.4	131.3	3.17
15 Korea	46.88	148.4	3.16
16 Mauritius	1.17	1.234	1.05
17 Zimbabwe	13.08	1.310	1.00
18 Botswana	1.61	.798	.49
19 Namibia	1.7	.689	.41
20 Swaziland	1	.730	.73
21 Zambia	10.41	.293	.028
22 Tanzania	32.79	.231	.007
23 Congo	49	0	0
23 Lesotho	2.2	0	0
23 Angola	11.3	0	0
23 Malawi	10.64	0	0
23 Mozambique	16.1	0	0
23 Seychelles	.075	0	0
23 Madagascar	15.06	0	0

*IMF: International Financial Statistics, 2001*

**Table 8: Comparing Market Capitalisation with GDP**

<b>Column 1 (Rd)</b> <b>Rank of Countries</b>	<b>Column 2 (MC)</b> <b>Market Capitalisation</b> <b>US\$bn</b>	<b>Column 3 (GDP)</b> <b>Gross Domestic Product</b> <b>US \$bn</b>	<b>Column 4 MC/GDP</b> <b>Market Capitalisation/GDP %</b>
1 United Kingdom	2612.2	1305.8	200.04
2 United States	15214.6	8986.9	169.30
3 Singapore	155.1	92.3	168.04
4 Netherlands	640.5	496.9	128.90
5 Sweden	328.3	277.9	118.14
6 Canada	770.1	704.9	109.25
7 South Africa	131.3	125.9	104.29
8 Australia	372.8	451.6	82.55
9 France	1446.6	1755.6	82.40
10 Spain	504.2	704.1	71.61
11 Italy	768.4	1203.9	63.82
12 Denmark	111.8	205.5	54.40
13 Germany	1270.2	2686.5	47.28
14 Norway	65.8	170.5	38.59
15 Mauritius	1.234	4.6	26.8
16 Korea	148.4	617.5	24.03
17 Botswana	.9975	5.25	18.62
18 Zimbabwe	1..310	7.2	18.19
19 Zambia	.200	3.8	5..26
20 Namibia	.3112	6.6	4.71
21 Tanzania	.2315	7	3..31
22 Swaziland	.073	3.8	1.92
23 Angola	0	7.6	0
23 Congo	0	6.1	0
23 Malawi	0	8.9	0
23 Mozambique	0	12.2	0
23 Madagascar	0	12.3	0
23 Seychelles	0	.59	0
23 Lesotho	0	3.7	0

Source: Main Economic indicators, 2002, World Stock Exchange Factbook 2000

## 4. Comparison of Rankings Using GDP and the Accounting Indicators

### 4.1 Correlation test

From table 9-10, the Spearman's rank correlation of the different methods used to measure development is calculated. The following acronyms are used:

*Ra = rank by GDP;*

*Rb = rank by number of listed companies deflated by million of population*

*Rc = rank by market capitalisation deflated by population size*

*Rd = rank by market capitalisation as a percentage of GDP.*

To establish any association or dependence between these ranks, the null hypotheses are tested below.  $H_0$ : is null hypothesis followed with alternative hypothesis as  $H_{o1}$ .

*H<sub>0</sub>: The economist's and the accountant's development indicators are positively correlated*

*H<sub>o1</sub>: The economic indicators of development are independent from the accounting indicators of development.*

*H<sub>0</sub>: The ranks are positively correlated.*

*H<sub>o2</sub>: Ranks under the accounting indicators are independent.*

The reason behind these two hypotheses is to justify whether the accounting indicators are equally important and relevant to measure development. Table 9 provides a list of the 29 countries and their ranks under each method of measurement as well as the differences in the ranks. In table 10 the results of the Spearman's rank correlation is produced.

### 4.2 Discussion of the results

Table 9 describes the ranks of 29 countries, including both developing and developed, under the GDP and under the accounting indicators. When comparing these figures it indicates that the ranks of many developing countries are higher when using the accounting indicators than GDP from the list. Few of the developing countries have climbed up the ladder. Mauritius and South Africa come in the first 14 countries out of a selection of 29 countries. Mauritius which ranked 16 under the GDP now, ranks 6 under (Rb), and South Africa moves from a rank of 18 under GDP to 12 under (Rb). This is the outcome when development is measured using the number of listed of companies deflated by the population size. Under this approach, France moves backward from 8 to 13 in rank and Germany from 5 to 16 in rank. Italy and Netherlands as well suffer from a fall in the rank. Italy falls back from rank 12 to rank 20 under this accounting indicator. Norway falls from the first position to the fourth position and the US from third position to the tenth. An important argument emerges in this analysis, that is, although a country may be classified as developing from the point of view of GDP, it may still be considered as developed for the purpose of accounting. A country with a high accounting development indicator explains that this country has a business environment whereby there is a large number of private business activities and as such it has to have an accounting system suitable to meet the requirements of the users.

This study is not undermining the importance of the economic indicators. The latter will continue to serve its usual purpose for macro-economic analysis. But it is not sufficient



in itself alone to provide any specific and relevant information basis for the development of an accounting and reporting system that a country would require.

In fact the accounting indicators for development provide more useful and specific information relevant to determine the accounting and reporting system that a country would require. It is practically impossible from the macro-economic indicators to decipher whether the number of companies is increasing or decreasing, the change in market capitalisation etc that do have a direct impact on financial reporting.

**Table 9 : Comparing Ranks**

Countries	Ra	Rb	Rc	Rd	Ra-Rb	Ra-Rc	Ra-Rd	Rb-Rc	Rb-Rd	Rc-Rd
Angola	23	24	24	23	-1	-1	0	0	1	1
Australia	10	2	9	8	8	1	2	-7	6	1
Botswana	17	18	19	17	-1	-2	0	-1	1	-1
Canada	11	3	7	6	8	5	5	-4	-3	-4
Congo	28	24	24	23	4	4	5	0	1	1
Denmark	2	5	8	12	3	-6	-10	-3	-7	-4
France	8	13	6	9	-5	2	-1	7	4	-3
Germany	5	16	10	13	-11	-5	-8	6	3	-3
Korea	14	11	15	16	3	-1	-2	-4	-5	-1
Italy	12	20	12	11	-8	0	1	8	9	1
Lesotho	25	24	24	23	1	1	2	0	1	1
Malawi	27	21	24	23	6	3	4	-3	-2	1
Mauritius	16	6	17	15	10	-1	1	-11	-9	1
Mozambique	28	24	24	23	4	4	5	0	1	1
Namibia	19	17	20	20	2	-1	-1	-3	-3	0
Netherlands	6	14	3	4	-8	3	2	11	10	-1
Norway	1	4	11	14	-3	-10	-13	-7	-10	-3
Seychelles	15	24	24	23	-9	-9	-8	0	1	1
Singapore	9	1	4	3	8	5	6	-3	-2	1
South Africa	18	12	14	7	6	4	11	-2	5	7
Spain	13	9	13	10	4	0	3	-4	-1	3
Swaziland	20	18	21	22	2	-1	-2	-3	-4	-1
Sweden	4	7	5	5	-5	-1	-1	2	2	0
Tanzania	26	23	23	21	3	3	5	0	2	2
United States	3	10	1	2	-7	2	1	9	8	-1
United Kingdom	7	8	2	1	-1	5	6	6	7	1
Zambia	24	22	22	19	2	2	5	0	3	3
Zimbabwe	22	19	18	18	3	4	4	-1	1	0
Madagascar	21	24	24	22	-3	-3	-1	0	2	2

Key: Ra= rank by gdp, Rb= rank by number of listed co/pop; Rc= rank by market cap/population; Rd=rank bymc/gdp( Figures to calculate rank are used from main econ indicators, June 2002

Table 10: Summary of results:

**Correlations**

			RA	RAB	RC	RD
Spearman's rho	RA	Correlation Coefficient	1.000	.767**	.855**	.800**
		Sig. (2-tailed)	.	.000	.000	.000
		N	29	29	29	29
	RB	Correlation Coefficient	.767	1.000	.818**	.814
		Sig. (2-tailed)	.000	.	.000	.000
		N	29	29	29	29
	RC	Correlation Coefficient	.855	.818	1.000	.936**
		Sig. (2-tailed)	.000	.000	.	.000
		N	29	29	29	29
	RD	Correlation Coefficient	.800	.814	.936	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	29	29	29	29

\*\* Correlation is significant at the .01 level (2-tailed).

Table 10 reports that there is significant positive correlation between the economist and the accountant's indicators of development. This positive correlation justifies the argument that the accounting indicators are equally relevant factors to measure development, other than the GDP. Moreover, a glean at these accounting indicators for development reveals that they provide data which are more important and relevant to determine the level of business activities and the people's interest in business of a country. Market capitalisation deflated by population is one of the indicators that can be used to determine the people's interest in private investment. Fundamentally these accounting development indicators are better premises to determine the financial accounting and reporting systems of a country.

## 5. Conclusion

This paper has considered 'developing and 'developed' countries in the context of accounting. A comparison of the economists' and the accountants' measurement of development is made, followed with a discussion on the anomaly in the GDP as a measure of development for accounting purpose. The three indicators of development proposed by Nobes (1998) is used to rank 29 countries and then compared with the ranks under GDP. The result reports that under the accounting indicators of development, the ranks of some countries have significantly changed. Countries ranked and classified as 'developing' under the umbrella of the economists become 'developed' for the purpose of accounting. Moreover, the result from the correlation test also reports that there is a significant correlation in the ranks obtained under the accounting indicators. Furthermore, this study also reveals that the accounting indicators provide more relevant and specific information for the purpose of accounting.

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