

DISCUSSION PAPERS IN ECONOMICS

Working Paper No. 01-17

Evaluating the Impact of Working While in School on School
Progress: The Case of Rural Bangladesh

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November 2001

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⁴ There is a growing parallel literature [ikSLfrH-ffx7/JN.NomR47EN7N7J-Hz/ehH-Z,RRnl ..Z 7N7.Zfi..e,R/liH-.mK.ff/t](https://www.researchgate.net/publication/354777777)

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⁵ This pattern is very systematic so as to be attributed only to age misreporting arising from the lack of official birth registry in many rural areas.

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¹⁰ These are mostly children who started school when they were 11 years of age or older, which is not such an uncommon phenomenon in rural Bangladesh.

¹¹ For those young adults who attended school in the previous year, information is also available on

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¹³ It is worth noting that in looking at grade-specific survival rates, the big difference between working and non-working children starts occurring at the beginning of the second cycle of primary (i.e. grade 2), which coincides with an increase in the required schooling time.

¹⁴ This gender difference may be partly explained by selection on observable and unobservable, but it may also indicate that working girls are more likely to combine productive activities with household chores (which I am not considering here) than working boys, so that they end up working longer hours.

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&= \dots \beta_1 - \dots \beta_0 \quad \text{<?}
\end{aligned}$$

$$\begin{aligned}
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\end{aligned}$$

$$\begin{aligned}
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&= r S_1 = 1 | X = \dots, W=1 - r S_0 = 1 | X = \dots, W=1 \\
&= \frac{\beta_1 \beta_w \cdot 1w - \beta_0 \beta_w \cdot 0w}{\beta_w} \quad \text{<'=}
\end{aligned}$$

$$\begin{aligned}
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&1 & & & 1 & & \# & - D \\
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\end{aligned}$$

$$MTE(\cdot_w) = \dots | X = \dots, U_w = w$$

$$\begin{aligned}
&= r S_1 = 1 | X =, U_w = w - r S_0 = 1 | X =, U_w = w \\
&= \left[\frac{\beta_1 + \cdot 1w \cdot w}{\sqrt{1 - \cdot 1w}} \right] - \left[\frac{\beta_0 + \cdot 0w \cdot w}{\sqrt{1 - \cdot 0w}} \right] \quad <+=
\end{aligned}$$

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²⁹ This information is available from the migration history of each individual in the sample.

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$Z\beta_w$ $X\beta_1$ $X\beta_0$

$$\begin{aligned}
 (1) \quad Z\beta_w X\beta_1 &= -0.11 \\
 (2) \quad Z\beta_w X\beta_0 &= -0.11 \\
 (3) \quad X\beta_1 X\beta_0 &= 0.00 \\
 (4) \quad Z\beta_w (X\beta_1 - X\beta_0) &= -0.11
 \end{aligned}$$

β_w β_1 β_0

$Z\beta_w$ $X\beta_1$ $X\beta_0$

⁴¹ This latter effect is, however, smaller and less statistically significant than the former. The finding that working children have unobservable characteristics that are positively associated with the school outcome in the non-working state is very robust to changes in model specification. This relationship could indicate that parents may select for work children whom they judge to be more able to combine school and work responsibilities, because of their greater physical and mental fitness and/or greater self-discipline.

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⁴² It is worth noting that, as it refers to the gender of this prototypical child, the above result is in sharp contrast with the unconditional gender difference in survival rates by work status. Thus, after controlling for selection on observable and unobservable the relative disadvantage of girls turns into relative advantage.

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Table 1. Children by Work Status

All	Girls	Boys
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Table 4.1. Switching Probit Model for Child Work and the Transition to Secondary School (Coefficient Estimates)

Work equation	Transition to secondary equations	
	Working state	Non-working state

Table 4.2. Switching Probit Model for Child Work and the Transition to Secondary School (Marginal Effects)

	Work equation		Transition to secondary equations			
	Coeff.	t-ratio	Working state		Non-working state	
Coeff.			t-ratio	Coeff.	t-ratio	Coeff.
Girl	0.007	0.316	0.090	1.411	-0.014	-0.951
School entry age	0.033	4.443	-0.069	-2.832	-0.020	-3.824
Current age	-0.006	-1.242	0.015	1.450	0.013	3.815
In school in or after 1992	-0.073	-2.436	0.210	2.259	0.111	5.903
Mother's education	-0.013	-2.622	0.041	2.314	0.017	4.131
Father's education	-0.005	-1.742	0.013	1.762	0.007	3.012
Modern latrine	0.001	0.061	0.149	1.665	0.057	3.969

Table 5. Marginal Effects of Model Covariates on the Average Treatment Effect (ATE) and the Treatment Effect on the Treated (TT)

	ATE		TT	
	Coeff.	t-ratio	Coeff.	t-ratio
Girl	0.104	1.579	0.113	1.810
School entry age ¹	-0.014	-1.190	-0.049	-1.195
Current age	-0.005	-0.725	0.001	0.037
In school in or after 1992	0.099	1.039	0.252	3.408
Mother's education ²	0.004	0.544	0.025	0.791
Father's education ³	-0.000	-0.009	0.006	0.441

Figure 1. Estimated Marginal Treatment Effects (

Table A.2. Kaplan-Meier Estimates of Survival Rates to Each Grade

	All		Girls		Boys	
	Survival	Std.Error	Survival	Std.Error	Survival	Std.Error
Primary						
Grade 2	0.9882	0.0024	0.9848	0.0039	0.9917	0.9546
Grade 3	0.9601	0.0044	0.9655	0.0058	0.9546	0.0067
Grade 4	0.9091	0.0065	0.9134	0.0090	0.9047	0.0094
Grade 5	0.8621	0.0078	0.8668	0.0152	0.8573	0.0113
Junior secondary						
Grade 6	0.7078	0.0105	0.6774	0.0152	0.7386	0.0143
Grade 7	0.6703	0.0109	0.6409	0.0157	0.7000	0.0150
Secondary						
Grade 8	0.6240	0.0114	0.5949	0.0163	0.6533	0.0158
Grade 9	0.5625	0.0120	0.5078	0.0172	0.6171	0.0165
Grade 10	0.5223	0.0125	0.4553	0.0179	0.5888	0.0171
Higher secondary						
Grade 11	0.4025	0.0141	0.3282	0.0194	0.4760	0.0199
Grade 12	0.3220	0.0162	0.2639	0.0219	0.3796	0.0237
Higher education	0.2505	0.0222	0.1783	0.0323	0.3155	0.0309

Notes: Based on unweighted data. The likelihood ratio test for the null hypothesis of no gender differences in survivor functions is rejected ($\chi^2(1) = 13.75 (0.000)$).