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GHANA'S NEW NATIONAL INCOME DATA SERIES: FOLLOW-UP TO M HUQ AND M TRIBE'S THE *ECONOMY OF GHANA: 50 YEARS OF ECONOMIC DEVELOPMENT* (PALGRAVE MACMILLAN, 2018)

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Ghana's New National Income Data Series: Follow-up to M Huq and M Tribe's *The Economy of Ghana: 50 Years of Economic Development* (Palgrave Macmillan, 2018)

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Abstract

This paper follows from the publication of our jointly authored book on the Ghanaian economy which was published in September 2018 (Huq and Tribe, 2018). This volume contains an extensive database which provides consistent series for most of the major macroeconomic features of the economy from 1960 to 2015. However, later in September 2018 the Ghana Statistical Service (GSS) published a significant update of the national income statistics (GSS, 2018a) and in this paper we aim to explore some of the implications of this update. As originally published, the new national income data do not permit a direct comparison of the old and new series at constant prices of the same year, and the paper contains estimates which contribute to covering this omission. The calculations using the new data series also provide estimates for constant price data which demonstrate the structural changes reported by the GSS publications in more detail than was contained within the official data release. Using a range of new data sources (including the Integrated Business Enterprise Survey – GSS, 2017b – and the Labour Force Survey – GSS, 2016) within the 2008 edition of the United Nations System of National Accounts (UN, 2008) the new national income series includes an upwards shift of approximately 30 per cent in GDP, and new estimates of manufacturing value added which amount to an increase of approximately 350 per cent. Statistical comparability of the new GDP series, particularly within sub-Saharan Africa, is an area which will need further consideration.

Keywords: Economic Development; Macroeconomic Analyses; Formal and Informal Sectors; Development Planning and Policy; Institutions and Growth; Economic Statistics; Sub-Saharan Africa – Ghana

JEL Codes: O1, O11, O17, O2, O20, O55

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1. Introduction

This discussion paper is intended to provide an update on some of the developments in the Ghanaian economic sphere since the publication of our book, *The Economy of Ghana: 50 Years of Economic Development* in September 2018 (Huq and Tribe, 2018). The manuscript of our book was completed in mid-2017 and since then there have been some significant events, notably the publication of a new series of National Income data by the Ghanaian Statistical Service (GSS, 2018a) based on the 2008 version of the United Nations *System of National Accounts* (UN, 2008 and 2018).

The order of discussion is as follows. Following this Introduction Section 2 presents a brief sketch of the data base which we developed for our book (Huq and Tribe, 2018: Appendices A and B). Section 3 then presents the basic data from the 2018 revision of the Ghanaian national income statistics, compares this with the previous data series (which was first published in 2010), and discusses some of the implications which arise from the comparison. Section 4 presents and reviews some basic data from the 2015 Labour Force Survey of 2015. Section 5 discusses the state of Ghanaian economic statistics and, finally, in Section 6 some brief conclusions are drawn. Appendix A discusses some specific aspects of statistics for the Ghanaian manufacturing sub-sector.

2. The database developed for the Huq and Tribe book (2018)

As in the first edition of the book (Huq, 1989), the second edition (Huq and Tribe, 2018) is based on a substantial and systematic databank. The creation of the new databank, covering the period from the early 1960s to the mid-2010s, was a very demanding task.[1] A fundamental element of the databank is the completely new series of national income data which was released in 2010 with a base year of 2006 and using the 1993 edition of the United Nations *System of National Accounts* (UN, 1993). This new national income series had a level of GDP which was 60 per cent higher than the data which were replaced (the previous series had been based on the 1968 UNSNA with a base year of 1993) (GSS, 2010). In 2007 the Ghanaian currency – the cedi – was redenominated, with all cedi nominal values being reduced by a factor of 10,000 (Bank of Ghana, 2007). Over the years there has been very considerable inflation in Ghana (Huq and Tribe, 2018: Table B.12 pp. 456-457). These three factors combined – the new series of national income data, the redenomination of the currency, and the

degree of inflation – made the creation of a set of national income data valued at constant prices (for 2006) extremely important as a basis for reaching meaningful conclusions about the development of the Ghanaian economy. Another factor making the creation of the database a high priority during the preparation of our book was the fact that many of the economic statistics were published in a very diverse range of documents (including online statistical sources) due to the absence of a consolidated body of statistics published by the Ghanaian government.

The principal sources of economic data for our book were the Ghana Statistical Service (GSS), the Bank of Ghana (BoG), and the annual *State of the Ghanaian Economy* published by the Institute of Statistical, Social and Economic Research of the University of Ghana (ISSER, various years). The Ghanaian *Quarterly Disgust of Statistics* (GSS, various dates (a)) had been a regular and reliable statistical source over the years from the early 1980s until this publication was discontinued in 1999-2000. In several cases it was necessary to undertake time-consuming searches in order to obtain representative data for some particular aspects of the economy, with some published sources involving significant inconsistencies. One example of this was the data on international personal remittances (Huq and Tribe, 2018: 269-72) where some of the data provided in the World Bank's *World Development Indicators* differed significantly from those given in the Bank of Ghana's *Statistical Bulletin*. In the second edition of his book on the Ghanaian economy (*Development Economics in Action*), Tony Killick expressed his serious concern about the state of Ghanaian economic statistics: "Many a researcher has wrestled with the inconsistencies and error margins in many of Ghana's statistical series and this condition has not improved over time. In fact, it may well be that in some areas the statistical services today are less dependable than in the early-1960s." (Killick, 2010: 397). Killick's criticism relates to a considerable amount of the official data which are used in the Huq and Tribe (2018) book, but circumstances – and the data – have been evolving.

As is emphasised in the Appendix to Chapter 3 of the book (Huq and Tribe, 2018: 41-49), a considerable amount of macro-economic analysis and interpretation of economic events depends upon a view of the reliability and consistency of the national accounts statistics. The creation of a consistent series of GDP data covering a long period (from 1960 to 2015), and of ratios for important economic parameters as a

proportion of GDP (such as those for Savings, Investment, Public Expenditure, Tax Revenue, Imports and Exports, and Official Development Assistance to give a few examples), was a high priority. The cooperation of the Ghana Statistical Service (GSS) in making available detailed data from the national accounts data series which was first released in 2010 and in providing advice for their interpretation is gratefully acknowledged.

It is apparent from the documents which are accessible on the websites of the IMF and of the World Bank that the IFIs have been at the very centre of the exercises to update the Ghanaian national accounts statistics. This includes the provision of technical assistance for these exercises (which was also provided by other members of the international aid community – notably the UK's DFID), but also in terms of applying pressure for the exercises to be undertaken and to be completed in a timely manner. In the case of the IMF, country reports were quoted in the appendix to Chapter 3 of our book dealing with national accounts statistics (Huq and Tribe, 2018: 42-44; IMF, 2011: 86 and 2014: 10). In the case of the World Bank, the 2013-2016 Country Partnership Strategy contained some significant comments about Ghanaian economic statistics (Huq and Tribe, 2018: 44; World Bank, 2013: 148).

Some clarification is needed in relation to the two significant upward adjustments of Ghana's national income statistics in 2010 and 2018. Following the development of the new series over the period 2006-2010, and its release in 2010, it would have been necessary to update all national income data for the years prior to 2006 if these were to have some consistency with the 1993 UN SNA and with the new data series. This would have involved a considerable volume of work, entailing upgrading from the 1968 SNA to the 1993 SNA methodology, assuming that the basic data required for such an exercise were available. Such an upgrade would have involved differential impacts on individual sectors and sub-sectors of the economy, meaning that no easy conversion ratio could have been used for such an adjustment. Following the development of the most recent new series of national income data over the years 2013 to 2018, and its release in 2018, a similar upgrading exercise would be needed for national income data prior to 2013 if some consistency is to be ensured.

3. Ghanaian National Income Accounts: 2010 and 2018 Data Series

The data series released in 2010 increased the level of the GDP by approximately 60 per cent over the previous series, and the new 2018 series has added another 28 to 34 per cent on top of the data based on the 2010 revision (see below Table 4). This means that there has now been a total increase of just over 100 per cent in the level of GDP as compared with the GDP data series which was in use before 2010. To make this clearer we can describe the national accounts data prior to the 2010 series as SNA 1968 (base year 1993) (GSS, 2010), the 2010 national accounts data series as SNA 1993 (base year 2006), and the 2018 series as SNA 2008 (base year 2013).

Table 1 presents the main 'Key Findings' from the Ghana Statistical Service publication of September 2018 which contained the principal data from the new GDP series release (GSS, 2018b) together with some added calculated data based on some GSS sources. The GSS version of the 'old' data series (based on the 2010 release methodology) gives 'overlapping' GDP statistics for 2013 to 2017 at 2006 prices. It is not possible to compare changes to the 'real' value of GDP if 2006 prices are used for the 'old' series and 2013 prices are used for the 'new' series. Consequently, for Table 4 (and also for Table 1), the 'old' GDP series has been converted to 2013 prices using the GDP deflator (which links the 2006 prices to current prices) from a 2017 GSS publication (GSS, 2017a).

Table 1 also develops the GSS data to show per capita GDP and GDP growth rates at 2013 prices (all in Ghana cedis – Gh₵). At constant 2013 prices GDP fell between 2013 and 2014 for both the 'old' and the 'new' data series, but growth resumed after this to a more 'normal' (relative to recent experience) rate of around 3 per cent per annum. For both the 'old' and the 'new' series there was a substantial increase in real GDP between 2016 and 2017, principally due to changes in the international oil price. The per capita GDP in Gh₵ at constant 2013 prices increased by 10.9 per cent between 2013 and 2017 on the basis of the 'old' GDP series, and by 7.4 per cent on the basis of the 'new' GDP series. Even though the 'new' GDP data series gives a lower per capita income growth than the 'old' series, 7.3 per cent is still a significant increase over four years – allowing for the fact that population grew by 9.6 per cent over this period (see Table 2). The US$ per capita GDP for 2017 is significantly

Table 1 – Major Ghanaian Statistical Features – based on Ghana Statistical Service 2018 with calculations

	2013*		2014*		2015*		2016*		2017*	
Absolute Values	old	new	old	new	old	new	old	new	old	new
Population estimate (million)	26.43	26.43	27.04	27.04	27.67	27.67	28.31	28.31	28.96	28.96
Average exchange rate (₵/$)	1.92	1.92	2.94	2.94	3.78	3.78	3.92	3.92	4.36	4.36
GDP (current prices) (million Gh₵)	93,416	123,650	113,343	155,433	136,957	180,399	167,353	215,077	205,914	256,671
GDP (constant 2013 prices) (million Gh₵) (a) (b)	93,552	123,650	90,507	120,144	93,979	122,731	97,480	126,866	113,686	145,438
GDP (current prices – (million US$)	48,654	64,401	38,612	52,950	36,264	47,767	42,685	54,858	47,269	58,920
Per capita GDP (current prices) (Gh₵)	3,535	4,679	4,192	5,748	4,950	6,520	5,911	7,597	7,110	8,863
Per capita GDP (constant 2013 prices) (Gh₵) (c)	3,535	4,679	3,347	4,443	3,396	4,436	3,443	4,481	3,926	5,022
Per capita GDP (current prices) (US$)	1,841	2,437	1,428	1,958	1,311	1,726	1,508	1,938	1,632	2,035
Growth Rates (per cent)										
GDP at current market prices	24.0		21.3	25.7	20.8	16.1	22.2	19.2	23.0	19.0
GDP at constant 2013 prices (c)			-3.25	-2.84	3.84	2.15	3.73	3.37	16.62	14.64

*Provisional

Source: GSS, 2018b – Key Findings Table – and calculated values as indicated below in the Notes.

Notes: 'old' = GDP data on 2006 base year and 1993 UN SNA; 'new' = GDP data on 2013 base year and 2008 UN SNA. Per capita GDP in US$ decrease and increase between years due to changes in the foreign exchange rate as well as changes in GDP values. (a) From Table 4 in this paper for 2013 and 2017 – the same methodology has been used as is explained in the notes to Table 5 using the respective deflators for the intervening years taken from the GSS 2017 source.(b) The discrepancy between the current (2013) prices GSS value for the 'old' 2013 GDP value of Gh₵93,416 million and the calculated 'old' value of Gh₵93,552 is insignificant within acceptable margins of error. (c) calculated – for 'new' GDP values this is taken from the GSS (2018b) source and for 'old' GDP values this constant price GDP divided by the population level. All other data taken directly from the GSS (2018b) source.

Table 2 – Major Ghanaian Statistical Features based on Table 1 – Indices of values

	2013		2014		2015		2016		2017	
Absolute Values	old	new	old	new	old	new	old	new	old	new
Population estimate (2013 = 100.00)	100.00	100.00	102.31	102.31	104.69	104.69	107.11	107.11	109.57	109.57
International value of the Gh₵ (2013 = 100.00)	100.00	100.00	65.31	65.31	50.79	50.79	48.98	48.98	44.04	44.04
GDP (constant 2013 prices) (million Gh₵)	100.00	100.00	96.75	97.16	100.46	99.26	104.20	102.60	121.52	117.62
Per capita GDP (constant prices) (2013 = 100)	100.00	100.00	94.56	94.97	95.95	94.81	97.28	95.79	110.91	107.35

Sources and Notes to Tables 2: Sources are as for Table 1. 'old' = GDP data are for the 2006 base year using the 1993 UN SNA; 'new' = GDP data are for the 2013 base year using the 2008 UN SNA. Notes: (a) From Table 4 in this paper for 2013 and 2017 – the same methodology has been used as explained in the notes to Table 1 using the respective deflators for the intervening years taken from the GSS 2017 source.

lower than the 2013 values for both the ‘old’ and the ‘new’ GDP series especially because of the substantial fall in the international value of the Gh₵ over this period.

Table 2 shows index values for four major statistical series. Population increased by just below 10 per cent in total between 2013 and 2017. The international value of the cedi fell by about 56 per cent. At constant 2013 Gh₵ values GDP grew by 21.5 per cent between 2013 and 2017 for the ‘old’ series and by 17.6 per cent for the ‘new’ GDP series. GDP per capita in Gh₵ and constant 2013 prices grew by 10.9 per cent for the ‘old’ data series and by 7.4 per cent for the ‘new’ data series between 2013 and 2017. It is particularly notable that over this period there was a drop in the international value of the cedi, and a sustained comparatively high rate of inflation, as shown clearly in Table 3.

For comparative purposes Table 3 presents a set of Ghanaian statistical ‘features’ sourced from the December 2018 version of the World Bank’s ‘*World Development Indicators*’ (WDI) (World Bank, 2018a). The GDP data in this table are still based on the ‘old series’ (first released in 2010), and the table also shows more GDP data expressed in US dollar values (current prices, constant 2010 prices and constant 2011 – and current – international PPP prices). At the time of writing (early 2019) the World Bank had not updated its Ghana WDI data to reflect the ‘new’ GDP series of 2018. The range of US dollar values for GDP and for GDP per capita is wide, with the current price value for GDP being less than half of the PPP (purchasing power parity) current price value. The PPP adjusts for the real purchasing power of the US dollar in the domestic economies of other countries, so that if a large number of goods and services in Ghana can be purchased at dollar prices (at the ruling exchange rate between the Gh₵ and the dollar) which are significantly lower than the dollar prices in the USA, this would explain the higher PPP value of the Ghana GDP.

There are two adjustments which have been made to the data in Table 3, and these relate to the GDP deflator and to the Consumer Price Index. Both of these parameters have been taken from the WDI for December 2018 and have then then recalculated with 2013 as the base year in order to be consistent with the base year used in the

Table 3 – Major Ghanaian Statistical Features – World Development Indicators December 2018

Indicator Name	2010	2011	2012	2013	2014	2015	2016	2017
GDP (constant 2010 US$ million)	32,174.77	36,694.40	40,104.34	43,036.98	44,752.37	46,469.54	48,199.09	52,299.46
GDP (constant Gh₵ millions)	24,100.59	27,486.03	30,040.25	32,236.95	33,521.87	34,808.12	36,103.65	39,175.04
GDP (current US$ millions)	32,174.77	39,566.30	41,939,73	47,805.70	39,086.63	37,338.43	42,803.58	47,330.02
GDP deflator (base year for Ghana is 2006)	191.04	217.62	250.71	289.78	338.12	393.46	463.54	525.63
GDP deflator (adjusted to 2013 = 100) (a)	65.93	75.10	86.52	100.00	116.68	135.78	159.96	181.39
Consumer Price Index (adjusted to 2013=100) (b)	76.89	83.60	89.55	100.00	115.49	135.30	158.91	178.57
GDP growth (annual %)	7.90	14.05	9.29	7.31	3.99	3.84	3.72	8.51
GDP per capita (constant 2010 US$)	1,312.61	1,460.66	1,558.48	1,633.51	1,659.80	1,684.73	1,708.78	1,813.84
GDP per capita (constant Gh₵)	983.21	1,094.11	1,167.38	1,223.59	1,243.27	1,261.95	1,279.97	1,358.66
GDP per capita growth (annual %)	5.22	11.28	6.70	4.81	1.61	1.50	1.43	6.15
GDP per capita, PPP (constant 2011 international $)	3,059.38	3,404.46	3,632.45	3,807.34	3,868.60	3,926.71	3,982.77	4,227.63
GDP, PPP (constant 2011 international $)	74,991.93	85,526.14	93,473.90	100,309.21	104,307.40	108,309.71	112,340.90	121,897.91
GDP, PPP (current international $)	73,474.95	85,526.14	95,195.74	103,806.79	109,881.64	115,335.16	121,154.04	133,826.20

Source: World Bank, 2018a. The GDP statistics in this table are based on the 1993 UNSNA and have 2006 as the base year – i.e. prior to the 2018 GDP Update

Note: (a) The base year for the deflator (GDP price inflation index) included in the WDI is the same as the base year for the GDP statistics – which is 2006 for the December 2018 edition of the WDI (as shown above for the source). (b) The base year for the Consumer Price Index in the WDI is 2010 and for this table the index has been re-calculated with 2013 as the base year.

Note that this data was downloaded from the World Bank website in December 2018.

other tables relating to the GDP statistics. It can be seen that although the GDP deflator and the Consumer Price Index data move in exactly the same pattern, they are not identical for the obvious reason that they are measuring different economic phenomena. However, since both relate to the same set of Ghanaian economic circumstances, they are close together, as is to be expected.

Table 4 contains the explanation of the calculation (estimation) of GDP values for the 'old' series (based on 2006) from the data included in the GSS document which has been used for much of this discussion (GSS, 2018b). It also contains broad sectoral GDP (value added) data on a comparative basis for the 'old' and the 'new' series all at constant prices of 2013.

First, Table 4 shows that for overall GDP the effect of the re-basing of the national income series on 2013 (instead of 2006), of using the 2008 edition of the UNSNA (instead of the 1993 edition) and of using additional sources of data has been to raise the GDP value for 2013 at 2013 prices by 34 per cent. For GDP in 2017 at 2013 prices the effect has been to raise the GDP value by slightly below 30 per cent. Added to the 60 per cent increase in GDP values due to the 2006-2010 re-basing exercise, the results of which were released in 2010, this means that GDP values are now (2018) at a level which is about double that of the values in the version which was replaced in 2010.

Second, Table 4 shows a breakdown between the main economic sectors in the economy, with values for GDP in each sector for 2013 and 2017 at 2013 prices. This aspect of the table shows that the 'new' series value added for the agricultural sector in 2013 was 25 per cent higher than the 'old series', that the 'new' series value added for the industrial sector was 71 per cent higher than the 'old' series, and that the 'new' series value added for the services sector was just over 7 per cent higher than the 'old' series.

The GDP value for 2017 in the 'new' series for the agricultural sector was 17 per cent higher than the 'old series', the 'new' series value added for the industrial sector was 81 per cent higher than the 'old' series, and the 'new' series value added for the

Table 4 – Principal GDP Statistics – 2013 and 2017old and new at constant 2006 and constant 2013 prices)(Gh₵ Million)

	2013 GDP			2013 GDP			2017 GDP		2017 GDP		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	old (2006 prices)	new (2013 prices)	2013 deflator for 2006 prices	old (2013 prices)	new (2013 prices)	Ratio of new 2013 data at 2013 prices to old 2013 data at 2013 prices	old (2006 prices)	new (2013 prices)	old (2013 prices)	new (2013 prices)	Ratio of new 2017 data at 2013 prices to old 2017 data at 2013 prices
AGRICULTURE	7,035	25,290	288.70	20,310	25,290	1.2452	8,441	28,503	24,370	28,503	1.1696
INDUSTRY	8,475	43,104	296.75	25,151	43,104	1.7138	9,888	53,191	29,342	53,191	1.8128
SERVICES	15,798	48,408	285.20	45,056	48,408	1.0744	19,554	55,776	55,768	55,776	1.0001
GROSS DOMESTIC PRODUCT at basic prices	29,994	116,802	290.20	87,042	116,802	1.3419	36,450	137,471	105,777	137,471	1.2996
Net indirect Taxes	2,243	6,848	290.200	6,510	6,848	1.3419	2,725	7,967	7,909	7,967	1.0073
GROSS DOMESTIC PRODUCT in purchasers' value	32,237	123,650	290.20	93,552	123,650	1.3419	39,175	145,438	113,686	145,438	1.2793

Sources: GSS, 2017; GSS, 2018b.

Notes:
(a) from Table 1.3 in GSS, 2018b;
(b) from Table 1.3 in GSS, 2018b;
(c) from Appendix 6 in GSS, 2017 – the deflator gives the ratio of the sector price index for 2013 to the sector price index for 2006 and so gives values at 2013 prices rather than 2013 prices with the base year 2006 – the same approach has been used for the intervening years to arrive at base-year 2006 GDP values at 2013 prices;
(d) calculated from cols (a) and (c);
(e) from Table 1.3 in GSS, 2018b;
(f) calculated from cols (d) and (e);
(g) from Table 1.3 in GSS, 2018b;
(h) from Table 1.3 in GSS, 2018b;
(i) calculated from cols (g) and (c);
(j) from Table 1.3 in GSS, 2018b;
(k) calculated from cols (i) and (j)

services sector was almost exactly the same as for the ‘old’ series. This means that the adoption of the revised methodology and the addition of new data sources have disproportionately affected the industrial sector, which has increased very substantially, as compared with the agricultural and services sector. Indeed the recorded size of the services sector has effectively not increased at all.

The question which then arises is that of how to explain the significant increase in the value of the industrial sector value added in the ‘new’ GDP series. To focus initially on the manufacturing sector, Table 5 shows that for 2013 (at constant 2013 prices) the value added according to the ‘old’ data series was Gh₵4,627 million while the value added in the ‘new’ data series was Gh₵14,523 million – an increase of 314 per cent. For 2017, the manufacturing value added in the ‘old’ data series (again at constant 2013 prices) was Gh₵4,741 million and in the ‘new’ data series it was Gh₵17,336 million – an increase of 366 per cent. These are extraordinary increases in the manufacturing value added, comparing the ‘old’ data series with the ‘new’ one. It was possible to consult with the GSS to seek clarification of why such a considerable increase came about. The explanation is that, in addition to moving from the 1993 UN SNA to the 2008 UN SNA between the two GDP data series, new sources of data became available within the Integrated Business Establishment Survey (IBES – GSS, 2015a, 2017b, 2018c and 2018e) which was a survey/census covering all non-household establishments (large, medium, small and micro). This new data source has much more comprehensive coverage than sources which were previously available, particularly including smaller scale enterprises (GSS, 2018c). Appendix A to this paper provides further information on the nature of the Ghanaian IBES.

The effect of this revaluation of the manufacturing value added statistics contained within the new GDP series was to increase the proportion of GDP originating in the manufacturing sub-sector from 5.3 per cent to 12.4 per cent in 2013, and from 4.5 per cent to 11.7 per cent in 2017, as can also be seen in Table 5. One effect of this change in the sub-sectoral value added data for manufacturing is to throw more light on to some of the conclusions published in Huq and Tribe (2018) – the writing of which was all completed prior to the publication of the new GDP data, and before we became aware of the existence of the Integrated Business Establishment Survey (IBES – GSS,

Table 5 – Gross Domestic Product by Sector and Sub-Sector 2013 and 2017
Gh₵ millions 2013 constant prices and Per cent

		2013		2013		2017		2017	
		2013 prices	2013 prices	Per cent		2013 prices	2013 prices	Per cent	
		old	new	old	new	old	new	old	new
1.	AGRICULTURE	20,310	25,290	22.4	21.7	24,370	28,503	18.3	21.2
1.01	Crops	15,172	17,062	17.4	14.6	14,982	19,535	14.2	15.4
	o.w. Cocoa	1,910	1,980	2.2	1.7	1,857	1,930	1.8	1.8
1.02	Livestock	1,179	4,354	1.4	3.7	1,172	5,362	1.1	3.0
1.03	Forestry and Logging	1,946	2,048	2.2	1.8	2,004	2,060	1.9	1.7
1.04	Fishing	1,204	1,826	1.4	1.6	1,229	1,546	1.2	1.2
2.	INDUSTRY	25,151	43,104	27.8	36.9	29,342	53,191	25.5	33.2
2.01	Mining and Quarrying	8,196	15,933	9.4	13.6	6,189	20,092	5.9	10.7
	*o.w. Oil****	7,172	6,803	8.2	5.8	5,927	11,279	5.6	3.5
2.02	Manufacturing	4,627	14,523	5.3	12.4	4,741	17,336	4.5	11.7
2.03	Electricity	379	1,327	0.4	1.1	1,074	1,780	1.0	1.8
2.04	Water and Sewerage	548	680	0.6	0.6	495	768	0.5	0.6
2.05	Construction	10,455	10,641	12.0	9.1	14,476	13,216	13.7	8.3

Table 5 – Gross Domestic Product by Sector and Sub-Sector 2013 and 2017
Gh₵ millions 2013 constant prices and per cent (continued)

		2013		2013			2017		2017	
		2013 prices	2013 prices	Per cent			2013 prices	2013 prices	Per cent	
		old	new	old	new		old	new	old	new
3.	SERVICES	45,056	48,408	49.8	41.4		55,768	55,776	56.2	45.6
3.01	Trade; Repair of Vehicles, Household Goods	5,033	13,118	5.8	11.2		6,704	14,492	6.3	14.0
3.02	Hotels and Restaurants	5,066	4,577	5.8	3.9		6,164	5,324	5.8	3.9
3.03	Transport and Storage	9,782	6,979	11.2	6.0		13,585	8,350	12.8	7.2
3.04	Information and communication	1,515	1,876	1.7	1.6		3,779	2,995	3.6	2.1
3.05	Financial and Insurance Activities	5,672	5,953	6.5	5.1		9,337	7,251	8.8	5.0
3.06	Real Estate	0	1,145		1.0		0	1,261		1.9
3.07	Professional, Administrative & Support Service activities	3,359	1,612	3.9	1.4		4,364	1,721	4.1	1.5
3.08	Public Administration and Defence; Social Security	5,113	4,265	5.9	3.7		5,697	4,547	5.4	3.3
3.09	Education	3,130	4,693	3.6	4.0		4,505	5,065	4.3	3.4
3.10	Health and Social Work	921	2,612	1.1	2.2		1,616	3,042	1.5	2.1
3.11	Community, Social and Personal Service Activities	3,746	1,579	4.3	1.4		3,663	1,730	3.5	1.2
	FISIM (Financial Intermediation Services Indirectly Measured)**									

Table 5 – Gross Domestic Product by Sector and Sub-Sector 2013 and 2017
Gh₵ millions 2013 constant prices and Per cent (continued)

		2013		2013			2017		2017	
		2013 prices	2013 prices	Per cent			2013 prices	2013 prices	Per cent	
		old	new	old	new		old	new	old	new
4.	GROSS DOMESTIC PRODUCT at basic prices	87,042	116,802				105,777	137,471		
	Net indirect Taxes		6,848					7,967		
5.	GROSS DOMESTIC PRODUCT in purchasers' value		123,650					145,438		

*Provisional ***Oil means Oil and Gas

Sources and Notes:

Sources: GSS, 2017; GSS, 2018a; GSS, 2018b.

Notes:

Sectoral GDP data - 'new' data has been sourced from the GSS 2018 publications relating to the new national income data – 2018b in particular; 'old' data for the economic sectors 1, 2 and 3 have been based on the sources and methods described in the notes to Tables1, 2 and 3;

Sub-sectoral data - 1.1 etc, 2.1 etc and 3.1 etc – have been based on calculations using aggregate GDP at basic prices and the sub-sectoral proportions taken from Table 1.4 of GSS, 2018b;

It will be appreciated that a considerable amount of 'estimation' is involved in this exercise but the orders of magnitude are sufficiently robust to be meaningful.

For example the Agriculture sector 'old' GDP for 2013 at 2013 prices is 20,310 million cedis from the GSS 2018b data adjusted to constant 2013 prices - as compared with the sum of the sub-sectoral value added data which is 19,500 million cedis

For the Industry sector 'old' GDP the GSS 2018b value adjusted to 2013 prices using the methodology previously described is 25,151 million cedis as compared with 24,204 million cedis using the value added estimates based on the sub-sectoral value added proportions

For the Services sector 'old' GDP the GSS 2018b value adjusted to 2013 prices using the methodology previously described is 45,056 million cedis as compared with 43,337 million cedis using the value added estimates based on the sub-sectoral value added proportions.

2017b). The first phase of the IBES consisted of the recording of basic non-household business establishment features, and it was not until the second phase that detailed operating statistics were collected. Because the data from the IBES are so recent it is also not referred to in other publications which are contemporary with Huq and Tribe (2018), such as the major book edited by Aryeetey and Kanbur (2017).

In the Huq and Tribe book (2018: Chapter 9 – Table 9.1 and 9.8 pp. 149 and 161) quite a lot of emphasis was placed on the declining proportion of manufacturing value added to GDP over the period from the year 2000, and in the relatively low proportion of GDP contributed by manufacturing by comparison with several other sub-Saharan African countries. However, with the new series of GDP data published in 2018, it is apparent that manufacturing value added has been significantly higher than was suggested by the statistics available at the time when our book was being prepared. It seems that for drawing firm conclusions about the level of manufacturing value added and its role in the Ghanaian economy we need to await the availability of more careful analysis based on the new national income data and of the sources used in its compilation (i.e. particularly the IBES and the Labour Force Survey data).

Table 5 also shows that the increase in the absolute level of manufacturing value added in the 'new' GDP series has a number of other implications for the interpretation of the structure of Ghanaian national income. One of these is that the value added of the industrial sector of the economy for 2013 is increased from 27.8 per cent of the total GDP for the 'old' series to 36.9 per cent in the 'new' series – and for 2017 from 25.5 per cent to 33.2 per cent – i.e. approximately an eight percentage points increase in its contribution to the economy. Within the industrial sector Mining and Quarrying has increased its share of GDP by about 8 percentage points (with Oil's share – within this sub-sector – falling by about 2 percentage points). The share of Construction value added fell by about 3 percentage points for 2013 and by about 5 percentage points for 2017. Another notable increase in the share of total GDP is seen in the Electricity sub-sector – albeit from a small base – so that in 2013 electricity's share of GDP increased from 0.4 per cent in the 'old' series to 1.1 per cent in the 'new' series, and in 2017 it increased from 1.0 to 1.8 per cent. This reflects a number of economic and financial factors related to the expansion of electricity generation and distribution which are discussed in Huq and Tribe (2018 pp. 125, 304-305, 318).

Again, in Table 5, it can be seen that the value added in the Agricultural sector slightly falls as a proportion of the total GDP between the 'old' and the 'new' GDP data series. Particularly notable in the Agriculture sector are slight falls in the proportion of GDP contributed by crops (including cocoa) in 2013, but for 2017 crops record a slight increase between the two GDP series (14.2 per cent to 15.4 per cent) while cocoa remains the same at 1.8 per cent. Forestry and logging records a slight fall (0.4 per cent and 0.2 per cent for 2013 and 2017 respectively), while Livestock records a substantial increase (from a small base) from 1.4 per cent of GDP to 3.7 per cent for 2013 and from 1.1 per cent to 3.0 per cent for 2017.

Perhaps surprisingly, the proportion of the total GDP contributed by the Services sector shows a significant fall between the 'old' and 'new' GDP data series, although the absolute level of Services sector value added increases slightly between the two GDP data series. Table 5 shows for 2013 that from 49.8 per cent of GDP in the 'old' series, the contribution of services fell to 41.4 per cent in the 'new' series, while for 2017 the share of the services sector in GDP fell from 56.2 per cent to 45.6 per cent between the two data series. This fall could be described as representing a decline of about 10 percentage points. Within the Services sector there is significant variation between the impact of the updating of the GDP statistics for different sub-sectors, probably largely reflecting the effect of the new sources for GDP data rather than the updated edition of the UN SNA used as a basis for 'new' data series. For example, Trade, Repair of Vehicles and Household Goods more than doubles in its proportion for 2017 (slightly less than doubles its proportion for 2013), most likely due to the availability of considerably better statistics on this sub-sector's activities from the IBES survey of 2016 (GSS, 2015a, 2017b and 2018e). On the other hand, for sub-sectors where the quality of data was probably not that much improved between the 'old' and 'new' GDP series (because it was already of a good standard) the proportionate share of GDP fell – for example in Transport and Storage, Financial and Insurance Activities, Administrative and Support Activities, Public Administration, Defence and Social Security. Other sub-sectors are perhaps more difficult to explain on this *a priori* basis and so it will be necessary to await more detailed analysis in the literature.

An evolution of the literature on the Ghanaian economy is likely on the basis of the 'new' GDP statistics and on the basis of the IBES data in particular. Recent estimates for the manufacturing sub-sector's total factor productivity have used the data sets generated by the World Bank's Regional Programme on Enterprise Development (RPED) (see for example, Ackah et al., 2012), but these will now have been supplanted to a considerable extent by the IBES data referred to above, as well as by the Labour Force Survey data (see below Section 3) data. However, because the RPED has been in operation for quite a considerable time, and because it covers several sub-Saharan African countries, the comparability of the manufacturing sub-sector value added and other data across the relevant countries will need to be considered afresh.[2]

There are other implications arising from the publication of a new series of GDP statistics which relate to consideration of the ratio of a range of parameters to the value of Ghana's GDP. Table 6 focuses on Government Final Consumption Expenditure (GFCE) as a proportion of GDP. This Table excludes Government Capital Formation and so does not, obviously, give a full picture of the extent of government's full participation in the economy. The GFCE data are published on the basis of current price statistics rather than constant (real value) price statistics – so it is the current price GDP series which needs to be used for any comparison. For the 'old' GDP series it can be seen from Table 6 that in 2010, GFCE was 7.07 per cent of GDP (the data for this series in Table 6 have been sourced from World Bank, 2018a). The proportion rose to 13.79 per cent in 2011 (a near doubling between the two years) before falling back to 11.76 per cent in 2012, and stabilising at between 9.00 and 10.00 per cent (between 2013 and 2017). For the 'new' GDP series it can be seen that the proportion of GDP accounted for by GFCE fell in the range of 6.91 per cent and 7.91 per cent between 2013 and 2017. The 'new' series is therefore running at about 2 per cent below the 'old' series in terms of the proportion of GDP committed to GFCE.

One of the problems associated with a comparison of international values with 'domestic' values in Ghana is that of which foreign exchange rate to use in order to avoid reaching misleading conclusions. As can readily be seen in Tables 1 and 2, the exchange rate between the Ghanaian cedi (Gh₵) and the US$ has fluctuated widely in recent years, thus making such comparisons more difficult. For this reason import

Table 6 – Government Final Consumption Expenditure as a Proportion of Gross Domestic Product (2006-based series and 2013-based series) 2010to 2017

	2010	2011	2012	2013	2014	2015	2016	2017
GDP (current prices - Gh₵ millions - 2006 base year) (a)	46,042	59,816	75,315	93,416	113,343	136,957	167,353	205,913
GDP (current prices) (Gh₵ millions – 2013 base year) (b)				123,650	155,433	180,399	215,077	256,671
GDP (current prices - US$ millions – 2006 base year) (a)	32,175	39,566	41,940	47,806	39,087	37,338	42,804	47,330
GDP (current prices US$ millions) (2013base year) (b)				64,401	52,950	47,767	54,858	58,920
General government final consumption expenditure (current prices - Gh₵ millions) (a) (n)	3,255	8,248	8,860	8,694	10,606	13,353	15,175	20,281
General government final consumption expenditure (% of GDP – 2006 base year) (a)	7.07	13.79	11.76	9.31	9.36	9.75	9.07	9.85
General government final consumption expenditure (% of GDP – 2013 base year) (c)				6.91	6.91	7.62	7.08	7.91

Sources: (a) World Bank, 2018a – Table 2 above; (b) GSS, 2018b – Table 1 above; (c) Calculated
Notes: (n) The value for General government consumption expenditure at current prices is not, of course, affected by the GDP data with which it is being compared.

Table 7 – Exports and Imports as a Proportion of Gross Domestic Product (2006-based series and 2013-based series) 2010to 2017

	2010	2011	2012	2013	2014	2015	2016	2017
Exports of goods and services (current US$ millions) (a)	9,484	14,614	16,927	16,344	15,448	16,587	17,584	18,892
Exports of goods and services (% of GDP – 2006 base year) (a)	29.48	36.94	40.36	34.19	39.52	44.42	41.08	39.92
GDP (current prices US$ millions) (2013 base year) (b)			64,401	52,950	47,767	54,858	58,920	
Exports of goods and services (% of GDP - 2013 base year) (c)			26.28	30.87	32.34	30.24	29.84	
Imports of goods and services (current US$ millions) (a)	14,769	19,529	22,148	22,690	19,124	20,955	20,658	24,004
Imports of goods and services (% of GDP - 2006 base year) (a)	45.90	49.36	52.81	47.46	48.93	56.12	48.26	50.72
GDP (current prices US$ millions) (2013-based GDP) (b)			64,401	52,950	47,767	54,858	58,920	
Imports of goods and services (% of GDP - 2013 base year)©			34.39	42.85	40.04	38.20	35.06	

Sources: (a) World Bank, 2018a – Table 2 above; (b) GSS, 2018b – Table 1 above; (c) Calculated

Table 8 –Official Development Assistance as a Proportion of Gross Domestic Product (2006-based series and 2013-based series) 2010to 2017

	2010	2011	2012	2013	2014	2015	2016	2017
Net official development assistance received (current prices – US$ millions) (a)	1,697.22	1,803.87	1,799.29	1,328.17	1,123.13	1,768.69	1,315.99	
Net official development assistance received (% of GDP - 2006 base year) (c)	5.27	4.56	4.29	2.78	2.87	4.74	3.07	
Net official development assistance received (% of GDP - 2013 base year) (c)				2.06	2.12	3.70	2.40	
GDP (current prices - US$ millions – 2006 base year) (a)	32,175	39,566	41,940	47,806	39,087	37,338	42,804	47,330
GDP (current prices - US$ millions – 2013 base year) (b)				64,401	52,950	47,767	54,858	58,920

Sources: (a) World Bank, 2018a – Table 2 above; (b) GSS, 2018b – Table 1 above; (c) Calculated

and export data in Table 7 have been sourced from the World Bank's *World Development Indicators*, and the GDP data have been sourced from Ghana Statistical Service data. It is hoped that the resulting comparisons do not misrepresent the economic reality – at least individual time series data should be internally consistent even if comparisons between different time series data are problematical.

Table 7 shows exports and imports as a proportion of GDP for both the 'old' and the 'new' GDP series. Focussing on the years for which data are directly comparable it can be seen that exports (for the 'old' GDP series) were running at between 34 and 44 per cent of GDP between 2012 and 2016, while for the 'new' series they were running at between 26 and 32 per cent of GDP. This amounts to an 8 per cent fall in the proportion of GDP, thus implying that Ghana is somewhat less export-dependent than was implied by the 'old' GDP series. Essentially the outcome from the upgrading of the Ghanaian GDP statistics based on the 2008 edition of the UN SNA, and using a wider range of available data sources (notably the IBES – see above), has been to re-balance perceived economic activity more towards the domestic economy.

Also shown in Table 7 are data for imports as a proportion of GDP, and these show that the impact of the 'new' GDP data series is similar to that for the export data. On the basis of the 'old' 2006-based GDP series imports of goods and services were between 46 and 56 per cent (allowing for rounding) of GDP between 2010 and 2017, with no obvious trend – either up or down. For the 2013-based 'new' GDP series imports of goods and services were between 34 and 43 per cent of GDP between 2012 and 2016 – the years for which directly comparable data is available. Again, unsurprisingly, there is no obvious trend. The effect of using the 'new' GDP series rather than the 'old' GDP series is to reduce the imports/GDP ratio by around 10 per cent, so that the use of the 'new' GDP series has the effect of reducing the 'recorded' external dependence of the Ghanaian economy, but without changing the underlying reality – i.e. the same outcome as with the export statistics discussed in the previous paragraph.

Table 8 contains data for Official Development Assistance (ODA) to Ghana for the years 2010 to 2016 sourced from the World Bank's *World Development Indicators* (World Bank, 2018a). It can be seen that as a proportion of the 'old' 2006-based GDP,

ODA fell from 5.27 per cent in 2010 to 3.07 per cent in 2016. Measured in current price US$, ODA fluctuated during this period, with a high of US$1.8 billion in 2011 and a low of US$1.1 billion in 2014. In part, the comparatively low proportion of ODA to GDP for these years reflects the sustained growth of the economy, and the perception amongst the donor community that aid to Ghana should be 'stabilised' so that greater attention could be given to other countries which had more pressing needs for ODA. This view seems to have been shared by the Ghana Government, which had been borrowing quite heavily from the international bond market (Huq and Tribe, 2018: 61-62). The effect of the higher level of GDP in the 'new' (2018) series of national income statistics was to reduce the ratio of ODA to GDP by around one percentage point so that over the period 2013 to 2016 there was a high of 3.70 per cent in 2015 and a low of 2.06 per cent in 2013.

4. The New Labour Force Survey, 2015

The 2015 Labour Force Survey (GSS, 2016) was undertaken in December of that year, and was published a year later, providing a wealth of information and statistics about the labour force, a considerable amount of which could be fed into the updating of the national income statistics. This was the first such labour force survey to be undertaken in Ghana. Although the report was available at the time of the finalisation of the manuscript of the Huq and Tribe (2018) book, by the time that the Labour Force Survey results were released the main structure of the book was already determined and so, unfortunately, it was not possible to incorporate any of the results in the book. Although the Huq and Tribe book (2018) does not provide any detailed analysis of Ghana's labour force and/or employment, it does record the difficulties – at the time of writing – of obtaining any comprehensive and consistent employment data. When the volume was being drafted there were two principal sources of employment data. The first of these was for large scale employers, and the data were published in the regular *Quarterly Digest of Statistics* – but this data series ended in 1991, and the *Quarterly Digest* ceased publication in 2000 (GSS, various dates (a)). The second was employment data derived from the Living Standards Surveys (GSS, various dates (b); Huq and Tribe, 2018: pp. 126-127 Tables 7.2 and 7.3, and p. 464 Table B.16).

Table 9 – Principal Statistics from the 2015 Labour Force Survey

Line No.	Nature of the Data	Data	Source and Notes
1	Total Population 2015 (based on the Population Census of 2010) (Number)	27,670,000	Table 2.1 page 12
2	o/w Urban (Number)	13,943,000	Table 2.1 page 12
3	o/w Rural (Number)	13,725,000	Table 2.1 page 12
4	Total Population Aged 15-64 (% of Total Population)	55.10%	Table 2.2 page 13
5	Total Population Aged 65 and over (% of Total Population)	4.90%	Table 2.2 page 13
6	Total Population Aged 15 and over (% of Total Population)	60.00%	Table 2.2 page 13
7	Labour Force (Number)	16,602,000	Calculated from data in Tables 2.1 and 2.2 and from the text definition of the labour force
8	Employed (Number)	11,222,952	Calculated from lines 7 and 9
9	Employed (% of Labour Force)	67.60%	Table 3.1 page 21
10	Unemployed (Number)	1,510,782	Calculated from data in Table 3.1 page 21 and line 7
11	Unemployed (% of Labour Force)	9.10%	Table 3.1 page 21
12	Not in Labour Force (Number)	3,536,226	Calculated from data in Table 3.1 page 21 and line 7
13	Not in Labour Force (% of Labour Force)	21.30%	Table 3.1 page 21
14	Working in Informal Sector (Number)	8,345,636	Table 7.1 page 84
15	Working in Informal Sector (% of Labour Force)	50.27%	Calculated from lines 14 and 7

Source: GSS, 2016.
Note: The Labour Force is defined as all those aged 15 years or over

Table 9 presents the principal data from the Labour Force Survey (LFS – GSS, 2016), showing that the labour force (defined as all those in Ghana's population aged 15 and over – GSS, 2016: p. 10) was 60 per cent of the population in 2015 (when the LFS survey was undertaken). This amounted to 16.6 million people. Those in the labour force who reported being employed (which included self-employment and other non-contract types of employment) amounted to 11.2 million, or 67.6 per cent of the total. An additional 3.5 million reported themselves (in the results, which were grossed up to provide totals from the sample survey) as being "not in the labour force" – which amounted to not being available for work (GSS, 2016: 21) due to, for example, being in full-time education or being retired. A further 1.5 million were unemployed (using a 'relaxed' version of the definition – GSS, 2016: 56) – meaning that they were potentially

available but were not working at the time of the survey. On this basis 9.1 per cent of the labour force was unemployed at the time of the survey.

The LFS also reported that almost 8.5 million people were working within the 'informal sector' – just over 50 per cent of the total labour force, and just over 74 per cent of those 'working'. This is an extremely high proportion of the labour force – and of those working – and radically modifies the conventional definitions of employment and of employment structures, which have been based on the economic conventions of developed industrial countries. The 'informal sector' is defined in the LFS as follows:

> "The definition of the informal employment as used in this report combines the concepts of informal production units and informal employment. Informal employment was defined as employment in an establishment where workers were not entitled to paid holidays or leave, sick or maternity leave and where there was no verbal or written contract at the time a person started to work. Any one the three conditions had to be fulfilled in order for a person to be classified as working in informal employment." (GSS, 2016: 83)

Table 10 shows the industrial breakdown of both the Total Labour Force and the Informal Sector (total, urban and rural). One of the most interesting features of this table is that in a large number of sub-sectors there is a close similarity in the breakdown for both the total labour force and for the informal sector labour force. It might have been expected that there would be some deviations in the sectoral proportions of employment since some types of economic activity lend themselves more to 'informal' employment than do other types of activity.

Table 10 – Major Industry of currently employed Population 15 years and older – Total and Informal Sector

	Total Labour Force		Informal Sector (Urban and Rural)	
	Number	Percent-age	Number	Percent-age
Columns	1	2	3	4
Total	9,263,346	100.00	8,855,706	100.00
Agriculture, Forestry and Fishing	3,330,089	35.95	3,322,246	37.52
Mining and Quarrying	74,663	0.81	64,534	0.73
Manufacturing	1,253,840	13.54	1,236,044	13.96
Electricity, Gas, Stream and Air Conditioning Supply	11,105	0.12	6,918	0.08
Water supply, Sewerage, Waste Management and Remediation Act	29,630	0.32	23,048	0.26
Construction	316,368	3.42	309,132	3.49
Wholesale and Retail; Repair of Motor Vehicles and Motorcycles	1,925,943	20.79	1,910,317	21.57
Transportation and Storage	252,215	2.72	236,948	2.68
Accommodation and Food Service Activities	405,658	4.38	397,866	4.49
Information and Communication	46,052	0.50	44,102	0.50
Financial and Insurance Activities	71,592	0.77	41,505	0.47
Real Estate Activities	6,102	0.07	6,103	0.07
Professional, Scientific and Technical Activities	81,602	0.88	61,746	0.70
Administrative and Support Service Activities	46,677	0.50	35,051	0.40
Public Administration and Defence, Compulsory Social Security	182,442	1.97	147,082	1.66
Education	534,379	5.77	390,673	4.41
Human Health and Social Work Activities	241,238	2.60	174,590	1.97
Arts, Entertainment and Recreation	69,563	0.75	67,612	0.76
Other Service Activities	313,711	3.39	309,711	3.50
Activities of Households as Employers; Undifferentiated Good	68,530	0.74	68,531	0.77
Activities of Extraterritorial Organisations and Bodies	1,947	0.02	1,947	0.02

Sources: GSS, 2016. Notes: Col 1 from Table 4.6 page 39; Col 3 from Table 7.7 page 90

Table 11 – Major Industry of currently employed Population 15 years and older – Total and Informal Sector (Urban and Rural)

	Total Labour Force		Informal Sector (Urban only)		Informal Sector (Rural only)	
	Number	Percent-age	Number	Percent-age	Number	Percent-age
Columns	1	2	3	4	5	6
Total	9,263,346	100.00	4,380,464	100.00	4,475,242	100.00
Agriculture, Forestry and Fishing	3,330,089	35.95	527,044	12.03	2,795,202	62.50
Mining and Quarrying	74,663	0.81	26,840	0.61	37,694	0.80
Manufacturing	1,253,840	13.54	787,916	17.99	448,128	10.00
Electricity, Gas, Stream and Air Conditioning Supply	11,105	0.12	6,918	0.16	0	0.00
Water supply, Sewerage, Waste Management and Remediation Act	29,630	0.32	20,201	0.46	2,847	0.1
Construction	316,368	3.42	208,884	4.77	100,248	2.20
Wholesale and Retail; Repair of Motor Vehicles and Motorcycles	1,925,943	20.79	1,370,767	31.29	539,550	12.10
Transportation and Storage	252,215	2.72	161,705	3.69	75,243	1.70
Accommodation and Food Service Activities	405,658	4.38	263,146	6.01	134,720	3.00
Information and Communication	46,052	0.50	36,295	0.83	7,807	0.20
Financial and Insurance Activities	71,592	0.77	39,128	0.89	2,377	0.10
Real Estate Activities	6,102	0.07	1,953	0.04	4,150	0.10
Professional, Scientific and Technical Activities	81,602	0.88	57,801	1.32	3,945	010
Administrative and Support Service Activities	46,677	0.50	26,642	0.61	8,409	0.20
Public Administration and Defence, Compulsory Social Security	182,442	1.97	112,770	2.57	34,312	0.80
Education	534,379	5.77	257,567	5.88	133,106	3.00
Human Health and Social Work Activities	241,238	2.60	131,968	3.01	42,622	1.00
Arts, Entertainment and Recreation	69,563	0.75	59,220	1.35	8,392	0.20
Other Service Activities	313,711	3.39	233,259	5.32	76,452	1.70
Activities of Households as Employers; Undifferentiated Good	68,530	0.74	48,493	1.11	20,038	0.40
Activities of Extraterritorial Organisations and Bodies	1,947	0.02	1,947	0.04	0	0.00

Sources: GSS, 2016. Notes: Col 1 from Table 4.6 page 39; Col 3 from Table 7.8 page 91; Col 5 from Table 7.9 page 92

Table 11 then shows the sub-sectoral breakdown for the labour force as a whole and for the informal sector in urban and rural locations separately. Here there are significant differences between the industrial breakdown of informal sector employment between urban and rural areas. However, there is an approximately 50 per cent share of informal sector employment in both urban and rural areas. Predictably the proportion of the informal sector agricultural employment is highest in rural areas (over 60 per cent of the total) while in urban areas the highest proportion of informal sector employment is to be found in wholesale and retail trade and the repair of motor vehicles and motorcycles. Overall, this LFS gives considerably more 'hard data' about the nature of the 'informal' sector employment than has been available previously.

Another interesting aspect of the Ghanaian LFS is the light that it throws on to the data sources for national income estimates as well as for labour force characteristics. In a conference paper and discussion paper from 1997/1998 Tribe discussed the basis for inclusion (or not) of 'non-monetary' (or 'unrecorded' – or 'informal sector') economic activity in official national income statistics (Tribe, 1998). It was found that the procedures for including estimates for these 'informal' sector economic activities varied widely between different sub-Saharan African countries. While Kenya, Tanzania and Uganda had the value of 'non-monetary' production/income in their national income accounts as an element separate from monetary production/income, Ghana had adopted the practice of including 'non-monetary' production/income in the 'regular' estimates of national income (not distinguishing between 'monetary' and 'non-monetary' elements). The results from the Ghanaian LFS of 2015 is a very good example of the way that the database which can be used in the preparation of national income statistics has been developing so that recently revised statistical series are both 'richer' in content and also more comprehensive.

5. Some Remarks about Ghanaian Economic Statistics

In our book (Huq and Tribe, 2018: 415-416 and Appendix A – pages 417-424) there is criticism of the quality and availability of Ghanaian economic statistics. Killick made a very similar criticism in the second edition of his book *Development Economics in Action* (Killick, 2010). In criticising Ghanaian economic statistics the Huq and Tribe book (2018) was mindful of two particular issues. First, statistical shortcomings make

economic management and serious independent economic commentary much more difficult than if the range, reliability and public availability were better. Second, over the last few decades Ghana's economic statistics and the publications in which they appear have compared unfavourably with those of some other sub-Saharan African countries.

However, in recent years there have been some notable developments on the statistical front – not least with the national income series, and with the labour survey and enterprise survey which are discussed in this paper. This is part of a concerted effort to improve the quality and availability of economic statistics. The *National Strategy for the Development of Statistics 2018-2022* (GSS, 2018d) gives some indication of the complexity of the tasks faced by the Ghana Statistical Service. The support of the international community is also evident throughout the recent development of new and updated statistical series and the World Bank, in particular, has a comprehensive project focussed on enhancement of Ghana's statistics (World Bank, 2018b).

However, the fact that there have been two major updates of the Ghanaian GDP data within a short time period (first in 2010 and then again in 2018) has made consistent economic analysis and commentary more difficult in the short-to-medium term period. The combined effect of the two revisions has been to increase the official total GDP by about 100 per cent – i.e. doubling the value of the GDP, a very considerable overall revision. The 2018 GDP revision also includes considerable changes to the balance of the economy as compared with the 2010 revision, with the Industrial sector as a whole increasing its 2013 share of the GDP from 27.8 to 36.9 per cent, and the Services sector falling from 49.8 to 41.4 per cent for the same year.

The justification for the successive updates is based on: a) the need to have a set of GDP statistics which conform with current international practice, b) the need to incorporate significant new data sources which were not previously available, and c) the fact that before the first of the updates in 2010 the base year for the GDP data was 1993 using the 1968 UNSNA, so that the GDP data at that time could be regarded as 'creaking at the seams'. When the 2010 GDP revision was released it used a base year of 2006 and the 1993 UNSNA and, at this time, the preparation of the current

2008 UNSNA had not, of course, been completed. Therefore, the updating of the Ghanaian GDP data (i.e. from the 1993 base year/1968 UNSNA) was undertaken in two stages – first to the 2006 base year/1993 UNSNA and then to the 2013/2008 UNSNA series.

In the international context, it is significant that the current GDP series published by at least four other sub-Saharan African countries employ the UNSNA of 2008. The current Kenyan GDP series was released in 2014 using a 2009 base-year (Kenya National Bureau of Statistics, 2014: 3). The current Ugandan GDP series uses the UNSNA of 2008 and a base year of 2009/2010 (Uganda Bureau of Statistics, 2018 and 2019; UNDP, 2013). The current Tanzanian GDP series was released in 2019 using a 2015 base year (URT, 2015: 2). The current Nigerian GDP series uses the UNSNA of 2008 and a 2010 base year (National Bureau of Statistics, 2018: 72 – Methodological Notes).

In addition to this programme for the updating of the existing series and for the development of new data series the range of publications by the Ghana Statistical Service has also been enhanced. In particular, the addition of a new *Ghana Statistical Yearbook*, with the first two editions covering data for the years 2010-2013 and 2012-2015 respectively (GSS, 2015b and GSS, 2018f) provides both a partial replacement for the erstwhile *Quarterly Digest of Statistics* (published over the years 1981 to 2000 – GSS, various dates (a)) and for the publication of data series which have not been previously been readily available. However, at the time of writing the *Ghana Statistical Yearbook* does not have a prominent presence on the Ghana Statistical Service's website (which can be found at www.statsghana.gov.gh).

6. Conclusions

The 2018 update of the Ghanaian national income statistics increased GDP by about 30 per cent as compared with the level of the previous series, leading to a combined 100 per cent increase since the earlier series of national income statistics which was replaced in 2010.

A comparison of the most recent set of Ghanaian national accounts (released in September 2018) with the previous version (released in 2010) shows that the

manufacturing sub-sector's value added in 2013 was 314 per cent higher, and its value added in 2017 was 366 per cent higher. This will give rise to a significant reconsideration of the position of manufacturing in the Ghanaian economy.

The presentation of the new series of national income statistics by the Ghana Statistical Service in the latter part of 2018 did not, originally, permit a full appreciation of the economic implications of the revised data. It is hoped that our attempts to extract some more meaningful interpretation of the significant differences between the UNSNA 1993/2006 base year GDP data and the UNSNA 2008/2013 base year GDP data will provide a basis for better understanding of the development of the Ghanaian economy. In the longer term the GSS will, no doubt, provide a full and authoritative set of national accounts based on the data and methods employed in the 2018 release, and our modest commentary will, obviously, require further consideration at a later stage. There is still some way to go before a full set of the new sectoral and sub-sectoral national income data is available as a basis for a fuller appreciation of the nature and performance of the Ghanaian economy.

Appendix A – Statistics for the Manufacturing sub-Sector

It proved to be impossible to track down a copy of the 1987 *Census of Manufacturing Activities* which is mentioned in the website of the Centre for the Study of African Economies at the University of Oxford (see endnote 2). This means that the details of the sampling and other characteristics of the data generation for this Census were not accessible at the time of drafting this discussion paper.

The 2003 *Industrial Census* is available (GSS, 2013) and it contains information about the successive reports on the generation of industrial statistics in Ghana:

> "The first industrial census in Ghana was conducted by the Central Bureau of Statistics, now the Ghana Statistical Service, in 1962. The census was an enumeration of all mining and quarrying, manufacturing, construction, electricity and distributive trade establishments. It provided

> basic information on the structure and activity of all industrial establishments in the country and constituted a frame for the organization of subsequent statistical enquiries into industry.
>
> The second census was conducted in 1987 in two phases: one in November-December1987 and the other in October-December 1988 with 1987 as the reference year. The first phase of the census was to obtain basic data on all establishments engaged in mining and quarrying, manufacturing and the production and distribution of electricity and water. Information was collected on location, industrial activity among others. The second phase of the census covered all in-scope establishments engaging ten or more persons and collected data on employment, earnings, fixed assets, stocks, costs and receipts.
>
> The third National Industrial Census was conducted in 2003 in two phases: one in October–November 2003 and the other in November 2004–March 2005 with 2003 as the reference year. Phase I of the census was to obtain basic data on all establishments engaged in mining and quarrying, manufacturing, construction and the production and distribution of electricity and water. Information was collected on location, industrial activity among others. Phase II of the census covered all in – scope establishments engaging less than 10 persons. It collected the same information as in the 1987 Phase II, and used an abridged questionnaire for the small establishments." (GSS, 2006: 4)

A considerable amount of information is available about the organisation of data collection for the more recent Integrated Business Enterprise Survey (IBES). A brief history of economic censuses and surveys in Ghana is given in Chapters 1 and 2 of the IBES report entitled *Comprehensive Sectoral Report* (GSS 2018e) together with a description of the methodology followed in the survey. In contrast to the 1987 and 2003 exercises, which were focused solely on the manufacturing sub-sector, the IBES was conceptualised as covering all business enterprises within the size and other criteria which had been set up for all sectors of the economy. The IBES of 2015/2016 was based on the following sampling approach:

> "IBES phase II is planned to obtain detailed information from a scientifically selected list of about 32,000 establishments from the

> Business Register. The survey covers a representative sample of establishments engaged in the production of goods and the delivery of services. These are non-household establishments engaged in economic activities or are non-profit institutions, and they cut across all the sectors of the economy. The survey will span a period of 14 months, starting with data collection in November 2015 and ending with publication of survey reports in December 2016." (GSS, 2015)
>
> "Phase II of IBES covered a representative sample of establishments covering the different economic sectors namely Agriculture, Industry and Services at both national and regional levels. All establishments engaging 50 or more persons were included in the sample with certainty. However, for establishments engaging less than 50 persons a representative sample was drawn to be included in the sample.
> The target population in this survey was all non-household establishments, irrespective of size and sector of activity. These are establishments that are engaged in economic activities across all sectors of the economy. They were sampled from the sampling frame produced from IBES I." (GSS, 2017b: 2).

It can be seen from the above descriptions that 'non-household' enterprises were included in the IBES survey – and a significant number of these are likely to be within the 'informal sector'. However, 'household-based' enterprises (of which there will be many in Ghana and which are also part of the 'informal sector') were not included in the IBES survey. A careful comparison of the numbers of manufacturing enterprises included in the data sources for the a) the 2010 national accounts data series (using SNA 1993 and a base year of 2006), and b) the 2018 national accounts series (using SNA 2008 and a base year 2013) will be necessary in order to draw any robust conclusions about the detailed nature of the changes in manufacturing value added.

There is significant evidence showing that a substantial amount of manufacturing activity is undertaken in small scale establishments in the rural areas of Ghana, although much of the literature on manufacturing development focuses on larger scale establishments in urban areas. In 1984, for example, total manufacturing employment

was slightly less than 590,000 of which almost 56,000 was in large scale establishments and just over 530,000 was in small-scale establishments. Of those employed in small-scale establishments, over 448,000 were in household or rural establishments and nearly 86,000 were in organised or rural (note: this should perhaps read as “urban”) establishments (Steel and Webster, 1991: Table 1 page 6). The 1984 Population Census showed that in the Ashanti Region of Ghana 84,447, and in the Central Region 43,262, persons aged over 15 years were employed in manufacturing (Edusah and Tribe, 1992: Table 2 page 11).

The more recent Labour Force Survey (GSS, 2016), which is discussed in Section 3 of this paper, showed that while employment in Ghanaian manufacturing in 2015 was 1,253,840 (13.54 per cent of the total employment) most of this employment was in the ‘informal’ sector (1,236,044 – representing 13.96 per cent of total ‘informal’ sector employment). Of those employed in manufacturing, 787,916 were in the urban ‘informal’ sector, and 448,128 were in the rural ‘informal’ sector (see Table 11 above). Considerable caution is needed in interpreting the numbers employed, particularly for small-scale establishments in rural areas and for the industrial breakdown, due to individuals working simultaneously (within the calendar year) in several different sectoral activities all on a part-time basis (Tribe, 2005: 225).

One of the missing sets of GDP data which was remarked upon in our book (Huq and Tribe, 2018: 152-155) is a recent breakdown of manufacturing value-added by product groups. The most recent data which could be located for more detailed breakdowns (such as food products, textiles, wood products etc.) during the drafting of the book was for 2003, and it appears that the situation has not improved since then. It is extremely difficult to obtain any significant insights into the way in which the manufacturing sub-sector has been developing without these more detailed breakdowns.

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Endnotes

[1] In developing the databank for our book, we are particularly grateful for the research assistance of Talha Khokhar.

[2] In the first instance it is helpful to search for the 'Regional Programme on Enterprise Development' within the World Bank website (www.worldbank.org). The data associated with the Ghanaian element of this programme is managed by the Centre for the Study of African Economies, University of Oxford (https://www.csae.ox.ac.uk/manufacturing-enterprise-surveys/regional-project-on-enterprise-development-ghana-manufacturing-enterprise-survey-rounds-i-vii-12-years-1992-2003) and is described as follows: "The original sample of 200 firms, which were first surveyed in 1992, was drawn on a random basis from firms contained in the 1987 Census of Manufacturing Activities. The firms constituted a panel which was intended to be broadly representative of the size distribution of firms across the major

sectors of Ghana's manufacturing industry. These sectors include food processing, textiles and garments, wood products and furniture, metal products and machinery."