

Table S-1: Returns to Skills: Pooled Specification With Different Plausible Values

	PV 1	PV 2	PV 3	PV 4	PV 5	PV 6	PV 7	PV 8	PV 9	PV 10
(1) Baseline (OLS)	.200*** (.003)	.199*** (.003)	.199*** (.003)	.198*** (.003)	.199*** (.003)	.198*** (.003)	.199*** (.003)	.200*** (.003)	.198*** (.003)	.198*** (.003)
(2) Measurement error - literacy (2SLS)	.221*** (.003)	.221*** (.003)	.220*** (.003)	.219*** (.003)	.221*** (.003)	.221*** (.003)	.222*** (.003)	.221*** (.003)	.219*** (.003)	.221*** (.003)
(3) Measurement error - other PV (2SLS)	.232*** (.003)	.233*** (.003)	.230*** (.003)	.233*** (.003)	.231*** (.003)	.230*** (.003)	.235*** (.003)	.229*** (.003)	.232*** (.003)	.233*** (.003)
(4) Reverse causality - yrs school (2SLS)	.517*** (.007)	.516*** (.007)	.515*** (.007)	.519*** (.007)	.518*** (.008)	.514*** (.007)	.528*** (.008)	.517*** (.007)	.521*** (.007)	.515*** (.007)
(5) Reverse causality - parents (2SLS)	.461*** (.012)	.464*** (.013)	.466*** (.013)	.460*** (.012)	.465*** (.013)	.460*** (.012)	.477*** (.013)	.459*** (.012)	.474*** (.013)	.457*** (.012)
(6) Omitted variables - parents (OLS)	.182*** (.003)	.182*** (.003)	.182*** (.003)	.181*** (.003)	.181*** (.003)	.180*** (.003)	.182*** (.003)	.182*** (.003)	.180*** (.003)	.180*** (.003)
(7) Omitted variables - health (OLS)	.194*** (.003)	.194*** (.003)	.194*** (.003)	.192*** (.003)	.193*** (.003)	.192*** (.003)	.193*** (.003)	.194*** (.003)	.192*** (.003)	.192*** (.003)
Observations	45064	45064	45064	45064	45064	45064	45064	45064	45064	45064

Notes: Dependent variable: log gross hourly wage. Each cell reports the coefficient on numeracy skills from a separate regression. Column title indicates which plausible value of numeracy skills is used in the analysis. Regressions weighted by sampling weights, giving same weight to each country. Model names indicate bias addressed by the specification; "OLS" refers to ordinary least squares estimations, "2SLS" refers to two-stage least squares estimations. Sample: full-time employees aged 35–54 years. All regressions control for a quadratic polynomial in actual work experience, gender, and country fixed effects. *Baseline:* standard model controlling for work experience and gender. *Measurement error - literacy:* numeracy skills are instrumented by literacy skills (using always the same plausible value of numeracy and literacy skills). *Measurement error - other PV:* numeracy skills are instrumented by next plausible value of numeracy skills (i.e., the first plausible value of numeracy skills is instrumented with the second, the second with the third and so on; the tenth plausible value is instrumented with the first). *Reverse causality - yrs school:* numeracy skills are instrumented by years of schooling. *Reverse causality - parents:* numeracy skills are instrumented by parental education (1 = neither parent attained upper secondary education; 2 = at least one parent attained upper secondary education; 3 = at least one parent attained tertiary education). *Omitted variables - parents:* adds control for parental education. *Omitted variables - health:* adds control for respondent's health (1 = poor; 2 = fair; 3 = good; 4 = very good; 5 = excellent). Observations refer to baseline specification. Numeracy skills standardized to SD 1 within country. Robust standard errors in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01. *Data source:* PIAAC 2016.

Table S-2: Employment Effects of Skills: Pooled Specification With Different Plausible Values

	PV 1	PV 2	PV 3	PV 4	PV 5	PV 6	PV 7	PV 8	PV 9	PV 10
(1) Baseline (OLS)	.079*** (.002)	.080*** (.002)	.080*** (.002)	.081*** (.002)	.080*** (.002)	.082*** (.002)	.080*** (.002)	.079*** (.002)	.080*** (.002)	.079*** (.002)
(2) Measurement error - literacy (2SLS)	.079*** (.002)	.080*** (.002)	.078*** (.002)	.079*** (.002)	.079*** (.002)	.079*** (.002)	.078*** (.002)	.078*** (.002)	.079*** (.002)	.078*** (.002)
(3) Measurement error - other PV (2SLS)	.092*** (.002)	.092*** (.002)	.093*** (.002)	.092*** (.002)	.095*** (.002)	.092*** (.002)	.092*** (.002)	.092*** (.002)	.092*** (.002)	.091*** (.002)
(4) Reverse causality - yrs school (2SLS)	.171*** (.004)	.171*** (.004)	.171*** (.004)	.171*** (.004)	.172*** (.004)	.171*** (.004)	.173*** (.004)	.170*** (.004)	.172*** (.004)	.170*** (.004)
(5) Reverse causality - parents (2SLS)	.095*** (.007)	.095*** (.007)	.096*** (.007)	.095*** (.007)	.096*** (.007)	.095*** (.007)	.097*** (.007)	.094*** (.007)	.096*** (.007)	.094*** (.007)
(6) Omitted variables - parents (OLS)	.075*** (.002)	.076*** (.002)	.076*** (.002)	.077*** (.002)	.076*** (.002)	.078*** (.002)	.076*** (.002)	.075*** (.002)	.076*** (.002)	.076*** (.002)
(7) Omitted variables - health (OLS)	.066*** (.002)	.067*** (.002)	.067*** (.002)	.068*** (.002)	.067*** (.002)	.069*** (.002)	.067*** (.002)	.066*** (.002)	.067*** (.002)	.066*** (.002)
Observations	85800	85800	85800	85800	85800	85800	85800	85800	85800	85800

Notes: Dependent variable is a binary indicator that equals 1 if the respondent reports that she is currently employed, and 0 otherwise. Each cell reports the coefficient on numeracy skills from a separate regression. Column title indicates which plausible value of numeracy skills is used in the analysis. Regressions weighted by sampling weights, giving same weight to each country. Model names indicate bias addressed by the specification; "OLS" refers to ordinary least squares estimations, "2SLS" refers to two-stage least squares estimations. Sample: persons aged 35–54 years. All regressions control for a quadratic polynomial in age, gender, and country fixed effects. *Baseline:* standard model controlling for age and gender. *Measurement error - literacy:* numeracy skills are instrumented by literacy skills (using always the same plausible value of numeracy and literacy skills). *Measurement error - other PV:* numeracy skills are instrumented by next plausible value of numeracy skills (i.e., the first plausible value of numeracy skills is instrumented with the second, the second with the third and so on; the tenth plausible value is instrumented with the first). *Reverse causality - yrs school:* numeracy skills are instrumented by years of schooling. *Reverse causality - parents:* numeracy skills are instrumented by parental education (1 = neither parent attained upper secondary education; 2 = at least one parent attained upper secondary education; 3 = at least one parent attained tertiary education). *Omitted variables - parents:* adds control for parental education. *Omitted variables - health:* adds control for respondent's health (1 = poor; 2 = fair; 3 = good; 4 = very good; 5 = excellent). Observations refer to baseline specification. Numeracy skills standardized to SD 1 within country. Robust standard errors in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01. *Data source:* PIAAC 2016.

Table S-3: Extended Model with Part-Time Workers

Second stage (Dependent variable: log gross hourly wage)							
	Baseline	Measurement error		Reverse causation		Omitted variables	
Method	OLS	2SLS	2SLS	2SLS	2SLS	OLS	OLS
Instrument		Literacy	Numeracy (2nd PV)	Yrs school	Parents		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Numeracy skills	.191*** (.003)	.211*** (.003)	.222*** (.003)	.515*** (.007)	.453*** (.012)	.173*** (.003)	.184*** (.003)
Parental education						.092*** (.003)	
Health							.053*** (.003)
Individual characteristics	X	X	X	X	X	X	X
Country fixed effects	X	X	X	X	X	X	X
First stage (Dependent variable: numeracy skills)							
Literacy skills		.846*** (.003)					
Numeracy skills (2nd PV)			.859*** (.003)				
Years of schooling				.162*** (.002)			
Parental education					.329*** (.007)		
Instrument F statistic		72652	76667	8672	2202		
Observations	52257	52257	52257	51896	49646	49646	43663

Notes: Regressions weighted by sampling weights (giving same weight to each country). Two-stage least squares estimations in Columns (2)–(5); ordinary least squares estimations in Columns (1), (6), and (7). Sample: employees aged 35–54 years. Numeracy skills standardized to SD 1 within country. *Parental education:* 1 = neither parent attained upper secondary education; 2 = at least one parent attained upper secondary education; 3 = at least one parent attained tertiary education. *Health:* 1 = poor; 2 = fair; 3 = good; 4 = very good; 5 = excellent. Individual characteristics are a quadratic polynomial in actual work experience, gender, and an indicator whether a person works full-time (i.e., working more than 30 hours per week). Robust standard errors in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01. *Data source:* PIAAC 2016.

Table S-4: Returns to Skills: International Evidence (LIML Estimation)

Second stage (Dependent variable: log gross hourly wage)					
	Baseline	Measurement error		Reverse causation	
Method	OLS	2SLS	2SLS	2SLS	2SLS
Instrument		Literacy	Numeracy (2nd PV)	Yrs school	Parents
	(1)	(2)	(3)	(4)	(5)
Numeracy skills	.200*** (.003)	.221*** (.003)	.232*** (.003)	.517*** (.007)	.461*** (.012)
Individual characteristics	X	X	X	X	X
Country fixed effects	X	X	X	X	X
First stage (Dependent variable: numeracy skills)					
Literacy skills		.847*** (.003)			
Numeracy skills (2nd PV)			.858*** (.003)		
Years of schooling				.165*** (.002)	
Parental education					.331*** (.008)
Instrument F statistic		61223	65811	7569	1862
Observations	45064	45064	45064	44781	42894

Notes: Regressions weighted by sampling weights (giving same weight to each country). Two-stage least squares estimations in Columns (2)–(5); ordinary least squares estimations in Column (1). Sample: full-time employees aged 35–54 years. Model names indicate bias addressed by the specification; "LIML" refers to Limited Information Maximum Likelihood, where the user-specified constant (alpha) is set to 1. Fuller's (1977) modification of the LIML estimator is used, which ensures that the estimator has finite moments. Individual characteristics are a quadratic polynomial in actual work experience and gender. *Measurement error - literacy*: numeracy skills are instrumented by literacy skills. *Measurement error - second PV*: numeracy skills are instrumented by second plausible value of numeracy skills. *Reverse causality - yrs school*: numeracy skills are instrumented by years of schooling. *Reverse causality - parents*: numeracy skills are instrumented by parental education (1 = neither parent attained upper secondary education; 2 = at least one parent attained upper secondary education; 3 = at least one parent attained tertiary education). Observations refer to baseline specification. Numeracy skills standardized to SD 1 within country. Robust standard errors in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01. *Data source*: PIAAC 2016.