



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**THE EFFECT OF NEW INCOME TAX REFORM 979/2016 ON EMPLOYEES'
DISPOSABLE INCOME, INCOME TAX LIABILITY AND INCOME INEQUALITY
REDUCTION: EVIDENCED FROM PUBLIC AND PRIVATE COMPANIES'
EMPLOYEES IN ADDIS ABABA**

BY

TEWODROS AYALEW DERSO

JUNE 2019

ADDIS ABABA ETHIOPIA

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Abebaw Kassie (PhD). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Name

St. Mary's University, Addis Ababa

Signature

May, 2019

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Acronyms

CSA	Central Statistics Agency
CIA	Central Intelligent Agency
CTB	Comprehensive Tax Base
ERCA	Ethiopia Revenue & Customs Authority
VAT	Value Added Tax
IMF	International Monetary Fund
GDP	Growth Domestic Product
ETB	Ethiopian Birr
TJNA	Tax Justice Network Africa
MoFFC	Ministry of Finance and Economic Cooperation
PIT	Personal Income Tax
TIN	Tax Identification Number
OECD	Organization for Economic Comparison and Development

Abstract

This research investigates the effect of the new income tax Proclamation 979/2016 on the employee's disposable income, tax liability and the income inequalities among the high and low income earning groups of employees. For this, the quantitative research method is used and secondary payroll data is collected through the survey by using email and hard copy. The data is analyzed using the summary of descriptive statistics and paired sample means t-Test. Besides this, Gini- coefficient analytical tool is also used to measure the income inequalities among 1120 employees. The payroll data is gathered from 8 different public and private companies in Addis Ababa. The sample is selected by applying purposive sampling techniques and the sample size is determined using a statistical formula for an unknown population. The result shows that the tax reform brings a 9% increases on a disposable income and 30% decreases on the income tax liability of employees under this investigation. But on the contrary, the new tax reform doesn't play its role in reducing the income inequality among different income earning groups of employees rather it shows 0.4% marginal increases in income inequalities. This is because of reform gives higher disposable income for the top 20% income earning groups than the lower one. Furthermore, the study evidences the existence of high-income inequality among employees which is 0.41 Gini coefficient. It is slightly higher than the national Gini coefficient it is because of the size and scope of the study.

Finally, the research indicates that 73% of the income tax revenue has paid by the top 20% income earning groups. So, it is advisable for policymakers to improve the minimum taxable income from birr 601 to birr1500 to reduce the income inequality by minimizing the tax burden of lower income earning groups.

Keywords: *Employment income, income tax reform, income tax liability, and income inequality*

Chapter One

1 Introduction

1.1 Background of the Study

According to the 2019 economic freedom index report, Ethiopia has the leading individual income tax rate 35 percent and the top corporate tax rate 30 percent. The overall tax burden equals 12.4 percent of total domestic income (Heritage, 2019). The tax burdens on labor are high as compared with other African countries average. Ethiopia implicit tax rate on labor, a summary measure that approximates an average effective tax burden on labor income in the economy, stood at 44% in 2014, the highest in Africa.

High taxes on labor contribute to loss of competitiveness and may have detrimental effects on economic growth and employment by negatively impacting labor supply and demand.

Therefore, it is recommendable to reduce the tax burden from employees and labor to have economic growth-friendly.

Since the early 1990s, the country has maintained a “developmental state” model with high public sector investment to encourage growth and improve access to basic services. Strong economic growth and improved public services have been the primary drivers of poverty reduction over the past decade (World Bank, 2015). Ethiopia has not only reduced poverty significantly—from 45.5 percent in 1995/96 to 29.6 percent in 2010/11 now it is about 24% but also maintained low inequality. With a 2011 Gini coefficient of 0.302 since then, it is marginally increased (for per capita expenditures), Ethiopia remains one of the less-unequal countries in low- and middle- income countries (Inchauste & Lustig, 2017).

Based on the information from Central Intelligence Agency (CIA, n.d.), low inequality does not mean that the individual has sufficient per capita income which is \$2200 ranking the 204 among the world countries in the year 2017. Yet despite progress toward eliminating extreme poverty, Ethiopia remains one of the poorest countries in the world, due both to rapid population growth and a low starting base. Changes in rainfall associated with worldwide weather patterns resulted in the worst drought in 30 years in

2015-16, creating food insecurity for millions of Ethiopians. Revenue from the tax is one of the main sources of income for the nation to reduce poverty by redistribution to the society, but our country tax contribution to GDP is low 13.9% in the year 2017. One of the main reason is the country has an old and inappropriate tax system and reforms with inadequate research before and after the declaration and implementation of different tax policies (Lencho, 2012).

With this regard, starting from the Haile Selassie to EPRDF, so many tax reform and amendments have made. But when we see the empirical shreds of evidence, there is no remarkable study has taken place to show the performance of these reforms as compared with its intended objectives after implementation of the reform.

Most commonly, it is evidenced that the main aim of tax reform is to maximize the government revenue and increasing its efficiency to collect the maximum revenue from individual and Business entities that may pay taxes to deliver public services as the per the expectation of the people under their authority(Geda & Shimelis, 2005).

But on the contrary, most tax reforms do not meet its purpose rather it indirectly uses for other purpose and sometimes even the government uses as a tool to stabilize their internal socio-political crisis to win their support from the people they are ruling. For this justification, it is better to see the 2018 Trumps-tax-reform-plan which gives more favor to low and high income earning groups rather than maximizing the tax revenues (Floyd, 2019).

According to Fana Broadcasting Corporate news released on July 8, 2016, the Ethiopian Federal Republic House of people representative declared the following proclamation that had been practicing since July 8, 2016 (MoFFC, 2016).

1. Income Tax proclamation 979/2016
2. Federal Tax Administration proclamation 983/2016
3. New trade license and registration proclamation 980/2016

As per the report, after 2002 income tax proclamation, there was no change and amendments for the past 15 years and the main reasons for this new tax reform are listed below:

1. There is a socioeconomic development in the country, but the existing tax law becomes outdated and incompatible.
2. The government obliged to proclaim income tax reform because there was a pressure coming from the people who earn a low income and severely affected by the high rate of taxation and inflation
3. The other reason which forced the government to act actively and launch resolution was the country existing socio-economic and political situation (2008E.C people' protest).
4. The last but the influential reason for the change was the global situation in socio-political, economic and technological upheavals. It was the IMF and other international organization pressure for the reform.

According to Mr. Wasihun Abate, who was the chairman of the committee, the reform aim was to reduce the employee's income tax and increased their income by stepping the previous brackets from 150 to 600 and the high-income brackets 5000 to 10900.

The low-income tax bracket has increased by 300% from the previous one. Because of this, many taxpayers having income 150 to 600 are free of any tax liabilities and the high-income tax bracket increased by 118%, which can reduce the previous tax rate, which was 35% to 30%, 25%, and 20%, depending on the employees' income which might give tax relief for many workers it becomes clear and proofed by this research.

The main purpose of this study is to show the tax reform impact on employees income after a proclamation by answering the question like what is the effect new tax reform on disposable income earned by employees having different income groups with the assumption of other things remains constant.

The research method is quantitative using descriptive summary statistical tools and paired sample mean t-Test to analyze the secondary cross-sectional data that will be collected through survey methods by using email and hard copy from 8 private and public companies using purposive sampling method which is a non-probability sampling technique where subjects are selected because of their representativeness of the population based on the professional judgment of the researcher.

1.2 Statement of the problem

Based on the researcher's long years of experiences as a finance manager, there are observable problems regarding income inequalities among high and low income earning groups and tax burden on low income earning employees. Besides this, there is no research to show the problems. And the new tax reform is believed to solve the above-mentioned problems by its new progressive income tax brackets.

The tax system and reform in Ethiopia have a long history, but as per the researcher's best knowledge, there is no such satisfactory impact analysis done following the reforms. But some researchers tried to address the impact of tax reform on employees' performance (Gebisa, 2009), and other like (Asmare, 2018) and (Moges, 2000), shows the economic wide impact of direct tax reform on employees' income, rental, corporate effect and the GDP impacts of tax reform and focusing on distributional implication.

But this study will try to fill the research gap by investigating the impact of tax reform on employees' disposable income and tax liabilities rather than focusing on the economic wide effect and GDP.

So, the main initiation for this study is to show the 979/2016 income tax reform effect on employees' income, employment tax liability and its distributional consequences on different groups to address the above-mentioned problems.

1.2.1 Research questions

What are the effects of new income tax reform on the employee's disposable income and income tax liabilities?

Is there any significant means difference between the effects of 286/2002 income tax proclamation and 979/2016 on disposable income and income tax liabilities?

Does the new employment income tax reform contribute to reducing income inequalities among high and low income earning groups of employees?

1.3 The Objective of this paper

1.3.1 Objectives (General)

- To describe the effect of the new tax reform on employees' income and income tax liabilities.
- To compare the disposable income of employees before and after the tax reform.
- To know the effect of new income tax reform on employees' income inequality reduction before and after the proclamation of 979/2016.

1.3.2 Specific Objectives

- To test the effect of the new tax reform on employees' disposable income and employment income tax liabilities.
- Differentiate the employees' income tax before and after tax reform.
- Identify the existence of significant mean difference in disposable income and tax liabilities before and after the reform.
- Analyze the Gini coefficient calculated before and after the tax reforms.

1.3.3 Scope of the Study

The research delimited in terms of geographical location which confined in Addis Ababa. According to the CSA finding (2012), majorities of employed persons (44.8 percent) were service, shop, market sales, craft, and related trade workers out of 5,726,116 employed persons at the country urban level. Those employed persons were in the Elementary Occupations comprise the simple and routine task which mainly requires the use of the hand-held tool which needs physical effort representing factory labor workers to occupy the second position (22.6 percent). Professionals, technical and associate

professionals together made up 12.9 percent. So, it evidenced that in Addis Ababa most of the employees are working in the services giving sectors like educational sector, banks, and merchandises and manufacturing companies. So, from 8 private and public company's employees' 2 of them are manufacturing while the other 5 are service giving and 1 is the merchandising company workers' payrolls which can represent the population because the sample includes these sectors. And the two tax brackets of 286/2002 and 979/2016 are taken from the previous and new comprehensive income tax proclamations(MoCF,2002).

The study is conducted between the periods from October 2018 up to May 2019.

It is exactly 1120 employees' income collected from all groups of tax brackets and calculated in both rates. The total population of the study is unknown, so our prediction limited to sample companies only.

1.4The significance of the study

The study primarily will give benefit to the labor unions by giving information to strengthen their struggle for the improvement of employees' income, payment and for further reduction of tax liability. Besides this, it can use as an input for policy makers for future reforms and amendments of tax bracket.

It also benefits the Ministry of Revenue just to know how much of the employment income tax revenues increase or decreases because of the enforcement of the new income tax proclamation. It also helps to predict the revenue collection budget on employment income in Addis Ababa.

It uses as an input for further study and feedback for the policymakers on implementing the new income tax proclamation. Other researchers who have an interest in the issues raised in this paper can get information as a reference for their study.

1.5 organization of the paper

This paper has five chapters, chapter one is an introductory section which includes the background of the study, research questions, objectives of the study and scope. Chapter two is about literature review and chapter four is focusing on data analysis and interpretation.

The last section of this paper is about conclusion and recommendation.

1.6. Limitation of the research

One of the main limitations of the study is using cross-sectional data rather than time series data and it also assumes some employees who stay in the company for more than six months as they are working for a full budget year or it is annualized.

Furthermore, financial resources and time constraints are the limitations of this research because of this the researcher cannot increase the sample size. The availability of organized and reliable data on employees' income and tax liabilities are also other obstacles to launch highly advanced research on employees' income in Addis Ababa. These limit the researcher to use secondary data collected through the survey method and the cross-sectional data rather than primary and the time series data.

In many low-income countries, including Ethiopia, administrative data on wages are not available in a format that can be used for research. For example, the Ethiopian Revenue and Customs Authority collects this information mostly in hard copy form and in an incomplete format, so there is no detailed digital record at the individual employee level. The information available in digital format can only be disaggregated at the employer-level, not at the employee level. Hence, these data cannot be of much help in analyzing inequality, income distribution, and the effect of tax policy. Even the aggregate data that is available is of very poor quality because it is found as an institutional level and the hard copy form. As a result, at the moment it is very hard to get even basic information on employment incomes, such as the exact number of employees who pay tax in Ethiopia. The potential of these data for both tax administration and research remains

untapped. Because of the lack of administrative data on wages, researchers have often relied on survey data in which this research also followed (Mengistu & Mascagni, 2018).

So, it is mandatory to use the statistical method to determine the sample size and forced to use the survey method of data collection mechanism. These can be considered as a weakness for this study besides this, it can be encouraged as an ice-breaking work for future researchers and other users. Besides these difficulties, some companies are not cooperative to provide data specifically NGO's are closed their doors for researchers. With all the above data collection problems, this research is the first in its kind to break through the hassle by collecting 1120 employees' payroll data from public and private companies to play its role for future endeavors.

Chapter Two

2. The theoretical and empirical literature review

2.1. Definition and Classification of Taxes

According to the contemporary researcher from the Economics department of AAU, (Asmare, 2018) who tried to see the 2016 tax reform for the first time defined the following terminologies:

Tax is the money paid by the societies, based on their income and value of goods purchased to the government for public purposes. He evidenced that the word “Tax” has also been defined by different authors and different organizations. Tax, is a payment levied by the government from households, business, product or activity to fund government spending (TJNA, 2011b).

The Organization for Economic Cooperation and Development(OCDE, 2018,p.2) also defines the tax as “compulsory unreturned payments to the government. Others also defined tax is the shift of resources from the private sector to the public sector to achieve the country's economic and social objectives. Tax is defined as a financial charge or levy imposed upon an individual or legal entity by a state, to support government expenditure or defined the tax as a monetary charge imposed by the government on persons, entities, transactions or properties to yield revenue and can be collected with no direct benefits attached with it (Gale, Krupkin, & Rueben, 2015).

Taxation: it refers to the compulsory charge imposed on private, individual institutions or groups by the government. Taxpayer: is a person, the group of persons or an entity that pays or responsible for the tax. Tax Effort: Tax effort measures the ratio of actual tax collection to the potential tax expected from the economy. Traditionally tax potential has been considered by gross domestic product (GDP) of a country; hence tax effort is the ratio of actual tax revenue to GDP.

Tax policy is defined as all the sets and main instructions that determine the structures of a tax system and manage it to finance public spending and support the overall activities.

Tax reform: is defined as the increases or decreases in tax rates, brackets or thresholds and changes in the tax base; introducing new taxes and the elimination of old taxes; changes in the tax mix; change in administrative practices and procedures (Raghbendra, 2009), as stated the new income tax proclamation 979/ 2016 has its own similarity with the above definition of tax reform by updating the tax brackets which is significant as compared with 2002 income tax reform which separately declared the tax administrative proclamation 983/2016 for the first time in the history of Ethiopian tax reform, etc.

However, not all changes in taxes (like a change in tax collection periods) should be called tax reform and we would do well to reserve this term for significant changes. It is the procedure of shifting the current tax system to a new level of the tax system with the intention that the tax system can serve the main objective of financing government expenditure and meet other objectives (Daba, 2014).

Direct tax: is a tax which is evaluated and collected directly from the individuals who should bear it. Usually, it is collected through an intermediary; and the most popular example is employment income tax. It is possible you have no contact with tax authorities; it can depend on individual circumstances; it is possible to change the average tax rate. Direct taxes are these taxes that are based on the income of individual or groups of individuals, corporate bodies and institutions.

2.2. Theories of Taxation

The empirical pieces of evidence show that there is a huge gap among scholars to have the common ground on theories of tax that the policymakers tried to apply. So the following discussions about different tax theories can give us an opening eye to study further and provide a recommendation for the government.

Different scholars have different approaches to tax theories and reforms, according to Lencho(2014), who wrote his doctoral dissertation on income tax policy and design tried to give a wide coverage of the untouched issues of the scheduler income tax and its imposition by Emperor Haile Silase unchanged until the 1940s it is now implementing more than half a century. According to his study, theories of taxation classified based on making the tax system good and favorable for society. He also evidenced that income tax as one of the principal sources of domestic government revenue since the beginning of

modern taxation in the 1940s. The Ethiopian income tax system is “scheduler” in structure and orientation, the computation, assessment and collection of income taxes based on some identified sources of income, like income from employment, income from the rental of property and income from the business. According to his findings, the Ethiopian tax system may be described as a loose agglomeration of proclamations, regulations, directives, rules, etc., which despite their loose ends and rough edges, seem to fulfill the singular purpose for which they are designed, namely raising revenues for the Ethiopian government (Lencho, 2012).

According to another researcher (Asmare, 2018), the first theory of taxation is a socio-political theory of taxation which suggests that social and political objectives should be the pivotal factors in choosing the taxes. This theory is to support progressive taxation by using taxation to reduce income inequalities and it stated that a tax system should not be planned to support a single person from the society however it should ease the problems of society with these regards this study tried to show the progressive tax reform of 2016 and its impact on employment inequality.

Even though it is not comparable with the economist study on these issues because of scarce data on employees’ expenditures on the consumption goods, it is focused on the tax effect of their disposable income and inequalities among different income groups. According to this theory, taxation should be used effectively for overcoming the problem of the economy which arises from market failure (Ebieri& Ekwueme, Chikezi, 2016).

The second theory of taxation is expediency theory which proclaims that each tax proposal should pass the assessment of practicability. This theory proposes tax structure should not be designed to achieve ambitions pressure groups which protect and promote members interest if then the practicability of the tax will be in doubt (Ogbonna & Ebimobowei, 2012).

The third theory of taxation is the cost of service theory of taxation which focus on the citizens of a State must pay for the cost of any State under service they received.

The fourth theory of taxation is the ability to pay theory, which is based on the assumption that a citizen is to pay taxes just because he can and his relative share in the

total tax burden is to be determined by his relative paying capacity and argued that this theory of taxation is just, fair and the most accepted theory of taxation because theory favors the income redistribution function and it is a progressive form of tax system and it is practicable in indirect taxes as people with greater ability will pay more (Jhingan, 2011) which is now applying in the country in the employment income tax proclamation of 979/2016 which gives a tax reliefs for those poor employees having monthly income less than 600ETB.

The fifth and the last theory of tax is an optimal tax theory and the dominant approach in optimal tax theory is to use the standard welfares' framework in which the government sets taxes and transfers to maximize a social welfare function which is an explicit function of individual utilities. Social welfare is maximized subject to a government budget constraint and taking into account how individuals respond to taxes and transfers (Lencho, 2012).

But there is also another approach in theories of tax and tax reform in which the US scholars and others have been debating, one of the well-known writer Christopher Hanna (Hanna, 2006), who study the theories of tax and tax reform with different perspectives which is more relevant and good sources for income tax policymakers. Scholars will face difficulty to classify our countries tax theories but according to his work it seems a hybrid tax theory, but it is difficult to say it confidently because it is not well organized and codified rather they are scattering here and there. Tax law codification and management have several advantages. It helps for users to Judge purely in terms of accessibility and intelligibility, the organization of rules in a formal code with the logically coherent arrangement of rules is, without doubt, the most preferred form of rule organization.

Several countries such as Cameron, Colombia, Cote d'Ivoire, France, Gabon, Kazakhstan, and United States, have organized their tax laws in code like the civil and criminal law of our country (Lencho, 2012).

When we see the US tax reforms and individual income tax laws, they are initiated and declared by political leaders like Regan and Bush. According to Hanna (2006), in the late 1960s, Charles O. Galvin argued that a comprehensive income tax base ("CTB") was

both practical and desirable in the USA. He along with others used the Haig-Simons definition of income as a guide in defining a CTB.

Almost twenty years later, in the State of the Union Address on Jan. 25, 1984, Reagan said: “Let us go forward with a historic reform for fairness, simplicity, and incentives for growth. I am asking Secretary Don Regan for a plan for action to simplify the entire tax code, so all taxpayers, big and small, are treated more fairly. And I believe such a plan could cause that underground economy being brought into the sunlight of honest tax compliance. And it could make the tax base broader, so personal tax rates could come down, not go up. I’ve asked that specific recommendations, consistent with those objectives, be presented by December 1984....” (Bartlett, 2014, p.4).

Following his speech and commitment, Congress enacted the Tax Reform Act of 1986 (“1986 Act”), which broadened the income tax base and lowered marginal tax rates. As a result, the 1986 Act could be viewed as a partial victory for CTB advocates, such as Professor Galvin. However, if the 1986 Act is viewed as a move towards a CTB, then the tax acts in the years since 1986 should be viewed as moving away from a CTB as Congress enacted more exclusions, deductions, and other tax preference items that narrowed the tax base (Julia, 2018).

Similarly, twenty years later, in January 2005, President George W. Bush appointed a tax reform advisory panel to recommend improving the tax system. On November 1, 2005, the panel released its recommendations, proposing the United States adopt one of two different tax systems: a changed version of the current income tax system (“Simplified Income Tax Plan”) or a partial consumption tax system (“Growth and Investment Tax Plan”). Because of the panel’s report, fundamental tax reform has once again become a timely topic with the CTB concept resurfacing in many discussions (Office of Press Secretary, 2004).

According to Hanna (2006), tax scholars have developed several theories over the years regarding a pure (or normative) income tax system. These theories seem to be more important than ever, particularly considering the current Administration's interest in tax reform. In developing a pure income tax system, three theories are of particular

importance: the Haig-Simons definition of income, Samuelson depreciation, and the Cary Brown model. The Cary Brown model also is important in understanding a pure consumption tax system. This research paper discusses the three theories and shows an application of those theories.

The Haig-Simons definition of income, Samuelson depreciation and the Cary Brown model are discussed:

2.2.1 The Haig-Simons income tax theory

Individuals' income taxation has largely been based on some variant of the standard suggested by Haig (1921) and Simons (1938). This "Haig-Simons" (H-S) standard argues that an ideal income tax should be imposed on "comprehensive income", and the H-S standard has been used to justify the frequently heard a call for a "Broad-based, Low-rate" tax reform strategy (Alm, 2018).

The Haig-Simons definition of income is generally considered by most tax scholars to be the ideal definition of income. However, the recent studies like Alm (2018) considered a truly H-S individual income tax has in fact never been fully applied.

It is sometimes referred to as the Schanz-Haig-Simons definition of income, reflecting the early contribution of Georg von Schanz. This definition is the accretion concept of income, which defines income as the sum of consumption and accumulation.

Robert Haig published his definition of income in 1921, explaining income as the increase or accretion in one's power to satisfy his wants in a period in so far as that power comprises (a) money itself, or (b) anything susceptible of valuation in terms of money. More satisfy the definition of income which the economist offers is this: income is the money value of the net accretion to one's economic power between two points of time(Hanna,2006).

According to Haig's definition of gross income is focused on the point when the power to satisfy one's wants an increase, not necessarily the point when the wants are actually satisfied and it is stated on Us federal tax act 1986 code 61(Us federal Gov, 2001).

As a result, Haig included savings in income even though it had not yet been consumed. Henry Simons published his definition of income in 1938. They consider Simons's definition a refinement of Haig's definition, and it is Simons's definition that is often cited today by different scholars. Simons wrote that income is the "algebraic sum of (1) the market value of rights exercised in consumption and (2) the change in the store's value of property rights between the beginning and end of the period in question(Brooks, 2018).

Simons also noted that income is merely the result got by adding consumption during the period to 'wealth' at the end of the period and then subtracting 'wealth' at the beginning. Probably, the most significant deviation from the Haig-Simons definition of income in the U.S. income tax system is the realization doctrine.

Under the realization doctrine, appreciation in property is not taxed until the property is sold or otherwise disposed of. For example, assume an individual owns publicly traded stock that has appreciated in value. Under a realization-based income tax system, the individual will defer paying taxes on the appreciation until a realization event, most likely a sale, takes place. As a result, much of the wealth of entrepreneurs and capitalists, such as Bill Gates and Warren Buffett, the two wealthiest Americans, has never been taxed because, in each case, the bulk of their wealth is held in stock of corporations they created or gained, Microsoft and Berkshire Hathaway, respectively. Gates and Buffet have primarily pretax wealth, while most individuals have primarily after-tax wealth(Hanna, 2006).

In our case we don't have a secondary market or well organized primary stock market to value and measure the appreciation of property but there is a capital gain tax in which the tax officers estimate the value of an asset with no tangible evidence to impose a tax at the time of disposal by sales which is the most controversial issues. For example, Highway Engineers and consultant Company faced the problem when the auditing service was taken place by ERCA Western Addis Ababa Branch Office tax audit officers in the year 2014/15.

The most discussed the method for eliminating the tax deferral benefit of the realization doctrine is a “mark-to-market method” of accounting. Most agree that a mark-to-market method is a theoretically correct approach in a pure income tax system. Mark-to-market accounting implements the Haig-Simons definition of income, which most tax theorists feel is the ideal definition of income.

As many scholars have noted, however, eliminating the realization requirement and adopting a mark-to-market approach for unrealized appreciation in property could lead to many problems. These problems include liquidity in paying the resulting income tax, administrability in determining the changes in the fair market value of the taxpayer’s assets (particularly those not publicly traded on an exchange), and possible political problems(Hanna, 2006).

In income tax, one of those rules and concepts is the doctrine of realization. Although a serious deviation from the pure concept of income, it was adopted to contend with practical difficulties inherent in taxing appreciation of assets held by the taxpayer. However, the doctrine of realization continues to be applied even in situations in which there is no practical impediment to imposing the tax on appreciation as it accrues. For example, gain from the appreciation of publicly traded securities could easily be taxed as those securities appreciate in value (David, 2001).

It appears, however, that a strong argument could be made to partially or completely repeal the realization doctrine, at least as to publicly traded property where problems of liquidity and valuation are not present. With the increasing use of derivatives in the business world, a mark-to-market approach may also be needed for assets with values dependent on the publicly traded property(Hanna, 2006).

2.2.2 Samuelson depreciation

Samuelson depreciation is it closely links the second important tax policy theory to both the Haig- Simons definition of income and the Gary Brown model. In a paper published in 1964, Massachusetts Institute of Technology economics professor Paul Samuelson introduced the concept of economic depreciation, many times referred to as Samuelson depreciation. Samuelson (1964) showed that an income tax with an allowance for

"economic" depreciation leads to Asset valuations independent of their holders' marginal rates of tax. The tax system is the "neutral," in the sense that assets have the same value to all, irrespective of whether or at what rate it taxes them. Economic depreciation and pure accrual taxation are exactly equivalent. (Hanna, 2006).

This concept has been most clearly described in the tax law literature by Professor Marvin Chirelstein, who remained "moderately proud" of the income tax, despite its many shortcomings, which he knew well, and was firmly committed to the progressivity in distributing its burdens among the populace(Graetz, 2016).

This income tax model gives us information about our income tax policy on the depreciation of an asset which does not take in to account whether the depreciated asset is generating revenue if that is true it does not give the chance to know the amount of income created from the asset(Hanna, 2006).

2.2.3. The Cary Brown model

The Cary Brown model sometimes referred to as the MIT model holds that immediately deducting the cost of an asset is equivalent to excluding from income the future annual return of the asset. The Cary Brown model is named after its founder, Dr. Edgar Cary Brown. Dr. Brown, an economics professor at the Massachusetts Institute of Technology, published his model as a seventeen-page article in 1948 in a book containing a collection of essays, *Income, Employment and Public Policy: Essays in Honor of Alvin H. Hansen* describing the tax effect when the cost of an asset can be spread (or recovered) over a shorter period than its economic life or, in the extreme case, be immediately deducted in computing taxable income. By shortening the period during which an asset's cost can be recovered, the present value of the tax savings can increase. For example, when the depreciation period is short the tax saving as discounting becomes greater. When we see these issues in our case, our income tax law does not state about the time value of money for tax saving. It will be the question for another tax researcher to find out the solution that the taxpayer can save money and invest in other investment (Hanna, 2006).

Carry Brown model has its own assumption: first, the applicable tax rates must remain constant. The tax rates can be neither increase nor decrease over the time in question.

Therefore, tax is saved from the immediate deduction and collected at an identical rate on the earnings from an asset immediately deducted and on amounts received at the close of the transaction (whether by the disposition of the asset or by some other event). Second, the deduction must produce immediate tax savings equal to the deduction multiplied by the taxpayer's marginal tax rate. This means that the deduction must offset income from other sources and is not lost or delayed. The deduction results in an immediate tax benefit. Third, the tax savings are assumed to be invested at a rate of return equal to the original investment, and the opportunities to invest at the assumed rate of return are unlimited (McNulty, 2000).

In an income tax system, an individual is taxed once from labor (wages and salaries) and again from any investment or capital (interest, dividends, and capital gains). In a consumption tax system, all investments would be immediately deductible or the income from the investments would be exempt from tax. Investment or capital income is exempted from tax and the consumption tax is equivalent to a wage tax. The United States tax system is primarily an income tax system but has elements of a consumption tax system. According to Professor McNulty conclude in his research an income tax in theory probably is preferable to a consumption tax, and that our admittedly "hybrid" income tax(McNulty, 2000).

Most tax scholars seem to agree with the concept of a comprehensive tax base but disagree whether it should be an income base, a consumption base, or a combination of the two bases. In fact, despite having made strong arguments for many years for a comprehensive income tax base, Professor Galvin has come and consumption is necessary (Hanna, 2006).

Galvin has more recently acknowledged that some hybrid tax base of income and consumption is necessary. In our case, some scholars like Taddes Lencho agree that the tax policy of Ethiopia is the hybrid one, but it does not have a clear theoretical background as the above theoretical evidence shows that it is scheduler and hybrid (Lencho, 2014).

The tax justice network Africa (TJNA) suggests that a progressive tax system supports development in several ways. Progressive taxation may cause higher revenues, less financial and economic volatility, and faster economic growth. Increased revenues imply increased access to public services, and more revenue allocation towards poverty reduction efforts. More progressive taxation can also translate into the generation of more stable, long-term financial resources and a greater ability of policymakers to engage in countercyclical fiscal policies. It can also indirectly affect economic growth by reducing income inequality in which this research tried to investigate the effect the progressive employment tax bracket changes on income inequality of different income groups of workers. Progressive tax policy is applying in our country it is believed to improve how an economy automatically stabilizes itself using the country's fiscal system. Given the importance of progressive tax systems in achieving social justice and supporting development, efforts should be made to ensure that tax systems are progressive (TJNA, 2011a).

According to TJNA (2011), tax systems have three main objectives. These are

- (i) To raise revenue to fund government operations
- (ii) To assist in the redistribution of wealth and reduce income inequality, it is one of the motives for this study to check whether the reform has its own impact on employees' income inequality.
- (iii) To regulate economic activities

2.3 Lorenz curve, Gini coefficient as a measurement of personal income inequality and tax effect

The Gini index or Gini coefficient is a statistical measure of income or wealth distribution which was developed by the Italian statistician Corrado Gini in 1912. It is used as a gauge of economic inequality, measuring income distribution among a population. The Gini index is often represented graphically through the Lorenz curve, which shows income (or wealth) distribution by plotting the population percentile by income on the horizontal axis and cumulative income on the vertical axis (Towards data, 2019).

The Lorenz curve is a graphical representation of income inequality or wealth inequality developed by American economist Max Lorenz in 1905. The graph plots percentiles of the population on the horizontal axis according to income or wealth. It plots cumulative income or wealth on the vertical axis so that an x-value of 45 and a y-value of 14.2 would mean that the bottom 45% of the population controls 14.2% of the total income or wealth(Lorenz, 1905).

The Lorenz curve is often accompanied by a straight diagonal line with a slope of 1, which represents perfect equality in income or wealth distribution; the Lorenz curve lies beneath it, showing the actual distribution. While the Lorenz curve is most often used to represent economic inequality, it can also show the unequal distribution in any system. The farther away the curve is from the baseline, represented by the straight diagonal line, the higher the level of inequality. In economics, the Lorenz curve denotes inequality in the distribution of either wealth or income; these are not synonymous since it is possible to have high earnings but zero or negative net worth, or low earnings but large net worth.

The Gini coefficient is used to express the extent of inequality in a single figure. It can range from 0 (or 0%) to 1 (or 100%). Complete equality, in which every individual has the same income or wealth, corresponds to a coefficient of 0. Plotted as a Lorenz curve, complete equality would be a straight diagonal line with a slope of 1 (the area between this curve and itself is 0, so the Gini coefficient is 0). A coefficient of 1 means that one person earns all the income or holds all the wealth. Accounting for negative wealth or income, the figure can theoretically be higher than 1; in that case, the Lorenz curve would dip below the horizontal axis.

To find the approximate Gini coefficient, subtract the area beneath the Lorenz curve (around 0.25) from the area beneath the line of perfect equality (0.5 by definition). Divide the result by the area beneath the line of perfect equality, which yields a coefficient of around 0.5 or 50%. According to the CIA, Brazil's Gini coefficient in 2014 was 49.7% (Kenton, 2018).

In many OECD countries, income inequality has increased in the past decades. In some countries, top earners have captured a large share of the overall income gains, while for other's income has risen only a little. There is the growing consensus that assessments of economic performance should not focus solely on overall income growth, but also take into account income distribution. Some see poverty as the relevant concern while others are concerned with income inequality. A key question is whether the growth-enhancing policy reforms advocated for each OECD country and the BRIICS in *Going for Growth* might have positive or negative side effects on income inequality. More broadly, in pursuing growth and redistribution strategies simultaneously, policymakers need to know of complementarities or trade-offs between the two objectives(Holler, Joumard, & Koske, 2014).

According to IMF country Report No.15/326, Ethiopia's experience is a case in point of the complex interaction between inequality and growth. Unlike other rapidly growing economies, the country has not experienced a significant increase in inequality, as measured by the Gini coefficient, even as poverty reduction occurred at a rapid pace. The government's development plans have had a strong focus on inclusive growth, together with an increase in pro-poor spending. Yet, structural transformation and poverty reduction may require the implementation of reforms that could lead to an increase in income disparities. This highlights the potential policy trade-offs between growth and inequality.

The direct taxes are the main instrument of redistributive policy affecting income inequality. While direct taxes (personal income and business income) remain progressive, overall, their contribution and efficacy strengthened. They account for a relatively small portion in overall tax revenue, which limits their ability to reduce inequality. The analysis of the incidence of personal income taxes showed that they are progressive, as the main burden of these taxes carried by the rich (67 percent paid by the top 20 percent). However, lack of revisions to the tax brackets for a decade, and the relatively low threshold of the first tax bracket suggest that Ethiopia levies more taxes on the lowest income households compared to other countries(IMF, 2015).

2.4 Empirical Literature Review

Income inequality among individuals is measured here by the Gini coefficient. The Gini coefficient is the one which based on the comparison of cumulative proportions of the population against cumulative proportions of income they receive, and it ranges between 0 in the case of perfect equality and 1 in the case of perfect inequality(OCDE, 2017).

Individual income tax affects long-term economic growth. The structure and financing of a tax change are critical to achieving economic growth. Tax rate cuts may encourage individuals to work, save, and invest(Gale & Samwick, 2016).

Some empirical evidence shows that education and anti-discrimination policies, well-designed labor market institutions and large and/or progressive income tax and transfer systems can all reduce income inequality(OECD, 2012).

As it is mentioned earlier, there is no similar research with this study in our country but the studies launched by IMF focusing on Ethiopia has similarity with this research which can give us the evidence about the progressive tax reforms has its own impact on personal income distributional which can narrow the gap between the rich and the poor. The analysis of the incidence of personal income taxes showed that they are progressive, as the main burden of these taxes carried by the rich (67 percent paid by the top 20 percent). However, lack of revisions to the tax brackets for a decade, and the relatively low threshold of the first tax bracket suggest that Ethiopia levies more taxes on the lowest income households compared to other countries(IMF, 2015).

Other empirical evidence which focuses on the impacts of employment income tax on workers' motivation to work in our cases suggested that to realize domestic revenue mobilization objectives the Ethiopian Government acknowledged that the successful implementation of the overall tax Reform program including the employment income tax, which is vital to attaining the economic and social aim (Gebisa, 2009).

This study as it mentioned in the limitation section it differs from other related study and can be considered as its weakness of unable to use the time series data analysis of income inequality but it has a similarity in using various indicators like Lorenz curve measured by Gini coefficients, percentile ratios, and top and bottom inequality measures

takes place in the Republic of Ireland for the years 2004-15 on March 2019 while this study focuses on cross-sectional data analysis of income inequality among different employees working at different working environments caused by the change in new employees income tax brackets. Although the Gini coefficient, a summary measure and the most common income inequality indicator in the literature are identical, its empirical shared evidence shows that there is relatively stable in gross and disposable income terms in Ireland between 2004 and 2015(Ciaran, 2019). Significantly, the gap between the bottom (income at the 10th percentile) and the middle point of the distribution (median income) was wider in 2015 relative to the year's pre-crisis. This is also the case between the bottom and the top (income at the 90th percentile) of the distribution. The gap between the middle point in the distribution and the top was virtually unchanged over the same period. These trends apply to both gross and disposable income (Ciaran, 2019).

According to Memo (2017), empirical studies pointed out it has reached the taxes reforms in Ethiopia similar results with other developing countries. Geda and Shimeles (2005) explore the contribution of taxes and tax reform, the changes in its structure and institutional reform to understand its role in raising the revenue in Ethiopia for the period 1990–2003. As results showed that there had been a considerable improvement of the tax revenue, productivity and that the reforms made in this period had a significant effect on the responsiveness of the tax system.

(UNDP, 2016) tested and review the existing system of taxation and the reform measure in Ethiopia using total GDP estimated the tax revenue. Ethiopian tax revenues compared to Sub-Saharan Africa countries remained low. Such a low level of tax revenue mobilization the matter of policy or administration, however, this shows that the existing of a modest tax burden and the room to raise more revenue. As a result, the study suggested several alternatives on how to build a more sound tax system in Ethiopia.

According to (Moges,2000) who study on the distributional implications of a taxation system are derived from how the tax codes incorporate these principles for a pattern of the income distribution. His study examines the distributional issues and implications of personal income tax reforms in Ethiopia regarding the civil service sector. It analyzes

the theoretical issues and policies considering the 1994 and 2002 income tax reforms. He finds out tax system could play in promoting sustainable economic growth and address problems of chronic poverty(Moges, 2000).

The tax reform measure should focus on enhancing the efficiency of tax administration in tax assessment, tax law enforcement and control of tax evasion in view of increasing the tax bases and optimize the tax revenue collection relative to the economic growth of the country (N B E, 2017).

According to Lencho(2014), Ethiopia used income taxes as one of the principal sources of domestic government revenue since the beginning of modern taxation in the 1940s. The Ethiopian income tax system is “scheduler” in structure and orientation, the computation, assessment and collection of income taxes based on some identified sources of income, like income from employment, income from the rental of property and income from the business.

Shreds of evidence show that there is a renewed interest in policies aimed at reducing inequality and increasing income and opportunity of the less advantaged population by reducing the income tax rate(Hoynes & Patel, 2018).

According to the study on post-tax income distribution and development by Stewart from Oxford University (1999), many studies were based on the progressivity, or otherwise, of tax systems have come to differing conclusions, partly for differences in method. On balance, there appears to be mild progressiveness in the tax systems, with few cases in which post-tax income distribution is more unequal than pre-tax. For example, (Whalley, 1990), surveying seven tax incidence studies in developing countries, showed that mostly the tax systems were mildly progressive.

Income inequality has increased in most advanced and many developing economies over recent decades, reflecting a range of factors including globalization and technological change. Even more striking is the large variation in average disposable (post-tax-and-transfer) income inequality across regions, much of which can be accounted for by differences in the level and progressivity of tax and spending policies. In advanced economies, fiscal policy has played a significant role in reducing income inequality,

especially on the expenditure side but also through progressive income taxation(Coady & Gupta, 2015).

Tanzi (1995) notes a general decline in rates of individual and corporate income tax. However, some developing countries—including Jamaica, Turkey, and Indonesia—reduced inequality through the tax system (as cited,Chu, Davoodi and Gupta, 1999). So, when we see personal income tax which is progressive on its nature has its own impact on post-tax income distribution(Stewart, 1999). This study tried to show the post-tax effect of the employees' income because of the tax reform for this investigation Lorenz curve and Gini coefficient analysis tools used.

2.5 The research empirical contribution to other similar studies

This study differs from other research with its focus on the employees' income variability because of the new income tax reform 979/2016 while other past studies, including (Mamo, 2017), who recently tried to show the impact of tax reform on the revenue and who made an assessment on the productivity of the tax system for the period 1975-2014 and it helps to devise a reasonably good estimation of Ethiopian sustainable revenue profile but he did not address the new tax reform rather he puts as his research gap. So, this study will fulfill the problems what others unable to cover except some researcher like Bekele Gebisa who tried to study the impact of personal income tax on employees' motivation to work (Gebisa, 2009). Other researcher evidenced that other tax and tax reform in Ethiopia made from1990–2003 but the analyses based on the distributional impact of tax incidence using the concept of concentration curve, on the bases of 1999/2000 central statistical authority household income and consumption surveyed. Whereas, his study more concerned with the impact on the productivity of tax revenue while others derived elasticity and buoyancy indexes of the tax system and computed the difference. Besides, the past study went further to compute the buoyancy and elasticity indexes for both the Dergu and EPRDF reform periods and the combined period which provides important information on the efficiency of different tax policies his study helps as a springboard to conduct this and related studies regarding the impact of exemptions, tax incentives, and by including the impacts of current tax reform (2015/16) in which he could not incorporate (Geda &

Shimeles, 2005).

In this study, the variables are selected based on the theoretical and metrical evidence presented:

According to the IMF study on Ethiopia, the progressive tax reforms has its own impact on personal income distribution which can narrow the gap between the reach and poor in our case the low income and high-income group of employees and it also empirically evidenced that 67% of the employees' income tax paid by the top 20% of the high-income earning groups (IMF,2015). The above theoretical and empirical evidence can be accepted or rejected based on the result.

So, income tax before and after reform is selected as an independent variable and disposable income and employment income tax as dependent variables selected to justify the above theory.

2.6 Literature gap and Summary

As per the researcher's knowledge, this literature review has a gap in the citation of a similar study in Ethiopia it is because of the research objectives and the researcher's limitation to find out similar studies from Google search and from Google scholars request.

In the above literature reviews, the theoretical and empirical shared of evidence in relation to this research are discussed. It has two major sections: theoretical and empirical in the first section; definition, classification, and theoretical background are presented. The main concern is to support the research objectives by giving theoretical and empirical justification. For this purpose, the sources are categorized by local and foreign writers. The local writer like Asmare (2018) is arguing that tax reform has its own role in improving the economy of the nation by increasing revenue to GDP ratio and reducing income inequality. In relation to this, the main theoretical argument for this paper the main conceptual framework is focused on the employees' disposable income and tax liabilities which are the dependent variables as a function of the change in income tax

brackets which is the independent variable can express the relationship of dependent and independent variables

The income tax reform is believed to have a significant impact on the employees' disposable income and it has its own contribution in reducing the tax burden on employees.

Another argument is the progressive income tax which we are using in the reform has its own role in reducing the income inequality among the low and high-income groups of employees.

According to the foreign researcher like Hanna (2006) evidenced that the income tax theory can be classified into two major subdivisions such as the pure income tax theory and consumption theory. So, when we discussed income tax theory and reform in Ethiopia and specifically about employment income tax it necessary to understand the right classification to communicate with other scholars and giving advice to policymakers. As per the evidence, it is arguably to give the clear and right categories for our income tax theory and reform but some researcher like Lencho (2012&2014) believed that Ethiopia has both consumption and income tax theory in its nature which is called Hybrid tax theory.

Other theories like optimal tax theory, ability to pay and taxation theory of socio-political which favors the social and political objectives should be pivotal factors in choosing tax policy all the above are supporting this research objective (Asmare,2018).

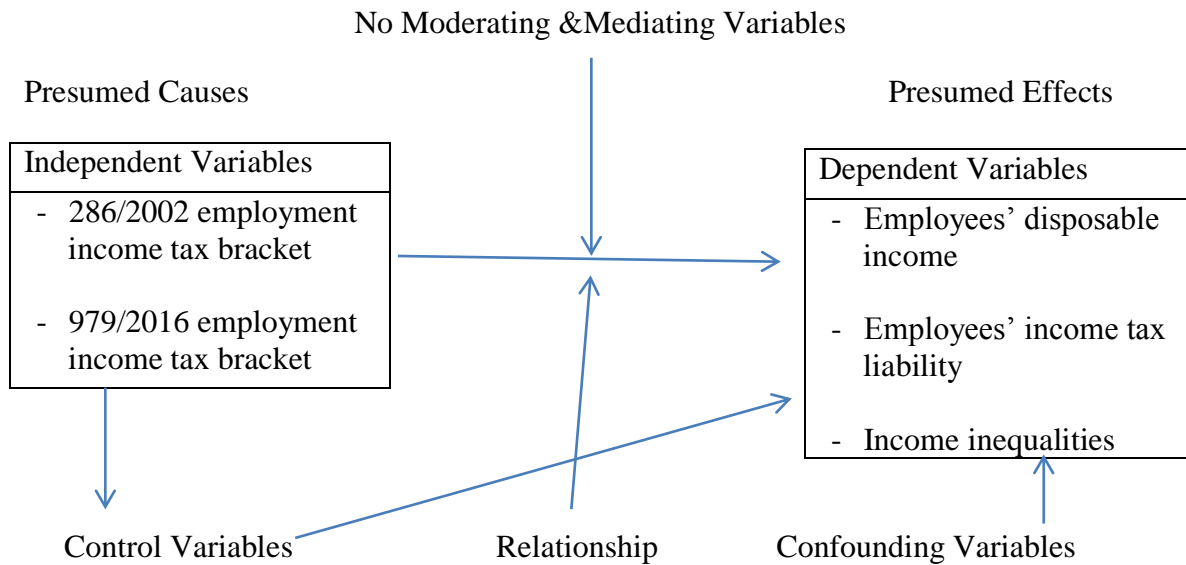
This study will provide information which can make it unique from its predecessors by focusing on the tax reform on employees' income in Addis Ababa and the income distributional effect between low and high-income groups

2.7 Conceptual framework of the study

In the conceptual framework fundamentals, it identifies the variables and their relationships from the theory of income tax reform specifically when the progressive employees' income tax brackets increases; it is believed to reduce the income inequalities among different income earning groups of employees.

The cause-and-effect relationship can be explained among the income tax brackets 286/2002, and 979/2016 are presumed causes or independent variables. They have a relationship with disposable income and income tax liabilities as presumed effects or dependent variables.

Diagram for Conceptual framework fundamental



Chapter Three

3. Research Design and Method

The researcher motive in this study is to investigate the income tax reform effect on employees' disposable income, employees' income tax liability and income inequality.

To achieve the above objectives the quantitative research method is used. The sample data is collected through the survey method by purposive sampling technique to selected 8 private and public companies having many business activities like merchandising, manufacturing and service giving which includes consulting, education and banking services. Based on the Central Statistics Agency finding (2012) stated in the scope of the study, the sample can fairly represent most workers in Addis Ababa. If we randomly select one employee and asking him which type of business or public service he or she is working, it will be one of the three types of business or public services. Totally, 1120 employees 2010E.C annual payroll data collected from 8 different private and public companies: Ghion Gas Plc(194), Ethiopian Plywood Enterprise (110), Enzyte Industrial and Commercial Plc (525), Highway Engineering and Co Plc(70), Commercial Bank of Ethiopia Torhyloch Branch (26),Sileshi Asefa(101),Selam City Mall (21) and Tinbite Ermias Primary School (73) are organized and based on the previous employment income tax brackets their disposable income and tax liabilities are also calculated for each employee's payroll collected from the finance department for analysis and interpretation.

1.7. Research Design

Quantitative research design is used in which the summary of the descriptive statistical tool is used. Descriptive statistics involves summarizing and organizing the data so they can be easily understood. Descriptive statistics, unlike inferential statistics, seeks to describe the data, but do not attempt to make inferences from the sample to the whole population. Here, we typically describe the data in a sample (Towards data, 2019) and paired sample means t-Test analytical tools are used. Sample sizes are typically large. For example, the study surveys more than thousands of Addis Ababa Employees' payroll data. The sample size is determined using the scientific method of determining the number of employees that must be considered when the total population under the investigation is unknown. When this happens statistics gives the method to estimate the sample size using the standards of 95% confidence interval, 3% standard error and maximum sample population proportion 50%, then the number of employees to be included in the study determined the sample size n required when estimating the population proportion using the following formula:

$$p \pm Z_{\alpha/2} * \sqrt{P(1-P)/n} \leq 3$$

p = sample population proportion (50%)

n = the sample size

$$Z_{\alpha/2} = 1.96$$

$1.96 \sqrt{.5(1-.5)/n} \leq 3$ then multiplying both sides by $1/1.96$

$$1/1.96 * 1.96 \sqrt{0.5 * 0.5} / n \leq 3 * 1/1.96$$

$0.5 / \sqrt{n} \leq 3 / 1.96$ then when reciprocating

$$\sqrt{n} / 0.5 \geq 196 / 3 \text{ and multiply both sides by } 0.5$$

$$\sqrt{n} \geq 32.67$$

$$n \geq 32.67^2$$

$n \geq 1067.32$ when it is approximate to the whole number it becomes 1068 (Krejcie & Morgan, 1970)

The formula gives the minimum number of the sample that is required for this study, so the result evidenced that then value is greater or equal to 1068. Based on this, statically estimates the sample size is determined for the unknown population which is 1120 employees are considered as a sample population proportion.

1.8. Sample and sampling Techniques:

The 2017/18 budget year or cross-sectional payroll data of 1120 employees are collected from 8 public and private companies found in Addis Ababa by using the purposive sampling method which is a non-probabilistic sampling technique that gives right for the researcher to select the sample based on his professional judgment preference, proximity, and availability of data. Based on this, the data is collected through email and hard copy by presenting the cooperation letter to the company manager and getting permission to access each company finance managers' data.

Each employee's payroll data with their name is private data to use publicly or for research purpose but to protect the privacy of their employees, the institutions do not include the name of the employees in the payroll data provided for the research instead they give sequential numbers in place of the name of employees' in the excel sheet of their monthly payroll data. So, the privacy of each employee under this research is highly protected. These institutions cooperated with the researcher by accepting the university letter to access their data. Some company gives a confirmation letter for its credibility of data. Sample copy letter is attached at appendix 7.

The following table can describe the number of employees from each institution and also the types of business the sample originated from.

Table 1. Shows the sources of sample data collection

No.	Types of organization	Number of employees	%	Rank
1	Service & Merchandise (Private)	194	0.17	2 nd largest population
2	Engineering Consulting (Private)	70	0.06	3 rd least population
3	Service (private)	21	0.02	1 st least population
4	Manufacturing Company (Private)	110	0.10	3 rd Largest population
5	Manufacturing Company (private)	525	0.47	1 st highest population
6	Service & Merchandise (Private)	101	0.09	4 th largest population
7	Financial Institution (Public)	26	0.02	2 nd least population
8	Educational Services (public)	73	0.07	5 th largest population
TOTAL		1120		1.00

Source: - from Survey data collected for this research

The above table shows that the total number of employees is 1120 and the sample data is tried to cover many business entities like manufacturing has 57%, merchandising and service giving companies have 43% to make the sample representative.

3.5 Source and tools/Instruments of data collection

The secondary data collection method is **defined:** When the data are collected by someone else for a purpose other than the researcher's current objectives and has already undergone the statistical analysis is called **Secondary Data**. The secondary data can be both qualitative and quantitative. The qualitative data can be obtained through newspapers, diaries, interviews, transcripts, etc., while the

quantitative data can be obtained through a survey (the researcher is responsible to gather quantitative cross-sectional payroll data personally which is already gathered for another purpose), like financial statements and statistics. The secondary data are readily available from the other sources and there are no specific collection methods. The researcher can get data from the sources both internal and external to the organization. For example, the internal sources of secondary data are:

- Sales Report
- Financial Statements etc.(Business Jargons, 2019).

Similarly, in this research secondary quantitative data of employees' payroll data are collected by surveying the internal organizations' financial data of their finance departments through email and hard copy. For example, the company's employee's record, payroll, and the tax paid documents to support quantitative shreds of evidence from the company finance managers; they are the main participants for this process.

1.9. Method of data analysis

The data analysis method of this research can be classified in to three main types, the first one summarizes descriptive statistics using excel tool pack, the second one is the paired sample mean t-Test which is appropriate for large data having shared characteristics for an instant in this data analysis both the disposable income and income tax liabilities are the dependent variable calculated from one sample data(paired) to compare the effect of income and tax before and after the effect of tax reform.

The last analysis tool applied for this research is the Gini coefficient of income inequality measurement tools. It is also used to analyze the effect of tax reform on the employees' income inequalities among 20% high income earning and 20% low income earning groups of employees. The data is grouped into equally sized deciles from lowest income earning to highest to calculate the Gini coefficient.

Chapter Four

2. Data analysis and Interpretation

4.1 General Information about Data

The data analysis and interpretation of this research have the following general information:

- 1) The net disposable income of employees is calculated by assuming that other factors affect the net disposable income are remaining constant like- inflation, and devaluation of the currency, etc.
- 2) The Lorenz curve and Gini coefficient tools used to analysis and check whether the income tax reform has its own impact in reducing the income inequality among different income groups that are classified into 10 income groups and presented from the smallest to the highest income earning groups.

So, 1120 employees are grouped into 10 having an equal number of employees for each group which is 112.

4.2 Descriptive Statistical Data Analysis and Interpretation

Table 2. Comparative Income tax payable based on 286/2002 and 979/2016 income tax proclamation

Group	%	No.of Employees	Basic salary	Income tax 286/2002	Income tax 979/2016	Difference	% age Decrease d(Increased)
0	0	0	-	-	-	-	-
1	10%	112	1,103,824.94	106,321.57	32,916.10	73,405.47	69%
2	10%	112	1,564,679.25	176,326.51	80,664.00	95,662.50	54%
3	10%	112	1,917,154.18	231,665.24	113,749.28	117,915.96	51%
4	10%	112	2,247,123.87	297,359.48	156,493.37	140,866.11	47%
5	10%	112	2,718,902.43	395,380.54	223,147.00	172,233.53	44%
6	10%	112	3,374,837.85	542,957.62	318,740.00	224,217.62	41%
7	10%	112	4,093,209.19	715,732.14	431,699.23	284,032.91	40%
8	10%	112	4,926,420.12	933,816.69	594,999.63	338,817.06	36%
9	10%	112	6,909,695.71	1,537,392.87	955,241.74	582,151.13	38%
10	10%	112	18,895,852.34	5,729,533.39	4,526,749.17	1,202,784.23	21%
TOTAL	100%	1120	47,751,699.89	10,666,486.05	7,434,399.53	3,232,086.52	30%

Source: - from Survey data collected for this research

Analysis, interpretation, and discussion

The above table is essential to answer the research question; what is the income tax reform effect on employees' disposable income? It also shows that on average 30% decreases on income tax because of the change in tax brackets. It shows that the total bir3, 232, 086.52 tax liability is reduced. It is also the result of the change in new income tax brackets. According to Asmare (2018), the income tax reform of 2016 has on average a 40% decreases in income tax liability but the result from this research has confirmed that there are 30% decreases on income tax liabilities which has 10% difference as compared with the previous one.

Table 3.Comparative disposable income based on 286/2002 and 979/2016 income tax proclamation

Group	Basic salary	Disposable Income 286/2002	Disposable Income 979/2016	difference	% increase (decrease)
0	-	-	-	-	-
1	1,103,824.94	997,503.37	1,070,908.84	73,405.47	7%
2	1,564,679.25	1,388,352.74	1,484,015.25	95,662.50	7%
3	1,917,154.18	1,685,488.94	1,803,404.90	117,915.96	7%
4	2,247,123.87	1,949,764.39	2,090,630.50	140,866.11	7%
5	2,718,902.43	2,323,521.90	2,495,755.43	172,233.53	7%
6	3,374,837.85	2,831,880.23	3,056,097.85	224,217.62	8%
7	4,093,209.19	3,377,477.05	3,661,509.96	284,032.91	8%
8	4,926,420.12	3,992,603.44	4,331,420.50	338,817.06	8%
9	6,909,695.71	5,372,302.84	5,954,453.97	582,151.13	11%
10	18,895,852.34	13,166,318.95	14,369,103.17	1,202,784.23	9%
TOTAL	47,751,699.89	36,990,848.32	40,193,939.05	3,203,090.73	9%

Source: - from Survey data collected for this research

Analysis, interpretation, and discussion

The above table shows the disposable income that compares the two tax brackets. The investigation shows that the employees earn on average 9% as compared with the 286/2002 tax brackets.

It also depicts that a higher amount of disposable income is earned by the high-income group which 11% while the low income earning groups earns 7%. It has its own impact

on the inequality analysis of this research. Because of this, there is a slightly marginal increase in 0.4% which is explained in the Gini coefficient measurement analysis section of this research.

Table 4. Descriptive statistics result about the 286/2002 Income tax effect on 1120 Employees

Description	Basic Salary	Income Tax	Disposable Income
Mean	42,635.45	9,523.65	33,111.80
Standard Error	1,560.36	519.94	1,045.36
Median	27,174.41	4,113.30	23,066.27
Mode	8,521.11	948.80	7,572.31
Standard Deviation	52,219.68	17,400.67	34,984.39
Range	446,183.75	143,719.31	302,464.44
Minimum	7,800.00	600.00	7,200.00
Maximum	453,983.75	144,319.31	309,664.44
Sum	47,751,699.89	10,666,486.05	37,085,213.84
Count	1120	1120	1120

Source: - from Survey data collected for this research

Analysis, interpretation, and discussion

The descriptive statistical value is calculated using the excel data analysis tool pack. The above table based on 286 income tax brackets shows that the average annual salary of 1120 employees is birr 42,635.45; the average annual tax liability is 9,523.65 which is higher than 979/2016 and the average annual disposable income is 33,111.80 which is lower than 979/2016. The standard deviation of income tax and disposable income are 17,400.67 and 34,984.39 respectively. And the maximum annual disposable income is 309,664.44 while the minimum annual disposable income is 7,200.00, and from this, someone can observe the gap between the poor and the rich employees' annual disposable income. Besides this, the maximum annual tax paid by an individual is birr 144,319.31 and the minimum annual tax paid by an individual is birr 600 it also has great variation which shows the higher amount of tax is paid by high income earning which has the policy implication for the government. It can give information to focus on the high earning group rather than imposing the tax on low income earning groups.

Table 5. Descriptive statistics result about the 979/2016 Income tax effect on 1120 Employees

	<i>Basic Salary</i>	<i>Income Tax</i>	<i>Disposable Income</i>
Mean	42,635.45	6,637.86	35,997.59
Standard Error	1,560.36	445.78	1,142.24
Median	27,174.41	2,352.01	24,787.76
Mode	8,521.11	202.50	8,318.61
Standard Deviation	52,219.68	14,918.56	38,226.51
Minimum	7,800.00	60.00	7,441.42
Maximum	453,983.75	131,616.60	426,539.44
Sum	47,751,699.89	7,434,399.53	40,317,300.36
Count	1,120.00	1,120.00	1120

Source: - from Survey data collected for this research

Analysis, interpretation, and discussion

The above table based on proclamation 979/2016 income tax brackets shows that the average annual salary of 1120 employees is birr 42,635.45; the average annual tax

liability is 6,637.86 when we compare with 286 income tax, the new proclamation average annual tax liability is decreased by birr 2885.79 and the disposable income increases by the same amount and it becomes birr 35,997.59. When we see the disposable income standard deviation of 979/2016 tax brackets as compared with 286/2002 tax brackets, it is high by birr 3, 242.12 in disposable income of 979/2016 which is 38,226.51 but when we compare the income tax standard deviation, the 979/2016 is lower than the 286/2002 by birr 2,482.11. This indicates that the employees' disposable income deviation or inequality gap is increasing rather than reducing the gap while the tax liabilities gap is narrowing. And the maximum annual tax liability is 131,616.60 while the minimum annual tax liability is birr 60, and from this, someone can observe the amount of tax paid by rich as compared with the poor employees which have great variation. The empirical shared of evidence from IMF(2015) shows that 67% of the individual income tax is paid by the above 20% income earning groups similarly in this study, the quantitative analysis result shows on table 5 shows that from the total tax liability of 7.4 million birr 5.4 million birr is paid by the top 20% of high income having 240 employees out of 1120 sample population proportion. So, 73% of the tax is paid by high-income groups but there is a 5% deviation from IMF study which shows the result is more reliable for further research and investigation.

4.3 The Paired sample means t-test

Table 6 Paired Sample Means t-Test

	<i>286 Income Tax</i>	<i>979 Income Tax</i>
Mean	9523.648258	6,637.07
Variance	302783279.9	222,572,882.72
Observations	1120	1120
Pearson Correlation	0.99519006	
Hypothesized Mean Difference	0	
df	1119	
t Stat	32.83357595	
P(T<=t) one-tail	1.9601E-166	
t Critical one-tail	1.646216486	
P(T<=t) two-tail	3.9202E-166	
t Critical two-tail	1.962086233	

The Paired sample means t-test Table

The main aim of this test is to prove whether the mean of the income tax before and after the reform has a significant difference at a 95% confidence interval and alpha.05. The null hypothesis and the alternative hypothesis presented below:

$$H_0: \mu = 0$$

The null hypothesis: there is no significant means difference of income tax before and after the tax reform

$$H_A: \mu \neq 0$$

The alternative hypothesis: there is a significant means difference of income tax before and after the tax reform

The table 6 the t-Test paired sample for mean shows that the p-value of the two-tail test is below.05 which results in the rejection of null hypothesis at 95% confidence which implies do not reject the alternative hypothesis which evidenced that there is a significant difference between the mean of 286/2002 income tax and 979/2016 income tax.

Besides this, the t-critical of two tails test 1.962086233. Which is smaller than the t stat which is 32.83 also justifies the rejection of the null hypothesis at 5% significant level? So, we can conclude that there is also a significant difference between the two means of income tax liability on employees before and after-tax reform at a 95% confidence interval.

Table 7 t-Test: Paired Two Sample t-Test for N Means

	Disposable Income based on 979proclamation	Disposable Income based on 286proclamation
Mean	35997.58961	33111.79807
Variance	1461265983	1223907683
Observations	1120	1120
Pearson Correlation	0.995647043	
Hypothesized Mean Difference	0	
df	1119	
t Stat	20.51860	
P(T<=t) one-tail	0.00000	
t Critical one-tail	1.64622	
P(T<=t) two-tail	0.00000	
t Critical two-tail	1.96209	

The Paired sample means t-test Table

The main aim of this test is to prove whether the mean of the disposable income before and after the reform has a significant difference at a 95% confidence interval and at $\alpha=0.05$. The null hypothesis and the alternative hypothesis presented below:

$H_0: \mu=0$

The null hypothesis: there are no significant means of a difference in disposable income before and after the tax reform.

$H_A: \mu \neq 0$

The alternative hypothesis: there is a significant means difference in the disposable income before and after the tax reform.

The table 7 of the t-Test paired sample for mean shows that the p-value of the two-tail test is below 0.05 which results in the rejection of null hypothesis at 95% confidence which implies do not reject the alternative hypothesis which evidenced that there is a significant difference between the means of 286/2002 disposable income and 979/2016.

Besides this, the t-critical of two tails test 1.96209, which is smaller than the t stat which is 20.51860 also justifies to rejecting the null hypothesis. So, we can conclude that there is also a significant difference between the two means of disposable income on employees at a 95% confidence interval.

4.4 Analysis of Income Inequality among different income groups using the Lorenz curve and Gini coefficient based on the 286/2002 and 979/2016 income tax effect on employees' income.

Table 8. Shows the Lorenz Curve and Gini coefficient analysis

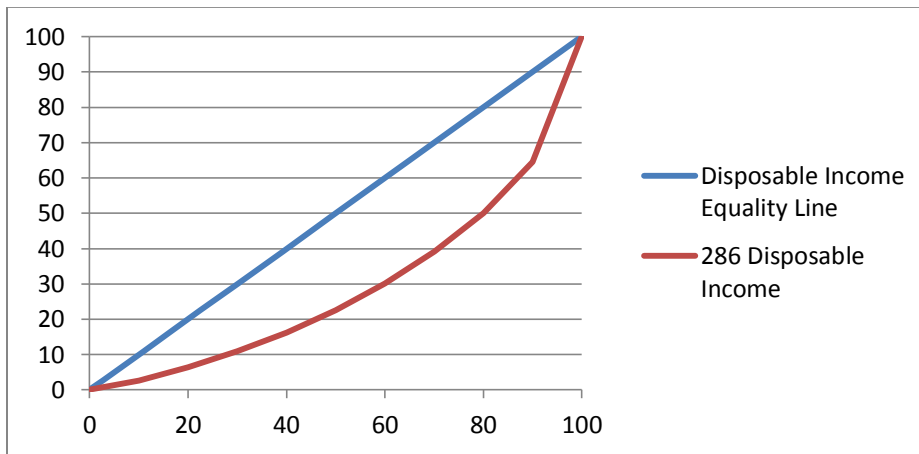
Group of employees	286 Disposable Income	979 Disposable Income	286 Disposable income(%)	979 Disposable income (%)	286cumulative Disposable income % for 2010e.c	979cumulative Disposable income% for 2010e.c	% Employees	Gini Coefficient of 286	Gini Coefficient of 979
0	0	0	0	0	0	0	0	0	-
1	997503.37	1070908.8	2.69	2.66	2.69	2.66	10	0.00134	0.00
2	1388352.7	1484015.2	3.74	3.68	6.43	6.34	20	0.00456	0.00
3	1685488.9	1803404.9	4.54	4.47	10.98	10.81	30	0.00871	0.009
4	1949764.4	2090630.5	5.26	5.19	16.24	16.00	40	0.01361	0.013
5	2323521.9	2495755.4	6.27	6.19	22.50	22.19	50	0.01937	0.019
6	2831880.2	3056097.8	7.64	7.58	30.14	29.77	60	0.02632	0.026
7	3377477.1	3661510	9.11	9.08	39.24	38.85	70	0.03469	0.034
8	3992603.4	4331420.5	10.77	10.74	50.01	49.59	80	0.04463	0.044
9	5372302.8	5954454	14.49	14.77	64.50	64.36	90	0.05725	0.057
10	13166319	14369103	35.50	35.64	100.00	100.00	100	0.08225	0.082
	37085214	40317300	100	100.00				0.29273	0.2905
								0.5	0.5
								0.20727	0.209
					Gini coefficient			0.4145427	0.4189018
					Difference				0.4%

Source: - from Survey data collected for this research

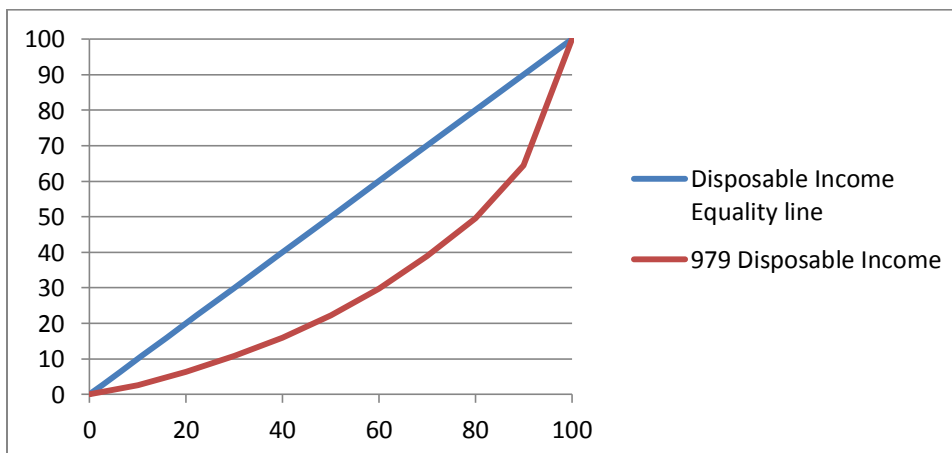
Analysis, interpretation, and discussion

The above table shows that the Gini coefficient calculated using the formula $Gini\ C = \frac{.5 \cdot (\text{Sum}(\text{Lower Value} + \text{Upper Value}/2 \cdot \% \text{ of Employees}))}{.5}$ is .41 for the 286/2002 and 979/2016 which shows no significant difference before and after income tax reform. So, we can conclude that there is no significant difference or we can say the new income tax reform does not have any effect in reducing the income inequality of employees under this investigation rather it is marginally worsening by .4% because of the higher increases (11%) of disposable income for rich employees than the lower income employees (7%).

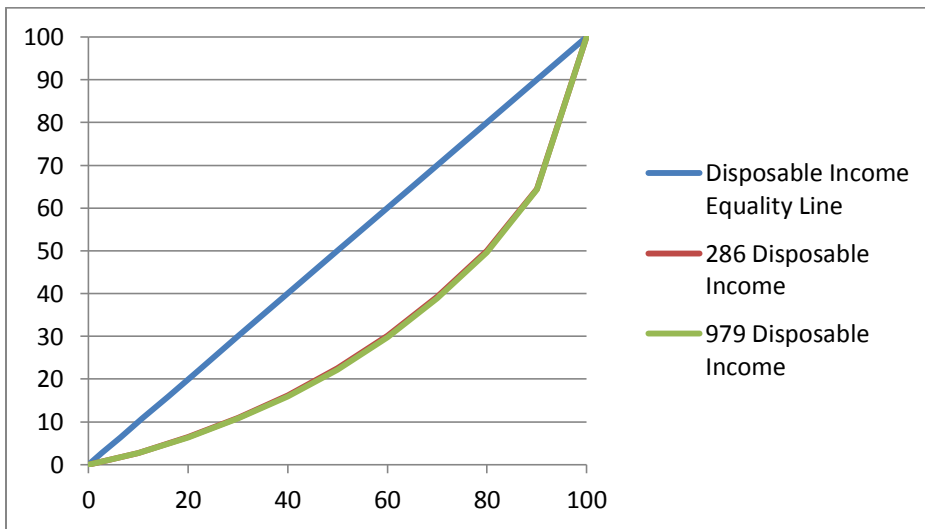
The following 3 graphs show the Lorenz curves



N.B Gini Coefficient because of 286/2002 income tax brackets on employees' disposable income is 0.4145427



N.B Gini Coefficient because of 979/2016 income tax brackets on employees' disposable income is 0.4189018



N.B Gini Coefficient because of 979/2016 income tax brackets on employees' disposable income as compared with 286/2002 income tax brackets it increases by is 0.004359 which is .4%.

Analysis, interpretation, and discussion

The above graph also evidences that the Lorenz curve of the two income distributions (286/2002 and 979/2016) are overlapping each other which has .41 Gini coefficient, shows there is no difference between them. The reform does not have a significant contribution on reducing the income inequalities among employees under investigation rather aggravating the income inequality by .4% it because of the tax reform favors high taxpayers on averages than the low taxpayers.

Chapter Five

5. Conclusion and Recommendation

5.1 Conclusion

The main objective of this research is to investigate the effects of 979/2016 employment income tax reform on their disposable income and income tax liabilities. With this concern, the study depicts that there is an average increase of 9% on employees' disposable income caused by the new income tax reform for the sample under this investigation.

The quantitative data analysis section of this paper shows that the income tax liability of 1120 employees is decreased on average by 30%. It also evidences that the government employment income tax revenue also decreased by the same percentage.

Other important concern is to investigate whether the new tax reform has a significant impact on reducing disposable income inequality among the low and high income earning groups of employee measured by the Gini coefficient. The result proofed that it is because of the tax reform has 11% increases on the disposable income of the top 20% and 7% for the lower 20% income earning groups. Therefore, new tax reform does not have any significant impact on reducing income inequality. The Gini coefficient is high but there is similarity in both the old and new income tax brackets which is .41. So, it is clear to conclude the new reform does not bring any significant contribution in balancing the income inequality rather it aggravates the income inequalities by 0.4%.

The quantitative analysis result shows on table 2, out of the total tax liability of 7.4 million birr, 5.4 million birr is paid by the top 20% of high income earning groups which has 240 employees out of 1120 sample population proportion. So, 73% of the tax is paid by 20% high-income groups.

Finally, as per the evidence, the income tax policy has a lot of problems. Even though some researchers say the income tax policy of Ethiopia is the hybrid which has a pure income tax and consumption tax in its character (Taddess, 2012). But it is difficult to

categorize which one is pure income tax and consumption tax. In consumption tax, all investment would be immediately deductible or the income from the investment would be exempt from tax according to carry brown model.

On the other hand, we cannot see the carry brown model, Samuelsson depreciation or the Haig-Simon income tax theory in practice. So, the investigation of this research concludes that the Ethiopian income tax law is undefined which needs further study to have clear theoretical and empirical ground to understand the income tax policy.

5.2 Recommendation

As per the result found in this research, there is a high gap between the low and high income earning groups of employees. The income inequality among the employees reaches 0.41 which is high.

Even though our national income inequality as it is mentioned in the literature measured by Gini coefficient which ranges from 0.301 to 0.33 which classified us less unequal countries but the income inequalities among different income earning groups of employees is high and the new progressive employment income tax reform does not have any contribution in reducing the inequalities.. So, the government and policymakers should have to think to revise the proclamation for further improvement minimum taxable income from birr 601 to birr 1500 of tax and also have to set the minimum wage for workers and the recommendation is \$50 or 1500 birr and which is still the lowest payment as compared with other African and Asian countries which can minimize this gap of income inequality between the low and high-income groups of employees.

According to the authors of the report Barrent and Baumann-Pauly (2019), Ethiopian garment workers earn \$26, in comparison, Chinese garment workers earn \$340 a month, those in Kenya earn \$207 and those in Bangladesh earn \$95, when we compare our payment with others, it is the lowest payment in the world.

This research shows 73% of the employees' income tax is paid by the 20% high earning group so if the government is willing to amend the brackets according to this research recommendation, it does not have a significant reduction on the government employment income tax revenues.

The scattered laws of income tax proclamation and regulation and directives should have to be organized and codified to manage and make it understandable just like the civil and criminal law book. The shreds of evidence show that there is significant scope to mobilize domestic resources by speeding up reforms, notably on the use of third-party information on taxpayers, promoting electronic tax filing and payment systems, and enhancing analytical capacity using comprehensive national databases(Addis Standard, 2019). It is difficult to launch similar research without having organized national or private database system for researcher and other users.

There are high pressure and strong rule by the government on the employees. Employees are not the sole taxpayers. Every business owner and the person should have to pay tax. So, the burden should be distributed to other income generating person and entities.

Some empirical evidence shows that there aren't major barriers to escaping poverty. We have seen house prices reach such obscene levels that property ownership is becoming the preserve of the rich. Those who are tenants and employee see huge proportions of their earnings taken in rent, leaving precious little for the other necessities of life, let alone the luxuries. However, these aren't features of an unfair capitalist system running rampant—they directly result from enormous government restrictions in allowing private house building. So, the government should enforce tax law on property holders to distribute the burden imposed on employees and other taxpayers.

New IT systems and database system in use for users of information and in revenue administrations increasingly include tools such as sophisticated risk engines to identify potential missing revenues. Efforts to curb offshore non-compliance by making the exchange of information among tax authorities and other users more effective have been given a new impetus. Tax evaders, who are often wealthy, have fewer places to hide their money. These initiatives also bolster international efforts by the IMF, OECD, UN and World Bank to help low-income countries to develop more effective tax systems. Tax reform can promote more equity while unblocking growth so that the next rising tide lifts more boats together.

Reference

- Addis Standard. (2019). Ethiopia reaps rewards of tax policy reform. Retrieved May 8, 2019, from News released website: <https://ethioexplorer.com/news-ethiopia-reaps-rewards-of-tax-policy-reform-afdb-research/>
- Alm, J. (2018). *Is the haig-simons standard dead? The uneasy case for a comprehensive income tax.* (1806), 1–28.
- Asmare, B. (2018). *Economy wide impact of direct tax reform in ethioia:A recursive dynamic computability general equilibrium analysis.* Addis Ababa University School of Business and Economics.
- Bartlett, B. *The Roots of the Tax Reform Act of 1986.* , (2014).
- Brooks, J. R. (2018). The definitions of income. *Georgetown University Law Center*, 253. <https://doi.org/10.2139/ssrn.2928972>
- Business Jargons. (2019). What are secondary data collection methods? Retrieved June 20, 2019, from <https://businessjargons.com/secondary-data-collection-methods.html>
- CIA. (n.d.). Ethiopia. Retrieved April 17, 2019, from Factbook - Central Intelligence Agency website: <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/et.html>
- Ciaran, N. (2019). *Income inequality in the republic of Ireland(2004-2015).* Retrieved from www.NERInstitute.net
- Coady, D., & Gupta, S. (2015). Income Inequality and Fiscal Policy. In *Staff Discussion Notes* (Vol. 12). <https://doi.org/10.5089/9781475504828.006>
- Daba, D. (2014). *Tax reforms and tax revenues performance in ethiopia.* 5(13), 11–20.
- David, E. (2001). The myth realization:Market-to-market taxation of publicly-traded security. *Florida Tax Review*, 10(4), 375–407.

- Ebieri & Ekwueme, Jones, Chikezi, D. (2016). Assessment of the impact of tax reforms on economic growth in Nigeria. *Journal of Accounting and Financial Management*, 2(2), 15–28. Retrieved from <http://pubs.caritasuni.edu.ng/>
- FDRE Ministry of Finance. (2002). Income tax Proclamation 286/2002. *Negarit Gazeta*. <https://doi.org/10.1007/978-3-642-19489-4>
- Floyd, D. (2019). Trump's tax reform plan explained. Retrieved April 18, 2019, from Investopedia website: <https://www.investopedia.com/taxes/trumps-tax-reform-plan-explained/>
- Gale, W. G., Krupkin, A., & Rueben, K. (2015). The relationship between taxes and growth at the state level: new evidence. *National Tax Journal*, 68(4), 919–942. <https://doi.org/10.17310/ntj.2015.4.02>
- Gale, W. G., & Samwick, A. A. (2016). *Effects of income tax changes on economic growth*. <https://doi.org/10.2139/ssrn.2494468>
- Gebisa, B. (2009). *The impact of personal income tax on employees' motivation to work: The case of Ethiopia* (Karlstad University). Retrieved from ww3.kau.se/kurstorg/files/g/82F316201919918715KKFDF0104/GEBISA.pdf
- Geda, A., & Shimeles, A. (2005). *Taxes and tax reform in Ethiopia, 1990-2003*. (2005/65), 1–25. Retrieved from <http://hdl.handle.net/10419/63498%0ANutzungsbedingungen>:
- Graetz, M. J. (2016). *Marvin Chirelstein*. 6. Retrieved from file:///F:/Research Paper Draft 1/Marvin Chirelstein.pdf
- Hanna, C. H. (2006). Tax theories and tax Reform. *SMUL Rev*, 58(2), 435–454. Retrieved from <https://scholar.smu.edu/smulr/vol59/iss2/3>
- Holler, P., Joumard, I., & Koske, I. (2014). Reducing income inequality while boosting economic growth: Can it be done? *The Singapore Economic Review*, 59(01), 1450001. <https://doi.org/10.1142/s0217590814500015>

- Hoynes, H. W., & Patel, A. J. (2018). Effective policy for reducing inequality? The earned income tax credit and the distribution of income. *Journal of Human Resources*, 53(4), 859–890. <https://doi.org/10.3386/w21340>
- IMF. (2015). *The federal democratic republic of ethiopia selected issue*. 1–25. Retrieved from <http://www.imf.org>
- Inchauste, G., & Lustig, N. (2017). *The distributional impact of taxes and transfers evidence from eight low-and middle-income countries*. Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/27980/9781464810916.pdf?sequence=2&isAllowed=y>
- Jhingan, M. (2011). *Money bank inyernational trade and public finance*.
- Julia, K. (2018). Tax Reform Act Of 1986. Retrieved May 14, 2019, from Investopedia website: <https://www.investopedia.com/terms/t/taxreformact1986.asp>
- Kenton, W. (2018). Lorenz curve. Retrieved April 16, 2019, from Investopedia website: <https://www.investopedia.com/terms/l/lorenz-curve.asp>
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size. *Educational and Psychological Measurement*, 38, 607–610. Retrieved from www.ndsu.edu/gdc/wp.../pdf/Determining-Sample-Size.pdf
- Lencho, Taddese. (2012). The ethiopian tax system: Excesses and gaps (Michigan State International Law Review; Vol. 20). Retrieved from <http://www.docdatabase.net/more-the-ethiopian-tax-system-excesses-and-gaps-1266433.html>
- Lencho, Taddess. (2014). *The ethiopian income tax system :Policy,design and practice* (University of Alabama). Retrieved from http://acumen.lib.ua.edu/content/u0015/0000001/0001504/u0015_0000001_0001504.pdf
- Lorenz, M. O. (1905). Methods of measuring the concentration of wealth. *Taylor & Francis , Ltd . on Behalf of the American Statistical*, 9(70), 209–219. Retrieved from

https://www.jstor.org/stable/2276207?seq=1#metadata_info_tab_contents

- Mamo, S. (2017). *The impact of tax reform on the revenue productivity of ethiopian tax system*. Addis Ababa University School of Graduate Studies This.
- McNulty, J. K. (2000). Flat tax, consumption tax, consumption-type income tax proposals in the united states: A tax policy discussion of fundamental tax reform. *California Law Review*, 88(6), 1–93. <https://doi.org/10.2307/3481214>
- Mengistu, A., & Mascagni, G. (2018). *Are there any reliable data on wages in low-income countries? observations and lessons from ethiopia*. Retrieved from <https://www.ictd.ac/publication/are-there-any-reliable-data-on-wages-in-low-income-countries-observations-and-lessons-from-ethiopia/>
- Moges, A. G. (2000). The distributional Implication of personal Income Tax reforms:The case of civil service sector i ethiopia. *Ethiopian Journal of Economics*, 9(2), 1–43. Retrieved from ageconsearch.umn.edu/bitstream/250053/2/Abu_Girma_THE...
- N B E. (2017). *Analysis of tax system productivity in ethiopia*. (124).
- OCDE. (2017). *Income inequality*. <https://doi.org/10.1787/9789264235120-en>
- OCDE. (2018). Taxing Wages. *Labour*. https://doi.org/10.1787/tax_wages-2005-en
- OECD. (2012). *Economic policy reforms 2012: Growing for growth*. 181–202. Retrieved from www.ndsu.edu/gdc/wp.../pdf/Determining-Sample-Size.pdf
- Office of Press Secretary. (2004). President Bush provides leadership on tax reform. Retrieved May 14, 2019, from <https://georgewbush-whitehouse.archives.gov/news/releases/2004/09/text/20040902-7.html>
- Ogbonna, G. N., & Ebimobowei, A. (2012). Impact of tax reforms and economic growth of Nigeria : A time series analysis. *Current Research Journal of Social Sciences*, 4(1), 62–68. Retrieved from <http://maxwellsci.com/print/crjss/v4-62-68.pdf>
- Raghebendra, J. (2009). *Routledge Advanced Texts in Economics and Finance - Routledge*. Retrieved from <https://www.routledge.com/Routledge-Advanced-Texts->

in-Economics-and-Finance/book-series/SE0757

Sims, T. S. (2012). Economic depreciation, accrual taxation, and the samuelson theorem: An essay on the structure of capital income taxation. *Boston University School of Law*, 16(12). <https://doi.org/10.2139/ssrn.2031533>

Stewart, F. (1999). *Income distribution and development*. Bangkok.

TJNA. (2011a). *Addressing inequality in africa through taxation*. Retrieved from Tax Justice Network - Africa. website: http://iffoadatabase.trustafrica.org/cgi-bin/koha/opac-search.pl?q=ccl%3Dpb%3ATax+Justice+Network+Africa%2C+&sort_by=title_az

TJNA. (2011b). *Tax uss if you can: Why africa should stand up for tax justice*. 2.

Towards data. (2019). Gini coefficient and lorenz curve - towards data science. Retrieved July 11, 2019, from <https://towardsdatascience.com/gini-coefficient-and-lorenz-curve-f19bb8f46d66>

UNDP. (2016). Performance and prospects of tax collection in ethiopia. In *Working Paper*. Retrieved from www.et.undp.org

Us federal Gov. (2001). *Title 26 -internal revenue*. 11531(3), 367–370. Retrieved from <https://www.google.com/search?q=Us+federal+tax+act+1986+code+61&oq=Us+federal+tax+act+1986+code+61&aqs=chrome..69i57.3693j0j1&sourceid=chrome&ie=UTF-8>

W.Heritage, O. (2019). *2019 index of economic freedom*. Retrieved from <https://www.heritage.org/index/pdf/2019/countries/ethiopia.pdf>

Whalley, J. (1990). *An alternative view of tax incidence analysis for developing countries*.

World Bank. (2015). *Annual Report*.

Appendix-I

286 Income tax effect and its Descriptive statistics			
	<i>Basic Salary</i>	<i>Income Tax</i>	<i>Disposable income</i>
Mean	42,635.45	9,523.65	33,111.80
Standard Error	1,560.36	519.94	1,045.36
Median	27,174.41	4,113.30	23,066.27
Mode	8,521.11	948.80	7,572.31
Standard Deviation	52,219.68	17,400.67	34,984.39
Sample Variance	2,726,895,167.40	302,783,279.91	1,223,907,682.81
Kurtosis	18.64	21.54	17.11
Skewness	3.88	4.28	3.66
Range	446,183.75	143,719.31	302,464.44
Minimum	7,800.00	600.00	7,200.00
Maximum	453,983.75	144,319.31	309,664.44
Sum	47,751,699.89	10,666,486.05	37,085,213.84
Count	1,120.00	1,120.00	1,120.00

Appendix-II

979Income tax effect and its Descriptive statistics			
	Basic Salary	Income Tax	Disposable Income
<i>Mean</i>	42,635.45	6637.86	35997.59
Standard Error	1,560.36	445.7772922	1142.235427
Median	27,174.41	2352.012981	24787.75586
Mode	8,521.11	202.5	8318.61
Standard Deviation	52,219.68	14918.56165	38226.5089
Sample Variance			
Kurtosis	18.64	28.19093117	20.37029078
Skewness	3.88	4.898715349	3.787748024
Range	446,183.75	131556.6	419098.0155
Minimum	7,800.00	60	7441.422
Maximum	453,983.75	131616.6	426539.4375
Sum	47,751,699.89	7434399.527	40317300.36
Count	1,120.00	1120	1120

Appendix –III

t-Test: Paired Two Sample for Means

	<i>286 Income Tax</i>	<i>979 Income Tax</i>
Mean	9523.648258	6,637.07
Variance	302783279.9	222,572,882.72
Observations	1120	1120
Pearson Correlation	0.99519006	
Hypothesized Mean Difference	0	
df	1119	
t Stat	32.83357595	
P(T<=t) one-tail	1.9601E-166	
t Critical one-tail	1.646216486	
P (T<=t) two-tail	3.9202E-166	
t Critical two-tail	1.962086233	

Appendix –IV

t-Test: Paired Two Sample for Means

	<i>Disposable Income based on 979proclamation</i>	<i>Disposable Income based on 286proclamation</i>
Mean	35997.58961	33111.79807
Variance	1461265983	1223907683
Observations	1120	1120
Pearson Correlation	0.995647043	
Hypothesized Mean Difference	0	
df	1119	
t Stat	20.51860	
P(T<=t) one-tail	0.00000	
t Critical one-tail	1.64622	
P (T<=t) two-tail	0.00000	
t Critical two-tail	1.96209	

Appendix-V

New Tax brackets of proclamation 979/2016.

<u>New Employment Income Tax Rate</u>			
No.	Salary Range (ETB)	Tax Rate	Deduction (ETB)
2.	601-1,650 Birr	10%	60 Birr
3.	1,651 - 3,200 Birr	15%	142.50 Birr
4.	3,201 - 5,250 Birr	20%	302.50 Birr
5.	5,251 - 7,800 Birr	25%	565 Birr
6.	7,801 - 10,900 Birr	30%	955 Birr
7.	Over 10,900 Birr	35%	1,500 Birr

Appendix -VI

Old Tax Rates of 286/2002

<u>Old Employment Income Tax Rate</u>			
No.	Salary Range (ETB)	Tax Rate	Deduction (ETB)
2.	150-650 Birr	10%	15 Birr
3.	651 - 1400 Birr	15%	47.50 Birr
4.	1401 - 2350 Birr	20%	117.50 Birr
5.	2351 - 3550 Birr	25%	235 Birr
6.	3501 - 5000Birr	30%	412 Birr
7.	Over 5001 Birr	35%	1,500 Birr

Appendix-VII

Letter for data collection reliability



በኮልጌ ቀራኒዮ ክፍለ ከተማ ትንቢተ ኤርምያስ አፀደ ህፃናትና የመጀመሪያ ደረጃ ትምህርት ቤት

Kolfe Keranyo Sub-City Tinbite Ermiyas Kindergarten and Primary School

ቁጥር ትክ/የመጀ/ደ/ት/ቤት/1593/5 /35

ቀን 05/09/2011 ዓ.ም

ለቅድስተ ማርያም ዩኒቨርሲቲ

አዲስ አበባ

ጉዳይ:- ትብብር ማድረጎችንን ስለማሳወቅ

ከላይ በጉዳዩ ላይ እንደተገለፀው በ 19/02/2019 በተፃፈ ደብዳቤ ለአቶ ቴዎድሮስ አያሌው የተለያዩ መረጃዎችን በመስጠት እንድንተባበራቸው በተጠየቅነው መሰረት አስፈላጊውን መረጃ በመስጠት ትብብር ማድረጎችንን እናሳውቃለን፡፡



ከሰላምታ ጋር
ሀረግ ብርሃኑ መስቀል በላይኛ
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