

# Real Effects of Workers' Financial Distress: Evidence from Teacher Spillovers

## Online Appendix

**Table OA.1**

Proposed lower bounds for the main effect in reading comprehension

	$\delta$				
	0.50	0.75	1.00	1.25	1.50
Lower bound, coefficient on bankruptcy	-3.697* (-1.731)	-3.698 (-1.579)	-3.699 (-1.552)	-3.701 (-1.352)	-3.702 (-1.422)

This table repeats the estimation in Table 3 applied to reading comprehension. Reported  $t$ -statistics in parentheses are based on bootstrapped standard errors. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

**Table OA.2**

Sensitivity of the main results to medical expenses thresholds

*Panel A: Mathematics*

	Medical expenses threshold				
	\$50	\$500	\$1,000	\$1,500	\$2,500
	(1)	(2)	(3)	(4)	(5)
Bankruptcy	-7.366*** (-3.71)	-7.609*** (-3.88)	-7.387*** (-3.83)	-6.272*** (-3.22)	-6.182*** (-3.25)
Div & med-bankruptcy controls	Yes	Yes	Yes	Yes	Yes
Local bankruptcy control	Yes	Yes	Yes	Yes	Yes
Teacher controls	Yes	Yes	Yes	Yes	Yes
Cohort controls	Yes	Yes	Yes	Yes	Yes
Number of observations	36,746	36,746	36,746	36,746	36,746
R-squared	0.785	0.785	0.785	0.777	0.785

*Panel B: Reading*

	Medical expenses threshold				
	\$50	\$500	\$1,000	\$1,500	\$2,500
	(1)	(2)	(3)	(4)	(5)
Bankruptcy	-4.801* (-1.93)	-3.915* (-1.71)	-4.078* (-1.88)	-3.694* (-1.76)	-3.867* (-1.89)
Div & med-bankruptcy controls	Yes	Yes	Yes	Yes	Yes
Local bankruptcy control	Yes	Yes	Yes	Yes	Yes
Teacher controls	Yes	Yes	Yes	Yes	Yes
Cohort controls	Yes	Yes	Yes	Yes	Yes
Number of observations	34,371	34,371	34,371	34,371	34,371
R-squared	0.764	0.764	0.764	0.764	0.764

*Panel C: Medical-bankruptcy percent*

	Medical expenses threshold				
	\$50	\$500	\$1,000	\$1,500	\$2,500
Medical-bankruptcy percent	31.9	24.6	18.7	15.8	10.5

This table repeats the estimation in Table 2 using different definitions for the medical-related bankruptcy indicator. Specifically, the \$1,500 threshold is replaced by thresholds of \$50, \$500, 1,000, and \$2,500. The frequency of medical-related bankruptcies for the teachers in the sample is reported in Panel C. Reported *t*-statistics in parentheses are heteroskedasticity-robust and double clustered by campus—grade and campus—year. \*\*\**p*<0.01, \*\**p*<0.05, \**p*<0.1.

**Table OA.3**

Main results excluding divorces and medical bankruptcies

*Panel A: Mathematics*

	(1)	(2)	(3)	(4)
Bankruptcy	-6.056*** (-2.91)	-6.062*** (-2.91)	-6.094*** (-2.94)	-5.357*** (-2.60)
Local bankruptcy control	No	Yes	Yes	Yes
Teacher controls	No	No	Yes	Yes
Cohort controls	No	No	No	Yes
Number of observations	36,535	36,505	36,493	36,493
<i>R</i> -squared	0.779	0.779	0.779	0.786

*Panel B: Reading*

	(1)	(2)	(3)	(4)
Bankruptcy	-2.436 (-1.23)	-2.445 (-1.23)	-2.336 (-1.18)	-2.165 (-1.09)
Local bankruptcy control	No	Yes	Yes	Yes
Teacher controls	No	No	Yes	Yes
Cohort controls	No	No	No	Yes
Number of observations	34,211	34,181	34,172	34,168
<i>R</i> -squared	0.761	0.761	0.761	0.766

This table repeats the estimation in Table 2 with the only difference being that those teacher-year observations identified as medical bankruptcies or where divorces occurred are excluded from the sample. Reported *t*-statistics in parentheses are heteroskedasticity-robust and double clustered by campus—grade and campus—year. \*\*\**p*<0.01, \*\**p*<0.05, \**p*<0.1.

**Table OA.4**

Main estimation using continuous test scores as dependent variable

*Panel A: Mathematics*

	(1)	(2)	(3)	(4)	(5)
Bankruptcy	-98.052** (-2.01)	-43.886*** (-3.82)	-43.831*** (-3.81)	-46.146*** (-3.97)	-42.840*** (-3.77)
Div & med-bankruptcy controls	No	Yes	Yes	Yes	Yes
Local bankruptcy control	No	No	Yes	Yes	Yes
Teacher controls	No	No	No	Yes	Yes
Cohort controls	No	No	No	No	Yes
Number of observations	36,788	36,788	36,758	36,746	36,746
<i>R</i> -squared	0.980	0.980	0.980	0.980	0.980

*Panel B: Reading*

	(1)	(2)	(3)	(4)	(5)
Bankruptcy	-123.900* (-1.68)	-47.962* (-1.90)	-48.061* (-1.90)	-48.316* (-1.90)	-46.572* (-1.83)
Div & med-bankruptcy controls	No	Yes	Yes	Yes	Yes
Local bankruptcy control	No	No	Yes	Yes	Yes
Teacher controls	No	No	No	Yes	Yes
Cohort controls	No	No	No	No	Yes
Number of observations	34,414	34,414	34,384	34,375	34,371
<i>R</i> -squared	0.979	0.979	0.979	0.979	0.979

This table repeats the estimation in Table 2 with the only difference being that standardized test scores are used as the dependent variable instead of passing rates. Reported *t*-statistics in parentheses are heteroskedasticity-robust and double clustered by campus—grade and campus—year. \*\*\**p*<0.01, \*\**p*<0.05, \**p*<0.1.

**Table OA.5**

Effect of teacher's financial distress on student performance: Alternate empirical approach

*Panel A: Mathematics*

	(1)	(2)	(3)	(4)	(5)
Bankruptcy	-6.824*** (-2.86)	-7.080*** (-2.76)	-7.103*** (-2.77)	-6.929*** (-2.77)	-6.491*** (-2.66)
Div & med-bankruptcy controls	No	Yes	Yes	Yes	Yes
Local bankruptcy control	No	No	Yes	Yes	Yes
Teacher controls	No	No	No	Yes	Yes
Cohort controls	No	No	No	No	Yes
Number of observations	199,920	199,920	199,791	199,769	199,769
<i>R</i> -squared	0.792	0.792	0.791	0.792	0.804

*Panel B: Reading*

Bankruptcy	-4.978*** (-2.64)	-3.977** (-2.23)	-3.983** (-2.24)	-3.900** (-2.21)	-3.246* (-1.88)
Div & med-bankruptcy controls	No	Yes	Yes	Yes	Yes
Local bankruptcy control	No	No	Yes	Yes	Yes
Teacher controls	No	No	No	Yes	Yes
Cohort controls	No	No	No	No	Yes
Number of observations	216,082	216,082	215,939	215,923	215,916
<i>R</i> -squared	0.767	0.767	0.767	0.768	0.778

This table shows WLS regressions for different variants of Eq. (3). The dependent variable is the percentage of students who meet state-mandated standards for mathematics (Panel A) and reading comprehension (Panel B). The main variable of interest is *bankruptcy*, the fraction of teachers assigned to the tested subject (e.g., mathematics) in a campus—grade—year that file for bankruptcy in the school year. A detailed description of all control variables is available in Appendix B. Variables aggregated at the campus—grade—year (group) level are assigned to the corresponding  $N$  teacher—year observations who teach the group. Each observation is assigned a weight of  $1/N$  to account for variation in the number of teachers per campus—grade—year group. All regressions include district—year fixed effects, teacher fixed effects, and grade—year fixed effects. A detailed description of this empirical approach is available in Appendix C. Reported  $t$ -statistics in parentheses are heteroskedasticity-robust and double clustered by teacher and campus—year. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

**Table OA.6**

Effect of teacher's financial distress on student performance by age

	(1)	(2)	(3)
Bankruptcy	-5.208 (-1.16)	-5.441 (-1.21)	-4.287 (-0.99)
Bankruptcy $\times$ 1(young)	-2.185 (-0.41)	-1.891 (-0.35)	-3.009 (-0.59)
Div & med-bankruptcy controls	Yes	Yes	Yes
Local bankruptcy control	Yes	Yes	Yes
Teacher controls	No	Yes	Yes
Cohort controls	No	No	Yes
Number of observations	36,758	36,746	36,746
R-squared	0.777	0.777	0.785

This table shows OLS regressions where the dependent variable is the percentage of students who meet state-mandated standards for mathematics. The main variable of interest is *bankruptcy* $\times$ *1(young)*, the interaction of the fraction of teachers assigned to mathematics in a campus—grade—year that file for bankruptcy in the school year and a dummy variable that takes the value of one for grades three to five, and zero otherwise. A detailed description of all control variables is available in Appendix B. All regressions include district—year fixed effects, grade—year fixed effects, and campus—grade fixed effects. Reported *t*-statistics in parentheses are heteroskedasticity-robust and double clustered by campus—grade and campus—year. \*\*\**p*<0.01, \*\**p*<0.05, \**p*<0.1.