Original Research Article

The Two Sides of the Coin of Youth Unemployment: Government and the Unemployed Individual

Abstract.

Youth unemployment has been a challenge for many governments in developing economies including Ghana. This study examines one of the challenges in economic and social settings: the potential loss of revenue to the government due to youth unemployment. Using data from 2000 to 2020, the study explores a simple regression model to determine the correlation between the youth unemployment and the unemployment rate. The study also examined a Discounted Cash Flow Analysis to estimate the potential fiscal capacity loss to the state through youth unemployment within a ten-year range. This study concludes that youth unemployment is a loss of potential revenue receipts to the state, which is a loss of fiscal capacity for governments in developing economies. This phenomenon decelerates economic growth in developing economies. The study recommends that the government should partner with the private sector to curb unemployed youth cankers. Despite its defied solution and planned developments over the past two decades, Ghana is still struggling to permanently nab youth unemployment.

Keywords: Youth Unemployment, Tertiary Unemployed, Discounted Cash Flow Analysis, Fiscal Capacity, Developing Economies, PAYE, Ghana.

1.0 Introduction

The indirect cost of unemployment (potential revenue loss) compared with the direct cost to unemployed individuals and the government has been extensively researched from diverse perspectives. In developing economies, unemployment has been a challenge for every government, as more young graduates are churned out from schools to join the labor force to their despair of sitting at home for longer periods to find meaningful jobs [1]. The Government of Ghana has realized the plight of teeming youth in this category and has created interventions by establishing employment programs as a means of alleviating the canker [2,3,4]. Youth unemployment has taken a political turn and has appeared in the manifestos of political parties in the country and across Africa. According to the Africa Center for Economic Transformation (ACET), approximately 50% of 10 million graduates from over 668 universities in Africa do not obtain jobs annually [5]. University World News: The Africa Edition website captures headlines on the link to various articles on unemployment in Africa. In Nigeria, it captures as “Graduate employability a talking point at Lagos Conference,” and in Morocco, it features as “One-third of university graduates unemployed, study reveals” and in Kenya the headline reads “PhD holders, young graduates, fight for survival – and jobs”. Ukazu [6] states that too many graduates fight for too few jobs in Nigeria. This study attempts to elucidate the potential loss of revenue to the state due to the unemployment of energetic youth, based on tax receipts and statutory deductions potential to the government. In the Ghanaian economy, the private sector absorbs about 92% of the labor force, with about 80.5% employed in the informal sector [7]. This phenomenon typifies the potential long-term loss of revenue received by the state through tax and social security deductions. Until the COVID-19

pandemic began in most developing economies, unemployment assistance (benefits) was not conspicuous in their budgets, and was mostly nonexistent. Unlike in developed economies, there is no social cushion for such a labor force. The devastating disruption of jobs during the pandemic, coupled with low growth in the manufacturing sector (3.2%) between 2008 and 2017, forced governments to implement interventions to alleviate the plight of the jobless [8,9]. In Ghana, intervention programs such as NationBuilders Corps (NABCO), One District, One Factory (1D1F), Planting for Food and Jobs, and Rearing for Food and Jobs (RFJ), as well as the National Entrepreneurship and Innovation Plan (NEIP) and a host of others, are meant to reduce the graduate unemployment situation in the country [10]. The consequences of unemployment on an individual are enormous because of the loss of financial pedigree in negative social settings, which can spill over to the next generation [11, 12].

1.1 Objectives of the Study:

The study aims to highlight the correlation between the unemployment rate and youth employment, specifically, the tertiary unemployment rate.

The study also seeks to analyze the discounted cash flow to determine the loss of PAYE tax revenue receipts to the government through unemployment in ten year.

Finally, to recommend to policy makers measures to reduce youth unemployment.

2.0 Reviewed Literature

Unemployment theories are found in the Classical, Keynesian, Neoclassical and New Keynesian Schools of thought. Labor demand as derived demand from the declining portion of marginal productivity of labor is credited to Pigou [13] and Solow [14] as classical dogmas. They emphasize that the demand curve is a negative function of real wage, and an increase in wages leads to a decline in demand for labor, and vice versa. Varian, [15] made reference to Keynes by posing a question “why is there persistent unemployment?” This question has been relevant for over 80 years since originator Keynes [16] put it. The explanation is provided by examining sticky wages and fixed money stock amidst the rational behavior of agents. Varian used algebraic examples of models to explain the sticky behavior of wages (*ibid*) by equating demand for output to supply of output in order to obtain an equilibrium market. The new classical belief is that anticipated changes in money supply do not affect real output, and the labor market adjusts quickly to eliminate shortages and surpluses. Friedman puts it that the average level of unemployment is invariant to the monetary policy rule regardless of the monetary policy tool used to stimulate the economy [17]. Most studies on unemployment are linked to productivity or GDP growth, and the pioneer is Okun [18], whose work gave rise to what is known as Okun’s law. Hegelund [19] tested Okun’s Law on different frequencies by reconstructing monthly unemployment and GDP for Sweden in 1913 -2014, using temporal disaggregation to determine the long-run equilibrium.

Numerous empirical studies on this topic have been conducted. Jonathan et al. [20] draw data from a family finance survey in the UK and argue that Social Security did not make any special provision for long-term unemployment, unlike long-term illness. Simpson, [21] looked at the cost of unemployment to three categories in the society – individual, society and the country and this time, USA. According to him, the individual cost of unemployment is a reduced standard of living due to low income, reduced skills or talent, and health issues, if unemployment is prolonged. Society is protectionist through immigration, trade wars with partners, political costs to the ruling government, crimes, lack of trust in the elite, and resentment towards the jobless (*ibid*). The country also receives unemployment through excessive payments of unemployment benefits, food assistance, and Medicaid, which could affect aggregate demand and lead to a recession. It may render education useless if prolonged, and could reduce public confidence in the economy (*ibid*). Baah-Boateng [22] utilizes

a logit regression technique on the 2008 and 2013 household survey datasets in Ghana and finds that unemployment increases with education and declines with age. Thus, the unemployment rate among the youth is higher than that among the elderly. This study also identified other factors that influence unemployment in Ghana, such as an individual's wage reservation, marital status, sex, poverty status, and location (rural-urban). A World Bank Report [23] identified six areas as employment opportunities for youth in Ghana: agribusiness, entrepreneurship, apprenticeship, construction, tourism, and sports.

3.0 Methodology

This study aims to bring to the fore the potential loss of PAYE (Pay As You Earn) tax revenue to the government through direct and indirect taxation, and access to social security contributions. By using the Ghana tax bracket for 2022 and gauging youth unemployment in absolute numbers for a period of ten years, we discounted the loss of revenue that could have been garnered by the government and its decelerating effects for developmental purposes. The study is justifiable from the fact that private firms are agents who collect such tax on behalf of the government at virtually no cost to the state. Undoubtedly, the main sources of revenue for the government are the taxation of employees and access to soft domestic borrowing from investment institutions, some of which the state superintends. Every employer is required to deduct monthly income tax (PAYE) on their employees and files it with the Ghana Revenue Authority (GRA) [24] by the 15th of the ensuing month. The individual statutory pension contributions paid by employees and employers are 5% and 12.5% of gross income, respectively. Additionally, the disposable income of individual employees attracts value-added tax from their purchases. The study employs a discounted cash flow analysis based on the Treasury bill rate and average gross salary of tertiary youth employee to estimate the potential loss of revenue to the state (fiscal capacity loss) as a result of unemployment of teeming youth and the extent of the labor force [25,26,27]. According to the African Education Watch, as cited by Eduwatch Ghana,[28] only 10% of the estimated 110,000 tertiary graduates obtain jobs after completing compulsory national service. Thus, cumulative unemployment over ten consecutive years is hovering around 990,000 unemployed tertiary youths. The discounted revenue, which is the cash flow loss to the state, is estimated to be 24% using the usual time value for money formula with reference to the base rate for October 2022, as announced by the Governor of the Bank of Ghana:

$$DCF = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t} \quad (1)$$

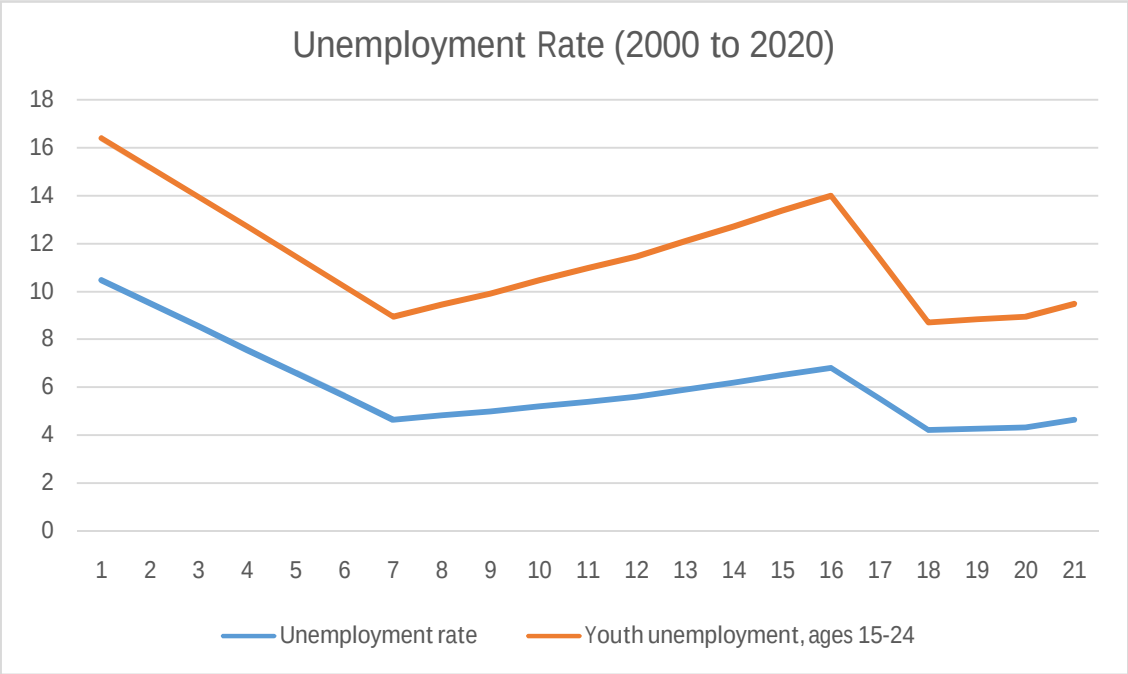
Where, DCF – Discounted Cash Flow

CF_t - Cash flow for the period,

r - Treasury bill rate

t - period

Figure 1: Unemployment Rate in Ghana



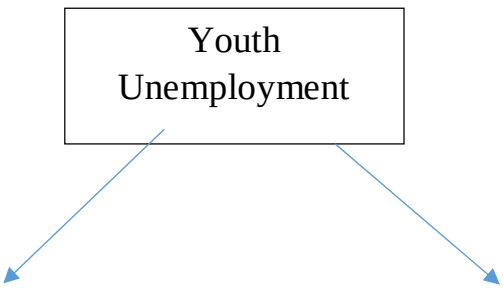
Authors' Computation with Data from Global Economy.com

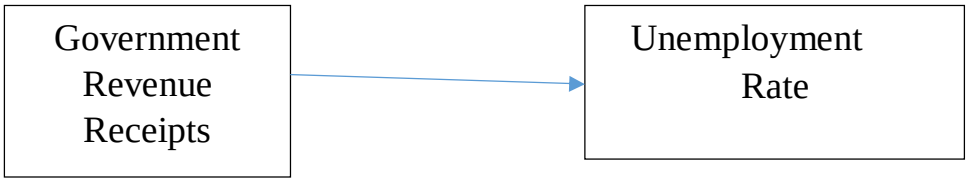
Table 1: Pay As You Earn Tax Bands and Chargeable Income Schedules

No.	Chargeable Income Tax	Annual (Gh.₵)	Monthly (Gh.₵)	Rates
1.	First	3,828	319	Nil
2.	Next	1,200	100	5%
3.	Next	1,440	120	10%
4.	Next	36,000	3,000	17.5%
5.	Next	197,532	16,461	25%
6.	Exceeding	240,000	20,000	30%

Source: Ghana Revenue Authority (GRA)

Figure 2: Conceptual Framework





Source: Authors' Conceptualization

A simple linear regression model was used in the study is below:

$$y = a + bx + \varepsilon$$

where y is the dependent variable,a, represents the constant of the model, bx, represents the coefficient of the independent variables, and ε is the error term.

In this study, the youth unemployment rate was used as the dependent variable, and unemployment age was used as the independent variable to measure the fitness of the model and indicate how much variation in the dependent variable was explained by the independent variable. Again, to ascertain how the unemployment rate will behave if there is a change in the youth age. The researcher used the unemployment rate as the dependent variable and the youth unemployment age as the independent variable.

4.0 Results and Discussion

The results indicate an R-value of 0.8957. This postulates that variations in the unemployment rate are explained by approximately 89% of youth unemployment. This result indicated the fitness of the regression model. It also reveals a positive and significant relationship between the unemployment rate and youth unemployment, with a coefficient of 0.7302 and P-value of 0.0018. This result indicates that a percentage increase in youth unemployment causes an approximately 73% increase in unemployment rate. This result is not surprising, considering the current agitation of youth in relation to unemployment in the country. The study used a 90% level of confidence; therefore, the margin of error in which the result is accepted was 0.1, that was 10%. The P-value is 0.0018, which is less than 0.1; therefore, researchers can conclude that there is a significant relationship between the unemployment rate and the youth unemployment. Furthermore, the regression results show that Ghana recorded the highest unemployment rate with a mean of 10.46, and the highest youth unemployment rate of 16.41. This means that, as youth unemployment increases proportionally, there is an increase in the unemployment rate, which is in line with [22]. The implication is that tertiary education is not enough for one to obtain employment but rather skills development after school matter for graduates to set up their own businesses. The lowest youth unemployment rate was recorded in 2017 with a mean of 4.22. It can be concluded that Ghana recorded the lowest unemployment

rate in 2017, with lowest unemployment rate of 8.72.

Table 2: Regression Result

Source: Excel Data Analysis

Regression Statistics	
Multiple R	0.946434859
R Square	0.895738943
Adjusted R Square	0.89052589
Standard Error	0.561566325
Observations	22

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	54.18654252	54.18654252	171.826177	2.811E-11
Residual	20	6.307134749	0.315356737		
Total	21	60.49367727			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	-2.31009766	0.645404352	-3.57930288	0.00187639	-3.65638755	-0.963808	-4.14649229	-0.473703027
X Variable 1	0.730283296	0.055711738	13.10824843	2.811E-11	0.61407065	0.846496	0.57176448	0.888802115

Regression Statistics

Table 3: Tax Revenue Loss through Youth Unemployment

Year	1	2	3	4	5	6	7	8	9	10
Unemployed	99,000	198,000	297,000	396,000	495,000	594,000	693,000	792,000	891,000	990,000
Average Pay (GhS1,200)	118,800,000	237,600,000	356,400,000	475,200,000	594,000,000	712,800,000	831,600,000	950,400,000	1,069,200,000	1,188,000,000
PAYE	9,900,000	19,800,000	29,700,000	39,600,000	49,500,000	59,400,000	69,300,000	79,200,000	89,100,000	99,000,000
Social Security Contr.	20,790,000	41,580,000	62,370,000	83,160,000	103,950,000	124,740,000	145,530,000	166,320,000	187,110,000	207,900,000
Total Potential Revenue	**30,690,000**	**61,380,000**	**92,070,000**	**122,760,000**	**153,450,000**	**184,140,000**	**214,830,000**	**245,520,000**	**276,210,000**	**306,900,000**
Add VAT 12.5%	14,850,000	29,700,000	44,550,000	59,400,000	74,250,000	89,100,000	103,950,000	118,800,000	133,650,000	148,500,000
Total Revenue loss	**45,540,000**	**91,080,000**	**136,620,000**	**182,160,000**	**227,700,000**	**273,240,000**	**318,780,000**	**364,320,000**	**409,860,000**	**455,400,000**
Interest (24%)	10,929,600.00	21,859,200.00	32,788,800.00	43,718,400.00	54,648,000.00	65,577,600.00	76,507,200.00	87,436,800.00	98,366,400.00	109,296,000.00
Discount Factor	1.24	1.5376	1.906624	2.36421376	2.931625062	3.635215077	4.507666696	5.589506703	6.930988312	8.594425506
Discounted Revenue Loss	**36,725,806.45**	**59,235,171.70**	**71,655,449.63**	**77,048,870.57**	**77,670,232.43**	**75,164,741.06**	**70,719,514.44**	**65,179,275.98**	**59,134,423.77**	**52,987,834.92**
Ten Year Revenue Loss										**645,521,320.97**

Source: Authors Computation of Discounted Cash Flow Analysis

Table 3 depicts the discounted cash flow analysis using PAYE and statutory deductions hitherto available to the state through youth employment based on estimations from Eduwatch Ghana. The Constitution of Ghana mandated a presidential term to be four years and was eligible for another term of four years. The analogy indicates a backlog of youth unemployment in presidential terms to the tune of 396,000 youth. A worrying figure that almost doubles in eight years and the monetary value of a ten-year period is in the region of half a billion of loss fiscal capacity, which serves to decelerate economic growth. This means that in developing countries, such as Ghana, youth unemployment should be seen as a direct loss of fiscal capacity. Revenue which is supposed to have been garnered for developmental projects through fiscal receipts from taxation eludes the economy.

5.0 Conclusion and Policy Implication

The study revealed a positive correlation between the unemployment rate and youth employment. This means that continuous improvement and skill development for the youth are necessary for them to fit into the job market. They should use every opportunity to enhance their skills. The use of social media should be at its advantage, and they should gather courage to try something for themselves through entrepreneurial initiatives. Again, it can be concluded that the higher the youth unemployment, the higher is the unemployment rate. Researchers reiterate that 89% of unemployment is caused by youth. Ghana recorded the highest unemployment rate (10.46 in the year 2000, with the highest youth unemployment rate of 16.41, whereas in 2017, the lowest unemployment rate of 4.22. It is recommended that the government deepens its partnership with private firms to absorb teeming youth in employment schemes, since the private sector is the engine for growth. This is possible by creating a conducive relationship between private enterprises and the government through tax rebates, support for market access, capacity training, and innovation incentives. Policymakers should also encourage youth to embrace the technical and vocational education and training (TVET) already taken off by both secondary and tertiary institutions in the country.

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