Growth and Distribution in Guyana

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Abstract

The paucity of data in much of the poor world prevents serious study on distribution and the latter is important since it affects the growth process and the performance of political institutions. This paper overcomes this obstacle by employing the Cambridge equation to derive profit and wage rates. The dynamics between these are used to estimate the changes in the functional distribution of income in Guyana from 1974-2013. This strategy uses the 'low hanging fruit' approach since data requirements are minimal. Growth in the mining sector ignites growth in the non-tradable services sector, which is characterized by low-wage employment. Consequently, a greater share of the gains in income in these sectors goes to profits when growth is sustained. The evidence implies that inequality is on the rise.

Keywords: Growth, Distribution, Guyana, Cambridge equation

1.   Introduction

In many poor and developing countries, data on inequality are either absent or dated and this makes research on inequality and distributional conflicts uncommon (Piketty 2014). This article uses a new approach to overcome these difficulties. It employs the famous Cambridge equation to derive profit rates and uses annual growth rate data to estimate annual wage rates. The dynamics between profit and wage rates are used to determine the evolution of inequality in Guyana – a small and open economy. This new approach measures the rate of change of the functional distribution of income, that is, wage and profit shares. This article is an important update on distributional conflicts and the first work to employ this approach to the study of inequality in Guyana. The evidence points to an increase of inequality even as per capita income increases.

Though inequality is under-researched in Guyana, (Gafar 2004) and (Khemraj 2013) have undertaken empirical and theoretical studies respectively. Gafar (2004) contends that growth in Guyana has no relationship with inequality, especially since the Gini coefficient has remained relatively stable during the years 1993-1999. This is contrary to the argument and evidence in this article. The time series employed in (Gafar 2004) is limited; so any definitive conclusion on the relationship between growth and distribution in Guyana is premature.

Gafar (2004) seeks to ascertain the relationship among market reforms, poverty reduction and inequality in Guyana. He concludes that growth in Guyana does not increase or decrease inequality, although, it reduces poverty. However, a stable income distribution in Guyana necessitates stable wage and profit rates, but the evidence presented in this article illustrates a highly volatile wage rate.

The ability to look beyond Gini coefficients and uncover the dynamics between wage and profit rates is crucial to understand the nexus between growth and distribution (Bhaduri and Marglin 1990; Stockhammer, Onaran, and Ederer 2008). The approach adopted in this essay does explain stable income distribution in Guyana between (1974-1999), but it offers new insights that cannot be derived from Gini coefficients. The period of (1974-84) was characterized by substantial increases of inequality (as measured by profit and wage rates), but the following period of (1985-95) experienced a full recovery.

An important advantage of this article over (Gafar 2004) is that it traces the evolution of inequality in Guyana from 1974-2013. This paper shows that the evolution of the functional distribution of income in Guyana has been one of deterioration (1974-84), recovery (1985-95), improvement (1996-06), and further deterioration in recent years (2007-13). Unlike (Gafar 2004), the evidence points to a strong relationship between growth and distribution in Guyana – more specifically, wages and profits.

Khemraj (2013) advances the thesis that an uneven income growth between the main ethnicities in Guyana is the inevitable end when the electoral outcome is fixed by ethnic voting. Although popular studies on inequality (Piketty 2014; Stiglitz 2012) emphasize the differences between wages and profits, (Khemraj 2013) underscores the income differences between the two primary ethnicities (Afro-Guyanese and Indo-Guyanese) in Guyana.

Khemraj (2013) proposes that the elected oligarchy in Guyana constructs an uneven income growth trajectory between the principal ethnicities. This article does not investigate the political economy underpinnings of distributional conflicts, but it is likely that the majority of the profit earners are those in the ethnic group with the greatest political power. Thus, increasing inequality in Guyana can easily mean rising inequality between the two principal ethnicities.

Unlike the rich literature on Guyana's economic performance, this article places significant explanatory power in the mining and quarrying sector. The apparent consensus in the literature (Khemraj 2013; Grenade and Lewis-Bynoe 2011; Grenade and Pasha 2011; Singh 2013; Staritz, Atoyan, and Gold 2007, among others) is that

political economy conditions are the principal determinants of Guyana's economic performance. However, this article presents evidence that illustrates the pivotal role the gold industry plays in Guyana's growth model. Guyana has benefited tremendously in recent years from the rise in gold prices, both in terms of gold declaration and exportation.

What is the cause of the recent rise of inequality? The article explains that sustained growth of non-tradable services permits profits to gain a greater share of a growing pie. Specifically, growth in the mining and quarrying industry increases both wages and profits, but wages are slow to grow in the non-tradable services sector, even as the industry experiences robust increases in growth and profit. The cumulative outcome is deterioration in the distribution of income. Most of the services industry in Guyana is characterized by low-wage intensive activities; thus, growth in these conditions increases profits relative to wages. The reverse is also true, the periods of improvement in the distribution of income is explained by poor growth or negative rates of profit, as opposed to robust increases in wages.

While (Gafar 2004) calls for pro-poor growth policies and less redistribution, (Khemraj 2013) advocates for constitutional reform to hedge against the tendencies of oligarchies to deliberately increase inequality. Though this article is only suggestive and exploratory, it reveals the distributional consequences of having an economic structure where non-tradable services account for the greater share in GDP. Thus, a structural transformation that will strengthen the relationship between wages and economic performance becomes necessary for inclusive growth.

Exclusive focus on poverty is typical of many developing countries but this may come at the cost of rising inequality. Gross inequality of income creates disparities in wealth and reduces the equality of opportunity in a society. Further, accumulated wealth is a significant determinant of future income (Piketty 2014) and the principal reason why developing countries must include distributional conflicts in their policy matrix.

The remainder of the paper is organized as follows. Section 2 outlines the derivation of the Cambridge equation and how this can be used to develop a new approach to inequality. Section 3 illustrates the evolution of inequality in Guyana and a brief discussion follows in section 4. Section 5 explains why inequality declined and then reversed and finally, section 6 concludes.

2.   A New Approach to Inequality

Equation (1) illustrates the equilibrium condition when national savings (NS) are equal to investment (I) and equation (2) follows (Kaldor 1955) disaggregation, where (s_p) and (s_w) are saving rates out of profits and wages respectively. We assume that $(s_p \neq s_w)$ and also $(s_p > s_w)$.

$$NS = I \qquad (1)$$

$$(s_p - s_w)P + s_w Y = I \qquad (2)$$

We divide both sides of equation (2) by (Y) and solve for profit share (P/Y) to derive the following:

$$P/Y = 1/(s_p - s_w) * I/Y - s_w/(s_p - s_w) \qquad (3)$$

Both (Kaldor 1955; Kalecki 1942), like many of the Classical economists assumed that $(s_w = 0)$, which simplifies eq. (3) into eq. (4). Pasinetti (1962) contends that eq. (4) holds even after relaxing the assumption that $(s_w = 0)$. The rate of profit (P/K) is derived by multiplying both sides of eq. (4) by (Y/K), see eq. (5).

$$P/Y = I/Y * 1/s_p \qquad (4)$$

$$P/K = I/K * 1/s_p \qquad (5)$$

To simplify notation, we use (π) and (r) as profit share and rate respectively. Since (I/K) is the rate of capital accumulation, eq. (5) can be generalized to the famous Cambridge equation, where (g) is the rate of economic growth.

$$r = g/s \qquad (6)$$

Although the profit rate was derived from a closed economy without any public sector, this derivation holds when the model is generalized to an open economy with a government sector (Steedman 1972; Pasinetti 1989a; 1989b; Teixeira 1999). The wage rate (w) is derived as follows:

$$w = g - r \qquad (7)$$

For illustrative purposes, let's assume that the wage share is 0.6 and the profit share is 0.4. When the profit and wage rates are the same, the profit and wage shares of 0.4 and 0.6 remain unchanged. When $(w > r)$, inequality declines and wage share increases relatively faster than profit share. Conversely, when $(r > w)$, inequality

increases and profit share in national income rises faster than wage share. This approach is used to determine the evolution of inequality or the *rate* of change of the functional distribution of income.

This approach is particularly useful for countries with poor data collection institutions and thin data on key measures like employment, nominal wage, capital and labour productivity etc. These are important data to calculate the actual distribution of income between labour and capital.

Concentrating on the rates of change of the functional distribution of income takes the 'low hanging fruit' approach since data requirements are minimal. This approach provides the scope for deeper analysis into the dynamics of growth and distribution as compared to Gini coefficients. The latter has less variability in relation to growth rates, while our approach directly captures how the rate of change of income is divided between wages and profits. Further, this approach allows us to determine whether a country's growth regime is profit or wage led (Bhaduri and Marglin 1990; Lavoie and Stockhammer 2012; Rowthorn 1981; Stockhammer, Hein, and Grafl 2011), which is important to inform policymakers on tax, inflation and income policies.

The limitations of this method must be noted immediately. The Cambridge equation illustrates the rate of profit that is consistent with an economy in steady state equilibrium and this hardly describes the growth process in poor countries. Thus, this approach is imprecise and only suggestive. Nonetheless, it may be the best approximation to shed light on growth and distribution dynamics in countries without household surveys or data to calculate income shares.

An additional limitation is that the distinction between wage and profit earners in poor countries may not be sufficiently clear to justify the use of the functional distribution of income or the rate of change of the functional distribution of income as a measure of inequality. Also, in poor countries, there are relatively larger numbers of small and micro enterprises and these can be theoretically classified as profit earners, which can make the pattern of the functional distribution of income less interesting. Still, we find this approach promising.

The lack of clarity between profit and wage earners becomes less of a problem when we consider the fact that much of the labour force in poor countries are employed as wage labour in state apparatus and public companies as compared to the private sector and self employment. Further, there is little reason to believe that small and micro enterprises are less vulnerable than wage labour, especially in consideration of the notoriously high death rates of businesses in poor countries and their poor collateral, which is a major constraint on improving access to finance. These counter arguments are not employed to diminish the significance of the limitations raised earlier, but rather, to justify our approach notwithstanding these potential limitations.

3.   The Evolution of Inequality in Guyana

Figure 1 depicts the evolution of profit and wage rates from 1974 to 2013 in Guyana. This time period is divided into four phases (A, B, C, D), where A, B and C are a decade each, while phase D spans only six (6) years. The white bars indicate increasing wage share relative to profit share, while the grey bars illustrate the opposite.

In recent years, the functional distribution of income has worsened, as is indicated by the growing grey bars in the last few years. The sizeable white bars during the period of (1990-96) reflect the marginal reduction of inequality that (Gafar 2004) alludes to. But note carefully that this improvement in the distribution of income follows a period of substantial increases of inequality. Further, a careful examination of Fig. 1 illuminates the violent changes in wage rates that are hidden in Gini coefficients.
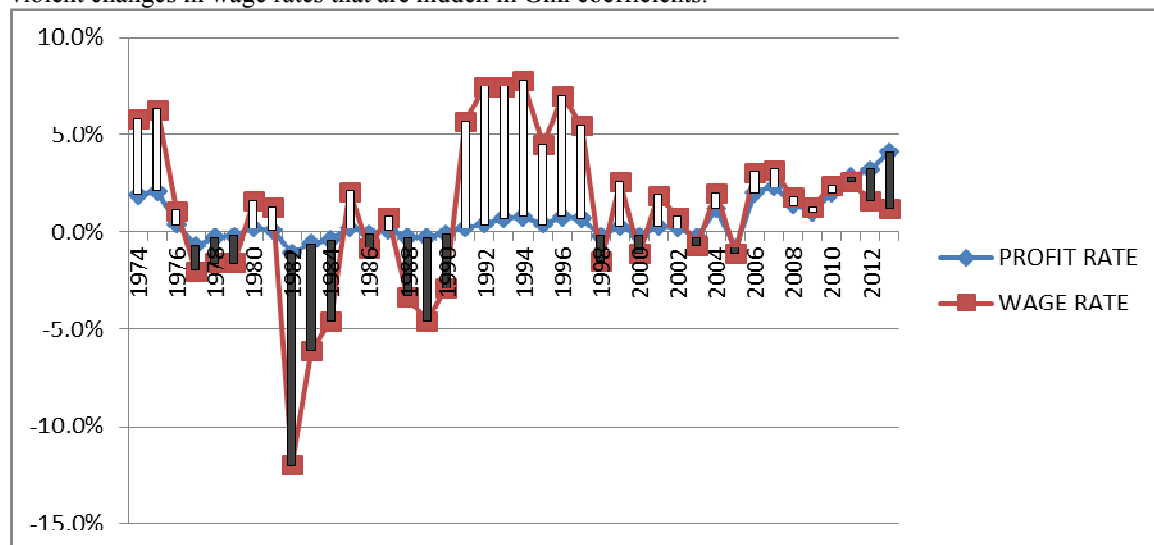

Figure 1. Evolution of Inequality

Period A: Labour's Lost Decade (1974-84)

The average rate of growth for this period is approximately (-0.94%). It is clear that labour borne the greater burden of this economic downturn, somehow, profits managed to stay alive. This brings out an important point that Keynes (1930) highlighted, he argued that profit is like the widow's cruse that is never depleted, even in downturns and stagnation. The great recession in the USA is a modern day example of profits having the upper hand: see (Stiglitz 2012; Piketty 2014) for how the great recession has worsened already high inequality. Average profit and wage rates for this period are (0.13%) and (-1. 07%) respectively, consequently, wage shares declined relative to profit shares. Indeed, Guyanese labour has lost the battle in this decade.

Period B: A Tale of Recovery (1985-95)

The average profit and wage rates in this period are (0.16%) and (2.2%) respectively, which represents a recovery in the functional distribution of income. Note carefully that we differentiate between recovery and reductions of inequality. Taking into consideration the increases of inequality in the previous decade, this period can only be defined as a recovery. This is unlike the claim that this period was one of declining inequality (Gafar 2004). An average growth rate of (2.3%) characterized this period and based on the reductions of inequality, this has been a decade of inclusive growth.

Period C: Genuine Reductions of Inequality (1996-2006)

Unlike a steady rise in the wage rate during the recovery phase, wage rates have been highly volatile in this decade, while profit rates remain steady. Average growth was (2.06%), while average profit and wage rates were (0.37%) and (1.68%) respectively. Thus, on average, wages rose (1.31%) faster than profits, a genuine reduction of inequality in Guyana.

This is no small achievement, most countries in the world cannot boast of two decades of perpetual improvement in the functional distribution of income. It is important to highlight however, that the rate of economic growth in this period is lower when compared to the recovery phase and the rate of reduction of inequality is also lower in this decade than in the previous. Essentially, inequality decreased at declining rates.

Period D: A Reversal of Fortune (2007-13)

This period is not a full decade, it only accounts for 2007 to 2013, however, more than half of a decade. This is Guyana's best period thus far; average growth stands strong at (4.4%). Wage rates grew by an average of (1.99%) and profit rates recorded an average increase of (2.38%). But this period is a reversal of fortune in terms of the functional distribution of income; profit rates grew (0.39%) faster than wage rates. Two points are vital to note:

- These years witness the return of inequality and
- It is rising at a much slower rate than inequality has declined in the two previous decades.

While the latter point may comfort some, it is a cause for concern that in the period of strongest growth, the distribution of income has deteriorated. This evidence contradicts the dominant view, which argues that incomes must grow first in order to achieve a fairer distribution of income. Though all boats float, the tide is elevating some boats faster than others. Instead of consolidating the gains made in Period C, Guyana's growth explosion has disproportionately benefited profit earners: that small group that manages to stay afloat during hurricanes (Period A) and appropriates greater shares in income when the tide is steady (Period D). The widow's cruse indeed!

4.   Discussion

Guyana's Poverty Reduction Strategy Paper (PRSP) (2011-15) explains that inequality has declined between 1992 and 2006; this is consistent with the recovery phase (Period B) and the genuine reductions of inequality (Period C). Specifically, the PRSP (2011-15) shows that the Gini coefficient has declined from 0.44 to 0.35, a reduction by 0.09. But Gini coefficients are unable to illustrate the extent to which these gains are under threat as the reversal of fortune period highlights.

Period B is the best performing decade in terms of reductions of inequality, except it was a recovery. Actual reductions of inequality in Period C were relatively less spectacular. But is this reduction due to good luck or good policy? Firstly, the strength of growth in this period is weaker when compared to the previous decade. Further, the dramatic fluctuations of both growth and wage rates could not have been the objective of any good policy. It is hard to convincingly argue that the improvements in the functional distribution of income are due to 'inclusive' economic policies.

An inclusive growth model is one that increases per capita income without the simultaneous increase of income disparities, while safe guarding the gains from an improved distribution of income in times of poor growth. Given this view, Guyana's recent growth explosion is not inclusive, although the two previous decades point to the contrary. But an inclusive growth model must also produce sustainable growth, this is lacking in the two previous decades.

This analysis reveals an interesting insight into the nature of Guyana's growth model. The stationary nature of profit rates indicates that the growth model is not investment led, though profit rates started to trend

upwards in recent years. See eq. (5) for the nexus between profit and investment rates. The recent upsurge in profit rates is undoubtedly connected to the historically high gold prices and the investment boom that the mining industry experienced. But this connection between investment and profit rates is relatively new. The evidence shows that Guyana's growth model is not based on investment. This is not surprising; Guyana is a small open economy with little production capabilities.

5.   Why did Inequality decline and then reversed?

To answer this question we need to take a closer look at the sources of growth in Guyana. We are not interested in standard growth accounting but we do undertake a sectoral growth analysis. This article argues that an important source of growth in Guyana is the mining and quarrying sector and this causes spillover effects into the services industry. We argue that the recent increase of inequality lies in this causal mechanism. Distribution, non-tradable ICT, restaurants, transport and storage services account for the greater share of the services sector in Guyana. Given the nature of these services one can hardly argue for the reverse line of causation.

The nexus between the mining sector and the services industry should be no mystery. Mining activities require intermediate goods that can only be sourced from importation; this gives rise to wholesale and retail sub-sectors. Also, increased transportation by air, water and land is directly connected to the mining and quarrying industry.

Figures 2 and 3 illustrate the profit rates for the non-services and services sectors and these are calculated at 1988 base year prices using the method described in section 2. The most notable feature of Fig. 2 is the dramatic decline in profit rates in the mining and quarrying industry. This is important for two reasons:

- The performance of this sector regulates overall economic growth for a country heavily dependent on favourable commodity prices in external markets and
- It supports growth in other sectors like distribution, transport and storage services etc., which are important for employment and income.

Note carefully that the period (1995-05) of negative profits in the mining and quarrying sector is also Period C described in section 3. This supports the view that reductions of inequality in this period have more to do with good luck than good policy. Surely, negative profit rates are not consistent with any good economic policy. Therefore, the genuine reductions of inequality have less to do with rising wages but more to do with negative profits and this is stemmed from poor economic performance in the mining and quarrying industry.
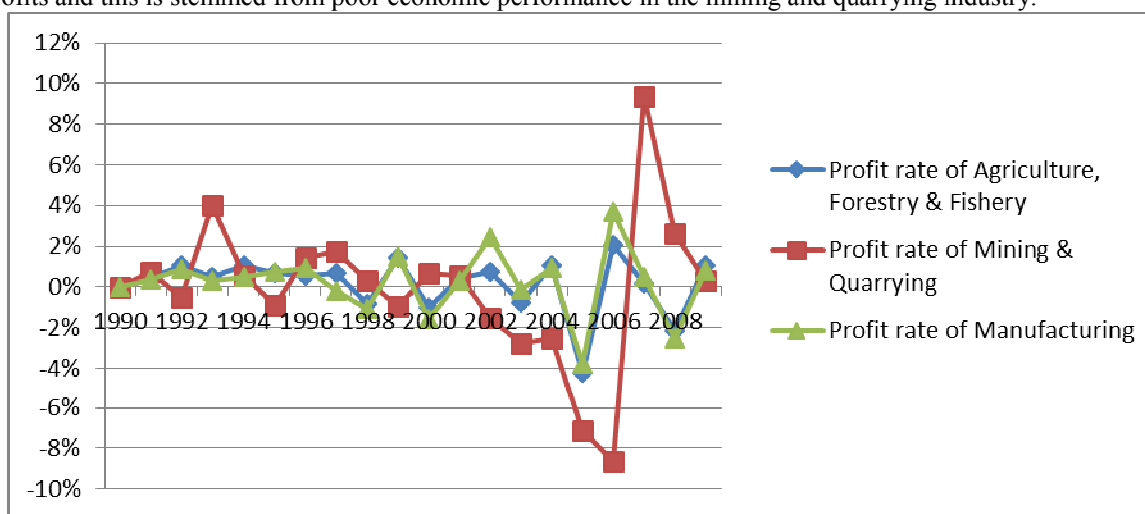

Figure 2. Profit Rates of the Non-Services Sectors at 1988 Prices

Stagnation, improvement and collapse characterize the evolution of profit rates for the services sector, see Fig. 3. Consequently, the periods of improvement in the functional distribution of income are the outcome of poor and unsustainable growth that led to the collapse and stagnation of profitability, instead of two decades of inclusive growth. We contend that the reverse is also true. A sustained boom in the mining sector will lead to robust growth in the services industry and profitability in all sectors, thereby, increasing inequality. Contrary to the popular notion on growth and distribution, in the Guyana case, growth is bad policy for the improvement in the functional distribution of income!
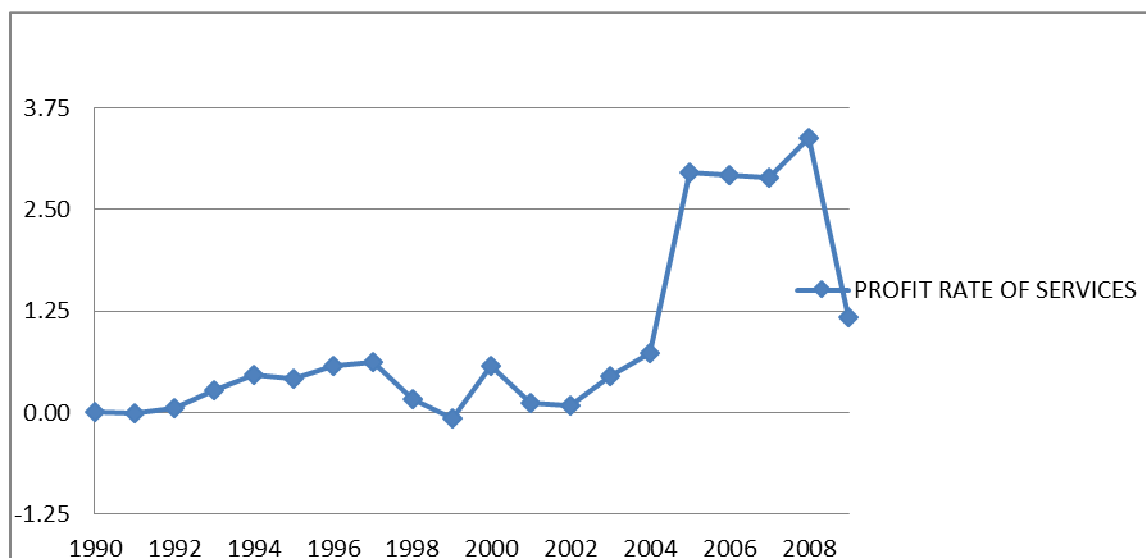
Figure 3. Profit Rates of the Services Sector at 1988 Prices

But how can we explain Period B, the phase of recovery in terms of growth and income distribution? The most important feature to note about this period is the short-lived economic recovery and one does not have to look far for a sound explanation. Figures 1, 2 and 3 illustrate the meager profit rates during this period, which indicates low investment rates and explains why the recovery was unsustainable.

(Weisman 2003; Staritz, Atoyan, and Gold 2007) support this reasoning that adverse terms of trade (for the mining and quarrying sector) reduces investment and thus, explains the meager and unsustainable growth in profit rates. Kaldoor-Verdoon Law (McCombie 2002) argues that low investment rates lead to poor productivity growth and (Weisman 2003) empirically verifies that total factor productivity growth during this recovery phase was (-5.5%). Further, (Faal 2003; Thomas, Jourdain, and Pasha 2011) contend that during this period the underground economy declined, which can explain the boost in economic growth and also why the latter is unsustainable. These unsustainable sources of the economic recovery limit the growth in profit rates and results in a relative improvement in the distribution of income. It follows that sustained growth leads to robust increases in profit rates and inequality.

This analysis makes an important contribution to the literature on Guyana's economic performance. Unlike (Singh 2013; Khemraj 2013; Staritz, Atoyan, and Gold 2007; Grenade and Lewis-Bynoe 2011; Grenade and Pasha 2011), this paper argues that the poor economic performance during the years 1997-2005 had more to do with low gold prices in world markets as opposed to poor governance and political turmoil. We do not wish to diminish the importance of the latter; rather, we emphasize the point that when an economy's economic performance is primarily externally driven, internal explanatory factors become secondary.

5.1   A Reversal of Fortune
Figure 4 highlights a mining boom in 2010 that corresponds to an equivalent boom in the services sector in the same year (see Fig. 5). Unlike previous mining booms, this one remains steady in spite of a decline in growth rates. The recent global financial crisis and the unprecedented increase in oil prices since 2007, led to historically high gold prices and a corresponding gold rush in Guyana. Grenade and Pasha (2011) argue that improved governance explains the economic recovery since 2006. But as was explained earlier, prices in external commodity markets are better explanations of Guyana's economic performance than political economy arguments.

The gold boon sustains profitability in the service industry and this is key in explaining the recent reversal of fortune. Unlike the non-services sectors, growth in the services sector is not wage intensive and this explains why profits appropriate most of the gains in income. See Figs. 6 and 7 for profit rates in the non-services and services sectors.
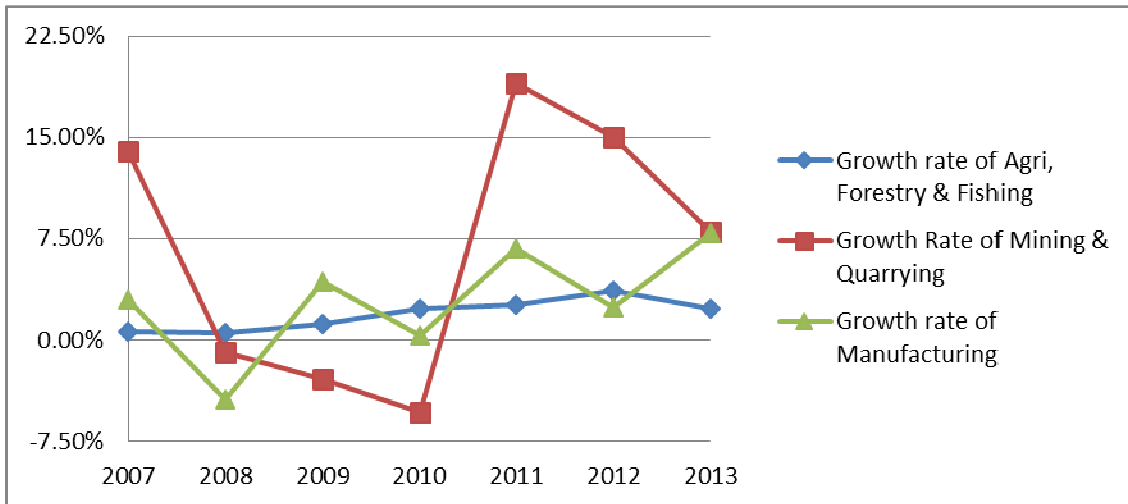
Figure 4. Growth Rates of the Non-Services Sectors at 2006 Prices
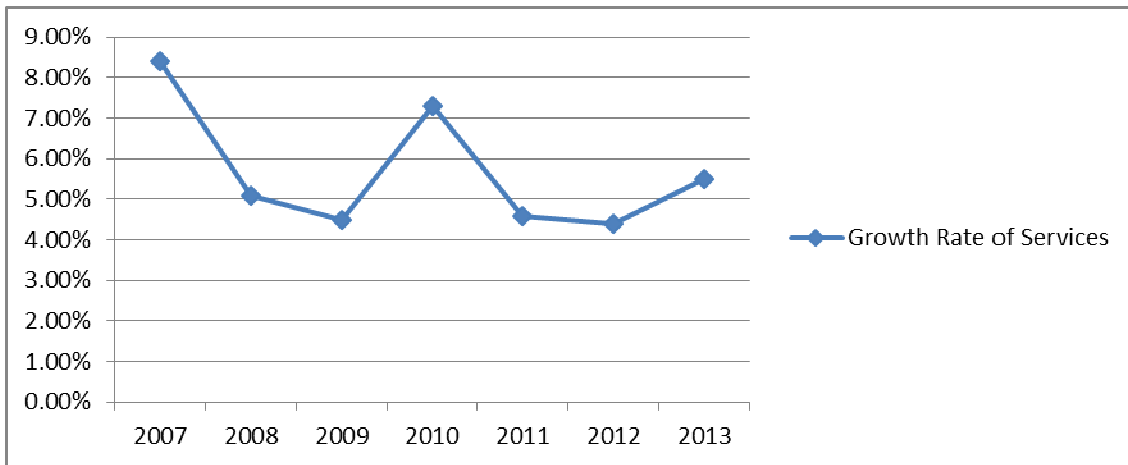

Figure 5. Growth Rates of the Services Sector at 2006 Prices
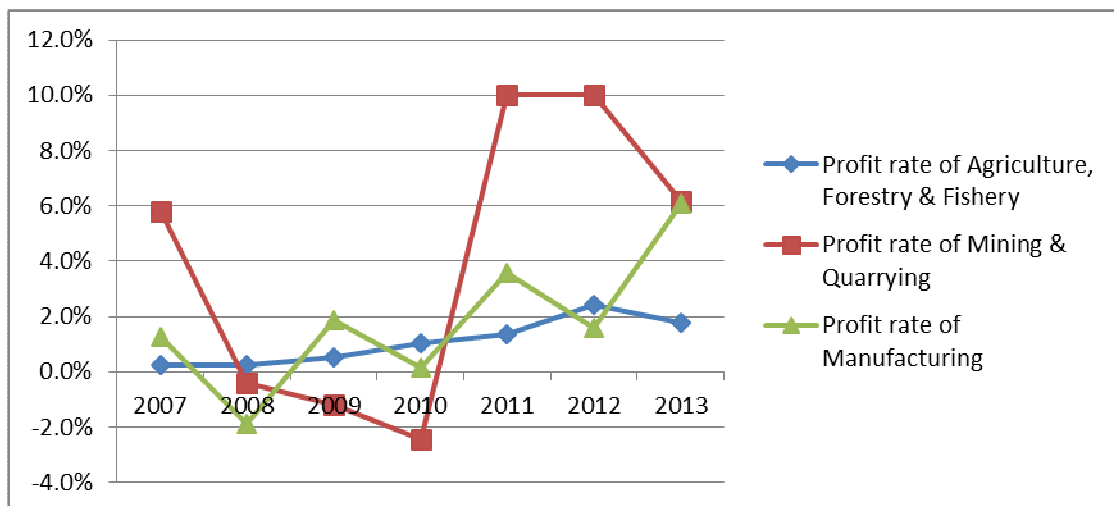

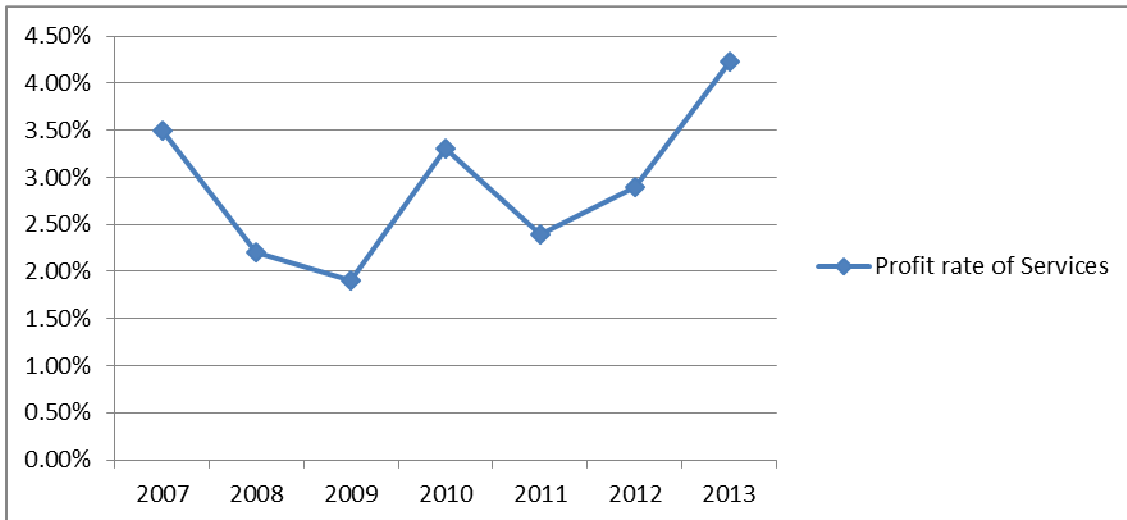Figure 6. Profit Rates of Non-Services Sectors at 2006 Prices

Figure 7. Profit Rate of the Services Sector at 2006 Prices

Unlike the non-services sectors, sustained growth in non-tradable services unambiguously lead to the following: $(r > w)$. Consider the case where a wholesale or retail trader has six sales girls/boys, an outlet store and one building for storage. A mining boom that leads to greater importation does not necessarily require ten sales girls/boys and more store outlets, though it may or may not necessitate additional storage. More importantly, it hardly leads to higher wages in the services sector, though; it inevitably leads to higher profit rates.

Financial services also increase with mining booms: more loans to miners, traders in the services sector and contractors and other customers in the construction sector. This will require increased monitoring of financial assets but not many more financial analysts or higher wage compensation. But it will increase banks' profitability on condition of prudent bank lending practices. Also, growth in non-tradable ICT and online shopping are hardly labour and wage intensive. Consequently, sustained growth in these sectors worsens the functional distribution of income. Therefore, if growth were sustained in Periods B and C the distribution of income would have deteriorated. Is Guyana's growth model inclusive? A poor growth model is evident when a society's only chance of reducing inequality is with poor growth!

Figure 8 illustrates the profit rates for the various sub-sectors in the services industry. It highlights their oscillation around a horizontal trend during the period that inequality has declined (1990-06) but also their recovery in recent years that explains the reversal of fortune. It is clear from the graph that distribution, construction, transport and financial services are the leading sub-sectors in the services industry. Unfortunately, these are low-wage intensive sectors; sustained growth in these will result in the following: $(r > w)$.
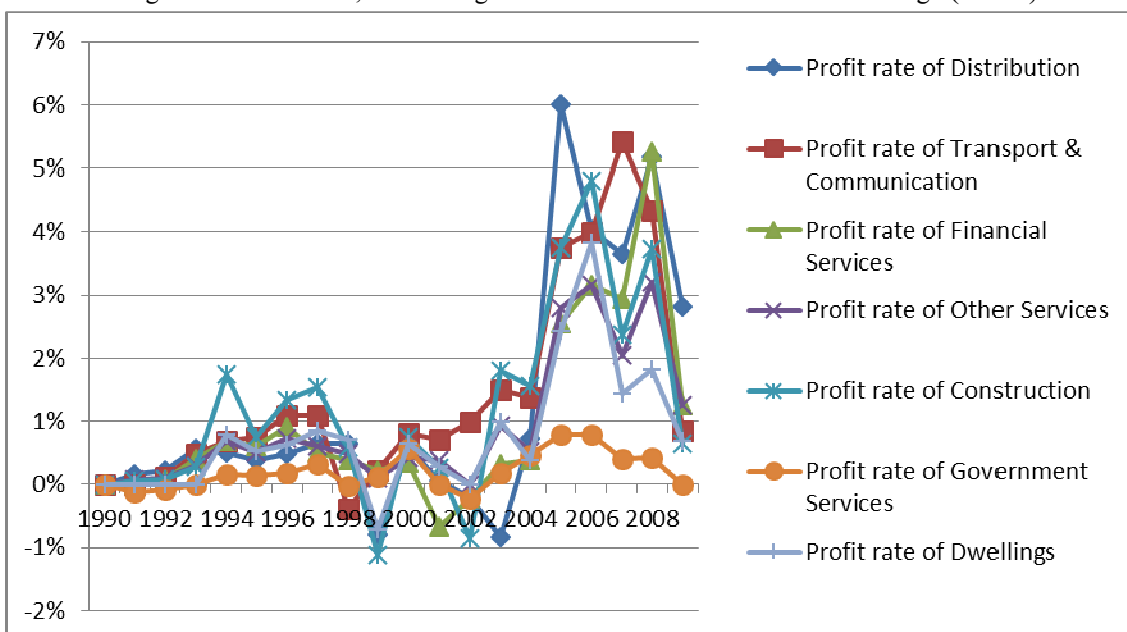

Figure 8. Profit Rates of the Services Sector

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The emphasis on non-tradable services and inequality is due to the detachment between growth in incomes and wages. Wage incomes increase substantially in the mining and quarrying sector during periods of economic boom. To attract labour into the hinterlands and away from urban centers and their families, higher labour compensation becomes necessary. Further, it is customary to tie wage income to gold production and gold prices; thus, gold booms unambiguously lead to higher wage income. Unlike labour in non-tradable services, employment in the mining and quarrying industry is fairly skills intensive, which justifies higher wage compensation. These mechanisms that lead to higher wages are absent in the services sector in Guyana, thus, explaining why this sector is the key source through which inequality increases.

Growth becomes important because it determines the rate at which profits exceed wages in the services sector and therefore, the rate of rising inequality. Note carefully that we do not generalize the view that sustained growth in Guyana leads to rising inequality. This relationship is only unique to countries with similar economic structure, one where non-tradable services appropriate increasing shares of GDP. Further, our proposition of growth and distribution in Guyana does not have a utopian prediction as in the Kuznets curve. In the absence of structural changes, economic growth will worsen the functional distribution of income.

6.   Conclusion

The principal contribution of this article is that it provides evidence of recent trends of inequality in Guyana, but the article goes beyond this and describes the evolution of inequality since 1974 to 2013. This is done using the Cambridge equation to derive profit rates and corresponding wage rates. The evidence implies that inequality is on the rise and this calls into question the inclusive nature of Guyana's recent growth boom.

The article argues that the mining and quarrying sector regulates Guyana's overall economic performance and in particular, ignites growth in the services industry. Much of the latter is composed of non-tradable services and consequently, low-wage activities. When growth and profits are robust in these sectors, a greater share of the gains in income goes to profits, thereby, increasing inequality. This parallels the jobless recovery in the advanced countries since the great recession; growth performance of this nature worsens the functional distribution of income.

The nexus between growth and inequality in Guyana is due to its economic structure. The latter does not allow strong economic growth to improve its distribution of income. The same can be said about the growth model is rich countries. Sustained growth in the FIRE economy increases profits relative to wages, which increases inequality. Unlike Guyana and other poor countries, rich countries have detailed data that allows them to provide better estimates of income inequality and concentration. Recent evidence shows that much of the financial profits go to the top 1% (Stiglitz 2012; Piketty 2014). If there is any claim to novelty in this article, it is that it creates an avenue for researchers to begin analysing growth and distribution in countries that lack these detailed data.

For poor countries like Guyana, absolute increases in income are important for poverty reduction but if this comes at the cost of higher inequality it can increase the likelihood of democratic capture, reduce aggregate demand and promote unsustainable debt-induced consumption, which can increase poverty in the long run.

While the new approach undertaken in this article is only suggestive, in our view, a poorly lit candle is better than no light and until data becomes available in poor countries; we call for extensive empirical research on the dynamics between growth and distribution using this approach. A promising extension of this work is to investigate the feedback mechanisms between changes in the functional income distribution and labour's bargaining power in countries like Guyana. Also, one can potentially use this approach to empirically determine the nature of growth regimes (profit vs. wage led growth regimes) across countries and time.

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