Household Income inequality in Ghana: a decomposition analysis

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Abstract

The study sought to decompose income inequality across various household income components and to estimate the marginal effects of changes in income components on overall income inequality in Ghana. A Gini decomposition procedure was applied to the fifth and sixth rounds of the Ghana Living Standards Surveys. The results suggest that, in general, income inequality has increased marginally over the years (Gini coefficient of 0.66 in 2013 and 0.62 in 2006). Inequality was however higher in urban areas than in rural areas in 2013 with a reverse situation observed in 2006. The income component analysis suggest that wage employment income dominated household income in both rural and urban areas, even though the magnitude was higher in urban areas. Farm income was only dominant in rural communities in 2006. Self-employment and remittance income had consistent equalizing effects on total household income distribution. The findings suggest that directing poverty reduction strategies towards specific income components will be crucial for effective pro-poor income distribution.

Key words: Household income, Inequality, Gini decomposition, Ghana

JEL classification: D630, I32, I38

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1. Introduction

Reducing poverty and inequality has been a principal concern among many developing country governments over several decades. This is evident in the Millennium Development goal one which sought to half poverty by the year 2015 (United Nations, 2010). The threat posed by poverty on human development in the areas of education and health makes the fight against poverty crucial. Like many other developing countries Ghana has engaged in various poverty reduction programmes such as the structural adjustment programmes. These programmes seem to have yielded positive dividends with poverty rates reducing over the years. Poverty estimates from the various living standard survey years suggest that consumption poverty reduced from 51.7% in 1991/92 to 31.9% in 2005/06\(^2\) and further to 24.2% in 2012/13. This suggests that Ghana is in good position to achieve the MDG goal of reducing poverty by half between 1990 and 2015 (Ghana Statistical Service, 2014a).

Further, Ghana's new lower middle income status coupled with the discovery of crude oil has raised economic prospects of the country with expectations of accelerated economic growth. Understanding the nature and trend in household income inequality is therefore crucial to identify whether the economic growth has been pro-poor or not. Indeed, studies have consistently showed the existence of a link between inequality, poverty and economic growth and that reducing inequality is central to sustained economic growth (Fosu, 2009, Ravallion, 2001, Bourguignon, 2004). This study is motivated by the important role of income inequality in the growth and development process of any country.

The literature on income inequality and its decomposition analysis has emerged over the years with different studies in different countries. For instance, applying an extended Gini decomposition procedure to United States income data, Lerman and Yitzhaki (1985) found that property income had a lower marginal impact on overall income inequality, relative to household head's wage and salary earnings and spouse's earnings. Brewer and Lewis (2012) found that while general income inequality in Great Briton increased steadily since 1978, inequality in investment and pension income has fallen between 1991 and 2009. To understand the nature of

\(^2\) welfare levels for 2005/06 were revised based on new poverty lines for 2012/13
income inequality in Greece, Papatheodorous (2000) showed that overall income inequality was significantly different among population subgroups. The decomposition analysis revealed that between group inequality accounted for very small part of overall inequality. The author, therefore, concluded that "reducing inequality between the household groups would have limited effect on reducing overall inequality". Using a regression based approach to decomposing household income by source, Kimhi (2007) provided evidence from various decomposition methods to show that "non-farm income is an equalizing source of income among farm households in Georgia". Household land holdings was found to have significant influence on income inequality. Schooling, land holdings and farm assets had decreasing effects on inequality while family size had increasing effects. Some studies have also showed rural-urban differences in income inequality with Xin, Feng and Zongyi (2011) providing a good summary using data from China. The authors conclude that rural-urban difference is a dominant cause of inequality and the gab in education and employment created by this difference impose long term effects on income inequality.

In Ghana, limited studies exist on the decomposition of household income inequality and the marginal impact of income components on inequality. Senadza (2011) provided a more recent evidence from the 2006 GLSS to show that aggregate non-farm income had an increasing effect on total income inequality. Further decomposition suggests that non-farm self-employment income and non-farm wage employment income had decreased and increased overall inequality, respectively. Education was identified as crucial to the nature of inequality in non-farm income. This study differs from Senadza (2011) in various ways; first, we examined whether the various income sources have equalizing or unequalizing effect on overall inequality by estimating marginal effects of income source on overall inequality. Secondly, we employed both the 2005/06 and 2012/13 GLSS data in a trend analysis to ascertain changes over time. Finally, while Senadza (2011) only focused on non-farm income in rural Ghana, we analysed inequality decomposition for all household income components and further disaggregated the analysis for both rural and urban households.
The remainder of the paper is structured as follows. Section 2 discusses the methodology and data used in the analysis while section 3 presents empirical findings. Section 4 and 5 provides the discussion of results and conclusions with appropriate policy recommendations, respectively.

2. Methodology
2.1 Framework

The current study adopt a methodology developed by Lerman and Yitzhaki (1985) which was an extension of earlier income decomposition theories developed by Kakwani (1977) and Shorrocks (1982).

To begin we suppose a household's income, \( y \), with its lowest level, \( a \), highest level, \( b \), and the cumulative distribution of income, \( F \), then half of Gini's mean difference (\( A \)) can be written as follows

\[
A = \int_a^b F(y)[1 - F(y)]dy
\]

using integration by parts, with \( u = F(y)[1 - F(y)] \) and \( v = y \), we obtain

\[
A = \int_a^b y[F(y) - 1/2]f(y)dy
\]

Defining \( y(F) \) as the inverse function of \( F(y) \), Equation (2) can further be transformed as

\[
A = 2\int_0^1 y(F)(F - 1/2)dF
\]

Noting that \( F \) is uniformly distributed between [0,1] so that its mean is 1/2 Equation (3) can be re-written as follows

\[
A = 2\text{cov}[y, F(y)]
\]

The conventional Gini coefficient can then be derived by dividing equation (4) by the mean income (\( m \)).
2.2 Decomposition of income inequality

To decompose household income inequality, we assume that household income has \( k \) components such that \( y = y_1, \ldots, y_k \). Then Equation (4) can be re-written as follows using the properties of the covariance and \( y = \sum_{k=1}^{K} y_k \)

\[
A = 2 \sum_{k=1}^{K} \text{cov}(y_k, F) \tag{5}
\]

where \( \text{cov}(y_k, F) \) is the covariance of income component \( k \) with cumulative distribution of income. The relative Gini can therefore be obtained by dividing Equation (5) by \( m \) while multiplying and dividing each component \( k \) by \( \text{cov}(y_k, F_k) \) and by \( m_k \) yields the decomposition by source as follows

\[
G = \sum_{k=1}^{K} \left[ \frac{\text{cov}(y_k, F) / \text{cov}(y_k, F_k)}{\text{cov}(y_k, F_k) / m_k} \right] \times \left[ \frac{2 \text{cov}(y_k, F_k) / m_k}{m_k / m} \right] \tag{6}
\]

\[
G = \sum_{k=1}^{K} R_k G_k S_k \tag{7}
\]

where \( S_k \) represents the share of source \( k \) in total income, \( G_k \) is the source Gini corresponding to the distribution of income from source \( k \), \( R_k \) represents the Gini correlation of income from source \( k \) with the distribution of total income\(^3\).

As noted by Stark, Taylor and Yitzhaki (1986) an intuitive interpretation of these parameters can be identified. For instance, the influence of an income component on total inequality depends on (1) the importance of a particular income source with respect to total income, \( S_k \); (2) how equally or unequally distributed this income source is, \( G_k \); and (3) the correlation between this income source and total income, \( R_k \).

\(^3\) \( R_k = \text{Cov}\{y_k, F(y)\} / \text{Cov}\{y_k, F(y_k)\} \) where \( F(y) \) and \( F(y_k) \) are the cumulative distribution of total income and of income from source \( k \).
Lopez-Feldman (2006) observed that an income component with large share of total income is likely to have a large impact on inequality. However, an equally distributed income source \( (G_k = 0) \) cannot influence overall inequality. On the contrary, a large and unequally distributed source income \( (S_k \text{ and } G_k \text{ are large}) \) can either have an increasing or decreasing effect on total inequality. An increasing or unequalizing effect may occur if the source inequality favours the rich \( (R_k \text{ is positive and large}) \) while a decreasing or equalizing effect may occur if inequality favours the poor.

### 2.3 Marginal impact

Understanding the impact of small changes in a particular income source on overall income inequality is critical to any decomposition analysis. Suppose a small change in income from source \( k \) equal to \( e y_k \), where \( e \) is close to unity and \( y_k \) is income from source \( k \). The partial derivative of the Gini coefficient with respect to a percentage change in income source \( k \) can be obtained as

\[
\frac{\partial G}{\partial e_k} = S_k (R_k G_k - G)
\]

where \( G \) is the Gini coefficient of total income inequality prior to the income change. It can further be shown that, the percent change in inequality resulting from a small percent change in income from source \( k \) equals the original contribution of source \( k \) to income inequality minus source \( k \)'s share of total income:

\[
\frac{\partial G}{G} = \frac{S_k G_k R_k}{G} - S_k
\]

### 2.4 Data

The study was based on cross section data from the sixth round of the Ghana Living Standards Survey (GLSS) conducted by the Ghana Statistical Service. The GLSS is a series of data collected on various socio-economic indicators. The first to fifth were conducted in 1997, 1988, 1991/92, 1998/99 and 2005/06. The sixth and most recent round was conducted between October
2012 and October 2013. The data is nationally and regionally representative with comprehensive information on household income and expenditure. A total sample of 16,772 households were interviewed with 7445 (44.4%) urban and 9327 (55.6%) rural households (Ghana Statistical Service, 2014b).

To perform the income source decomposition analysis, household income was disaggregated into the following components:

i. Farm income (Farm): this comprises all income from engagements in agricultural activities including wages, sale of farm products etc.
ii. Non-farm employment wage income (Wage employ): this is made up of income from all non-farm formal and informal engagements
iii. Non-farm self-employment wage income (self-employ): this includes income from both formal and informal self-employment activities
iv. Rental income (rent): this includes returns from all forms of capital and land
v. Remittance income (remittances): this is made up of both domestic and international transfers from family and friends to the household
vi. Miscellaneous income: These are all other sources of income in the household apart from the above mentioned components

3.0 Results

Table 1 shows decomposition results of household income components at the national level. The results show that wage employment income accounts for about 70% and contributed the largest to nonfarm income as well as total household income in Ghana in 2013. This indicates a significant rise from about 33% in 2006. Self-employment income contributed the lowest to household income with about 0.1% source share in 2013 while miscellaneous income contributed the lowest (about 1.2%) to total income in 2006. It is worth noting that Farm income contributed about 19% to total income in 2013 which marks a reduction from about 30% in 2006.

4 see sixth GLSS report for further details about sampling procedure
In general household income inequality has marginally increased between 2006 and 2013. A Gini coefficient of about 0.66 was estimated in 2013 relative to 0.62 in 2006. The decomposition analysis suggests that in 2013, with the exception of income from miscellaneous sources, income from self-employment with source Gini coefficient of about 0.93 and remittances with source Gini coefficient of about 0.92 were the most unequally distributed. In 2006, wage employment income source (source Gini of about 0.89) and remittance income (source Gini of about 0.88) were the most unequally distributed.

A further examination of the share of total inequality (Share) suggests that wage-employment income source contributed the highest to total income inequality in both 2013 (about 78%) and 2006 (about 38%). The coefficient of Gini correlation with distribution of total income ($R_k$) also show that wage-employment income favours the rich more than any other income source with relatively high values of about 0.94 in 2013 and 0.82 in 2006. On the other hand, income from remittances, even though highly unequal, favours the poor and has a slightly equalizing effect on the distribution of total income. This is shown by the relatively small (about 3.0% in 2013 and 10.8% in 2006) share of remittances in total income inequality and the relatively low (about 0.49 in 2013 and 0.64 in 2006) coefficient of Gini correlation between remittance income and total income.

Table 1 also shows that in 2013, self employment income favoured the poor more than any other income source with Gini correlation coefficient of approximately 0.48 despite being the most unequal. On the other hand rent income favoured the poor more than any other income source in 2006. This implies that self employment wage income and rent income had the most equalizing effect on the distribution of income in 2013 and 2006, respectively. Farm income was unequally distributed in 2013 and 2006 with Gini coefficient of 0.81 and 0.87, respectively. The Gini correlation between farm income and total income was about 0.62 and 0.66 in 2013 and 2006, respectively. Farm income also contributed about 15% and 27% of total income inequality in 2013 and 2006, respectively.
Table 1: Trend in Income inequality by source, National

<table>
<thead>
<tr>
<th>Income Source</th>
<th>2013</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$S_k$</td>
<td>$G_k$</td>
</tr>
<tr>
<td>Farm</td>
<td>0.19255</td>
<td>0.81427</td>
</tr>
<tr>
<td>Wage employ</td>
<td>0.69880</td>
<td>0.77820</td>
</tr>
<tr>
<td>Self employ</td>
<td>0.00115</td>
<td>0.92521</td>
</tr>
<tr>
<td>Rent</td>
<td>0.04645</td>
<td>0.70668</td>
</tr>
<tr>
<td>Remittances</td>
<td>0.04473</td>
<td>0.91662</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.01631</td>
<td>0.99131</td>
</tr>
<tr>
<td>Total income</td>
<td>0.65886</td>
<td></td>
</tr>
</tbody>
</table>

Source:
Note: $S_k$=Income share; $G_k$= Gini source; $R_k$= Correlation with rank of total income; Share= Share of income inequality

Similar analysis was conducted for rural households in Ghana. The results in Table 2 show that, in general, inequality in rural household income increased marginally from a Gini coefficient of 0.61 in 2006 to 0.64 in 2013. While Farm income contributed about 52% of household income in 2006, this share significantly reduced in 2013 to 36% of total household income. Farm income also contributed about 31% of total income inequality in 2013, a reduction from 51% in 2006. This income source was also unequally distributed with relatively high source Gini in both 2013 (0.72) and 2006 (0.74). The relatively high Gini correlation with rank of total income in 2013 (0.78) and 2006 (0.81) imply that farm income favoured the rich. The trend however show slight decline over the period. It is also worth mentioning that while farm income was the highest contributor to total rural household income in 2006, this changed in 2013 with wage employment income being the highest contributor to income.

Similar to the earlier results, with the exception of miscellaneous income, self-employment (0.93) and remittance (0.90) income were the most unequal in 2013 while the most unequal income source in 2006 were wage employment (0.94) and remittance (0.88). Despite their unequal nature, self-employment and remittance income favoured the poor with relatively low Gini correlation with total income of 0.45 and 0.40, respectively. On the contrary, the most unequal income sources in 2006 also recorded relatively high Gini correlation with total income of 0.81 and 0.61, respectively. This implies that wage employment and remittance income had relatively dis-equalizing effect on the distribution of total income in 2006.
Table 2: Trend in Income inequality by source, Rural

<table>
<thead>
<tr>
<th>Income Source</th>
<th>2013</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$S_k$</td>
<td>$G_k$</td>
</tr>
<tr>
<td>Farm</td>
<td>0.35989</td>
<td>0.72071</td>
</tr>
<tr>
<td>Wage Employ</td>
<td>0.54267</td>
<td>0.80427</td>
</tr>
<tr>
<td>Self employ</td>
<td>0.00062</td>
<td>0.92568</td>
</tr>
<tr>
<td>Rent</td>
<td>0.05100</td>
<td>0.63348</td>
</tr>
<tr>
<td>Remittances</td>
<td>0.03257</td>
<td>0.90335</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.01325</td>
<td>0.99469</td>
</tr>
<tr>
<td>Total income</td>
<td>0.64194</td>
<td></td>
</tr>
</tbody>
</table>

Source:
Note: $S_k$=Income share; $G_k$= Gini source; $R_k$= Correlation with rank of total income; Share=
Share of income inequality

The inequality analysis for urban household income components is reported in Table 3 below. The results indicate that income inequality in urban areas increased over the years with Gini coefficient of approximately 0.60 in 2006, compared to 0.66 in 2013. The source decomposition analysis show that wage employment income was consistently the highest contributor to total urban income over the years and accounted for 82% of total income in 2013 relative to 44% in 2006. Moreover, wage employment income also contributed the highest to overall income inequality in 2013 (87%) and 2006 (47%). As expected, in 2013, the share of farm income in total income was low in urban areas (5.9%) and its contribution to total inequality was also low (4.6%). The share of farm income in total urban income was relatively higher (12.5%) in 2006 and contributed 16.4% to overall inequality.

The Gini coefficient suggest that, apart from miscellaneous income, Farm income and remittance income were the most unequal in 2013. In 2006 farm income and rent income were the most unequal. However, the Gini correlation with total income suggests that farm income favoured the rich more in 2006 than in 2013. On the other hand, remittance and rent income favoured the poor in 2013 and 2006, respectively.

Table 3: Trend in Income inequality by source, Urban

<table>
<thead>
<tr>
<th>Income Source</th>
<th>2013</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10
<table>
<thead>
<tr>
<th>Income Source</th>
<th>$S_k$</th>
<th>$G_k$</th>
<th>$R_k$</th>
<th>Share</th>
<th>$S_k$</th>
<th>$G_k$</th>
<th>$R_k$</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm</td>
<td>0.05926</td>
<td>0.9305</td>
<td>0.54744</td>
<td>0.04574</td>
<td>0.1251</td>
<td>1.05526</td>
<td>0.74021</td>
<td>0.16362</td>
</tr>
<tr>
<td>Wage Employ</td>
<td>0.82317</td>
<td>0.72832</td>
<td>0.96191</td>
<td>0.87383</td>
<td>0.43654</td>
<td>0.81111</td>
<td>0.80002</td>
<td>0.47433</td>
</tr>
<tr>
<td>Self employ</td>
<td>0.00158</td>
<td>0.90701</td>
<td>0.43964</td>
<td>0.00095</td>
<td>0.26782</td>
<td>0.80037</td>
<td>0.61901</td>
<td>0.22218</td>
</tr>
<tr>
<td>Rent</td>
<td>0.04283</td>
<td>0.75991</td>
<td>0.4803</td>
<td>0.02369</td>
<td>0.01532</td>
<td>0.87942</td>
<td>0.22441</td>
<td>0.00506</td>
</tr>
<tr>
<td>Remittances</td>
<td>0.05442</td>
<td>0.91329</td>
<td>0.48132</td>
<td>0.03625</td>
<td>0.14274</td>
<td>0.85051</td>
<td>0.59395</td>
<td>0.12074</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.01874</td>
<td>0.98699</td>
<td>0.69725</td>
<td>0.01954</td>
<td>0.01248</td>
<td>0.99006</td>
<td>0.6799</td>
<td>0.01407</td>
</tr>
<tr>
<td>Total income</td>
<td>0.65996</td>
<td></td>
<td></td>
<td></td>
<td>0.59721</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source:
Note: $S_k$=Income share; $G_k$= Gini source; $R_k$= Correlation with rank of total income; Share=
Share of income inequality

In comparing the decomposition analysis for rural and urban areas, it can be observed that, in general, overall income inequality was higher in urban areas than rural areas in 2013. A reverse situation was observed in 2006 where overall income inequality was higher in rural areas than in urban areas. Also the share of farm income in total income was significantly higher in rural areas than in urban areas. Indeed, farm income contributed the largest to overall rural income in 2006, even though wage employment income contributed slightly higher than farm income in 2013. On the contrary, wage employment income consistently dominated overall urban income in 2006 and 2013. Remittance income was more important in urban areas than rural areas, contributing more to overall urban income and inequality than rural.

3.1 Marginal effects of income source on overall inequality

To further understand the extent to which the various income sources have equalizing or unequalizing effect on total income inequality, the marginal effects were computed and reported in Table 4. Podder (1993) noted that, in examining whether an income source has equalizing or unequalizing effect, the marginal effects are more informative than the proportional contributions to inequality. Paul (2004) and Kimhi (2007) established that the marginal effects are more consistent in such analysis. The marginal effects also shows the impact of a 1% change in a particular income source on overall income inequality. A negative (positive) marginal effect shows that a percentage increase in a particular income source reduces (increases) overall income inequality hence has an equalizing (dis-equalizing) effect.
Table 4 shows that, all other things being equal, a 1% increase in farm income decreases the Gini coefficient of total income by 0.044% in the national sample, 0.045% in the rural sample and 0.014% in the urban sample. In 2006, a 1% increase in farm income, all things equal, decreases overall inequality by 0.021% and 0.014% in the national and rural samples, respectively, but increased inequality in the urban sample by 0.039%. This implies that, with the exception of results on the urban sample in 2006, farm income largely had an inequality decreasing effect and hence equalizing effect on overall income distribution.

Similarly, household remittance income showed consistent and negative estimates, implying that a marginal change in this income source decreases overall income inequality. This suggests that remittance income was an equalizing income source for both rural and urban households and over time. For instance, in 2013, the marginal effect show that a 1% increase in remittance income, all things equal, decreases the Gini coefficient for overall income by 0.014%, 0.014% and 0.018% in the national, rural and urban samples, respectively. Similarly, self-employment and rent income were also found to be equalizing income sources, irrespective of the survey year and place of residence.

On the contrary, wage employment income consistently showed increasing effect on overall inequality with positive marginal effects. The results show that, in 2013, a 1% increase in wage employment income, all things equal, increases overall inequality by 0.077%, 0.079% and 0.051% in national, rural and urban samples, respectively. Similarly, a 1% increase in this income source in 2006, increased total inequality by 0.058%, 0.042% and 0.038% for national, rural and urban samples, respectively.
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm</td>
<td>-0.04381</td>
<td>-0.04507</td>
<td>-0.01352</td>
<td>-0.02134</td>
<td>-0.01392</td>
<td>0.03852</td>
</tr>
<tr>
<td></td>
<td>(-0.050, -0.038)</td>
<td>(-0.060, -0.032)</td>
<td>(-0.017, -0.010)</td>
<td>(-0.345, -0.0004)</td>
<td>(-0.028, -0.001)</td>
<td>(0.021, -0.062)</td>
</tr>
<tr>
<td>Wage Employment</td>
<td>0.07721</td>
<td>0.0792</td>
<td>0.05066</td>
<td>0.05786</td>
<td>0.04215</td>
<td>0.03779</td>
</tr>
<tr>
<td></td>
<td>(0.070, 0.083)</td>
<td>(0.063, 0.092)</td>
<td>(0.045, 0.057)</td>
<td>(0.040, 0.070)</td>
<td>(0.034, 0.053)</td>
<td>(0.010, 0.053)</td>
</tr>
<tr>
<td>Self employment</td>
<td>-0.00037</td>
<td>-0.00021</td>
<td>-0.00063</td>
<td>-0.01762</td>
<td>-0.00871</td>
<td>-0.04564</td>
</tr>
<tr>
<td></td>
<td>(-0.004, -0.003)</td>
<td>(-0.003, -0.002)</td>
<td>(-0.008, -0.005)</td>
<td>(-0.024, -0.090)</td>
<td>(-0.017, -0.003)</td>
<td>(-0.054, -0.036)</td>
</tr>
<tr>
<td>Rent</td>
<td>-0.02107</td>
<td>-0.02337</td>
<td>-0.01914</td>
<td>-0.01106</td>
<td>-0.01274</td>
<td>-0.01026</td>
</tr>
<tr>
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<td>(-0.025, -0.021)</td>
<td>(-0.022, -0.014)</td>
<td>(-0.013, -0.009)</td>
<td>(-0.014, -0.011)</td>
<td>(-0.012, -0.008)</td>
</tr>
<tr>
<td>Remittances</td>
<td>-0.01437</td>
<td>-0.01402</td>
<td>-0.01817</td>
<td>-0.01082</td>
<td>-0.01102</td>
<td>-0.022</td>
</tr>
<tr>
<td></td>
<td>(-0.015, -0.013)</td>
<td>(-0.015, -0.013)</td>
<td>(-0.022, -0.015)</td>
<td>(-0.018, -0.006)</td>
<td>(-0.018, -0.003)</td>
<td>(-0.033, -0.010)</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.00241</td>
<td>0.00347</td>
<td>0.0008</td>
<td>0.00298</td>
<td>0.00424</td>
<td>0.00159</td>
</tr>
<tr>
<td></td>
<td>(0.001, 0.005)</td>
<td>(-0.008, -0.009)</td>
<td>(-0.001, -0.006)</td>
<td>(-0.004, -0.009)</td>
<td>(-0.003, -0.016)</td>
<td>(-0.002, -0.006)</td>
</tr>
</tbody>
</table>

Source: Authors' computation

Note: Bias corrected 95% confidence intervals obtained from bootstrap procedure are reported in parenthesis.
4.0 Discussion

The findings of the study suggest that, in general, household income inequality has slightly increased between 2006 and 2013. This is in spite of the significant economic growth recorded in Ghana over the period. Available statistics suggest that between 2006 and 2013, Ghana's GDP growth rate averaged 8.1% (World Bank, 2013). This rate is economically significant considering the global economic crises recorded within the same period. However, the findings of the study point to the fact that this growth was not pro-poor. Pro-poor growth is expected to first lead to a reduction in inequality and, consequently, reduce overall poverty (Ravallion, 2001, Fosu, 2009). Similar trend in inequality was found for both rural and urban areas. It is also interesting to note that, contrary to what prevailed in 2006, urban communities were more unequal than rural communities in 2013. This, however, conforms with findings from other researchers such as Mussa (2014) who found higher urban inequality in Malawi.

Disaggregating household income showed that non-farm wage income (from wage employment or self-employment) were the dominant contributors to household income in both rural and urban areas. Farm income was only dominant in rural areas in 2006. This finding suggests that, over the years, there has been a shift from agricultural activities to non-agricultural wage activities. However, non-form wage employment, self-employment and remittance income were the most unequally distributed, irrespective of the year, even though the inequality in self-employment and remittance income favoured the poor more than wage employment. This findings suggest that an unequally distributed income source does not necessarily mean it is pro-rich. That is, an income source may be highly unequal (high Gini coefficient) but also be pro-poor. In this case inequality is good for the poor in society (Taylor et al., 2005, Lopez-Feldman, 2006).

The marginal effects which are considered to be the most effective way of establishing whether changes in an income component increases or decreases overall inequality suggest that farm income, remittances, self-employment and rent income had the most important reducing effect on total income inequality in Ghana. This finding was consistent, irrespective of the year and place of residence, even though farm income had a more equalizing effect on income distribution in rural areas than urban areas. This findings conform with Senadza (2011) who found that non-
farm self-employment income was more equalizing than non-farm wage employment. Senadza (2011) also justified this situation by the entry barriers that exist in non-farm wage employment activities. This barriers (such as skilled labour in the form of education) provide significant limitations to poor households or individuals who are mostly unable to acquire the requisite skills. On the other hand, self-employment, even though may require some specific skill are more easier for the poor to engage in no matter how small. In terms of the equalizing effect of remittances, Taylor and Wyatt (1996) came to a similar conclusion that remittances reduce inequality because they translate into a greater part of poor households’ income. The authors argued that remittances can increase poor households’ access to credit by accumulating productive assets which lead to increased future income.

The findings serve as important tools in refocusing policies directed towards reducing poverty and inequality. Blanket poverty reduction policies that generally seek to increase income may not achieve its objective and may rather lead to increased inequality which only favour the rich. While household income levels may generally increase, the poorest households may be disadvantaged in such income distribution. Effective poverty reduction policies that also target reducing inequality should focus on the poorest households. For instance, policies that encourage small scale self-employment activities will be crucial for pro-poor growth. Such policies may include access to credit and provision of basic infrastructure for individuals in self-employment activities.

5.0 Conclusion

The paper set out to investigate inequality in household income components. The marginal effects of the impact of changes in income components on overall income inequality were also estimated. Using data from the fifth and sixth GLSS the trend in inequality between 2006 and 2013 was explored. The results suggest that, in general, income inequality has increased marginally over the years. Inequality was however higher in urban areas than in rural areas in 2013 with a reverse situation observed in 2006. The income component analysis suggest that wage employment income dominated household income in both rural and urban areas, even though the magnitude was higher in urban areas. Farm income was only dominant in rural areas.
communities in 2006. It can also be concluded from the decomposition analysis that self-employment and remittance income were the two most consistent income sources that had equalizing effects on total household income distribution, even though their Gini coefficients suggest they were highly unequal.

The findings provide important policy implications for Ghana. In recent times, several poverty reduction strategies have been adopted in Ghana. These include the Savannah Accelerated Development Authority (SADA) and social cash transfer programmes such as the Livelihood Empowerment against Poverty (LEAP). While these programmes are important for poverty reduction, directing them towards specific income components will be crucial for effective pro-poor income distribution.
References


