Recognizing the Importance of Health Insurance in Mitigating Hazardous Child Labour in Ghana

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Abstract

This paper provides evidence on health insurance impact on child labour. Findings from this study suggest that insured poor families with children in school are less likely to allow their children to enter the labour market. Children in insured households reduce hours of paid employment by about an hour per week. Health insurance uptake had negative impact on both earnings from paid employment and overall time spent working. On the other hand, we find that health insurance reduces education gap, increases schooling years completed and improves expenditure on eduction.

Keywords: Health insurance, child labour, health expenditure

1. Introduction

Child labour continues to be ubiquitous in developing countries because poor households are vulnerable to adverse events such as droughts, illness or economic shocks which might have serious consequences for their livelihood (Banerjee and Duflo, 2011). Their vulnerability stems from the lack of efficient social protection mechanism such as health insurance that relies on redistribution to alleviate poverty. The consequences of this phenomenon are not limited to; the disposal of valuable assets, reduction in nutrition and consumption, drawing on savings or borrowing from the extended family in times of economic shocks, but also concerns the substitution of children's time away from school for income generating activities in order to overcome the short fall in household income (Dercon 2002, Cohen and Sebstad 2005, Strobl

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2017). The likelihood that child labour is being used as a buffer against uninsured shocks, makes health insurance policies aimed at reducing household risk exposure a variable policy option to mitigate against children's labour supply (Guarcello et al. 2010).

From these cited studies and other studies such as Landmann and Frlich (2015) and Frlich and Landmann (2017), more insights have been gain on the impacts of health insurance on child labour. Guarcello et al. (2010) used cross-sectional data from Guatemala and multinomial logit regression to examine the impact of private or public medical health insurance on attendance and child work. They found that children from insured households are less likely to work and more likely to to be enrolled in schools than children from uninsured households. Frlich and Landmann (2017) investigated an *ex-post* and *ex-ante* behaviour form of risk coping change with regards to the effects of health insurance on child labour for poor families in Pakistan using a randomised controlled trial (RCT). They found out that the extension of health insurance coverage to other households leads to higher perceived protection and makes parents more confident to leave their children out of work and instead make them attend school more regularly. Strobl (2017) assessed the effect of health insurance on the working intensity of children as well as on various schooling outcomes. Her results suggests that health insurance, in addition to its direct financial and health related benefits, also has indirect benefits by reducing child labour and encouraging schooling.

These findings notwithstanding, there are other areas or regions that much more insights may be required, especially in the sub-Saharan Africa (SSA) where statistics on child labour indicate a worsening trend in recent years. It appears relevant to understand the dynamics between the National Health Insurance Scheme (NHIS) of Ghana and child labour, given that the stated mission of the NHIS is to provide financial risk protection against the cost of quality basic health care for all residents of Ghana. The emergent question is whether or not the NHIS is able to ease the financial constrains of poor households and help mitigate the issue of child labour that impede the holistic development of child.

I use the sixth round of the Ghana Living Standards Survey (GLSS) conducted between October 18, 2012 and October 17, 2013.

The paper proceeds as follows. Section 2 discusses child labour in Ghana. Section 3 describes the data, variables and descriptive statistics. Section 4 lays our empirical strategy. Section 5 discuses the empirical results. We conclude with Section 6.

2. Child Labour in Ghana

In discussing child labour in Ghana, it is important understand its definition. Ghana has adopted the International Labour Organization (ILO) definition of child labour, especially the ILO Conventions C138 and C182. The country in 1998, enacted the Children's Act of Ghana which prohibits children from engaging in any work that is exploitative or hazardous to the child's health, education, or development. The Government of Ghana (GoG) strengthened its commitment to the eradication of child labour in 2016 by drafting regulations to the Labour Act that include protections for child domestic workers and developed standard operating procedures to refer victims of child trafficking to social service providers as part of the Child Protection Compact. The GoG is also developing the National Plan of Action Phase II on the Elimination of the Worst Forms of Labour, and signed memoranda of understanding with 20 institutions responsible for its implementation,as well as expanded its Livelihood Empowerment Against Poverty program into 28 new districts (DOL 2017).

These regulations and policy initiatives of the GoG are very encouraging because it has been reported by the Ghana Living Standards Survey (6th edition) and dated August 2014, that 21.8 percent of children aged 5-17 years are experiencing varied kinds of premature work. Additionally, it reports that the proportion of male children in child labour was slightly higher (22.7%) than females (20.8%). On geographical dimension, the proportion of urban children in child labour was 12.4 percent compared to 30.2 percent of children in rural areas.

The comparison of the results from the 2005/2006 and 2012/2013 GLSS rounds points to a sharp rise in children's experience of employment: the percentage of children in the 7-14 years age range in employment more than doubled from 2005/2006 (13%) to 2012/2013 (29%). It may be reasonable to suspect that parents and children may be resorting to using the immature labour to assist household subsistence whenever there is a financial barrier. In the circumstance where NHIS eases the suggested financial constraints on such families, it may be fair to expect a reduction in the amount of hours that children spend in paid employments and thus reinforce the attainment of higher education. Therefore, the reported rise in levels of child labour vis-a-vis the possible influence of policy interventions such as the NHIS on easing the barriers to education remains a curious phenomenon requiring further and improved empirical scrutiny.

3. Data, variables and descriptive statistics

I used the nationally representative Ghana Living Standards Survey Round Six (GLSS6) which was conducted by the Ghana Statistical Service (GSS) between 18^{th} October, 2012 to 17^{th} October, 2013. Like the previous rounds, it focuses on the household as the key socio-economic unit and provides valuable information on the living conditions and well-being of households in Ghana.

3.1. Variables

Following Landmann and Frlich (2015) I created a binary indicator for 'child labour', where all children working in hazardous occupations are automatically classified as child labour. In the GLSS6 data, these are mostly jobs that come under the worst form of child labour as specified by the GoG. They include agriculture (mostly in cocoa production and harvesting); fishing (including for tilapia); artisanal gold mining (Quarrying and small-scale mining); domestic work; and street work (including vending and carrying heavy loads). In the case of non-hazardous occupation, child labour depends on age and hours worked. The classification are; children below 12 years who worked more than 1 hour per week, children between 12 and 13 who work more than 14 hours per week and juveniles between 14 and 17 who work more than 43 hours. This classification is based on the ILO definition of child labour. As noted by Frlich and Landmann (2017) this definition is somewhat arbitrary and may be sensitive to age classification, so there is the need to control for age of children. In the data, we are able to access employment or economic activities information on persons between the ages of 15 years and older in the labour force module, while the child labour module, provides information on persons between the ages of 5 to 14 years. Therefore, our potential child labourers are children who are 5 years or older, but the main focus of this study is on those aged 7-16 (inclusive). This restriction takes into consideration the primary school starting age and the official minimum working age in Ghana. The compulsory school starting age in Ghana is 6 and the minimum working age is 15.

Due to the sensitive nature of the outcome variable, we use four different outcomes; namely total hours worked, child labour hours worked and unpaid hours worked as well as Child labour earnings in evaluating the impact of health insurance on child labour. We use these different outcome variables because as explained in Haile and Haile (2012), the intensity of child labour

plays an important role in the allocation of time between work and schooling. Spending more hours working means less time will be available for other activities, including school attendance and homework.

Since there is a trade-off between schooling and child labour, we tried to examine the impact of health insurance on schooling outcomes. In order to execute this objective, we utilise four different measures. Following Strobl (2017) and Haile and Haile (2012), we start with the *highest grade completed*, that is the number of years of school completed by the child. Then we construct the variable *education gap* which measures the difference between the highest schooling grade actually completed and the expected schooling grade according to the child's age.[1] As a third measure, we use the *age-adjusted measure of education* used in Haile and Haile (2012).[2] Our last measure is the *total education expenditures* of the household in the last 12 months.

3.2. Descriptive statistics

Table 1 summarizes the background and household characteristics of the 4,732 children aged 7 to 16. This sample was selected based on the restrictions imposed. Of the 4,732 children selected, 54% are boys and 46% are girls. In the sample, children are aged 13.5 on average and the insured constitute about 60% of the sample. Boys represent more than half of both the insured and uninsured ((53% and 56%, respectively) children. Panel A of Table 1 summarizes work and schooling activities among the children. Work in the definition of GSS refers to any economic activity performed by the respondent that contributes to economic production of goods and services. The figures in the table show that children can engage in different or multiple categories of work. About 80% of the children are engaged in any economic activity, which from the GSS definition includes both paid employment and unpaid economic activity. Based on the sample, we find that about 8% of the insured children perform paid employment activity, while the corresponding figure for the uninsured is 11%. About 78% of the sample perform unpaid economic activity. Similar proportion of insured and uninsured children (93%) engaged in unpaid households services (domestic work).

[1]Following Islam and Choe (2013), Maldonando and Gonzalez-Vega (2008) and Strobl (2017), we define education gap as $EducationGap = max\{0, Expected - ActualEducation\}$.

[2]For more on this definition, see Haile and Haile (2012).

Table 1: Descriptive statistics

	(1)		(2)		(3)
	Mean	Sd	Mean	Sd	Mean difference
Panel A: Outcome variables					
Paid employment	0.08	0.27	0.11	0.31	0.03***
Unpaid Economic Activity	0.77	0.42	0.79	0.40	0.02
Unpaid household services	0.93	0.26	0.93	0.25	0.01
Any economic activity	0.76	0.43	0.83	0.37	0.07***
School enrolment	0.98	0.15	0.97	0.16	-0.00
Education gap	4.23	3.08	4.79	2.96	0.56***
Schooling years completed	3.44	3.36	2.81	3.10	-0.63***
Age adjusted education years	46.33	47.85	37.62	45.59	-8.70***
Hours worked in last 7 days	19.56	15.54	21.17	16.48	1.61**
Child labour hours worked in last 7 days	8.64	16.20	10.66	17.89	2.02***
Unpaid hours worked in last 7 days	7.58	15.65	9.26	17.32	1.68***
Earnings in last 7 days	40.56	554.97	42.66	397.79	2.10
Per capita expenditure on education	278.69	523.73	228.17	366.74	-50.51***
Pane B: Child Characteristics					
Insured	0.60	0.49			
Sex (Male=1)	0.53	0.50	0.56	0.50	0.02
Age in years	13.49	1.94	13.49	1.94	-0.01
Panel C: Household characteristics					
Father's schooling years completed	5.89	4.72	5.01	4.37	-0.88***
Mother's schooling years completed	5.44	4.76	4.64	4.34	-0.80***
Locality (Rural=1)	0.78	0.41	0.83	0.37	0.05***
Household size	7.17	3.33	7.36	3.31	0.19
Number of children below 18 years	4.18	2.34	4.45	2.41	0.27***
Oldest child is school agedd	0.72	0.45	0.72	0.45	-0.00
Oldest child is a girl	0.41	0.49	0.39	0.49	-0.02
Poverty status	0.49	0.50	0.52	0.50	0.03*
Child live with mother	0.78	0.41	0.75	0.43	-0.04**
Child lives with father	0.66	0.48	0.64	0.48	-0.02
Western	0.07	0.25	0.09	0.28	0.02**
Central	0.01	0.11	0.06	0.23	0.05***
Greater Accra	0.02	0.14	0.02	0.14	0.00
Volta	0.05	0.22	0.11	0.31	0.06***
Eastern	0.09	0.29	0.13	0.34	0.04***
Ashanti	0.09	0.29	0.11	0.31	0.02*
Brong Ahafo	0.14	0.35	0.10	0.30	-0.04***
Northern	0.12	0.32	0.16	0.37	0.04***
Upper East	0.18	0.39	0.11	0.31	-0.07***
Upper West	0.23	0.42	0.12	0.33	-0.11***
No. of insured in cluster	383.76	250.05	227.16	216.58	-156.60***
Observations	2833		1899		4732

Figure 1 illustrates the age participation rates of our sample in paid employment, unpaid economic activity, unpaid household services and schooling enrolment for the pooled sample of insured and uninsured children. Panel (a) of Figure 1 shows that after a fall in the participation rate at age 9 for the uninsured, the participation rate in general increases with age. This panel also show that the uninsured has higher participation rate than the insured after age 11. Panel (b) of Figure 1 indicates that the uninsured children have higher participation rate for all ages except age 16 when compared to the insured. In panels (c) and (d) child participation rate in unpaid household services and school enrolment are similar.

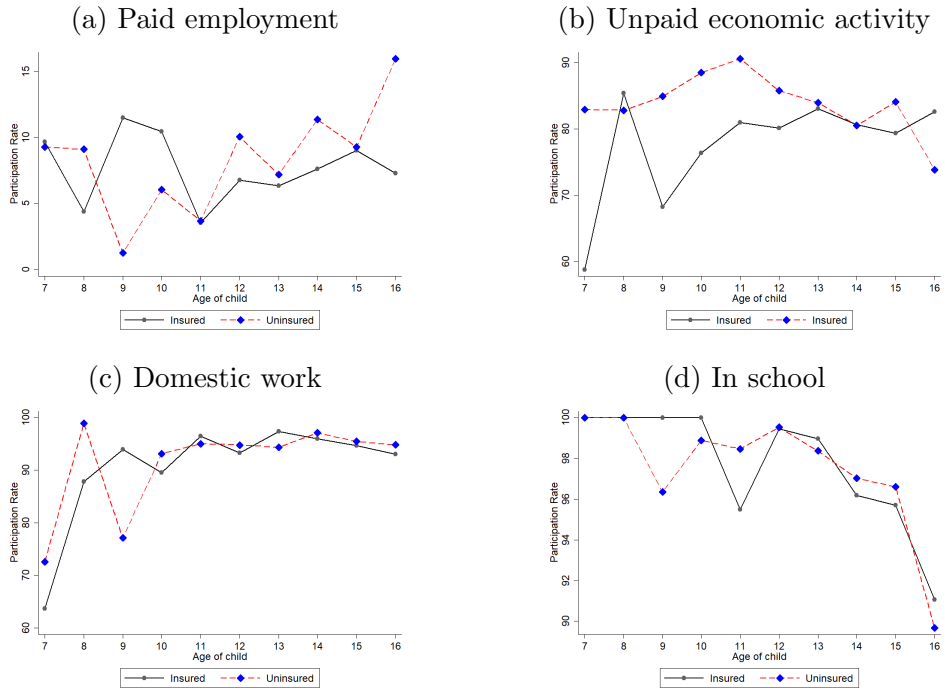
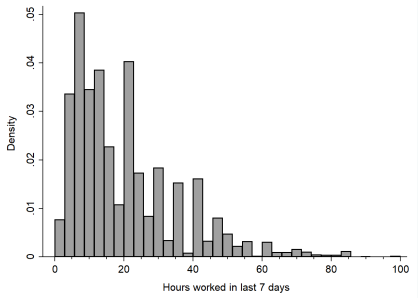


Figure 1: Participation in Work and School

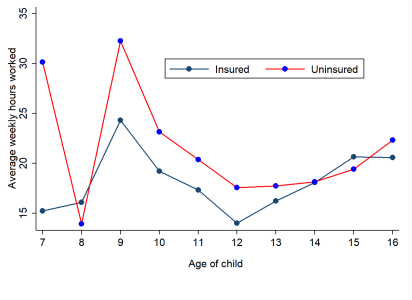
Regarding the total hours worked in the past seven days, Table 1 shows that uninsured children work more hours than do insured children. We see a similar situation when we consider the total hours based on the definition of child labour. The average hours worked in paid employment is about 20 hours per week. Figures 2, 3 and 4 indicate the age distribution of total hours worked in paid employment in the last seven days for overall sample, region

and gender. We begin with Figure 2 panel (a), which presents a histogram of the total hours worked in paid employment. This graph shows that the mode, median, and mean hours worked in paid employment are 8, 15 and 20 hours respectively. This means that majority of the children spend about an hour a day engaging in a paid employment. While the histogram reveals that majority of the children work less than 20 hours a week, the spikes around 32-35 hours and 40-42 hours imply that some of the children who work in paid employment do so full time.

(a) Total hours worked for pay



(b) Paid Employment



(c) Child labour hours worked

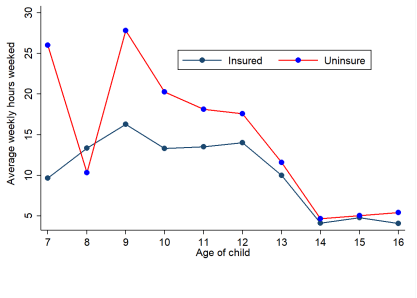


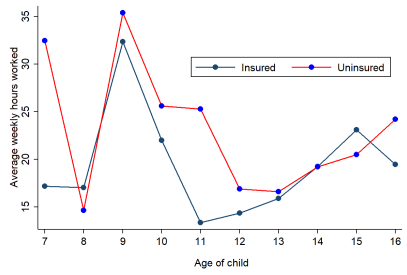
Figure 2: Average Weekly Hours Worked for Pay by Insurance Status

For clearer understanding of the issue of child labour in terms of hours worked, Figure 2 panel (b) and (c) plot average weekly hours worked in paid employment against age, while panel (c) is a replication of panel (b) but under the definition of child labour. Within the framework of child labour models, one may expect that children's working time in general should increase with age. Surprisingly, panel (b) shows that younger children, those below 12 years tend to work longer hours than their older counterparts. Moreover, panel (c) does reinforces the observation in panel (b), indicating that older

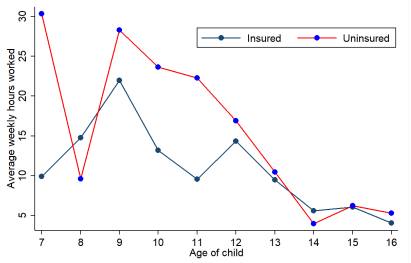
children spend less hours working when the ILO definition is used.

Figure 3 replicates Figure 2 (b) and (c) but this time we consider gender in relation to hours worked. Interestingly, it is apparent in the figure that for both boys and girls, younger children below 14 spend on average more time working than their seniors counterparts above 14. It is also very revealing in the figure that the uninsured perform more hours working per week than the insured.

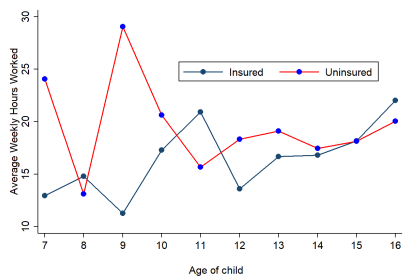
(a) Boys: Paid Employment



(b) Boys: Child labour hours worked



(c) Girls: Paid Employment



(d) Girls: Child labour hours worked

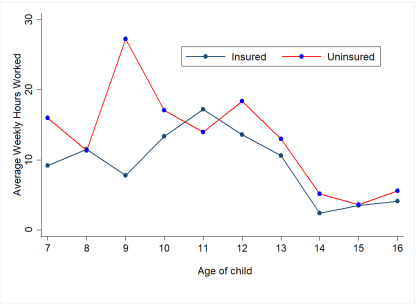
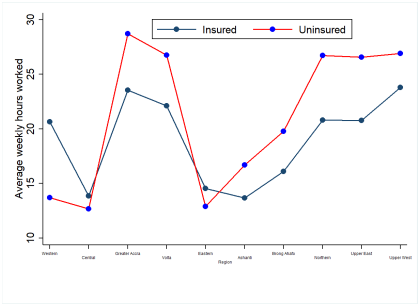


Figure 3: Average Weekly Hours Worked for Pay by Gender, Age and Insurance Status

Figure 4 shows regional distribution of child labour time for both insured and uninsured children. The graphs demonstrate that children in the Greater Accra, Volta, Northern, and Upper East as well as the Upper West regions are exposed to hazardous working times. The regional distributions also mirrored the observations in Figures 2 and 3 as the uninsured spending more time working, expect in the case of the Eastern region where the insured children spent more time working than the insured.

(a) Total Hours Worked



(b) Child labour hours worked

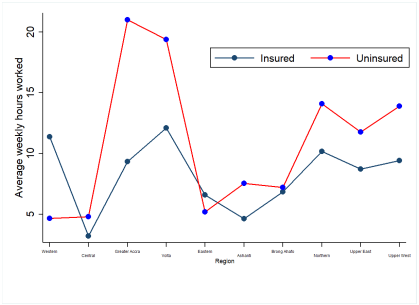


Figure 4: Average Weekly Hours Worked for Pay by Region and Insurance Status

Other descriptive statistics for various child and household characteristics provided in Table 1 show that there is significant differences between the insured and uninsured children.

4. Empirical Strategy

Our main goal is to estimate the impact of health insurance on child labour. In order to achieve this objective, we regress a child labour indicator H_{ijk} for child i in household j and community k on the controls X_{ijk} and an indicator for the household's enrolment in the NHIS, $NHIS_{ijk}$;

$$H_{ijk} = \alpha + \beta_1 X_{ijk} + \beta_2 NHIS_{ijk} + \eta_l + \epsilon_{ijk}. \tag{1}$$

η is a set of dummies capturing geographic, administrative and other specific characteristics at the district level. ϵ_{ijk} is an error term that is zero in expectation on the other controls listed in Equation 1. It is worth noting that an endogeneity of the health insurance variable can be suspected because of self-selection of households into the NHIS. We followed the literature on health insurance and took appropriate steps to control for endogeneity of the health insurance variable that usually arises because of differences between health insurance scheme participants and non-participants. Following Strobl (2017) we used the enrolment rate of households at the cluster (community) level and a dummy indicating the satisfaction of the household with the quality of health services provided at the district level to conduct a test of endogeneity proposed by Wooldridge (2002).

As shown in Figure 2 panel (a), given that our dependent variable hours worked as well as all the others presented in Table 1 are positive integers

with a sizeable proportion of zero values and skewed to the right, count data models such as poisson or negative binomial suit our purpose. Following Long and Freese (2014) we conducted several tests for our dependent variables using user written command *countfit* to choose between Zero-inflated Poisson (ZIP) and Zero-inflated negative binomial (ZINB). Our test results led us to select ZINB over the ZIP model, because they provided strong evidence that the variables are overdispersed, while the Voung test and the Akaike information criterion value indicates that the ZINB is preferred over ZIP.

In addition to the ZINB analysis, we explore the robustness of our results by performing a tobit regression analysis. As discussed earlier, most of our dependent variables have zero values for some of the children in our sample, demanding a technique that controls for sample selection in estimating equation 1.

5. Results

Estimations presented in Table 2 are on our main variable of interest as described in 3.1. In what follows, we focus on the main findings. The first column of the table shows ZINB results, and the second column shows the tobit results. In both cases, we present the average marginal effects (AME) for the whole sample. We find sizeable and strong statistically significant negative effect on total hours and child labour hours worked. The effects on unpaid hours worked and earnings, as expected, were also negative, but they were not statistical significant for us to draw a firm conclusion. On one hand, our ZINB results suggest that children from insured households work, on average, about one hour less than their counterparts from uninsured households, holding all other variables constant. On the other hand, the tobit results indicate that children from insured households work, on average, roughly two and half hours less than children from uninsured households when we consider the total hours worked and child labour hours worked. The results for hours worked and child labour hours worked conforms to our observation in panel (b) and (c) of Figure 2.

Four types of variables allow us to study the effect on schooling achievement. We observe that all the education variables have very strong coefficients and are all significant in both methods used. For example, considering the education gap variable, our ZINB result indicates that children from insured households have about one-fifth of a schooling year less education gap

than their counterparts from uninsured households, while the tobit result provides two-fifth less education gap.

Table 2: Impact of NHIS on Child labour and Schooling

	ZINB		Tobit	
	NHIS	n	NHIS	n
Hours worked	-1.129**	4,689	-2.433 ***	4,689
	(0.436)		(0.632)	
Child labour hours worked	-0.707*	4,689	-2.727**	4,689
	(0.392)		(1.405)	
Unpaid labour hours worked	-0.151*	4,689	-2.411	4,689
	(0.089)		(1.632)	
Earnings	-6.077	4,689	-47.152	4,689
	(8.712)		(180.762)	
Education gap	-0.220**	4,689	-0.391***	4,689
	(0.076)		(0.096)	
Schooling years completed	0.198***	4,688	0.654***	4,688
	(0.067)		(0.150)	
Age adjusted school years	1.584*	4,689	8.698 ***	4,689
	(0.940)		(2.029)	
Education expenditure	103.16***	4,689	13.129***	4,689
	(31.911)		(3.450)	

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

To take into account the impact of health insurance on other educational attainments, we introduced the schooling years completed and age adjusted school years. Our result for both variables are positive and statistically significant as expected. Thus, on average, enrolment into the NHIS by households increases the schooling years completed by at least 0.20 years. Finally, our results also indicate that insured families spend on average about 103 GHS

more on education than their uninsured counterparts.

6. Conclusion

This paper attempted to examine whether the implementation of health insurance can help mitigate hazardous child labour in Ghana. In doing so, we used data from the sixth round of the GLSS. Our child labour indicators are based on respondent's information on employment and economic activities. The paper shows that paid employment and unpaid economic activity participation rates seem to be high among the uninsured aged 11 and order, while both the insured and uninsured have similar participation rate in unpaid household services (domestic work). The paper also points out a hazardous child labour practice where younger children below 14 spend long hours on paid employment.

We used count data regression (ZINB) and tobit modle to estimate the impact of NHIS membership on child labour and education attainment. Our results reveal that households' enrolment in the NHIS reduces paid employment time of children between 1 and 2.4 hours per week, which is equivalent to a decrease of around 0.5% to 13% of the children's average weekly working time. We also find that health insurance reduces child labour hours worked as well as unpaid hours worked. In the case of earnings, our results show a negative effect but it was not significant. In addition, the empirical results also show that NHIS enrolment increases schooling years completed, age adjusted schooling years and expenditure on education, while at the same time reduces education gap.

Our findings call for policies that will strength the implementation and sustainability of the NHIS in Ghana. Because health insurance as a risk coping mechanism helps parents to mitigate against child by not sending them to engage in work in times of difficulty. It is our view that much progress could be made in the fight against child labour in Ghana if the government is able to sustain the health insurance scheme, and also continue to implement other polices like the capitation grant and the school feeding policy.

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