Journal of Academic Research in Economics

Volume 11 Number 3 December 2019

ISSN 2066-0855

PROOFREADERS

MIHAELA BEBESELEA, Spiru Haret University
ONORINA BOTEZAT, Spiru Haret University
MIHAELA CIOBANICA, Spiru Haret University
DANIEL DANECI, Spiru Haret University
MIHNEA DRUMEA, Spiru Haret University
CLAUDIA GUNI, Spiru Haret University
PAULA MITRAN, Spiru Haret University
LAVINIA NADRAG, Ovidius University Constanta
IULIANA PARVU, Spiru Haret University
LAURA PATACHE, Spiru Haret University
MEVLUDIYE SIMSEK, Bilecik University
ADINA TRANDAFIR, Spiru Haret University

CONTENTS

THE REDISTRIBUTIVE EFFECT OF TAXATION IN NIGERIA

HYACINTH EMENTA ICHOKU
Veritas University, Abuja
Email: hichoku@yahoo.com
WALTER ANUKU
Pures College of Technology, Toronto
Email: wanuku@yahoo.com

Abstract

Taxation has been in existence before the amalgamation of Nigeria as a political entity in 1914. Direct taxes were first introduced into the northern part of Nigeria. The taxes were successfully administered because the citizens were used to one form of tax or another before the formalization of direct taxes. With the amalgamation of the northern and southern protectorate in 1914, direct taxation was introduced into the western territory in 1916 and then the eastern provinces in 1927. In Nigeria, the enabling tax laws and regulations were fashioned after those of Britain. While there is plenty of tax revenues, poverty prevails and the taxpayers are worse off, hence the justification of this study. This study methodology adopted a focus on decomposition of personal income tax of Civil Servants and Political appointees in 2018; it determined the implication on the economy, and whether it has reduced inequality of income and wealth during the period under review. The study compares the redistributive effect of taxation between civil servants and political appointees. Cross-sectional data using the Aronson, Johnson, and Lambert (AJL) (1994) decomposition framework was deployed to examine the redistributive effect of Nigeria's income tax. Also, the Gini index was calculated with the pre-tax and post-tax information to determine if the Nigerian tax system has reduced income inequality. The overall result shows that income inequality exists among Nigerians and that our tax system is progressive but do not redistribute wealth.

Keywords: Distribution, Distributive, Achievement Gap, Education, Education and Gender, Education and Inequality, Education Quality, Equality of Opportunity, Income Distribution, Inequality, Low Income, Need Based Financial Aid, Poor, Taxation, Subsidy, Development, Poverty.

JEL classification: D3, I24, I320, I13 E62, D63, H24, H22.

1. INTRODUCTION

In Nigeria's federal system, the regions and later the states always maintained the right to impose taxes on incomes, properties, and determine fees for services. This right is recognized and embedded in all our constitutions since independence. Taxes are ideally used as a means of supporting the infrastructure of our country. The most positive and compelling basis of support for taxation is that it guarantees the payment for infrastructure on a shared cost basis according to your income (Fashola, 2007). The tax creates a balance between the various social and economic classes by the redistribution of wealth and income (Meltzer & Richard, 1981). The redistribution raises the quality of life and increases social cohesion. If there are no taxes, there will be nothing public such as roads, public schools, hospitals, law enforcement, courts, fire service, security, and waste collection. According to Holmes & Sunstein (2000), taxes are dues that we pay for the privileges of membership in an organized society. Taxation should increase national incomes and redistribute it in such a manner that inequalities of income and wealth are reduced in the economy (Aghion, Caroli, & Garcia-Penalosa, 1999). The latter is because absolute disparities of income and wealth create social cleavages (Narayan, 2002), which leads to economic and political instability. In this regard, Ravallion (2001), maintained that extreme inequalities stand in the way of economic development. Ispolatov, Krapivsky, and Redner (1998) narrates that redistribution aims to remove these absolute inequalities and direct the misdirected and misused resources into productive channels for economic development.

Taxation and expenditure on welfare are the two primary redistributive policy instruments to reduce inequality (Alesina & Rodrik, 1994). Besides, Hofman and Guerra (2007) states that redistribution ensures a more equitable distribution of income and other resources. In the assessment of redistributive policies, two fundamental principles are equity and efficiency (Bowles & Gintis, 1996). Equity relates to the fair distribution of resources, while efficiency is concerned about losses due to distortion in economic behaviors (Rosen, 2004). Redistribution of the resources can be considered as a secondary objective or a means to achieve equity as a primary goal (Le Grand 1991). Equity in the measurement of distributional justice of redistributive policies has two dimensions, namely: vertical and horizontal equity (Musgrave, 1990). For vertical equity (progressive taxation), redistributive policies should levy appropriately more taxes from the rich and provide appropriate benefits to the poor (Ostry, Berg, & Tsangarides, 2014). For horizontal equity, redistributive policies should levy identical taxes or provide equal transfers to all units with the same level of wellbeing (Plotnick, 1985). The effect of progressive taxation is often represented as merit because it tends to make inflation and deflation in some measure self-correcting. According to Kakwani (1986), redistributive policies is classified into two categories. The first category is the policies that have a direct impact on the markets generating incomes, by changing policies, the distribution of incomes alters the supply and prices of goods and services. For example, this category includes minimum wage legislation, subsidized interest rates for home buyers, and

wage indexation. The second category is the fiscal policies that redistribute factor incomes received by individuals through the market operation. Direct and indirect taxes and various rent that support welfare programs belong to the second category. However, Bernanke and Gertler (2000), notes that the fiscal policies have a low direct effect on the process of price and income formation.

To what extent should income be redistributed, and what are the consequences for the economy (Weisbach, 2003 and Warr, 1983). These questions have been on the research agenda ever since the minimum sacrifice theory was introduced by Adams Smith (Mill, 1904) and later by Edgeworth and Pigou (Creedy, 1981). The approach suggests that after-tax incomes should completely be equalized if the marginal utility of consumption is decreasing. This reasoning does not take into account the disincentive effects of taxation on labor supply decisions which create a trade-off between equity and efficiency considerations (Mirrlees 1971, and Sheshinski 1972). In addition, they recognize how the distortive effects of fiscal policy have been a common assumption. The latter implies that the redistribution achieved goes entirely through the fiscal system. The problem with income redistribution is a high level of horizontal inequity with the unequal tax treatment of equal income groups (Wagstaff & Van Doorslaer, 1997). Whether income taxes levied at a state or regional level effect the after-tax distribution of income is relevant across the states in Nigeria. The apparent inequality in Nigeria requires efficient wealth redistribution (Oshewolo, 2010). In a similar vein, Bird & Zolt (2005), summarized that inequality leads countries to implement more redistributive taxes in the form of subsidies, transfers, and pension scheme.

In Nigeria, as in most developing countries, policies for poverty alleviation tend to focus almost exclusively on income growth (Fosu, 2017), neglecting the potential role of redistribution. It was asserted that to meet the global targets for reducing poverty, it will be essential to make pro-growth policies more favorably distributed (Klasen, 2008). Also, that structural inequalities, especially in income and input distributions, are manifestations as well as potential causes of poverty (Bailey, Krieger, Agénor, Graves, Linos, & Bassett, 2017). The higher the level of inequality, the less impact economic growth has in reducing poverty for any rate of economic growth. In corroboration, Ali (1997), notes that if poverty reduction is adopted as an overarching objective of development, then a policy which would result in a one percent reduction in the Gini coefficient would lead to an equal percentage reduction in the head-count ratio. Nigerians living on about $2 per day have risen from approximately 28% in 1979 to about 41% in 1993 due to the combined effects of mismanagement by the military dictatorship and the Structural Adjustment Programme (SAP) (Nwagbara, 2011). The failure to actualize the democratic transition in 1993 contributed to the political upheavals and economic crises that accelerated the rise in the poverty profile of Nigeria (Akinyoade, Center, & Enweremadu, 2014). By 1999 when the democratic transition eventually took place, about 70% of Nigerians were living in poverty (Kates & Dasgupta, 2007). The scarcity of social support programs is reflected in the low priority given to social welfare programs in the public expenditure over the decades.

2. LITERATURE FRAMEWORK

Taxation has had a long and influential history in shaping civilizations throughout the world (Gore, 2006). Great ancient civilizations such as Egypt, Rome, Greece, Persia, Zulu, and Benin taxed their people to achieve collective greatness (Brazier, 2011). Concerning human existence, there were only two certainties in life: taxes and death (Foster & Iamnitchi, 2003). In Africa, emperors and kings received tax in the form of tribute or a portion of farm produce or profit from trading goods from their subjects and provinces (Rodney, 1966). In another continent, the English parliament passed the world first income tax in 1404 (Allen, 2001). According to Fashola (2007), the first instance of taxes being deducted out of a person's income from the source was in 1512, putting the Europeans ahead of Nigeria in the legalization of tax matters. The redistributive role of taxation consists of increasing the real income of the masses and reducing higher income levels (Gruber & Saez, 2002). Redistributive policies are of two types: proportional and progressive income tax, which is concerned with vertical equity (Diamond & Saez 2011). The strategies seek to alter the size of the distribution of income in general ways. Lipsey, (1989) rightly stated that high marginal rates of income tax combined with expenditure system that benefit all income groups more or less equally would narrow income inequalities.

French Revolution during the socialist agitation preceding 1848, that taxation should be a means of redistributing incomes was decisively rejected (Hobsbawm, 2010). In the 1830's redistribution became more widely advocated, that McCulloch (1845), expressed his objection in the quoted statement: The moment transparent principle of exacting from citizens the same proportion of their income, you are at sea in the absence of rudder, and there is no amount of injustice you may not commit (Blum & Kalven, 1952). In 1848, Friedrich Engels and Karl Marx proposed a heavy progressive or graduated income tax (Marx, Griffith, & Engels, 2009). As one of the measures the period after the first stage of the revolution, the proletariat will use its political strength to wrest all capital from the bourgeois, and to centralize the instruments of production within the powers of the state. These measures were described as means of despotic inroads on the right of property ownership. These necessitate further inroads upon the old social order and are unavoidable as a means of entirely revolutionizing the mode of production. Kyj, Romeo, and Marshall, (2001), narrated that the general attitude was still well summed up in A. Thieres statement that "proportionality is a principle, but the progression is hateful arbitrariness." After this first onslaught was repelled, the agitation for progressive taxation resurfaced in a new form. The social reformers disclaim any desire to alter the distribution of incomes. Then began to contend that the total tax burden assumed to be determined by other considerations should be distributed according to the people's ability to pay. To secure the equality of sacrifice and that this would be best achieved by taxing incomes at progressive rates (Seligman, 2004). Although numerous arguments advanced in support of this still survive in public finance, it requires consideration as some still believe that it provides a kind of scientific support of regressive taxation. Despite the abstract

character of progressive tax, it had tremendous influence in making scientifically acceptable what before had been admittedly based on mere arbitrary postulates. Recent developments in the field of utility analysis completely rejects the argument because of the belief in the possibility of comparing the utilities to different persons has been abandoned. Also, partly because whether the concept of decreasing marginal utility can legitimately be applied to income as a whole is doubtful. Mill (1979), rightly stated that it has becomes meaningless to speak of the degree of utility of a thing by itself. There can now be doubts that the use of utility analysis in the theory of taxation was all regrettable (Spicer, 1995). Stakeholders who advocated progressive taxation during the nineteenth century generally stressed that their aim was to achieve equality of sacrifice and not income redistribution (Okun, 2015). Also, they generally held that the aim could justify a moderate degree of progression and that its excessive use was inappropriate (Williamson, 1990). Numerous attempts to supply an objective standard for an appropriate rate of progression failed and no answer was offered for the objection. Meanwhile, Buchanan (1950), raised the suggestion that rates would not stay within limits was treated as a distortion of the argument, betraying a reprehensible lack of confidence in a democratic government.

In 1891 Prussia introduced an income tax that is progressively rising from about 0.67% to 4% (Schueler, 2016). But, Rudolf von Gneist, the venerable head of the consummated movement for the Rechtsstaat, protested in the Diet about the abandonment of the fundamental principle of equality before the law, which provided the only barrier against encroachment on the property (Cohn, 1895). The smallness of the burden involved in the new schemes made ineffective any attempt to oppose it as a matter of principle. Some other countries soon followed Prussia, yet, it took about twenty years for the movement to reach the Anglo-Saxon powers. It was in 1910 and 1913 that United States and the Great Britain adopted graduated income taxes rising to a spectacular figure of 8.25% and 7% (Atkinson, 2002). In the space of thirty years, these figures had risen to 97 and 91 % (David, 2014). What the supporters of progressive taxation had asserted could not happen for half a century, came to pass. The change in the absolute rates, completely changed the character of the problem, making it different not only in degree but kind. The only support on which a progressive scale of overall taxation can be defended is the desirability of changing the distribution of income (Hale, 1923). Also, the defense cannot be based on any scientific argument but must be recognized as a political postulate. The reason that is usually offered explains that the increase in public expenditure in the last forty years was not possible without resort to progression (Sinn, 1996). In this regard, Atkinson (2002), submitted that without progression, a huge burden would have had to be placed on the poor masses and that immediately the necessity of relieving the poor was accepted, some level of progression was inevitable. However, after the introduction of progressive taxes, the poorest who contributed the largest number of voters did not benefit but the working class (Salamon, 2000). On the other hand, it would probably be true, that the illusion of using progressive taxation, to shift the burden onto the shoulders of the wealthy has been the justification of taxation increase (Slemrod, 1998). Base on the influence of

this illusion, the masses accepts a heavier load than they would have done otherwise. According to Hayek (1960), the only major result of the progressive tax policy has been the limitation of the incomes earned by the most successful with the result of gratification of the less well-off.

3. DISTRIBUTIVE ROLE OF TAX SYSTEM

Countries use taxes for many purposes, such as raising revenue to support government expenditures, encourage or discourage certain behaviors, and to correct market imperfections. Also, taxes and expenditures are used to distribute wealth. A good tax system allocates the cost of governance in some fair way (Bird, & Zolt, 2005). In addition, achieving an acceptable degree of fairness in taxation allows the government to collect funds from the private sector without adding to the inflationary pressure. Fair taxes are an essential ingredient in achieving the quasi-constitutional equilibrium necessary to maintain a sustainable political structure (Smart & Bird, 2006). A country's tax system is important and a highly visible symbol of its fundamental political and philosophical choices. There are many non-exclusive views of the possible redistributive role of a tax system. A tax system may be used to redistribute income to reduce the level of inequality (Goñi, López, & Servén, 2008). The tax burden may be allocated in whatever manner that is politically acceptable with its distributive impact from that allocation rather than being its rationale (Posner, 1975). A tax system may attempt to allocate tax burden following one of the many other concepts of fairness in economics (Wenzel, 2002). A different approach might see the task of a tax system as simple to raise the amount of revenue, given the economic and political constraints to fund redistributive expenditures. (Posner, 1974). Notably, Klasen, (2003) submitted that a more limited approach might focus less on reducing inequality and more on reducing poverty through pro-poor tax policies to free the poor from some of their tax burdens.

Determining the appropriate distributive role of taxation not only differ sharply but changed over a period. In the 1950s and 1960s, tax policy discussion and tax reform in many countries reflected optimism (Danirodrik, 1996). In the era stated above, redistribution was influenced mainly by post-war European experience and in the reformist approach of the largest U.S.A. trained advisers (Latham, 2010 and Bebbington & Thiele 2005). Most analysts in the 1950s and 1960s take it for granted that a highly progressive personal income tax with marginal rates of 60% to 70%, buttressed by a substantial corporate income tax, constitute the core of an ideal tax system (Bird, & Zolt, 2005). Consumption taxes, excises, customs duties and cascading manufacturers sales taxes, were grudgingly accepted as necessary for revenue purposes (Bird, 2003). But the sooner such levies are replaced by robust income taxes the better. Little attention is directed at local taxes because all the action was at the central government level.

The two aims of taxation were generally seen to be; to raise substantial revenue to finance the state as the hub of development and, to redistribute wealth. Not only did the reason for redressing inequality through fiscal means seem

important, but the ability of taxes to do the job was mostly unquestioned. Indeed, many optimists thought that revenue and redistribution goals could be achieved simply by imposing effective tax rates on direct income. The cost of doing so received little attention because the negative effects of taxes on investment, growth, and savings were considered to be minimal. High tax rates became persuasive for governments to use tax incentives to induce private investors to invest in projects most needed for developmental purposes (Prud'Homme, 1995). In short, the conventional knowledge was that developing countries could solve their fiscal problem by learning to tax. But Tanzi (2000), remarked that the expression is meant to tax in a properly progressive fashion with heavy reliance on personal income taxes.

After a while, most tax policy advisors saw the personal income tax as the center of the tax universe. But, the main challenges in developing countries were to firstly, adopt an excellent comprehensive income tax (Bird & Zolt, 2004), put into place a sufficiently effective tax administration to spread the cost of governance among members of society. Although, the cost of governance should be the ability to pay (Bolton & Mehran, 2006). Income, especially the Haig-Simons concepts was by general agreement, the best proxy for ability to pay (Musgrave, 1967). As a result, early tax missions to developing countries advised policymakers to replace taxes on consumption such as tariffs, export taxes, excise taxes, general sales taxes with taxes on income (Goode, 1993). Also, recommended, is a comprehensive progressive personal income tax both to redistribute income and to ensure that tax revenues would increase sufficiently and rapidly to allow government expenditures to expand at a rate higher than the growth rate. But Piketty and Saez, (2003), noted that progressive taxation did not begin with the personal income tax. Throughout history, countries collected proportionally higher taxes from the rich than the poor (Auriol & Warlters, 2005). The latter was possible through the use of inheritance taxes, property, and taxation on businesses. As the world economy became slow in the 1970s, the concern for growth and attitudes towards the structure and role of taxation began to change (Peacock & Wiseman, 1961). By the end of the century, most analyst and policymakers had come to believe the ineffectiveness in redistributing income and wealth (Steinmo, 2003), leading to sharp divide between the rich and the poor. The views on the appropriate role of government moved from dirigiste to laissez-faire (Bird & Zolt 2004), emphasizing the reduction of the size of the state through privatization and other means. The result was that income tax rates on persons and corporations were cut sharply and are now almost universally in the 20%-30% range (Djankov, Ganser, McLiesh, Ramalho, & Shleifer, 2010). However, most discussion about tax burdens in developed and developing economies alike continues to focus on the personal income tax. The focus is understandable, because of the high visibility of this tax.

Progressive taxation of total income will reduce the consumption and accumulation of wealth of the rich (Gunn, 1979). Progressive policy may adversely affect productive investment. When a progressive income tax is levied on individuals and corporations, it should be accompanied by certain exemptions to lessen the effects of taxation on business investments. In addition, Kaldor (2014)

summarized that progressive taxation should be levied so that it does not lead to dissaving of the taxpayers. The tax system may raise the maximum amount of revenue given various economic and political constraints to fund redistributive expenditure policies. Also, a progressive policy will collect proportionally higher taxes from the rich than the poor, that is, the higher your income, the higher your taxes. Whichever be the policy, they are all focused on reducing inequality and alleviating poverty to free the poor from tax burdens. Differences in leadership view of the appropriate redistributive role of taxes will lead to different tax system designs. Depending on the redistributive policy operational in a country, the effects on incentive investment are less understood. The tax level in a country depends not merely on the ability of its tax administration to collect taxes rather on a much more extensive array of considerations. For example, if potential taxpayers perceive that their preferences are adequately represented in political institutions and consider the government to be helpful and not wasteful, citizens will be willing to vote for higher rates of taxation and comply with their tax obligations. Supply factors (tax handlers) and demand factors (the shadow economy, governance and corruption, tax morale, and inequalities in the distribution of income) affect the level of taxation and hence the performance of the public sector. This article encourages tax advisors and importantly the government that sustaining increased tax vote is a function of provision of benefits in the form of good roads, improved welfare, security, pipe-borne water, electricity, housing, health care, and free education from tax proceeds.

4. PROGRESSIVITY OF TAXATION

The personal income tax in some countries is progressive because tax rates increase as taxable income rises. When income taxes are borne by the individuals who pay them, tax liabilities appear to increase as a proportion of income (Gruber & Saez, 2002). But many problems exist in interpreting the meaning of the figures that may be derived from such exercises. For example, the progressivity rate of increase in taxes may differ across different ranges of the income distribution (Benabou, 2000). Also, differential degrees of tax evasion may alter assessments of relative progressivity. Progressive tax systems have a surprisingly weak redistributive effect (Goñi, López, & Servén, 2008). The estimated progressivity of personal income tax rates is more than offset by the estimated regressivity of consumption and other taxes. For example, Pechman and Okner (1974), found that the U.S. tax system in 1966 was not significantly progressive, also that the U.S.A tax system remained essentially proportional overall with little effect on income inequality.

Economists have found that the income tax has had a more significant effect in reducing inequality in other developed countries (Tanzi, 1998). Still, under the most progressive assumptions concerning the incidence of different taxes, taxes are generally not very effective in reducing inequality (Goñi, López, & Servén, 2008). One reason is that inequality arises from many non-tax related factors (Slemrod & Bakija, 2000). In Latin America, for instance, inequality results

from a complex set of interconnected causes acting through markets, household formation, and state policy (Apple, 2013). Which reflect the unequal socio-political distribution of resources. As many recent studies have argued, the country's best chance to eliminate income inequality may be through its expenditure programs (Corak, 2013). But in most developing countries government spending programs have been ineffectively targeted from the perspective of either relieving poverty or reducing inequality (Ravallion, Squire, & Bruno, 1999). In most developing countries, politics is essentially clientelistic, and when the pro-powerful party is in power as has always been the case, it should come as no surprise that the fiscal systems put into place are not very pro-poor. Until the political environment and the political equilibrium reflected in fiscal outcomes change, the income distribution seems likely to persist. However, this argument may be less effective if reducing short-term suffering from poverty is sufficiently desirable. Redistribution can contribute to long-term poverty alleviation (Kanbur, 2001). The lesson for developing economies is not to avoid redistribution policies but to redistribute in the most economically beneficial way. The argument against fiscal redistribution is that it gives rise to relatively high effective marginal tax rates and hence, substantial efficiency losses (Slemrod, 1990). But the lesson for developing economies is not that nothing can be done through the fiscal system to deal with unproductive inequality but that marginal tax rates should be kept low by increasing the tax base which is the reason for the usual broad-base and low rate recipe for tax reform make sense from both an efficiency and a distributional perspective. Nevertheless, the situation is far from clear whether leadership in Nigeria and many developing countries are willing to change tax and expenditure policies to a distributive ideology. At the bottom of the distributional pyramid, unskilled poor in less developed countries can move across the border and find low-skilled, but relatively better-paying jobs in the developed countries. Incentives to realign the low-level distributional equilibrium present in developing countries like Nigeria are weakened.

5. MEASURING REDISTRIBUTIVE EFFECT OF TAXATION

Since the days of Musgrave and Thin (1948), redistributive effects have commonly been measured by comparing the Gini coefficients G_x and G_{x-T} for original pre-tax and post-tax income respectively. They defined a measure of effective progression as an index that measures the extent to which a given tax structure results in a shift in the distribution of income towards equality the conventional method to measure Redistributive Effect (RE) using the Lorenz and Gini coefficients in this case would require the subtraction of the post-payment Gini from the pre-tax Gini coefficient. If the value is positive, the tax system is progressive. It reduces inequality if the post-tax Gini coefficient is lower than the pre-tax Gini coefficient. If the value is zero, then the payment system is proportional while a negative value will suggest a regressive tax system.

5.1. MODEL FOR THE STUDY

The Aronson-Johnson-Lambert Decomposition Model.

The redistributive impact is defined as the reduction in the Gini coefficient caused by income tax (Wagstaff & Van Doorslaer 1997). Thus,

$$RE = G_X - G_{X-P} \tag{1}$$

where G_X and G_{X-P} are the pre-tax and post-tax Gini coefficients respectively, and x denotes pre-tax income, or some measure of *ability* to pay, and *P* denotes the tax. Aronson, Johnson, and Lambert (1994) shows that the difference can be written as:

$$RE = V - H - R \tag{2}$$

where *V* is the vertical redistribution, *H* is the horizontal inequity, and *R* is the degree of reranking. The vertical redistribution component represents the redistribution that would arise if there were horizontal equity in taxes (Wagstaff, Adam, et. al., 1999), and can then by defined as:

$$V = G_X - G_0 \tag{3}$$

Where G_0 is the between-groups Gini coefficient for post-tax income. This can be computed by replacing all post-tax incomes with their group means. *V* itself can be decomposed into a tax rate effect and a progressivity effect:

$$V = (g/1 - g)K_e \tag{4}$$

Where *g* is the sample average tax rate (as a proportion of income) and K_E is the Kakwani index of taxes that would arise if there were horizontal equity in the tax system. It is computed as the difference in between the group's concentration index for taxes and G_X. In effect, the vertical redistribution generated by a given level of progressivity is scaled by average rate *g*.

Horizontal inequity *H* can be measured by the weighted sum of the group (*j*) specific post payment Gini coefficients, G_{X-P}, where weights is given by the product of the group's population share and its post payment income share, $\alpha j.H =$

$$\sum \alpha j \; G^{j}_{X-P} \tag{5}$$

Note that because the Gini coefficient for each group of pre-tax equals is nonnegative, *H* is also non-negative. Horizontal inequity *H* reduce redistribution, and do not increase it. Implying that any horizontal inequity will always make a post-tax distribution of incomes unequal than it would be in its absence.

R captures the extent of reranking of income that occurs in the move from the pre-tax to the post-tax distribution of income. It is measured by:

$$R = G_{X-P} - C_{X-P} \tag{6}$$

where G_{X-P} is a post-tax income concentration index that is obtained by first ranking households by their pre-tax incomes and then within each group of pre-tax

equals, by their post-tax income. R cannot be negative as the concentration curve of post-tax income cannot lie below the Lorenz curve of post-tax income. Note that the two curves coincide if no reranking occurs.

In all, the total redistributive effect can easily be decomposed into four components: an average rate effect (g), the departure-from-proportionality (progressivity effect (K_E)), a reranking effect R, and a horizontal inequity effect H. Empirical execution of this decomposition requires choice of income intervals to define equals. Although this choice does not affect the total $H+R$, however, it will affect the relative magnitudes of H and R. Generally, the larger the income intervals, the greater will the estimate of horizontal inequity and the smaller the estimate of reranking (Aronson, Johnson, and Lambert 1994). That makes the distinction between H and R rather uninteresting in applications. Additionally, is the quantification of the vertical redistribution V, in absolute magnitude and relative to the total redistributive effect, and its separation into average rate and progressivity effects.

The decision to deploy the Aronson-Johnson-Lambert Model of redistributive effect in this study is based on the fact that they are most accepted and widely used. In addition, Reynolds- Smolensky index assumes horizontal equity (i.e. equal treatment of equals) does not exist. Everyone at a particular income level is assumed to contribute the same amount of taxation but this can hardly be a plausible assumption. Furthermore, there is the problem of re-ranking that is not calculated by the Reynolds Smolensky index. Re-ranking effects leads to people having different ranks in the pre and post payments periods. Thus, it is important to include horizontal inequity and re-ranking (Reynolds, Avebury & Smolensky, 1977). Unfortunately, the Reynolds- Smolensky index assumes there is no horizontal inequity and no re-ranking occurs in the transition from pre to post-payment income periods.

5.2. DATA

Cross sectional data will be collected from Delta state government payroll for this study showing salaries of Civil Servants and Political Appointees, their Annual basic and Annual Pay-As-You-Earn (P.A.Y.E) taxes respectively, for year 2018. The choice of this study site is predicated on the fact that research of this kind which focuses on small area analysis tend to yield better results than those that attempt a larger coverage. The above is consistent with Poverty and Economic Policy (PEP) Research Network, research objectives of focus on small area analysis (Fine, & Nabli, 2011). With a population estimated to be about 4.5 million people and diverse sub-ethnic groups, Delta state mirrors development in Nigeria as a whole. This implies that the results could be generalized to Nigeria. Concentrating on a state will provide a sharper focus to the redistribution of taxes in the country.

5.3. ANALYSIS AND PRESENTATION OF DATA: ARONSON, JOHNSON, LAMBERT (AJL) DECOMPOSITION FRAMEWORK

Redistributive effect of Personal Income Tax (PIT) contributes to decrease income inequality and standard approach for measuring this impact is to compare pre-tax and post-tax Gini coefficients. Aronson, Johnson, Lambert (1994) have shown that the overall redistributive effect RE (difference between pre-tax and post-tax Gini coefficients) could be decomposed into four components.

Vertical effect is a measure of the inequality reduction that would have occurred if equals had been treated equally, in other words, it measures the progressivity effect of the (PIT) which is determined by tax level g (as share of PIT in pre-tax income) and progressivity index KT proposed by Kakwani (1976). The latter is based on the assumption that there was no difference in tax treatment, that is everybody with same income x faces the same tax schedule.

Horizontal effect also is a measure of loss of the redistributive effect due to unequal treatment of equals, which is a direct measure of the classical horizontal inequity, that is; the unequal treatment of equals, calculated as a product of αj (product of the population share and post-tax income share of households with pre-tax income x) and G_{X-T} (Gini coefficient for post-tax income for workers with pre-tax income x). Reranking; an additional loss of the redistributive effect arising from the difference in pre-tax and post-tax ranking of income units. It is calculated in the base of G_{X-T} (post-tax Gini coefficient) and C_{X-T} (coefficient of concentration for post-tax income calculated by ranking taxpayers first according to the pre-tax income and then within each group of pre-tax equals by their post-tax income.

5.4. DECOMPOSITION METHOD

This section shows the estimation procedure using the AJL framework. Foremost is the calculation of the redistributive effect (RE) which is computed as the difference between the pre-tax and post-tax Gini indices i.e $G_X - G_{X-P}$. Gini indices is calculated using the convenient covariance method (Jenkins 1998). The formula is represented as:

$$Gini\ index = 2cov(x_i\ , R_i)/x \tag{7}$$

Where x is the income of the unit and R, is the fractional rank of that unit of income, x is the mean of income (x_i) variable. This computation was carried out by Statistical Package for Social Statistics SPSS 23.0, and sorted by Excel worksheet.

Obtaining the value of vertical effect v in the model as specified in equation, the values of g and kE are first computed and then V is then calculated, g is the average tax rate (as a proportion of income) and kE is the kakwani index obtained from $kE = CT - G_X$. CT (concentration curve) assumes that workers

within a defined income equal pays equal tax, it is obtained using the convenient covariance method similar to the method of calculating Gini coefficient but it varies between –1 and +1. The values are negative when the curve is above the diagonal and positive when they are under the curve. It is giving as:

$$CT = 2cov(tf(x), R)/X \tag{8}$$

Where *tf(x)* is the average tax made by a unit of pre-tax equals which varies according to prepayment income band. X is the mean of the pre-tax income unit; fractional rank R_i refers to the ranking of the individual unit by their pre-tax income. To calculate the ranking, SPSS is applied from the rank command; covariance is equally calculated from the correlation command using the same SPSS. The difference between CT and G_X gives the kakwani index of progressivity. G_X in the model is the pre-tax Gini coefficient. Estimating the horizontal inequity (H) which is represented in the AJL model as:

$$H = \sum \alpha j G_{X-P}^{j} \tag{9}$$

αj is the product of groups population share and its post payment income share. G_{X-T} is the Gini coefficient of post payment income distribution in the pre-tax income class. Therefore, the summation of the products of αj and G_{X-T} gives the extent of the horizontal inequity caused by income tax. Reranking variable (R) given as $G_{X-T} - C_{X-T}$ is calculated by first ranking taxpayer by their pre-tax incomes and then within each group of pre-tax equals by their post-tax income. Where G_{X-T} is a post-tax income concentration index and C_{X-T} is the coefficient of concentration for post-tax income, that is ranking post-tax income on pre-tax income.

5.5 DECOMPOSITION RESULT

The Gini coefficients for *civil servants* were computed using convenient covariance method. Gini indicates the extent of income inequality between pre and post-tax income.

Table 1. *Changes in inequality among civil servants*

Pre-Tax Gini coefficient (G_X)	0.2971
Post-Tax Gini coefficient (G_{X-T})	0.2821
Redistributive effect (RE)	0.0161

Table 2. *Bandwidth of 100 is taken among civil servant*

	g		KE	V%	H%	R%
Band 1	1.0003	0.3188	0.1628	1012%	537%	373%
Band 2	1.0001	0.1356	0.0667	414%	241%	73%
Band 3	1.0000	0.1059	0.0461	286%	123%	63%
Band 4	1.0000	0.0987	0.0389	241%	120%	22%
Band 5	1.0000	0.0799	0.0437	272%	147%	25%

Table 3. *Changes in inequality among political appointees*

Pre-Tax Gini Coefficient (Gx)	0.08125
Post-Tax Gini Coefficient (Gx-P)	0.0779
Redistributive effect (RE)	0.0034

Table 4. *Bandwidth of 100 is taken among political appointees*

	g	CT	KE	V%	H%	R%
Band 1	1.0000	0.0476	0.0118	347%	202%	44%
Band 2	1.0000	0.0209	0.0148	435%	238%	97%

Table 1 shows the Gini coefficients of the civil servants computed by their income using the convenient covariance method (Jenkins 1988). It shows that income tax reduced inequality from 0.2971 to 0.2821 in 2018. The Gini's therefore indicate the extent of income inequality between individuals. The data here consist of about 2507 staff from Delta State Government workforce.

Table 2 shows the total decomposition of Nigerian tax system using AJL model into four major components (g, KE,H,R) by computing income of Civil Servant in 5 bands using 100 as income bandwidth per unit equals. The number of observations differ between groups.

Table 3 is also showing Gini coefficients of political appointees in Delta State work force numbering 904 individuals. The result shows a small Gini coefficients and redistributive effect (RE) when compared to that of table 1.

In table 4 total decomposition of income tax of political appointees in Nigeria with data from Delta state payroll showing their income and tax deductible. Like table 2, table 4 was also decomposed into (g, KE,H,R). This was computed with just two bands because of the number under review. Each Band represented 100 income bandwidths.

6. CONCLUSION AND POLICY ISSUES

The major objective of this study is to investigate the redistributive effect of taxation in Nigeria using Delta State as a case study. Income tax was used to compute these effects. One model was used for the two categories of income earners, the Aronson, Johnson, Lambert (1994) model.

The empirical result shows that redistributive effect of taxation is high with increased average tax rate, irrespective of high progressivity. Most serious problem is too high level of horizontal inequity with unequal tax treatment of equal income groups. In comparing the redistributive effect among Civil Servants and political appointees, the horizontal inequity for political appointees is higher than that of the Civil servants for possible reason of irregularity and abuse of tax rate or undue political patronage. The vertical redistribution among the two group shows pro-poor (Inequality reducing) redistribution.

The value of Gini coefficients for civil savants is high which should have been offset by the values of *V, H, R*. High value of *H* in band 1 of the civil savants shows increased deductions probably from associations which membership are higher in the junior cadres.

Comparing the political class to the civil servants, the values of *V, H, R* is not destabilizing to affect the value of their Gini coefficient which is quite low. Both classes have average tax rate of 1.0000, which is quite high showing that the tax rate among Nigerian is high compared to their incomes. There is lower income inequality among political appointees than the civil servants with regards to the value of their Gini coefficients. The general conclusion is that there is high inequality among civil savants compared to political appointees in Nigeria using Delta State as a case study.

Examining any changes within the bands, horizontal inequity with classical notion was the most serious in Band 1 of table 2 and almost in all bands. However, the role of income tax to alleviate income inequity was as usual not obvious, the policy implication is that Nigerian income tax system can have more redistributive effect with increasing the level of horizontal equity, which leads to the equal tax treatment of equal income group. In Nigeria, focus is on progressivity of the tax system, that is vertical equity to consider redistributive effect of income tax. This study therefore suggests that horizontal equity with classical notion can be actively used as one tool to increase the redistributive effect of Nigeria's income tax system. The relatively large positive values of *V, H, R* indicates that the future of Nigeria may be that of rising income inequality. Based on this it behooves on the policy makers to implement a number of inequalities reducing reforms along-side market-oriented ones. The above reveals that Nigerian income tax is highly progressive yet has low redistributive effect mainly because of horizontal inequity. Equal income groups should be treated equally to improve the redistributive effect.

REFERENCES

Aghion, P., Caroli, E., & Garcia-Penalosa, C. (1999). Inequality and economic growth: The perspective of the new growth theories. *Journal of Economic literature*, *37*(4), 1615-1660. doi:10.1257/jel.37.4.1615.

Akinyoade, A., Center, A. S., & Enweremadu, D. (2014). *A tale of two giants: Oil and economic development in Nigeria and Indonesia (1960-1999).* Retrieved from https://www.researchgate.net/profile/Akinyinka_Akinyoade/ publication/ 301296174_A_Tale_of_Two_Giants_Oil_and_Economic_Development_in_Nigeria_and_Indonesia_1960-1999/links/ 5710bf1308aefb6cadab71 47/A-Tale-of-Two-Giants-Oil-and-Economic-Development-in-Nigeria-and-Indonesia-1960-1999.pdf.

Alesina, A., & Rodrik, D. (1994). Distributive politics and economic growth. *The Quarterly Journal of Economics*, *109*(2), 465-490. Retrieved from https:// www.nber.org/papers/w3668.pdf .

Ali, A.A.G. (1997). *Dealing with poverty and income distribution issues in developing countries: Cross regional experiences*. Paper presented at the AERC Biannual Research Workshop, Nairobi, December 1996. doi.org/10.1093/jafeco/7.suppl_2.77.

Allen, R.C. (2001). The great divergence in European wages and prices from the Middle Ages to the First World War. *Explorations in Economic history*, *38*(4), 411-447. doi:10.1006/exeh.2001.0775.

Apple, M.W. (2013). *Educating the right way : Markets, standards, God, and inequality*. Routledge. Retrieved from https://nepc.colorado.edu/sites/default /files/ Apple.Away.pdf

Aronson, J.R., & Lambert, P.J. (1994). Decomposing the Gini coefficient to reveal the vertical, horizontal, and reranking effects of income taxation. *National Tax Journal*, *47*, 273-294. Retrieved from http:// www.jstor.org/stable/41789068.

Aronson, J.R., Johnson, P., & Lambert, P.J. (1994). Redistributive effect and unequal income tax Treatment. *The Economic Journal*, *104*(423), 262-270. doi.org/10.2307/2234747.

Atkinson, A.C. (2002*). Top Incomes in the UK over the 20th Century*. Retrieved from https://www.jstor.org/stable/3559965?seq=1#page_scan_tab_contents .

Auriol, E., & Warlters, M. (2005). Taxation base in developing countries. *Journal of Public Economics*, *89*(4), 625-646. Retrieved from http://idei.fr/sites/ default/files/medias/doc/wp/2003/taxbase.pdf .

Ang, J.B. (2007). CO_2 emissions, energy consumption, and output in France. *Energy Policy*, *35*(10), 4772–4778.

Apergis, N., & Payne, J.E. (2009). CO_2 emissions, energy usage, and output in Central America. *Energy Policy*, *37*(8), 3282–3286.

Kuznets, S. (1955). Economic growth and income inequality. *The American Economic Review*, *45*(1), 1–28.

Lee, C.-C., & Chang, C.-P., et al. (2008). Energy-income causality in OECD countries revisited: The key role of capital stock. *Energy Economics, 30*(5), 2359–2373.

Levin, A., Lin, C.-F. (2002). Unit root tests in panel data: Asymptotic and finite-sample properties. *Journal of Econometrics, 108*(1), 1–24.

Martínez-Zarzoso, I., Bengochea-Morancho, A. (2004). Pooled mean group estimation of an environmental Kuznets curve for CO2. *Economics Letters 82*(1), 121–126.

Masih, A.M.M., & Masih, R. (1997). On the temporal causal relationship between energy consumption, real income, and prices: Some new evidence from Asian-energy dependent NICs Based on a multivariate cointegration/vector error-correction approach. *Journal of Policy Modeling, 19*(4), 417–440.

Mehrara, M. (2007). Energy consumption and economic growth: The case of oil exporting countries. *Energy Policy, 35*(5), 2939–2945.

Bailey, Z.D., Krieger, N., Agénor, M., Graves, J., Linos, N., & Bassett, M.T. (2017). Structural racism and health inequities in the USA: Evidence and interventions. *The Lancet, 389*(10077), 1453-1463. doi.org/10.1016/S0140-6736(17)30569-X .

Bebbington, A., & Thiele, G. (2005). Non-governmental organizations and the state in Latin America: Rethinking roles in sustainable agricultural development. Routledge. Retrieved from https://doi.org/10.4324 /9780203974377 .

Benabou, R. (2000). Unequal societies: Income distribution and the social contract. American Economic Review, *90*(1), 96-129. Retrieved from https://www. aeaweb.org/articles?id=10.1257/aer.90.1.96 .

Bernanke, B., & Gertler, M. (2000). *Monetary policy and asset price volatility* (No. w7559). National bureau of economic research. Retrieved from https://www.nber.org/papers/w7559.pdf.

Bird, R.M. (2003). Taxation in Latin America: Reflections on sustainability and the balance between equity and efficiency. Retrieved from https://pdfs.semanticscholar.org/1038/ca82b1e3768e8a73b71f20c2928274d540be.pdf

Bird, R.M., & Zolt, E.M. (2005). The limited role of the personal income tax in developing countries. *Journal of Asian Economics, 16*(6), 928-946. Retrieved from https://doi.org/10.1016/j.asieco.2005.09.001.

Bird, R.M., & Zolt, E.M. (2004). Redistribution via taxation: The limited role of the personal income tax in developing countries. UCLA L. Rev., 52, 1627. Retrieved from https://www.uclalawreview.org/wp-content/uploads/ securepdfs/2019/01/39_52 UCLALRev16272004-2005.pdf .

Blum, W. J., & Kalven, H. (1952). The uneasy case for progressive taxation. *The University of Chicago Law Review, 19*(3), 417-520. Retrieved from https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?referer=https://scholar.google.co/&httpsredir=1&article=2722&context=uclrev.

Bolton, P., & Mehran, H. (2006). An introduction to the governance and taxation of not-for-profit organizations. *Journal of Accounting and Economics, 41*(3), 293-305. doi:10.1016/j.jacceco.2006.06.001.

Bowles, S., & Gintis, H. (1996). Efficient redistribution: New rules for markets, states, and communities. *Politics & Society, 24*(4), 307-342. Retrieved from http://www.umass.edu/preferen/gintis/efficient.pdf .

Brazier, C. (2011). *The no-nonsense guide to world history*. *New Internationalist*. Oxford UK.

Buchanan, J.M. (1950). Federalism and fiscal equity. *The American Economic Review, 40*(4), 583 -599. Retrieved from https://www.jstor.org/stable/1808426?seq=1#page_scan_tab_contentshttps://asean.elibrary.imf.org/doc/IMF001/03475-9781451848281/034759781451848281/Other_formats/Source_PDF/034759781451895018.pdf?redirect=true .

Cohn, G. (1895). The science of Finance (No. 1). University of Chicago Press. Retrieved from https://books.google.ca/books?hl=en&lr=&id=6I9NAAAAMAAJ&oi=fnd&pg=PA3&dq=I+vain+did+Rudolf+von+Gneist,+the+venerable+leader+of+the+then+recently+consummate+movement+for+the+Rechtsstaat,+protest+in+the+Diet+that+this+meant+the+abandonmen+of+the+fundamental+principle+of+equality+before+the+law,+which+provided+the+only+arrier+&ots=rOJtB-ai6G&sig=wGMOwoikQc0OLQXAcgfiWvQz3PM&redir_esc=y#v=oneage&q&f=false.

Corak, M. (2013). Income inequality, equality of opportunity, and intergenerational mobility. *Journal of Economic Perspectives, 27*(3), 79-102. doi.org/10.1257/jep.27.3.79.

Creedy, J. (1981). FY Edgeworth, 1845–1926. In *Pioneers of Modern Economics in Britain* (pp. 72 -104). Palgrave Macmillan, London. Retrieved from https://minervaaccess.unimelb.edu.au/bitstream/handle/11343/34394/66917_00002382_01_973.pdf?sequence=1&isAllowed=y.

David, H. (2014). *Skills, education, and the rise of earnings inequality among the "other 99 percent"*. DOI: 10.1126/science.1251868.

Danirodrik, B. (1996). Understanding economic policy reform. *Journal of economic Literature, 34*(1), 9-41. Retrieved from http://www.vedegylet.hu/fejkrit/szvggyujt/Rodrik_UnderstandingEconomicPolicyReforms.pdf.

Diamond, P., & Saez, E. (2011). The case for a progressive tax: From basic research to policy recommendations. *Journal of Economic Perspectives, 25*(4), 165-90 doi=10.1257/jep.25.4.165.

Djankov, S., Ganser, T., McLiesh, C., Ramalho, R., & Shleifer, A. (2010). The effect of corporate taxes on investment and entrepreneurship. *American Economic Journal: Macroeconomics, 2*(3), 31-64. Retrieved from https://www. nber. org/papers/w13756.pdf .

Fashola, B. (2007). *Lagos state Stakeholders conference on Taxation*. 3rd Dec., 2007, page 32 Sunday Vanguard of Dec., 16, 2007.

Fine, J. C., & Nabli, M. K. (2011). *Poverty and Economic Policy Network (PEP): External assessment of activities and future directions*. Retrieved from https://idl-bnc idrc.dspacedirect.org/bitstream/handle/10625/48306/IDL-48306.pdf?sequence=1.

Foster, I., & Iamnitchi, A. (2003). On death, taxes, and the convergence of peer-to-peer and grid computing. In *International Workshop on Peer-To-Peer Systems* (pp. 118-128). Springer, Berlin, Heidelberg. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.542.1286&rep=rep1&type=pdf.

Fosu, A.K. (2017). Growth, inequality, and poverty reduction in developing countries: Recent global evidence. *Research in Economics, 71*(2), 306-336. doi.org/10.1016/j.rie.2016.05.005.

Gore, A. (2006). *An inconvenient truth: The planetary emergency of global warming and what we can do about it*. Retrieved from https://books.google.ca/books?id=93M6C24ac9MC&lpg=PP1&pg=PP1#v=onepage&q&f=flse.

Goñi, E., López, J.H., & Servén, L. (2008). *Fiscal redistribution and income inequality in Latin America*. The World Bank. Retrieved from https://openknowledge.worldbank.org/bitstream/handle/10986/6468/wps4487.pdf?sequence=1.

Goode, R. (1993). Tax advice to developing countries: An historical survey. *World Development, 21*(1), 37-53. doi.org/10.1016/0305-750X(93)90135-V.

Gruber, J., & Saez, E. (2002). The elasticity of taxable income: evidence and implications. *Journal of Public Economics, 84*(1),1-32. (DOI): 10.3386/w7512.

Gunn, A. (1979). The Case for an Income Tax. The University of Chicago Law Review, 46(2), 370 400. Retrieved from https://www.jstor.org/stable/1599457?seq=1#page_scan_tab_contents.

Hale, R.L. (1923). Coercion and distribution in a supposedly non-coercive state. *Political Science Quarterly, 38*(3), 470-494. Retrieved from https://www.jstor.org/stable/pdf/2142367.pdf.

Hayek, F.A. (1960). *The Constitution of Liberty*. University of Chicago Press, 306-323.

Hobsbawm, E. (2010). *Age of revolution*: *1789-1848*. Hachette UK. Retrieved from http://pratclif.com/ebooks/Eric%20Hobsbawn%20%20Age%20of%20revolution%20%201789-1848%20.pdf.

Hofman, B., & Guerra, S.C. (2007). Ensuring inter-regional equity and poverty reduction. In *Fiscal Equalization* (pp. 31-59). Springer, Boston, MA. Retrieved from http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/ unpan 044601.pdf.

Holmes, S., & Sunstein, C.R. (2000). *The cost of rights: Why liberty depends on taxes*. WW Norton & Company USA.

Ispolatov, S., Krapivsky, P.L., & Redner, S. (1998). Wealth distributions in asset exchange models. *The European Physical Journal B-Condensed Matter and Complex Systems, 2*(2), 267-276. DOI:10.1007/s100510050249.

Jenkins, S. (1988). Reranking and the analysis of income redistribution. *Scottish Journal of Political Economy, 35*(1), 65-76. Retrieved from https://doi.org/10.1111/j.1467-9485.1988.tb01030.x.

Kakwani, N. (1986). *Analyzing redistribution policies: A study using Australian Data*, Cambridge: University Press.

Kakwani, N.C., & Podder, N. (1976) Efficient estimation of the Lorenz curve and associated inequality measures from grouped observations. *Econometrica 44*(1) 137 – 148. DOI: 10.2307/1911387.

Kates, R. W., & Dasgupta, P. (2007). African poverty: A grand challenge for sustainability science. *Proceedings of the National Academy of Sciences, 104*(43), 16747-16750. doi.org/10.1073/pnas.0708566104.

Kaldor, N. (2014). *Expenditure tax*. Routledge. London, England.

Kanbur, R. (2001). Economic policy, distribution and poverty: The nature of disagreements. *World development, 29*(6), 1083-1094. doi.org/10.1016/ S0305-750X(01)00017-1.

Klasen, S. (2008). Economic growth and poverty reduction: measurement issues using income and non-income indicators. *World development, 36*(3), 420-445. Retrieved from doi.org/10.1016/j.worlddev.2007.03.008.

Klasen, S. (2003). In search of the holy grail. How to achieve pro-poor growth. In *Towards Pro-poor Policies*. Proceedings from the ABCDE Europe 63-93. Retrieved from https://www.econstor.eu/bitstream/10419/85301/1/DB96.pdf.

Kyj, L., Romeo, G., & Marshall, P. (2001). Flat tax proposals: A current review, with a history of the arguments pro and con. Lehman, C. (Ed.) *Advances in Accountability: Regulation, Research, Gender and Justice* (Advances in Public Interest Accounting, Vol. 8), Emerald Group Publishing Limited, Bingley, 157-176. https://doi.org/10.1016/S10417060(01)08008-7.

Latham, M.E. (2010). *The right kind of revolution: Modernization, development, and US foreign policy from the Cold War to the present*. Cornell University Press. New York.

Lambert, P.J. (1994) *The distribution and redistribution of income: A mathematical analysis*, (2nd ed.), Manchester: Manchester University Press.

Le Grand, J. (1991). *Equity and choice: An essay in economics and applied philosophy*. London: Harper Collins.

Lipsey, R. (1989). *An introduction to positive Economics*. Eight edition, Oxford University press, UK.

Marx, K., Griffith, H., & Engels, F. (2009). *Karl Marx & Friedrich Engels*. Collector's Library. Retrieved from https://www.buchverlagkempen.de/res/ user/bvk/ media /pr55_b.pdf.

McCulloch, J.R. (1845). *The literature of political economy: A classified catalogue of select publications in the different departments of that science, with historical, critical and biographical notices*. Longman, Brown, Green and Longmans UK.

Meltzer, A.H., & Richard, S.F. (1981). A rational theory of the size of government. *Journal of political Economy, 89*(5), 914-927. Retrieved from http://www.people.fas.harvard.edu/~iversen/PDFfiles/Meltzer%26Richard1981.pdf.

Mill, J.S. (1979). *Of what sort of proof, the principle of utility is susceptible. Utilitarianism*, ed. George Sher. Indianapolis, Ind.: Hackett Publishing. Retrieved from http://science.jburroughs.org/mbahe/BioEthics/Articles/UtilitarianismbyMillCh4.pdf .

Mill, J.S. (1904). *Principles of political economy* (Vol. 12). Рипол Классик. Retrieved from http://library.umac.mo/ebooks/b31139632.pdf .

Mirrlees, J.A. (1971). An Exploration in the theory of Optimum taxation. *Review of Economic Studies, 38*(114). doi: 10.2307/2296779.

Musgrave, R.A. (1990). Horizontal equity, once more. *National Tax Journal, 43*(2), 113-122. Retrieved from https://pdfs.semanticscholar.org/695f/269df0891afca7a3181314fd79a492c0bf76.pdf .

Musgrave, R.A, & Thin, T. (1948) Income tax progression, 1929-48, *Journal of Political Economy, LVI*(6), 498-514. Retrieved from https://www.journals.uchicago.edu/doi/abs/10.1086/256742?journalCode=jpe .

Musgrave, R.A. (1967). In defense of an income concept. *Harvard Law Review, 81*(44), 44-62.

Narayan, D. (2002). Bonds and bridges: Social capital and poverty. In J. Isham, T. Kelly, & S. Ramaswamy (Eds.) *Social capital and economic development: Well-being in developing countries* (pp58-81). Northampton, MA: Edward Elgar. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.588.2831&rep=rep1&type=pdf .

Nwagbara, E.N. (2011). The story of structural adjustment programme in Nigeria from the perspective of the organized labour. *Australian Journal of Business and Management Research, 1*(7), 30-41. Retrieved from https://core.ac.uk/download/pdf/25879059.pdf .

Okun, A.M. (2015). *Equality and efficiency: The big trade-off*. Brookings Institution Press. Retrieved from https://assets.aspeninstitute.org/content/uploads/files/content/docs/OKUN_EQUALITY_AND_EFFICIENCY_(AS08).PDF .

Oshewolo, S. (2010). Galloping poverty in Nigeria: An appraisal of government interventionist policies. *Journal of Sustainable Development in Africa, 12*(6), 264-274. Retrieved from http://www.jsd-africa.com/ .

Ostry, M.J.D., Berg, M.A., & Tsangarides, M.C.G. (2014). *Redistribution, inequality, and growth*. International Monetary Fund. Retrieved from https://relooney.com/NS4053/00_NS4053_140.pdf .

Peacock, A.T., & Wiseman, J. (1961). Front matter, the growth of public expenditure in the United Kingdom. In *The growth of public expenditure in the United Kingdom* (pp. 32-0). Princeton University Press. Retrieved from http://www.nber.org/books/peac61-1 .

Pechman, J.A., & Okner, B.A. (1974). Who bears the tax burden?. *Studies of Government Finance Series.* Retrieved from https://eric.ed.gov/?id= ED137901 .

Piketty, T., & Saez, E. (2003). Income inequality in the United States, 1913–1998. *The Quarterly Journal of Economics, 118*(1), 1-41. Retrieved from https:// www. nber.org/papers/w8467.pdf .

Plotnick, R. (1985). A comparison of measures of horizontal inequity. in M. David & T. Smeeding (eds.), *Horizontal equity, uncertainty and economic well-being* (pp. 239-268), NBER Studies in Income and Wealth, Volume 50, Chicago University Press.

Posner, R. A. (1975). The social costs of monopoly and regulation. *Journal of Political Economy, 83*(4), 807-827. Retrieved from https://www.nber.org/ papers/w0055.pdf .

Posner, R. A. (1974). *Theories of economic regulation*. Retrieved from https://www.nber.org/papers/w0041.pdf .

Prud'Homme, R. (1995). The dangers of decentralization. *The World Bank Research Observer, 10*(2), 201-220. Retrieved from http://documents. worldbank.org/curated/en/602551468154155279/pdf/770740JRN0WBRO0Bo x0377291B00PUBLIC0.pdf .

Ravallion, M. (2001). Growth, inequality and poverty: Looking beyond averages. *World development, 29*(11), 1803-1815. Retrieved from http://darp.lse.ac.uk /papersDB/Ravallion_(WorldDev_01).pdf .

Ravallion, M., Squire, L., & Bruno, M. (1999). *Equity and growth in developing countries: Old and new perspectives on the policy issues*. The World Bank. Retrieved from http://documents.worldbank.org/curated/en/ 677901468766463 905/pdf/multi0page.pdf .

Reynolds, M., & Smolensky, E. (1977). Public expenditures, taxes, and the distributionof income: The United States, 1950, 1961, 1970. New York: Academic Press.

Rodney, W. (1966). African slavery and other forms of social oppression on the Upper Guinea coast in the context of the Atlantic slave-trade. *The Journal of African History, 7*(3), 431-443. doi.org/10.1017/ S0021853700006514.

Rosen, H.S. (2004). Public finance. In *The encyclopaedia of public choice* (pp. 252-262). Springer, Boston, MA. Retrieved from http://www-personal.umich.edu/~jnthnlvn/publiceconomics/rosen_cost_benefit_analysis. pdf.

Salamon, L.M. (2000). The new governance and the tools of public action: An introduction. *Fordham Urban Law Journal, 28*(5), 1611-1674. Retrieved from

https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?referer https://scholar. google.com/&httpsredir=1&article=2182&context=ulj.

Schueler, R. (2016). *Educational inputs and economic development in end-of nineteenth-century Prussia* (No. 227). Ifo Working Paper. Retrieved from https://www.econstor.eu/bitstream /10419/149549/1/wp-2016-227-schueler-educational inputs-prussia.pdf

Seligman, E.R.A. (2004). The income tax: A study of the history, theory, and practice of income taxation at home and abroad. New Jersey: The Lawbook Exchange.

Sheshinski, E (1972). The Optimal Linear Income Tax. *Review of Economic Studies, 39*(3). Retrieved from http://darp.lse.ac.uk/papersdb/Sheshinski _(REStud_72).pdf.

Sinn, H. W. (1996). Social insurance, incentives and risk taking. *International Tax and Public Finance, 3*(3), 259-280. Retrieved from https://www.nber.org/ papers/w5335.pdf .

Slemrod, J., & Bakija, J. (2000*). Does growing inequality reduce tax progressivity? Should it?* (No. w7576). National Bureau of Economic Research. Retrieved from https://www.nber.org/papers/w7576.pdf .

Slemrod, J. (1998). *The economics of taxing the rich* (No. w6584). National Bureau of Economic Research. Retrieved from https://www.nber.org/papers/ w6584.pdf .

Slemrod, J. (1990). Optimal taxation and optimal tax systems. *Journal of Economic Perspectives, 4*(1), 157-178. doi/pdf/10.1257/jep.4.1.157.

Smart, M., & Bird, R.M. (2006). *The GST cut and fiscal imbalance*. Retrieved from http://homes.chass.utoronto.ca/~msmart/wp/smartbird-gst8.pdf.

Spicer, M.W. (1995). On Friedrich Hayek and taxation: Rationality, rules, and majority rule. *National Tax Journal, 48*(1), 103-112. Retrieved from https:// www .jstor.org /stable/41789127.

Steinmo, S. (2003). The evolution of policy ideas: Tax policy in the 20th century. *The British Journalof Politics and International Relations, 5*(2), 206-236. doi.org/10.1111/1467-856X.00104.

Tanzi, M.V. (2000). *Tax policy for emerging markets-developing countries*. International Monetary Fund. Retrieved from https://www.imf.org/ external/pubs/ft/wp/2000/wp0035.pdf

Tanzi, V. (1998). Corruption around the world: Causes, consequences, scope, and cures. *Staff Papers (Internationaly Monetary Fund), 45*(4), 559-594. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1. 196.9342&rep=rep1&type=pdf .

Van Ewijk, C., & Tang, J.G. (2001) Unions, Progressive taxes and Education Subsidies. *European Journal of Political Economy, 23*(4). doi.org /10.1016/ j.ejpoleco.2006.09.007.

Wagstaff, A., Van Doorslaer, E., Van Der Burg, H., Calonge, S., Christiansen, T., Citoni, G., & John, J. (1999). Redistributive effect, progressivity and differential tax treatment: Personal income taxes in twelve OECD countries. *Journal of Public Economics*, *72*(1), 73-98. doi.org/10.1016/S0047-2727(98) 00085-1.

Wagstaff, A., & Van Doorslaer, E. (1997). Progressivity, horizontal equity and reranking in health care finance: A decomposition analysis for The Netherlands. *Journal of Health Economics*, *16*(5), 499-516. doi.org/10.1016/ S0167-6296(97)00003-9.

Warr, P. G. (1983). The private provision of a public good is independent of the distribution of income. *Economics Letters*, *13*(2-3), 207-211. Retrieved from https://econweb.ucsd.edu/~jandreon/PhilanthropyAndFundraising/Volume%2 01/5%20Warr%201983.pdf.

Wenzel, M. (2002). The impact of outcome orientation and justice concerns on tax compliance: The role of taxpayers' identity. *Journal of Applied Psychology*, *87*(4), 629. Retrieved from http://archives.cap.anu.edu.au/ctsi_org_au/ publications/taxpubs/Wenzel.JAP.pdf.

Weisbach, D.A. (2003). Should legal rules be used to redistribute income? *The University of Chicago Law Review*, *70*(1), 439-453. Retrieved from https:// chicagounbound.uchicago.edu/cgi/viewcontent.cgi ? article= 5179 & context = uclrev.

Williamson, J. (1990). What Washington means by policy reform. In J. Williamson (Ed.) *Latin American adjustment: How much has happened*, *1*, 90-120. Retrieved from https://ortk.pw/30044418.pdf.