

A Level Playing Field? Revising per capita GDP Estimates in Sub Saharan Africa: From Structural Adjustment to SNA 2008

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A LEVEL PLAYING FIELD?
REVISING PER CAPITA GDP ESTIMATES IN SUB SAHARAN AFRICA:
FROM STRUCTURAL ADJUSTMENT TO SNA 2008.

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The relativity of African income estimates was affirmed when Ghana announced that GDP estimates were revised upwards by 60.3 percent in November 2010. Similar revisions are to be expected in other countries. Many statistical offices are currently using outdated base years, and have still not upgraded to the System of National Accounts for the years 1993 or 2008. It is argued that with the current uneven application of methods and poor availability of data, any ranking of countries according to GDP levels is misleading. The paper emphasises the challenges for ‘data users’ in light of these revisions. GDP data are disseminated through international organisations, but without any metadata. Transparency in reporting will be helpful in turning the attention of the development community to the important role played by the local statistical offices. The MDGs highlight the capacity problem of statistical offices. Currently, neither data users nor data producers are getting the assistance they need.

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1. INTRODUCTION

On the 5th of November, 2010, Ghana Statistical Services announced that its GDP for the year 2010 was revised to 44.8 billion cedi, as compared to the previously estimated 25.6 billion cedi. This meant an increase in the income level of Ghana by about 60 percent and, in dollar

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values, the increase implied that the country moved from being a low income country to a middle income country overnight (Ghana Statistical Service, 2010). In response, on the Center of Global Development blog pages, African development expert Todd Moss (2010) exclaimed: “Boy, we really don’t know anything”. Given this level of error margin in the GDP estimate on Ghana, arguably the most studied country on the continent, what should we think about economic statistics deriving from other African countries? The news was met with equal bewilderment in Ghana. According to the local news, the UN Resident Coordinator for the United Nations Development Programme went as far as dismissing the new classification as a statistical hypothesis, and emphasized that, in terms of its achievements towards the MDGs, Ghana should still be classified as being among the poorest countries in the world (Enquirer, 2011).

When the current President of Ghana, John Atta Mills was campaigning for the presidential elections in 2008 one of his promises was to take Ghana to middle income status by 2020. Is this sudden increase in Ghana’s GDP a result of pressure to deliver on its electoral promises? This would seemingly fit well with the best aphorism summarizing prejudice against statistics: ‘there are three kinds of lies: lies, damned lies, and statistics’.¹ According to the World Bank, the upward revision was not a result of political tampering with the statistics. It was all done according to global standards of national accounting.² The World Bank reports that the rebased national accounts followed a review of the underlying statistical methodology undertaken by IMF advisors. On July 1st 2011 the World Bank gave the revised national income estimates its

¹The phrase was attributed to the British politician Benjamin Disraeli by Mark Twain in his autobiography, according to Best (2001).

² This matches my impression during conversations with statistical officers at Ghana Statistical Services, Accra Ghana and at the institute of Statistical, Social and Economic Research, Legon, Ghana, February 2010. There was no doubt that GDP was underestimated. At the time the estimates that were mentioned were in the range of 40 to 45 percent.

official stamp of approval, and Ghana was reclassified as a low middle income country from its previous status as a low income country (World Bank, 2011a).³

The revisions raise questions regarding the meaningfulness of comparisons of GDP levels in Sub-Saharan Africa, and leave recent growth estimates shrouded in uncertainty. This paper takes its starting point in the recent revision in Ghana, and discusses the likelihood of similar revisions in other countries based on information collected upon visits to the statistical offices in Ghana, Nigeria, Uganda, Tanzania, Kenya, Malawi and Zambia.⁴ The paper emphasises the challenges for ‘data users’ in light of these revisions. The central premises for data users are that the data are comparable across time and space. While revisions constitute an important step towards getting an accurate measure of GDP level for the individual country, they make it difficult to utilize the data for comparisons of changes in production and income.

The second section of the paper gives a historical perspective on the challenges faced by statistical offices since Structural Adjustment, and offers a consideration of the GDP level and growth evidence data users are left with. It is argued that the lack of a transparent revision of baseline estimates across Sub Saharan Africa following Structural Adjustment has left scholars and policymakers with malleable ‘facts’ on economic performance. The challenge of providing reliable and valid data for development has not been satisfactorily met. Rather than strengthening the institutional capacity to measure development, the recent Millennium Development Goals (MDGs) agenda could arguably have been detrimental for national accounts statistics because it has put pressure on statistical offices to prepare reports on social statistics related to the MDGs.

³ A status it was granted simultaneously with Zambia.

⁴ In addition information has been gathered in an email survey. Representatives from the statistical offices in Burundi, Cameroon, Cape Verde, Guinea, Lesotho, Mali, Mauritania, Mauritius, Morocco, Namibia, Mozambique, Niger, Senegal, Seychelles and South Africa have participated in the survey.

2. A LEVEL PLAYING FIELD?

This paper was specifically written for the conference on the ‘Experiences and Challenges in Measuring National Income, Wealth, Poverty and Inequality in African Countries’, co-organised by International Association of Research in Income and Wealth (IARIW), (with Statistics South Africa). Therefore it is suitable to start out by making reference to a similar conference, also co-organized by IARIW (with the UN Economic Commission for Africa) five decades ago, in Addis Ababa, January 1961, when national income accounting was in its trial phase in Africa. In the 1950s and 1960s the most vocal sceptic in development economics regarding the preparation of national income estimates and the comparison of resulted aggregated levels was Dudley Seers:

In the hands of authorities, such international comparisons may yield correlations which throw light on the circumstances of economic progress, and they tell us something about relative inefficiencies and standards of living, but they are very widely abused. Do they not on the whole mislead more than they instruct, causing a net reduction in human knowledge? (1952-53, p. 160)

The usefulness of these aggregates was commented on in many of the papers published in an edited volume following the conference (Samuels, 1963). The discussion was centered on whether it was at all defensible to aggregate national accounts. Ady wrote: “The usual aggregates are certainly valueless, at present, for certain purposes: welfare comparisons using per capita income, for example, are obviously nonsensical when income estimates themselves are in part derived by multiplying per capita averages of doubtful accuracy by population estimates equally subject to error” (Ady, 1962, p. 5).

Billington (1962) on the other hand, explicitly contradicted Seers, and took the view that the United Nations System of National Accounts was the best approach forward to measure the progress of African economies. He argued that the system of standardization of measurement

was the right path forward (pp. 1-51). In support, Prest and Stewart (1953), who estimated the income of Nigeria, and Peacock and Dosser (1958), who provided estimates of the income of Tanganyika, all argued that to provide total aggregates was necessary, and that these estimates would help in informing the government and the international community regarding prospects for economic progress. Ady remained sceptical and reminded readers that “there is at least one African country whose per capita income figures were revised upwards by 75 per cent in recent years” (1962, p. 55).

National Income Statistics can be approached as a knowledge problem or a governance one. One can critically investigate whether the estimates are intellectually defensible and ask whether the final estimates are most likely to increase knowledge or mislead data users. It is clear that in the 1960s, the governance imperative proved more important. As was emphasised by Okigbo (1962), in the preface of his GDP estimates for Nigeria 1950-57, the GDP statistics were required and demanded as an input into national development plans. Simultaneously, he was careful to point out that “It is impossible to overstate the arbitrariness of the process of ‘quantification’” (p. 65). Seers, as mentioned, argued for a set of minimalistic accounts in place of the aggregates, and recommended that one stick to recording the sectors where one actually had data, and refrain from misleading aggregation (1959, pp. 1-36). He did, however, consider it very unlikely that he would be heard and explained that “the ‘demonstration effect’ of industrial countries is so strong that it is the rule, rather than the exception, for statisticians working in primary producing countries to treat national income estimates as the highest priority in statistical work” (p. 36).

Seers was correct in his prediction. By the 1960s national income accounting was widely established in independent states across Sub-Saharan Africa. Was Billington right concerning the

disciplining virtues of standardization in methods? At the turn to official recording by newly independent African countries, Deane (1961) reviewed some of the new official estimates while national accounting was in its trial phase in Africa and commented that “what was once the happy hunting ground of the independent research worker has become the routine preoccupation of official statisticians and international Civil Servants”; but according to Deane “the fact is, however, that African national-income publications are as heterogeneous under the official stamp as they ever were when privately produced” (pp. 630-31).

Where are we today, five decades later? The Ghana revision implies that the GDP level estimates are still as ‘soft’. The GDP estimates are taken at face value by data users – as downloaded either through the Penn World Tables and World Development Indicators or other data sources. The governance imperative has changed; the GDP estimates are increasingly used in global rankings of income and are the basis of international classifications. The problem is that there is a disconnect between the data users and the data producers. Alwyn Young (2010) encountered the problem of incomplete datasets when attempting to build up and revise a database for African measures of living standards. He argued that the underlying data supporting estimates for living standards are minimal or nonexistent (p. 1).

Young reported that for 24 of the 45 countries for which the PWT provides international price data, there were in fact no benchmark studies of prices. Although the UN reports constant data prices for 47 Sub-Saharan African countries between 1991 and 2004, they have only received data for less than half of these 1410 observations and for 15 of the countries no underlying data has been received at all (Ibid p. 1). It is further explained in the World Bank Statistics Manual that when the data are missing, the Bank uses ‘a method for filling the data gap, which is based on the assumption that the growth of the variable from a period for which

data exists has been the same as the average growth for those other countries in the same regional or income grouping, where data exists for both periods (World Bank, 2011b).’ Possibly to reassure data users it is reported that “these gap-filling procedures are run automatically, with no human intervention” (Ibid).

So where do data users go when they want to know the GDP level of a country? There are three major sources of national income data: the World Development Indicators, Penn World Tables and Maddison.⁵ They are all based on national account files as prepared by the respective national statistical agencies, but differ in their modifications and according to their currencies and purchasing power parity adjustments. The World Development Indicators database is maintained by the World Bank Group, and it is the data source most commonly used in public domains such as politics and the media. The second source is from a database maintained by economists at Pennsylvania University. This database has been updated since the first version was published in 1980. The most recent version was published in 2011 as version 7.0. These data sources are the ones most commonly used by growth economists when calculating cross country growth regressions. A third source of income data, commonly used by economic historians but also by economists, are the datasets produced by Angus Maddison. These datasets are regularly updated by the Groningen Growth and Development Center at University of Groningen.

So what do we know about income levels in Africa? In Table 1 the countries are ranked according to the reported GDP per capita for year 2000; the poorest countries are at the top and the richest at the bottom. Only sub-Saharan African economies are ranked in the table, and the countries in the rankings only include countries for which GDP per capita data for the year 2000

⁵ From World Development Indicators (henceforth WDI) GDP per capita (constant 1995 US\$) is used. The best equivalent from Penn World Tables (henceforth PWT) is Real GDP per capita (Laspeyres) in 1996 International Geary Dollars. Finally, from Maddison Per Capita GDP in 1990 International Geary-Khamis Dollars is used.

Table 1: Ranking African Economies according GDP per capita in three data sources (International USD)

Rank	MADDISON		WDI		PWT	
1	Congo-Kinshasa	217	Congo-Kinshasa	92	Congo-Kinshasa	359
2	Sierra Leone	410	Ethiopia	115	Liberia	472
3	Chad	429	Burundi	139	Sierra Leone	684
4	Niger	486	Sierra Leone	153	Burundi	699
5	Burundi	496	Malawi	169	Ethiopia	725
6	Tanzania	535	Tanzania	190	Guinea-Bissau	762
7	Guinea	572	Liberia	191	Niger	807
8	Central African Rep.	576	Mozambique	191	Tanzania	817
9	Comoro Islands	581	Niger	200	Togo	823
10	Ethiopia	605	Guinea-Bissau	210	Madagascar	823
11	Togo	614	Chad	218	Chad	830
12	Zambia	645	Rwanda	242	Malawi	839
13	Malawi	656	Burkina Faso	243	Zambia	866
14	Guinea Bissau	681	Madagascar	246	Burkina Faso	933
15	Madagascar	706	Nigeria	254	Central African Rep.	945
16	Angola	765	Mali	294	The Gambia	954
17	Uganda	797	Sudan	313	Rwanda	1018
18	Rwanda	819	Togo	323	Mali	1047
19	Mali	892	Kenya	328	Sudan	1048
20	Gambia	895	Central African Rep.	339	Uganda	1058
21	Burkina Faso	921	São Tomé & Príncipe	341	Nigeria	1074
22	Liberia	990	Uganda	348	Mozambique	1093
23	Sudan	991	Gambia, The	370	Benin	1251
24	Mauritania	1017	Zambia	394	Kenya	1268
25	Kenya	1031	Ghana	413	Congo-Brazzaville	1286
26	Cameroon	1082	Benin	414	São Tomé & Príncipe	1300
27	São Tomé & Príncipe	1226	Comoros	436	Comoros	1359
28	Nigeria	1251	Mauritania	495	Ghana	1392
29	Ghana	1270	Angola	524	Mauritania	1521
30	Benin	1283	Lesotho	548	Senegal	1571
31	Zimbabwe	1328	Guinea	605	Lesotho	1834
32	Côte d'Ivoire	1352	Senegal	609	Angola	1975
33	Senegal	1358	Zimbabwe	620	Cote d'Ivoire	2171
34	Mozambique	1365	Cameroon	675	Cameroon	2472
35	Lesotho	1490	Cote d'Ivoire	739	Guinea	2546
36	Cape Verde	1777	Congo-Brazzaville	791	Zimbabwe	3256
37	Congo-Brazzaville	2005	Swaziland	1538	Cape Verde	4984
38	Swaziland	2630	Cape Verde	1541	Namibia	5269
39	Namibia	3637	Equatorial Guinea	1599	Equatorial Guinea	6495
40	Gabon	3847	Namibia	2366	Botswana	7256
41	South Africa	3978	Botswana	3931	South Africa	8226
42	Botswana	4269	South Africa	4020	Swaziland	8517
43	Seychelles	6354	Mauritius	4104	Gabon	10439
44	Equatorial Guinea	7973	Gabon	4378	Seychelles	10593
45	Mauritius	10652	Seychelles	6557	Mauritius	15121

Sources: Alan Heston, Robert Summers, and Bettina Aten, Penn World Table Version 6.2 (Center for International Comparisons of Production, Income and Prices, University of Pennsylvania, 2006); Angus Maddison, The World Economy: Historical statistics (OECD, Paris, 2003); WorldDevelopment Indicators (World Bank, Washington, DC, 2007).

is available from all three sources.⁶ Subsequently 45 countries are left, and the result of the simple exercise of calculating the correlation coefficients of the income estimates according to the three sources is presented in Table 1 below.

What kind of agreement should one expect? It could be equated with measuring the weight of 45 different bags of flour with 3 different weights. In that case, some kind of systematic error might be expected. This would mean a clearly discernible and stable plus or minus error attributable to the specific weight, but a correlation coefficient extremely close to 100 percent. It is, after all, a measure of the income in the same country, in the same year and theoretically using the same method. It is obvious from this table that the issue is not only one of systematic error in measurement between the sources, as in the example of the faulty weight. Instead, it is as if each time the income is measured, it is done using a different weight with an unknown margin or direction of error.

The three sources agree on the ranking of some countries but disagree on most and in some cases, with a large discrepancy. The sources agree unanimously that the Democratic Republic of Congo (DRC), formerly Zaire, is the poorest country. It should be noted that its income is probably grossly understated in the official statistics. MacGaffey noted this some time ago, and the situation has certainly not improved since. Among the ten poorest economies, there are only six that consistently appear in that bracket according to all three sources. In addition to the DRC, these are Sierra Leone, Niger, Burundi, Tanzania and Ethiopia. There is better agreement among sources when identifying the ten richest countries. In the relative ranking among them there is

⁶ Thereby directly excluding Algeria, Egypt, Libya, Morocco and Tunisia. In addition, World Development Indicators does not have data for Djibouti, Mayotte, Reunion and Somalia. Note that Maddison lacks a separate estimate for Eritrea (his estimate for Eritrea and Ethiopia is considered to represent Ethiopia).

wide variation, but nine out of 10 countries appear in the top ten groups of all the three sources. There are also large fluctuations in the rankings. When considering the lowest and highest rank of a country across the three sources, some stand out. There is the most uncertainty with regards to the placement of Guinea, which is ranked as the seventh poorest economy according to Maddison while PWT lists it one spot short of placing it among the ten richest African countries in per capita terms. Mozambique is considered the eighth poorest country by WDI, while Maddison places it among the twelve richest economies. Across the three sources, Liberia jumps 20 places; the country is ranked as the second poorest by PWT and yet Maddison ranks it as richer than the majority of African countries. Angola, Central African Republic, Comoros, Congo-Brazzaville, Nigeria and Zambia all make leaps of more than ten places in the rankings from one source to the other, leaving the relative ranking of one fifth of the countries as a matter of high uncertainty.

Why is there so much disagreement? As mentioned previously, the systematic variation in cash values reflects that the income per capita measures are quoted in international dollars from different years: 1990 (Maddison), 1995 (WDI) and 1996 (PWT) respectively. Furthermore, the income estimates reported in datasets provided by the PWT and WDI differ because different formulas were used to calculate the international price estimates. The methods applied to express the income estimates are quite similar, and should not alone account for such differences in ranking.

Maddison himself notes “the discrepancy between the World Bank and my estimates is bigger than can be explained by the bias of EKS [International Geary-Khamis Dollars] measure” (source?). The problem lies with the primary source. The international GDP per capita datasets all take the national account files, as provided by the appropriate statistical agencies, as a starting

point. Therefore, the datasets necessarily inherit all of the data quality problems originating in the country from where they are collected.

In theory, the differences between national or official data and international income and growth data are only that the latter are expressed in international prices. But there are other sources of disagreement. The data series provided by the national statistical agencies are subject to revisions, and there are various official series with different base years covering the same years. The dataset provider has a multitude of national accounts data files to pick from; therefore the process of splicing various series together involves some discretion on the part of the dataset compiler. The actual process of picking and harmonizing series are not accounted for in a specific and transparent manner in the data descriptions accompanying the published datasets.

The problem is that the data users are not well informed. Many data users have no *a priori* reasons to judge which of the datasets are better than the other. Only seasoned country experts can reasonably be able to judge the data quality in a country. A data user would like to know to what extent the dataset one is using coheres with what is otherwise known about the country, and should therefore be able to judge whether a large fluctuation is economic information or just statistical errors. A data user could also be interested to know how the data quality in one country compares with the data from another country. To be specific: perhaps the data user, having seen that Ghana just revised their income upwards by 60 percent, may feel cautious about comparing the income of Ghana with that of Cote D'Ivoire or Nigeria. How should the data user navigate the databases?

The term for this information is metadata. This information should ideally accompany the statistical series. It should contain definitions, sources and all other information that the data user needs to be a confident user of the data. The World Bank and other international organisations

offer very little help here. The only metadata that are downloadable in the databank from the World Bank is its textbook definition, and it is then noted that data are in constant or current, local or international currency and that the base period “varies by country”.⁷ The data manual, which we have referred to earlier, only contains the generic mathematical formulas and definitions that are used to compile the data.

Table 2 shows the availability of estimates from national statistical offices. The list shows great variation. Only 18 of the 48 countries have prepared estimates for the year 2009 or 2010. Still, the World Bank data provides data in both constant and current prices for all of these countries until and including year 2009. This means that when we have contemporary rankings of African economies, more than half of the entries are pure guesswork. It also implies that when we are presented with continent wide growth statistics about half of the underlying data are actually missing, and are created with ‘no human intervention’. The prevailing sentiment seems to be that data availability is more important than the quality of the data that are supplied. The base year is of crucial importance.

For 13 countries the official information has not been obtainable. 19 of these countries have a base year that is within the last decade (i.e. 2001 or more recent). According to the IMF Statistics Department, advisors remind authorities that international best practice is to rebase every 5th year,⁸ but only 7 countries (Burundi, Ghana, Malawi, Mauritius, Niger, Rwanda and Seychelles) have been able to follow up on this recommendation. The base year determines the year for which the prices used for accounting are held constant, in order to distinguish economic growth from price increases. Choice of the base year also has further implications: the index problem applies. This means that the weight of each sector is still determined from its base year

⁷ Retrieved from <http://data.worldbank.org/> August, 2011.

⁸ Personal communication, Macroeconomic Statistics Advisor, IMF East AFRITAC, December 2010.

Table 2: Availability of National Accounts Data at Statistical Offices in Africa (Local currency, billions)

Country	Estimate	Base year	GDP	WDI	Difference
Angola	--	--	--	5988.7	
Benin	2005	--	2309.10	2261.5	2%
Botswana	2009	1993/94	83.2	83.27	0%
Burkina Faso	2005	1999	2881.4	2862.8	1%
Burundi*	2007	2006	1403	1060	32%
Cameroon*	2009	2000	11040.3	8895	24%
Cape Verde*	2007	1980	107.3	88.61	21%
Central African Rep.	2003	1985	670.09	712.11	-6%
Chad	2009	--	3622	2796.61	30%
Comoros	--	--	--	153.11	
Demo. Rep of Congo	--	--	--	3366.42	
The Rep of Congo	2009	1990	3869.8	4523.4	-14%
Cote d'Ivoire	2008	1996	--	8631.19	
Djibouti	2000	--	91.24	--	
Equatorial Guinea	2004	1985	2389.53	2768.7	-14%
Eritrea	--	--	--	18	
Ethiopia	2002	--	383.36	66.56	476%
Gabon	2008	2001	7032.86	6508.77	8%
Gambia	2008	2004	22.98	18.24	26%
Ghana*	2010	2006	43.14	36.87	
Guinea*	2008	2003	20982	20778	1%
Guinea-Bissau	2006	1986	172.33	312.11	-45%
Kenya*	2008	2001	2099.8	2077.43	1%
Lesotho*	2009	2004	14.57	13.76	6%
Liberia	--	--	--	30.27	
Madagascar	2009	1984	16802	16802.95	0%
Malawi*	2007	2006	510.54	484	5%
Mali*	2008	1997	--	3067.32	
Mauritania*	2007	2005	914.74	854.82	7%
Mauritius*	2010	2009	299.48	274.5	9%
Mozambique*	2009	2003	269.34	263.3	2%
Namibia	2008	2004	72.9	74	-1%
Niger*	2010	2006	2748.2	2542	8%
Nigeria*	2009	1990	24794.23	25760.6	-4%
Rwanda	2010	2006	3,282	2964.1	11%
Sao Tome and Principe	2006	2001	1444.62	1550.2	-7%
Senegal*	2009	1999	6023	6037.9	0%
Seychelles*	2009	2006	10.72	10.4	3%
Sierra Leone*	2009	2001	7868.83	6442.16	22%
Somalia	--	--	--		
South Africa*	2010	2005	2662.76	2407.7	11%
Sudan	2008	1981/82	12774.68	121.29	10432%
Swaziland	--	--	--	--	
Togo	--	--	--	28212.65	
Uganda*	2009	2002	34166	30556.8	12%
Tanzania*	2010	2001	32293.5	30556.8	6%
Zambia*	2008	1994	55210.6	52869.6	4%
Zimbabwe	--	--	--	--	

Sources: World Development Indicators and national statistical office websites. * Information obtained from the statistical office personally.

^The base year used by the World Bank is different than that reported by the national government (or information not available). Sudan and Ethiopia are in an inexplicable large disagreement. I have not been able to find out what explains the discrepancy.

value, thus a small sector in the base year will still contribute little to aggregate growth today, even if its importance has increased greatly. When GDP is revised and the base year changed, it allows the statistician to reweight the relative importance of the different sectors, and further, to change or reconsider the methods and data sources.

How important is this variation in base years presented in Table 2? It is extremely likely that the income of the countries with an outdated base year is severely underestimated. Ghana is one of the countries with an up to date base year: 2006. It is also worth noting the disagreement between the official statistics and those provided by the World Bank. In the last column in the table the most recent estimate in local currency at current prices is compared with the same data from the World Bank. Often the discrepancy is accounted for by the fact that the national statistical office and the World Bank are not using the same base years for their accounts. For example Burundi has updated its base year to 2006, while the World Bank series still uses 1980 as their base year. The result is that the World Bank reports a much lower GDP for Burundi, to the dismay of the national accounts division.⁹ In conclusion a ranking of African economies according to GDP levels should not be taken at face value. The information is in large part, automatic data permutations, and the level differences are as likely to reflect statistical methods as they are to be informative of economic realities. Upon direct questioning, most statisticians in national accounts divisions replied affirmatively to the question: ‘Do you think that GDP is underestimated today?’. Out of 23 countries surveyed, only Lesotho and Namibia were satisfied

⁹ Personal communication, Institut de Statistiques et d’Études Économiques, Burundi, February 2011.

that GDP estimates were covering the whole economy, while representatives from 18 countries responded that GDP was underestimated.¹⁰

3. FROM STRUCTURAL ADJUSTMENT TO SNA 2008.

The independent states across Sub-Saharan Africa implemented regular and standardized national accounts in support of national development plans in the 1960s and 1970s. There were some variations in the political economy of development in the region – the most emphasised being whether a given country was described as ‘socialist’ or ‘capitalist’ (Barkan, 1994), or whether it was categorized as urban or rural biased in their agriculture economy policy (Bates, 1991). There were some important common denominators across all regimes. All states used marketing boards to administrate the purchases, sales and transport of agricultural crops – including both so called ‘cash crops’ for exports and food crops for domestic consumption. In addition, most states were directly or indirectly involved in industrial and infrastructure activities through state development corporations. In all states this meant that national statistical offices could draw upon a rich availability of administrative data - i.e. data collected by the government to support its regular functions. Eventually, survey data also became available as most states conducted household budget surveys once or twice in the 1960s and 1970s. This data allowed states to further increase the coverage of rural and non-monetary activities, as allowed for in the 1968 SNA.

¹⁰ From South Africa it was stated that it was not the mandate of the Statistical Office to give an answer to this question.

Progress soon gave way to decline, and in the 1980s and 1990s economic collapse redefined the task of development. The convenient data sources became increasingly obsolete as ‘parallel’, ‘black’ and ‘informal’ markets thrived. Ted Brett writes of Uganda in the late 1970s that “the formal economy was replaced by an untaxed economy” (2008, p. 350). The new challenge was to account for this ‘informal’ economy in the midst of a collapsing formal economy in which the statistical offices were firmly embedded. This economic development experience has been referred to as ‘the lost decades’ which were indeed lost in national accounting terms. As the historians Ellis (2002) and Nugent (2004) note, this makes the historical writing of the 1980s and 1990s difficult.

To take a few examples, in the Zambian statistical office in Lusaka the national account reports and any other publications relating to the accounting methodology and most other relevant reports ceased to be available after 1973. Beyond that, just an annex report to the 1973-1978 estimates was obtainable. This means that very little is known about the estimates and their procedures in the 1980s. In 2007, during my visit to the Central Statistical Office in Lusaka, neither the national accountants nor the persons responsible for library/data dissemination functions were able to clarify whether this was an issue of the reports having gone missing or of one of them never having been published.¹¹ A similar problem was observed in Ghana where the Ghanaian Statistical Services office/department ceased publishing its annual Economic Survey in 1985 due to a lack of funding and qualified personnel.¹² It attempted to re-instate this document as a regular source of economic information for Ghana in 2005, but it has not been published since. According to Muwanga-Zake, the statistical office in Uganda completely collapsed:

¹¹ Personal Communication, Central Statistical Office, Lusaka, March 2007.

¹² Personal Communication, Ghana Statistical Services, Accra, February 2010.

The main problem was the lack of investment in statistics production; the Department lacked resources and could not effectively carry out its role as the central coordinating body for statistics within government, let alone for the country as a whole. The Department lacked essential facilities: buildings became derelict; there was only one roadworthy vehicle; and there were no computers, so all statistics had to be manually tabulated and simple desk calculators used for calculations. Other agencies progressively took over aspects of the Department's data gathering and processing responsibilities. Inevitably, there was considerable overlap in some important statistics activities, such as price collection, estimation of GDP, and statistics on central government revenue and expenditure. Any published data had lost credibility. (2010, p. 247)

In the 1980s and 1990s all African economies with the exception of Botswana had to undergo 'Structural Adjustment' – the policy reform programmes that the IMF and the World Bank made conditional upon further financial support. This meant a reduced role for the state, in all states, irrespective of whether they were referred to as 'capitalist' or 'socialist' in the 1970s and 1980s. In many countries some of the basic functions of the state were privatized, and as a result the recording capacity disappeared. Beatrice Hibou mentions the examples of Mozambique and Cameroon and notes that customs collection was privatized and that correspondingly "the national accounts do not record either the volume or the value of the exports, nor the tax and customs revenue"(2004, p. 7). It was not until the late 1990s that the statistical offices in some countries were able to adjust to new economic and political realities. Fortunately, the cases of upwards revision in Tanzania and Zambia following structural adjustment are well documented, and provide us with an insight into what may have happened in other countries.

A Zambian report on a national income estimate revision for a new series based in 1994 starts by stating the obvious: "inflation rates of more than 200 percent in the early 1990s had adverse effects on the provision of macroeconomic statistics" (Republic of Zambia, 1994). Creating meaningful data on year-to-year real economic growth in such circumstances is

complicated. Furthermore, structural adjustment entailed massive change in the structure of production and ‘the break-up of the former large parastatals meant that previous sources of data were not available’ (Ibid). A revision and a rebasing were overdue as the accounts were still based on 1977 prices and the benchmarks were “becoming inadequate, and over time provided less accurate estimates” (ibid). The previous estimates had largely “excluded [the] informal sector and therefore impaired the value of GDP estimates over time, in all sectors except agriculture” (Ibid).

After incorporating informal sector activity into total GDP, the formal sector share was estimated at 58 percent in terms of value added with a corresponding 42 percent share for the informal economy. To this estimate, the statistical office gave the following warning: “we wish to caution that including the informal sector activity in the Zambia National Accounts may tend to exaggerate the GDP of the nation, relative to other countries or even to the previous estimates which mostly excluded it. It must also be recognised that it will be difficult to up-date the sector relation based on indicators in the absence of surveys to monitor the activity in the future’ (Ibid).

In Tanzania the report accompanying the new constant price series at 1992 prices held that “strong efforts were made to determine what is the story behind the figures, whether the data applies to what is experienced as happening in the industry. This has not been emphasised earlier”; thus indicating that rather than letting the data speak for themselves, the resulting figures were compared to what was otherwise known or assumed regarding economic trends (United Republic of Tanzania, 1997). Structural changes, especially in the later part of the 1980s, were not reflected in the available statistics, resulting in an under-estimation of value added. “Estimates of the size of this deficiency ranged from 30 percent to as much 200 percent of GDP” (Ibid). The new level estimates were reached by incorporating all available data into the

accounts, including the results of new surveys of the transport, trade and construction undertaken as part of the project. In the previous estimation methods of 1976 the “private sector was under covered – sometimes not covered at all – and the growing informal sector was not generally accounted for” (Ibid). A time series was developed by extrapolating these data trends backwards. The assumptions were changed; the informal economy was expected to increase when the formal sector was in decline, rather than move with it.

Thus in the late 1990s both Zambia and Tanzania underwent a massive upward re-appraisal of their respective national incomes following structural adjustment. Both countries had followed a path of state led development from the late 1960s until the crisis in the 1980s. During this period as a matter of convenience and ideology, data on trade, services and, by implication, production (through the state marketing board) were collected by the parastatal companies which were assumed to be representative of the whole economy. When those state agencies were unable to offer services or unable to offer services for an acceptable price, economic actors turned to informal and parallel operators. Consequently, the national income estimates recorded a massive decline in the late 1970s and early 1980s. It is impossible to correctly gauge the movement and/or the size of this unrecorded component. As noted, Zambia and Tanzania have revised their economies to include ‘informal’ sector estimates, but much as with the inclusion of the ‘subsistence’ economy in the 1960s, the national accountants are unable to measure economic change. The resulting national income series is potentially misleading as scholars approach per capita estimates and wish to compare income across countries, as well as across time.

Writing generally on structural adjustment, Paul Nugent (2004) comments that “the statistics which constitutes the basis on which structural adjustment is conventionally evaluated are

especially problematic. Aside from the larger question of the relationship between the numerals and reality, there is the simple fact that African governments have lacked the means to gather reliable statistics” (2004, p. 328). The cases of Tanzania and Zambia have wide applicability. Economic decline in the late 1970s followed by structural adjustment in the 1980s and 1990s is the dominant pattern in Sub-Saharan African. Changing economic realities were not reflected in the official economic statistics, and the effect of revisions re-raises questions regarding the efficacy of structural adjustment programmes. The importance of the statistical offices was neglected in the decades of policy reform, specifically during the period of structural adjustment in the 1980s and 1990s. In retrospect it may be puzzling that the IMF and the World Bank, the latter recently fashioning itself as the ‘Knowledge Bank’, embarked on growth oriented reforms without ensuring that there were reasonable baseline estimates that could plausibly establish whether the economies were growing or stagnating. For the statistical offices, structural adjustment meant having to account for more with less; informal and unrecorded markets were growing, while public spending was curtailed. As a result, our knowledge regarding the economic effects of structural adjustment is limited.

After the implementation of structural adjustment programmes during the 1980s, the IMF and the World Bank shifted the focus to redesigned policy reform programmes called Poverty Reduction Programmes where policy targets were set out in a Poverty Reduction Strategy Paper. The motivation was to actively involve the country subject to the reforms in the policy formulation process – referred to as ownership - and to appease critics of the structural adjustment programmes who had pointed out the negative impacts on the poor from the former programmes. Many scholars have pointed out that the actual changes to both process and content

were minor (Stein, 2008), but it did make a difference to the statistical offices: it created a new demand for poverty data.¹³

Lucas and Booth (2003) argue that the Poverty Reduction Strategy Paper (PRSP) led to improvements in the quality and availability of household survey data. They argue that some serious concerns over the sustainability of this level of data collection remain, but at least the importance of the challenges involved with household surveys are now better recognized (Ibid, p. 101). They also note that while the issue of data availability is discussed in the PRSPs, the country capacity for data analysis and collection is neglected (Ibid, p. 102). Thus the new development agenda caused a new demand for information, but did not have clear strategies for how this demand should be fulfilled. Poverty monitoring has been complicated by this deficiency, and the existing data series relies on inconsistent and unreliable data (Levine, 2006, pp. 89-100).

Currently the international development community has embraced the idea of ‘evidence based policy’. Related to it are the principles of ‘results based management’ that have inspired the development community to set out quantifiable targets such as the Millennium Development Goals (Black and White, 2003). This new agenda has again put the issue of the statistical capacity of poorer countries on the policy agenda. The eight goals are supported by 18 targets and 48 indicators, thus encompassing most aspects of economic development. Interestingly, indicators of political ‘governance’ were not included in the list of quantifiable targets. One of the justifications in a UN Development Programme report was that this would put too much pressure on poorer countries’ statistical capacities. It was argued that while the concept of ‘governance indicators’ is on the rise from the national to international level, statisticians have

¹³ For a history see, Bjørn Wold (2005).

shied away from this task due to a lack of data, a perceived lack of experience and the political sensitivity of the endeavour (UNDP, 2010 p. 5). This admission highlights the precarious situation of the statistical offices, and begs the question: if this applies to the governance indicators, what are the effects of the Millennium Development Goals' data demands on the national statistical office?

The response from the national accounts divisions, the statistical offices, international and national stakeholders is univocal. The pressure currently put on statistical offices is not yet matched by their capacity. A discussion paper by Gonzalo Duenas Alvarez et al, (2011) provides a listing of all the available data relating to 12 MDG targets from 1990 to 2009, for each sub-Saharan African country.¹⁴ The data availability picture is a mixed one: 9 countries have data at least as recent as 2005 for all but one of the targets (Liberia is the only country with recent data for all targets) and most countries have at least some data over the time period for all but one target. Somalia and Sudan have no data at all, and it is notable that the poverty data consistently are where we find the least recent observation. Most probably this is because the survey instruments used to measure poverty involve more costly data collection and analysis (Guenard and Mesple-soms, 201). Also note that this only surveys a subset of 12 MDG indicators and the data availability situation for all 48 indicators is likely to provide a more pessimistic picture. The latest MDG progress report does briefly mention issues of data availability, but does not engage with how this may effect evaluation, nor does it discuss issues of statistical capacity (United Nations, 2011). Vandemoortele claims that in the case of the MDGs, statistics have been abused to fabricate evidence of success, and furthermore, that the use of the quantitative targets has promoted a one-dimensional view of development and the process has strengthened the “money-

¹⁴ The observations for start and end dates: 1990 and 2009 are estimates only.

metric and donor-centric view of development” (2011, p. 1). Sanga argued specifically regarding the MDGs that: “a major weakness is the assumption that data would be available. Countries have been struggling to build their capacity to collect, process and disseminate the requisite data” (2011, page?).

In some cases, the MDGs have meant a windfall of economic resources for the statistical offices. National accounts divisions have complained that this means that staff from already undermanned divisions are pulled to sections where data are collected for the MDG indicators. National stakeholders, such as the central banks, have lamented that they suspect that the quality of the important economic growth data have been decreasing and have noticed that, as a result of more resources for data collection, analysis and dissemination have suffered. These concerns have been echoed by representatives from IMF and World Bank. The concern is that the limited capacity of the statistical offices is further constrained by the Millennium Development Goals agenda.

4. CONCLUSION

The cases of upward revisions discussed here point to a general problem of dealing with ad-hoc revisions. Ghana’s income was just revised upwards by over 60 per cent. More upward revisions are likely to be forthcoming from other countries, and it is not likely that they will be as well documented as they were in the cases of Ghana, Tanzania and Zambia. Perhaps most surprisingly, upwards revisions like these are in line with global standards. Some countries are still following the 1968 Standard of National Accounts, while others have already implemented

the 1993 or 2008 standard.¹⁵ The problem is that they are unequally adapted at the local level. Furthermore, there is no agreement on a method for dealing with the growth effects of these revisions. The national income accountants in the countries that I visited had been contacted recently by IMF representatives who recommended substantial upward revisions of the national income estimates. It was recommended that the increase be ‘spliced’ in backwards, thus creating an illusory acceleration of economic growth in the most recent years. Essentially this means that instead of adding a 60 percent increase in a single year, the increase is divided into separate parts and added to the estimates for earlier years. An equally important issue is how the revisions affect cross country comparisons. As a result, the data used to assess development is in a precarious state.

What do to about it? Best practice needs to be based on local conditions and not solely on international standardization. Transparent recording of data deficiencies that pertains to specific countries is sorely needed. Drawing attention to data deficiencies is not only a first step towards solving them; it will also mean that the chances of scholars and practitioners of development do not draw incorrect inferences from poor statistics.

Ambition regarding monitoring efforts over a specific project should also be tempered by a holistic view on the capacity of the statistical office to deliver information upon which one can confidently govern. The MDGs agenda is committing the same mistakes as were committed at independence, during structural adjustment and during the era of poverty reductions. Targets, and the policies needed to reach them, were identified first but less thought was given to where

¹⁵ As far has been possible to gather; only Cameroon and Lesotho is currently on the way to upgrade to SNA 2008. The majority of countries reports using SNA 1993, while three of 23 responding countries reported to be using 1968 SNA. If one should venture a guess, it is not likely that non-responding countries have more up to date methodologies, rather the opposite.

this information should come from. It may be a useful suggestion to turn the initial question around. Rather than asking what kind of development we should target – the question should be: what kind of development can we monitor.

Currently funds are being made available to statistical offices but in an uncoordinated fashion. Typically, support has been ad-hoc and directly linked to particular donor funded projects. In this manner, donors distort data production rather than building up statistical capacity. It has been observed that this stretches current manpower and infrastructural resources. The statistical officers are richly enumerated in terms of per diem allowances when engaged in data collection, but this means less people and resources for analysis and dissemination.

In terms of more technocratic advice this book would like to issue a further call for tempering ambitions. The international standardization of measurement of economic development has led to a procedural bias. Thus there has been a tendency to aim for high procedural adherence, rather than to focus on the contents of the measures. Development measures should take their starting point in local data availability, and not create measures reliable by appearance only. A typical tendency has been to aim for high validity, rather than reliability. There is a preference for aggregation, a preference for conducting a census and for getting the level estimates. These preferences come at the expense of prioritizing frequent reporting of survey data that tells data users something useful about changes. In practice this means that there is funding made available for big one off data collection projects. This preference is shared by the statistical office and donors, as the statistical office gets access to per diem funding for data collection, while the donors fulfil demanding global standards of statistical sophistication.

A change in the funding structure at the statistical offices is needed. Not only more funding, but funding geared towards reliable and frequently disseminated surveys. It is better to survey 50 minibuses each year and thereby get an impression of earnings and services provided in the small scale transport sector regularly, rather than to have one transport census every 30 years and hope that change before, after, and in between roughly follows the number of license plates issued in the country. There also needs to be a shift in funding so that statistical offices are rewarded for dissemination and analysis. Independence of the statistical office is not only a legal matter; it also derives from ability to survey, analyse and disseminate. More regular survey funding would also leave the statistical offices with a better capability to collect data independently of government or donor projects in the country.

Income and growth data users are currently given very little help from the data providers. The metadata – information accompanying the data files - are lacking or insufficient. In order to best judge the quality of the estimates, the user needs to know when the last revision of the baseline estimate was undertaken. The availability of data on the informal sector will depend on when the last time a household budget survey was conducted. Finally, to avoid misunderstandings the data users should be informed about the structural breaks in the series. Transparency in reporting, meaning that international databases acknowledge their sources and report metadata appropriately will be helpful in turning the attention of the development community to the important role played by the local statistical offices.

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