Teachers Teaching Teachers: The Role of Networks on Financial Decisions Gonzalo Maturana and Jordan Nickerson Internet Appendix

Additional Tables and Figures

 ${\bf Table~IA.I} \\ {\bf Property~characteristics~of~sample~teachers~and~Texas~homeowners} \\$

This table shows avergae property characteristics for the teachers in our sample and the sample of Texas homeowners.

	Sample teachers	Texas homeowners	Difference	t-statistic
Assessor values (\$)	168,439	184,663	-16,224	-11.26
Square footage	$2,\!150.8$	$2,\!120.5$	30.35	0.38
Number of bedrooms	3.364	3.289	0.074	9.97
Number of bathrooms	2.371	2.309	0.062	7.74

${\bf Table~IA.II} \\ {\bf Multi-step~estimation~using~lower-order~fixed~effects}$

This table shows estimates similar to the ones in Table II, using lower-order fixed effects instead of campusmonth fixed effects in the first stage. Panel A reports the results of the first stage (t-statistics in parentheses). Panel B reports the results of the residual distance regressions and their corresponding distance ratios. Reported p-values in parentheses are estimated by generating the distribution of each coefficient under the null of no peer effects, following Shue (2013). ***p<0.01, **p<0.05, *p<0.1.

	Panel A	A: First stage	
	(1)	(2)	(3)
	1st	1st	1st
	Stage	Stage	Stage
Savings (\$, ×10,000)	57.378***	58.466***	65.693***
	(5.02)	(4.89)	(5.13)
1(Underwater)	-9.000	-10.196	-9.064
	(-1.22)	(-1.24)	(-1.01)
Percent Underwater	-47.295	-35.191	-19.648
	(-0.61)	(-0.34)	(-0.17)
Constant	42.101***	60.834***	38.110***
	(8.94)	(8.84)	(6.94)
MSA-Year FE	Y	N	N
District-Year FE	N	Y	N
Campus-Year FE	N	N	Y
N	313,583	313,583	313,583
R^2	0.026	0.034	0.056

	Panel B: Re	sidual distan	ce and distar	nce ratio			
	(1	1)	(2	(2)		(3)	
	Residual	Distance	Residual	Distance	Residual	Distance	
	Dist.	Ratio	Dist.	Ratio	Dist.	Ratio	
1(Common Off-Period)	-4.138**		-3.967**		-4.889**		
	(0.0318)		(0.0332)		(0.0326)		
Constant	235.115**	*	237.443**	*	243.324**	*	
	(<0.0001)		(<0.0001)		(<0.0001)		
Distance Ratio		0.0176**		0.0167**		0.0201**	
		(0.0318)		(0.0332)		(0.0326)	

Table IA.III Correlation Matrix of Teacher Characteristics

This table shows the correlation coefficients among teacher characteristics.

	Pay	Tenure	Grad Degree	Age	Female
Pay	1				
Tenure	0.52	1			
Grad Degree	0.29	0.17	1		
Age	0.47	0.48	0.24	1	
Female	-0.16	0.04	-0.02	-0.0001	1

Table IA.IV Robustness for Table III

This table shows OLS regressions in which the dependent variable is a 0/1 indicator of refinances, and the main variable of interest is *Peer Refinances*, a variable that captures the number of peers having undertaken a mortgage refinance in the previous 3-month period, scaled by the size of the peer group. In Panel A, the main difference with Table III is the definition of *Peer Refinances*, which only considers refinances done by peers in the last two months (instead of three months). Panel B, in turn, uses an alternative measure of savings which assumes a term of 30 years. Reported are the effects of a one standard deviation change in *Peer Refinances*, and *t*-statistics in parentheses are heteroscedasticity-robust and clustered by MSA-year. ***p<0.01, **p<0.05, *p<0.1.

	Panel A: Alter	rnative measure	of Peer Refinar	nces	
	(1)	(2)	(3)	(4)	(5)
Peer Refinances	11.854***	10.851***	9.492***	6.554**	6.618**
	(5.55)	(5.08)	(3.97)	(2.05)	(2.08)
Savings ($\$$, $\times 10,000$)	48.903***	49.243***	53.010***	56.310***	56.307***
	(6.46)	(6.46)	(6.74)	(5.45)	(5.45)
1(Underwater)	-7.638	-9.089	-7.887	-5.400	-4.712
	(-1.10)	(-1.16)	(-0.93)	(-0.57)	(-0.50)
Percent Underwater	-10.605	5.204	14.607	-33.544	-58.994
	(-0.13)	(0.05)	(0.12)	(-0.24)	(-0.42)
Teacher Characteristics	N	N	N	N	Y
MSA-Year FE	Y	N	\mathbf{N}	N	N
District-Year FE	\mathbf{N}	Y	$\mathbf N$	N	N
Campus-Year FE	\mathbf{N}	N	Y	N	N
Campus-Month FE	N	N	N	Y	Y
\overline{N}	303,467	303,467	303,467	303,467	303,467
R^2	0.024	0.032	0.055	0.242	0.242
	Panel B: A	Alternative mea (2)	sure of Savings (3)	(4)	(5)
Peer Refinances	(1)	(2)	(3)		. ,
Peer Refinances	(1) 11.075***	(2) 10.153***	(3) 9.164***	6.281*	6.343*
	(1)	(2)	(3)		. ,
	(1) 11.075*** (4.81) 44.621***	(2) 10.153*** (4.39) 45.032***	(3) 9.164*** (3.62) 48.668***	6.281* (1.93) 54.139***	6.343* (1.96) 54.126***
Savings ($\$$, ×10,000)	(1) 11.075*** (4.81)	(2) 10.153*** (4.39)	(3) 9.164*** (3.62)	6.281* (1.93)	6.343* (1.96)
	(1) 11.075*** (4.81) 44.621*** (6.66)	(2) 10.153*** (4.39) 45.032*** (6.70)	(3) 9.164*** (3.62) 48.668*** (7.00)	6.281* (1.93) 54.139*** (5.41)	6.343* (1.96) 54.126*** (5.40)
Savings ($\$$, $\times 10,000$) 1(Underwater)	(1) 11.075*** (4.81) 44.621*** (6.66) -9.967	(2) 10.153*** (4.39) 45.032*** (6.70) -11.383	(3) 9.164*** (3.62) 48.668*** (7.00) -10.167	6.281* (1.93) 54.139*** (5.41) -8.621	6.343* (1.96) 54.126*** (5.40) -7.888
Savings ($\$$, $\times 10,000$) 1(Underwater)	(1) 11.075*** (4.81) 44.621*** (6.66) -9.967 (-1.45)	(2) 10.153*** (4.39) 45.032*** (6.70) -11.383 (-1.46)	(3) 9.164*** (3.62) 48.668*** (7.00) -10.167 (-1.21)	6.281* (1.93) 54.139*** (5.41) -8.621 (-0.93)	6.343* (1.96) 54.126*** (5.40) -7.888 (-0.85)
Savings ($\$$, $\times 10,000$) 1(Underwater)	(1) 11.075*** (4.81) 44.621*** (6.66) -9.967 (-1.45) -18.839	(2) 10.153*** (4.39) 45.032*** (6.70) -11.383 (-1.46) -7.812	(3) 9.164*** (3.62) 48.668*** (7.00) -10.167 (-1.21) -3.728	6.281* (1.93) 54.139*** (5.41) -8.621 (-0.93) -47.085	6.343* (1.96) 54.126*** (5.40) -7.888 (-0.85) -72.377
Savings (\$, ×10,000) 1(Underwater) Percent Underwater Teacher Characteristics	(1) 11.075*** (4.81) 44.621*** (6.66) -9.967 (-1.45) -18.839 (-0.23)	(2) 10.153*** (4.39) 45.032*** (6.70) -11.383 (-1.46) -7.812 (-0.07)	(3) 9.164*** (3.62) 48.668*** (7.00) -10.167 (-1.21) -3.728 (-0.03)	6.281* (1.93) 54.139*** (5.41) -8.621 (-0.93) -47.085 (-0.33)	6.343* (1.96) 54.126*** (5.40) -7.888 (-0.85) -72.377 (-0.51)
Savings (\$, ×10,000) 1(Underwater) Percent Underwater Teacher Characteristics MSA-Year FE	(1) 11.075*** (4.81) 44.621*** (6.66) -9.967 (-1.45) -18.839 (-0.23)	(2) 10.153*** (4.39) 45.032*** (6.70) -11.383 (-1.46) -7.812 (-0.07)	(3) 9.164*** (3.62) 48.668*** (7.00) -10.167 (-1.21) -3.728 (-0.03) N	6.281* (1.93) 54.139*** (5.41) -8.621 (-0.93) -47.085 (-0.33) N	6.343* (1.96) 54.126*** (5.40) -7.888 (-0.85) -72.377 (-0.51)
Savings (\$, ×10,000) 1(Underwater) Percent Underwater Teacher Characteristics MSA-Year FE	(1) 11.075*** (4.81) 44.621*** (6.66) -9.967 (-1.45) -18.839 (-0.23) N	(2) 10.153*** (4.39) 45.032*** (6.70) -11.383 (-1.46) -7.812 (-0.07) N	(3) 9.164*** (3.62) 48.668*** (7.00) -10.167 (-1.21) -3.728 (-0.03) N	6.281* (1.93) 54.139*** (5.41) -8.621 (-0.93) -47.085 (-0.33) N	6.343* (1.96) 54.126*** (5.40) -7.888 (-0.85) -72.377 (-0.51) Y
Percent Underwater Teacher Characteristics MSA-Year FE District-Year FE	(1) 11.075*** (4.81) 44.621*** (6.66) -9.967 (-1.45) -18.839 (-0.23) N Y	(2) 10.153*** (4.39) 45.032*** (6.70) -11.383 (-1.46) -7.812 (-0.07) N N	(3) 9.164*** (3.62) 48.668*** (7.00) -10.167 (-1.21) -3.728 (-0.03) N N N	6.281* (1.93) 54.139*** (5.41) -8.621 (-0.93) -47.085 (-0.33) N N	6.343* (1.96) 54.126*** (5.40) -7.888 (-0.85) -72.377 (-0.51) Y N
Savings (\$, ×10,000) 1(Underwater) Percent Underwater Teacher Characteristics MSA-Year FE District-Year FE Campus-Year FE	(1) 11.075*** (4.81) 44.621*** (6.66) -9.967 (-1.45) -18.839 (-0.23) N Y N N	(2) 10.153*** (4.39) 45.032*** (6.70) -11.383 (-1.46) -7.812 (-0.07) N N Y N	(3) 9.164*** (3.62) 48.668*** (7.00) -10.167 (-1.21) -3.728 (-0.03) N N N N Y	6.281* (1.93) 54.139*** (5.41) -8.621 (-0.93) -47.085 (-0.33) N N N	6.343* (1.96) 54.126*** (5.40) -7.888 (-0.85) -72.377 (-0.51) Y N N

 ${\bf Table~IA.V} \\ {\bf Teacher~Characteristics~and~Group~Characteristics}$

This table shows OLS regressions of a teacher's characteristic on the average of her peer group ($Peer\ Group\ Average$) and the average of all teachers within the campus but outside the teacher's peer group ($Campus\ Average$), using all teachers in the TEA records. Reported t-statistics in parentheses are heteroscedasticity-robust and clustered by campus. ***p<0.01, **p<0.1.

	Emplo	yment Chara	cteristics			Demographics	3	
-	Age (1)	Pay (2)	Grad Degree (3)	Female (4)	White (5)	Black (6)	Asian (7)	Hispanic (8)
Peer Group Average	0.030*** (3.31)	0.042*** (3.95)	0.006 (0.66)	0.075*** (8.10)	0.026** (2.36)	0.009 (0.63)	-0.001 (-0.11)	0.011 (0.87)
Campus Average	0.424*** (26.35)	0.830*** (86.22)	0.407**** (20.64)	0.469*** (30.65)	0.863*** (71.43)	0.891*** (56.50)	0.139**** (4.19)	0.878*** (57.23)
$\frac{N}{R^2}$	187,369 0.024	$187,369 \\ 0.254$	187,369 0.017	187,369 0.038	$187,369 \\ 0.287$	$187,369 \\ 0.286$	187,369 0.001	$187,\!369 \\ 0.303$

Table IA.VI Alternative Refinements of Peer Groups

This table shows OLS regressions in which the dependent variable is a 0/1 indicator of refinances, and the main variable of interest is $Peer\ Refinances$, a variable that captures the number of peers having undertaken a mortgage refinance in the previous 3-month period, scaled by the size of the peer group. The main difference with Table VI is the segmentation of $Peer\ Refinances$ into two mutually exclusive groups. The first group contains peers with the same characteristic as the individual, while the second group contains peers who differ in the characteristic. In Panel A, peers are defined as belonging in the same age group if the absolute difference in ages is less than 10 years. Panel B, in turn, segments the peer group based on having the same gender as the individual. Reported are the effects of a one standard deviation change in $Peer\ Refinances$, and t-statistics in parentheses are heteroscedasticity-robust and clustered by MSA-year. ***p<0.01, **p<0.05, *p<0.1.

Carrest Carr		P	anel A: Commo	on Age		
common age group (3.75) (3.32) (2.39) (1.41) (1.42) Peer Refinances 9.251*** 8.940*** 8.983*** 6.132 6.202 different age group (4.93) (4.58) (4.05) (1.57) (1.59) Savings (\$, x10,000) 49.060*** 49.470*** 53.023*** 55.955*** 55.912*** (6.47) (6.48) (6.67) (5.41) (5.41) I(Underwater) -7.799 -9.174 -8.613 -5.382 -4.734 (-(1.09) (-1.15) (-1.01) (-0.54) (-0.47) Percent Underwater -36.040 -25.252 7.299 -54.718 -81.225 (-0.42) (-0.22) (0.06) (-0.36) (-0.53) Teacher Characteristics N N N N N N Y MSA-Year FE N N N N N N N N N N N N N N N N N <td></td> <td>(1)</td> <td>(2)</td> <td>(3)</td> <td>(4)</td> <td>(5)</td>		(1)	(2)	(3)	(4)	(5)
Peer Refinances 9.251*** 8.940*** 8.983*** 6.132 6.202 6.16frent age group (4.93) (4.58) (4.05) (1.57) (1.57) (1.59)	Peer Refinances	7.245***	6.336***	4.987**	3.779	3.842
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	common age group		(3.32)		(1.41)	(1.42)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Peer Refinances	9.251***	8.940***	8.983***	6.132	6.202
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0 0 1					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Savings ($\$$, $\times 10,000$)	49.060***				
Percent Underwater		(6.47)	(6.48)	(6.67)	(5.41)	(5.41)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1(Underwater)					
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $,				
Teacher Characteristics N N N N N Y MSA-Year FE Y N N N N N District-Year FE N Y N N N N Campus-Year FE N N N Y N N Campus-Month FE N N N Y Y Y N 298,397	Percent Underwater					
MSA-Year FE Y N N N N District-Year FE N Y N N N Campus-Year FE N N Y N N Campus-Month FE N N N Y Y N 298,397 298,397 298,397 298,397 298,397 R2 0.024 0.033 0.056 0.242 0.242 Panel B: Common Gender (1) (2) (3) (4) (5) Panel B: Common Gender (1) (2) (3) (4) (5) Peer Refinances \$\text{8.508***} \tag{7.939****} \tag{7.939****} \tag{6.515****} \tag{4.487} \tag{4.562} \tag{4.562} 2.000000000000000000000000000000000000		(-0.42)	(-0.22)	(0.06)	(-0.36)	(-0.53)
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Teacher Characteristics		N	\mathbf{N}	N	Y
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	MSA-Year FE	Y	N	N	N	N
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	District-Year FE	N				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Campus-Year FE	N			N	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Campus-Month FE	N	N	N	Y	Y
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	\overline{N}	298,397	298,397	298,397	298,397	298,397
Peer Refinances 8.508*** 7.939*** 6.515*** 4.487 4.562 common gender (4.33) (3.87) (2.77) (1.37) (1.40) Peer Refinances 9.737*** 8.743*** 9.141*** 6.964 7.041 different gender (3.44) (3.06) (3.01) (1.60) (1.60) Savings (\$, ×10,000) 49.065*** 49.475*** 53.030*** 55.958*** 55.910*** (6.48) (6.48) (6.67) (5.42) (5.41) 1(Underwater) -7.788 -9.162 -8.577 -5.358 -4.714 (-1.09) (-1.15) (-1.01) (-0.53) (-0.47) Percent Underwater -36.140 -25.328 6.800 -55.000 -81.479 (-0.42) (-0.22) (0.05) (-0.36) (-0.53) Teacher Characteristics N N N N N N N MSA-Year FE Y N N N N N N N	R^2	0.024	0.033	0.056	0.242	0.242
Peer Refinances 8.508*** 7.939*** 6.515*** 4.487 4.562 common gender (4.33) (3.87) (2.77) (1.37) (1.40) Peer Refinances 9.737*** 8.743*** 9.141*** 6.964 7.041 different gender (3.44) (3.06) (3.01) (1.60) (1.60) Savings (\$, ×10,000) 49.065*** 49.475*** 53.030*** 55.958*** 55.910*** (6.48) (6.48) (6.67) (5.42) (5.41) 1(Underwater) -7.788 -9.162 -8.577 -5.358 -4.714 (-1.09) (-1.15) (-1.01) (-0.53) (-0.47) Percent Underwater -36.140 -25.328 6.800 -55.000 -81.479 (-0.42) (-0.22) (0.05) (-0.36) (-0.53) Teacher Characteristics N N N N N N N MSA-Year FE Y N N N N N N N						
Peer Refinances 8.508*** 7.939*** 6.515*** 4.487 4.562 common gender (4.33) (3.87) (2.77) (1.37) (1.40) Peer Refinances 9.737*** 8.743*** 9.141*** 6.964 7.041 different gender (3.44) (3.06) (3.01) (1.60) (1.60) Savings (\$, ×10,000) 49.065*** 49.475*** 53.030*** 55.958*** 55.910*** (6.48) (6.48) (6.67) (5.42) (5.41) 1(Underwater) -7.788 -9.162 -8.577 -5.358 -4.714 (-1.09) (-1.15) (-1.01) (-0.53) (-0.47) Percent Underwater -36.140 -25.328 6.800 -55.000 -81.479 (-0.42) (-0.42) (-0.22) (0.05) (-0.36) (-0.53) Teacher Characteristics N N N N N N MSA-Year FE N N N N N N N						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		(1)	(2)	(3)	(4)	(5)
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Peer Refinances	8.508***	7.939***	6.515***	4.487	4.562
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$						\ /
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		9.737***		-		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	9					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Savings ($\$$, $\times 10,000$)	49.065***				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		\ /	\ /	\ /	\ /	\ /
Percent Underwater -36.140 (-0.42) -25.328 (0.05) 6.800 (-0.36) -55.000 (-0.53) Teacher Characteristics N N N N Y MSA-Year FE Y N N N N District-Year FE N Y N N N Campus-Year FE N N Y N N Campus-Month FE N N N Y Y N 298,397 298,397 298,397 298,397 298,397 298,397	1(Underwater)					
(-0.42) (-0.22) (0.05) (-0.36) (-0.53) Teacher Characteristics N N N N Y MSA-Year FE Y N N N N District-Year FE N Y N N N Campus-Year FE N N Y N N Campus-Month FE N N N Y Y N 298,397 298,397 298,397 298,397 298,397		` /			\ /	` /
Teacher Characteristics N N N N Y MSA-Year FE Y N N N N District-Year FE N Y N N N Campus-Year FE N N Y N N Campus-Month FE N N N Y Y N 298,397 298,397 298,397 298,397 298,397	Percent Underwater					
MSA-Year FE Y N N N N District-Year FE N Y N N N Campus-Year FE N N Y N N Campus-Month FE N N N Y Y N 298,397 298,397 298,397 298,397 298,397		(-0.42)	(-0.22)	(0.05)	(-0.36)	(-0.53)
District-Year FE N Y N N N Campus-Year FE N N Y N N Campus-Month FE N N N Y Y N 298,397 298,397 298,397 298,397 298,397	Teacher Characteristics	N	N	N	N	Y
Campus-Year FE N N Y N N Campus-Month FE N N N Y Y N 298,397 298,397 298,397 298,397 298,397	MSA-Year FE	Y	N	N	N	N
Campus-Month FE N N N Y Y N 298,397 298,397 298,397 298,397 298,397	District-Year FE	N	Y	N	N	N
N 298,397 298,397 298,397 298,397 298,397	Campus-Year FE			Y		
	Campus-Month FE	N	N	N	Y	Y
	\overline{N}	298,397	298,397	298.397	298,397	298,397
		,		,		*

Table IA.VII First Stage Regressions

This table reports the first stage of the 2SLS IV regressions of Table VII. The dependent variable, Peer Refinances, instrumented for in the second stage, is the number of a teacher's peers who have undertaken a mortgage refinance in the previous 3-month period, scaled by the size of the teacher's peer group. We use the average net savings conditional on refinancing of a teacher's peer group, Avg. Peer Savings, as an exogenous instrument to estimate Peer Refinances. The variables Avg. Peer Savings and Peer Refinances have been standardized. Reported t-statistics in parentheses are heteroscedasticity-robust and clustered by MSA-year. ***p<0.01, **p<0.05, *p<0.1.

	(1)	(2)	(3)	(4)
Avg. Peer Savings	0.385***	0.381***	0.400***	0.401***
	(4.90)	(4.86)	(4.80)	(4.82)
Savings ($\$$, $\times 10,000$)	-0.074***	-0.070**	-0.034	-0.027
	(-2.82)	(-2.60)	(-0.90)	(-0.71)
1(Underwater)	-0.044	-0.057	-0.071	-0.054
	(-0.64)	(-0.83)	(-1.16)	(-0.87)
Percent Underwater	-0.490	-0.016	-0.114	-0.071
	(-0.50)	(-0.02)	(-0.14)	(-0.09)
Teacher Characteristics	N	N	N	Y
MSA-Year FE	Y	N	N	N
District-Year FE	N	Y	N	N
Campus-Year FE	N	N	Y	Y
N	245,201	245,201	245,201	245,201
R^2	0.032	0.080	0.211	0.211

Table IA.VIII
First Mover and Follower Characteristics

This table compares the characteristics of teachers that refinance independently of their peers with those of teachers who follow their peers.

	Trigger	Follower	Difference	$t ext{-statistic}$
Unpaid Balance (\$)	138,700.9	138,190.5	510.4	0.13
Savings (\$)	6,087.8	6,600.1	-512.3	-1.07
Pay (\$)	47,807.3	46,954.8	852.5	2.08
Tenure	6.17	6.33	-0.167	-0.48
Technical Class	0.26	0.27	-0.001	-0.06
Grad Degree	0.27	0.26	0.008	0.37
Age	41.64	41.33	0.307	0.61
Female	0.67	0.63	0.041	1.72