

## Online Appendix

### Common Lender, Ex-Banker Director, and Corporate Investment

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**Table A1: Relationship Bank Merger and Corporate Outcomes (1990-)**

See Table 1 for the definition of variables. This table provides multivariate tests for the linkage between relationship bank mergers and corporate outcomes for a subsample from 1990 onwards. The dependent variables are CAPEX, MARKUP, and EBITDA. The independent variable of interest is MERGER\_EXP. GROWTH\_EFFICIENCY includes TOBINS\_Q, SALES\_GROWTH, ROA, and CASHFLOW. FIRM\_CHARACTERISTICS includes SIZE, CASH, LEVERAGE, CASHFLOW\_STD, and DIVERSIFICATION. GROWTH\_EFFICIENCY and FIRM\_CHARACTERISTICS are one-year lagged values. All potentially unbounded variables are winsorized at 0.5% and 99.5%. Robust standard errors clustered at the firm level are reported in parentheses. The number of observations and R-squared are given in the last two rows. Statistical significance (two-sided) at the 10%, 5%, and 1% level is denoted by \*, \*\*, and \*\*\*, respectively.

	1	2	3	4	5	6
	CAPEX	CAPEX	MARKUP	MARKUP	EBITDA	EBITDA
MERGER_EXP	-0.348** (0.153)	-0.345** (0.154)	0.406* (0.246)	0.434* (0.256)	0.255 (0.189)	0.389** (0.189)
TOBINS_Q	0.320*** (0.100)	-0.201* (0.112)				
SALES_GROWTH	0.009*** (0.003)	0.013*** (0.003)				
ROA	0.103*** (0.016)	0.077*** (0.016)				
CASHFLOW	0.087*** (0.019)	0.052*** (0.019)				
SIZE		-0.857*** (0.204)		-1.262*** (0.324)		0.786*** (0.260)
CASH		0.054*** (0.006)		0.015 (0.015)		0.007 (0.009)
LEVERAGE		-0.053*** (0.005)		-0.066*** (0.006)		-0.079*** (0.006)
CASHFLOW_STD		-0.163*** (0.047)		-0.029 (0.072)		-0.080 (0.059)
DIVERSIFICATION		-0.330 (0.248)		-0.301 (0.380)		-0.605** (0.270)
Firm FE	Y	Y	Y	Y	Y	Y
RB × Year FE	Y	Y	Y	Y	Y	Y
Industry × Year FE	Y	Y	Y	Y	Y	Y
N	30,834	30,834	34,549	31,904	32,876	30,430
R-squared	0.355	0.364	0.933	0.935	0.802	0.820

**Table A2: Relationship Bank Merger and Markup/Profitability Ratio: Channel (Alternative Specification)**

See Table 1 for the definition of variables. The dependent variables are MARKUP and EBITDA. The independent variable of interest is DIR\_MERGER\_EXP. Columns 1, 2, 5, and 6 present the results for firms whose loan from the top lender (RB\_LOAN) accounts for greater than 10% of total interest-bearing debt. Columns 3, 4, 7, and 8 show the results for firms whose RB\_LOAN accounts for greater than 20% of total interest-bearing debt. FIRM\_CHARACTERISTICS includes SIZE, CASH, LEVERAGE, CASHFLOW\_STD, and DIVERSIFICATION. FIRM\_CHARACTERISTICS are one-year lagged values. All potentially unbounded variables are winsorized at 0.5% and 99.5%. Robust standard errors clustered at the firm level are reported in parentheses. The number of observations and R-squared are given in the last two rows. Statistical significance (two-sided) at the 10%, 5%, and 1% level is denoted by \*, \*\*, and \*\*\*, respectively.

	RB LOAN >= 10%		RB LOAN >= 20%		RB LOAN >= 10%		RB LOAN >= 20%	
	1	2	3	4	5	6	7	8
	MARKUP	MARKUP	MARKUP	MARKUP	EBITDA	EBITDA	EBITDA	EBITDA
MERGER_EXP	0.266 (0.278)	0.239 (0.286)	-0.006 (0.311)	-0.080 (0.314)	0.057 (0.210)	0.036 (0.215)	-0.077 (0.235)	-0.128 (0.241)
DIR_MERGER_EXP	0.941* (0.520)	1.011* (0.524)	1.251** (0.589)	1.388** (0.593)	1.262** (0.494)	1.321*** (0.500)	1.468*** (0.532)	1.576*** (0.540)
DIR_PRESENCE	-0.160 (0.234)	-0.165 (0.235)	-0.083 (0.253)	-0.102 (0.251)	0.131 (0.246)	0.131 (0.248)	0.143 (0.276)	0.091 (0.279)
RB_LOAN_GROWTH		-0.004*** (0.001)		-0.003*** (0.001)		-0.006*** (0.001)		-0.005*** (0.001)
SIZE	-0.719** (0.291)	-0.690** (0.291)	-0.854** (0.361)	-0.878** (0.360)	1.391*** (0.250)	1.451*** (0.256)	1.185*** (0.315)	1.185*** (0.322)
CASH	0.036*** (0.010)	0.032*** (0.010)	0.033*** (0.012)	0.029** (0.013)	0.016* (0.009)	0.012 (0.009)	0.014 (0.010)	0.007 (0.010)
LEVERAGE	-0.066*** (0.006)	-0.068*** (0.006)	-0.068*** (0.007)	-0.068*** (0.007)	-0.068*** (0.005)	-0.070*** (0.005)	-0.070*** (0.006)	-0.070*** (0.006)
CASHFLOW_STD	-0.161** (0.063)	-0.159** (0.064)	-0.144* (0.075)	-0.138* (0.074)	-0.186*** (0.054)	-0.198*** (0.056)	-0.183*** (0.061)	-0.200*** (0.062)
DIVERSIFICATION	-0.613** (0.300)	-0.752** (0.303)	-0.518 (0.350)	-0.632* (0.354)	-0.844*** (0.293)	-0.900*** (0.303)	-0.929*** (0.315)	-0.916*** (0.324)
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
RB × Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Industry × Year FE	Y	Y	Y	Y	Y	Y	Y	Y
N	26,530	25,848	17,439	16,882	25,148	24,490	16,581	16,045
R-squared	0.938	0.939	0.944	0.944	0.816	0.818	0.827	0.832

**Table A3: Relationship Bank Merger and Corporate Outcomes: Channel (Non-executive versus Executive Directors)**

See Table 1 for the definition of variables. The dependent variables are CAPEX, MARKUP, and EBITDA. The independent variables of interest are DIR\_MERGER\_EXP and NON\_EXECUTIVE\_DIR\_MERGER\_EXP. NON\_EXECUTIVE\_DIR\_MERGER\_EXP is the cumulative frequency of being affected by a connection-creating bank merger conditional on the presence of a non-executive director but the absence of an executive one formerly affiliated with either merging bank. NON\_EXECUTIVE\_DIR\_PRESENCE is a dummy equal to one conditional on the presence of a non-executive director but the absence of an executive one formerly affiliated with the firm's relationship bank. GROWTH\_EFFICIENCY includes TOBINS\_Q, SALES\_GROWTH, ROA, and CASHFLOW. FIRM\_CHARACTERISTICS includes SIZE, CASH, LEVERAGE, CASHFLOW\_STD, and DIVERSIFICATION. GROWTH\_EFFICIENCY and FIRM\_CHARACTERISTICS are one-year lagged values. All potentially unbounded variables are winsorized at 0.5% and 99.5%. Standard errors clustered at the firm level are in parentheses. The number of observations and R-squared are given in the last two rows. Statistical significance (two-sided) at the 10%, 5%, and 1% level is denoted by \*, \*\*, and \*\*\*, respectively.

	1	2	3	4	5	6
	CAPEX	CAPEX	MARKUP	MARKUP	EBITDA	EBITDA
MERGER_EXP	-0.313*	0.079	0.247	-0.027	0.170	-0.034
	(0.172)	(0.187)	(0.274)	(0.305)	(0.201)	(0.213)
NON_EXECUTIVE_DIR_MERGER_EXP	-0.018	0.037	0.297	0.313	0.316	0.317
	(0.213)	(0.215)	(0.402)	(0.360)	(0.266)	(0.267)
NON_EXECUTIVE_DIR_PRESENCE	0.038	0.076	-0.065	0.103	0.056	0.144
	(0.149)	(0.158)	(0.190)	(0.189)	(0.154)	(0.157)
DIR_MERGER_EXP	-0.546	-0.627*	0.355	1.225**	0.934*	1.237**
	(0.376)	(0.373)	(0.537)	(0.533)	(0.512)	(0.518)
DIR_PRESENCE	-0.067	-0.130	-0.235	0.333	0.444	0.565**
	(0.244)	(0.267)	(0.385)	(0.304)	(0.274)	(0.281)
RB_LOAN_GROWTH		0.015***		-0.004***		-0.005***
		(0.001)		(0.001)		(0.001)
TOBINS_Q	-0.185*	-0.134				
	(0.111)	(0.170)				
SALES_GROWTH	0.014***	0.014***				
	(0.003)	(0.004)				
ROA	0.077***	0.065***				
	(0.016)	(0.019)				
CASHFLOW	0.058***	0.078***				
	(0.018)	(0.023)				
SIZE	-0.924***	-1.205***	-1.124***	-0.638*	0.919***	1.260***
	(0.195)	(0.236)	(0.307)	(0.344)	(0.251)	(0.293)
CASH	0.049***	0.064***	0.015	0.034***	0.009	0.010
	(0.006)	(0.008)	(0.016)	(0.011)	(0.009)	(0.009)
LEVERAGE	-0.052***	-0.049***	-0.070***	-0.066***	-0.081***	-0.073***
	(0.005)	(0.006)	(0.006)	(0.007)	(0.006)	(0.006)
CASHFLOW_STD	-0.151***	-0.144**	-0.027	-0.030	-0.086	-0.098
	(0.046)	(0.059)	(0.067)	(0.077)	(0.059)	(0.063)
DIVERSIFICATION	-0.388	-0.277	-0.348	-0.655**	-0.660**	-0.933***
	(0.240)	(0.305)	(0.357)	(0.312)	(0.262)	(0.312)
Firm FE	Y	Y	Y	Y	Y	Y
RB × Year FE	Y	Y	Y	Y	Y	Y
Industry × Year FE	Y	Y	Y	Y	Y	Y
N	32,215	24,002	33,305	24,768	31,558	23,478
R-squared	0.387	0.426	0.938	0.939	0.825	0.836

**Table A4: Bank Concentration and Corporate Outcomes: Robustness**

See Table 1 for the definition of variables. In Panels A and B, we include only firms that were affiliated at least once with the banks involved in bank mergers between 1995 and 2004. In Panel D, we drop firms that were affected by a connection-creating bank merger more than once and weight observations at the firm level by the inverse of the propensity score, i.e., the conditional probability of assignment to the treatment (being affected by a connection-creating bank merger at least once between 1995 and 2004) versus nontreatment given observed covariates. The dependent variables are CAPEX, MARKUP, and EBITDA. The independent variables of interest are BANK\_INDUSTRIY\_HHI in Panel A and MERGER\_EXP in Panels B through D. LOW\_Q\_EXP is the cumulative frequency of being affected by any bank merger conditional on TOBINS\_Q being lower in the previous year (LOW\_Q = 1). Here, LOW\_Q is a dummy that equals one if the firm's TOBINS\_Q was in the bottom tercile in the previous year. Analogously, HIGH\_LEV\_EXP is defined as the cumulative frequency of being affected by any bank merger conditional on leverage being higher in the previous year (HIGH\_LEV = 1), where HIGH\_LEV is a dummy that equals one if the firm's leverage was in the top tercile in the previous year. GROWTH\_EFFICIENCY includes TOBINS\_Q, SALES\_GROWTH, ROA, and CASHFLOW. FIRM\_CHARACTERISTICS includes SIZE, CASH, LEVERAGE, CASHFLOW\_STD, and DIVERSIFICATION. GROWTH\_EFFICIENCY and FIRM\_CHARACTERISTICS are one-year lagged values. All potentially unbounded variables are winsorized at 0.5% and 99.5%. Robust standard errors clustered at the sector level (Panel A) and firm level (Panels B through D) are reported in parentheses. For the sake of making space, we omit the number of observations and R-squared from the table. Statistical significance (two-sided) at the 10%, 5%, and 1% level is denoted by \*, \*\*, and \*\*\*, respectively.

	1	2	3	4	5	6
	CAPEX	CAPEX	MARKUP	MARKUP	EBITDA	EBITDA
<b>Panel A (Subsample Analysis)</b>						
BANK_INDUSTRIY_HHI	-3.007*	-3.601**	6.543	5.919	6.002*	6.951**
	(1.668)	(1.702)	(3.975)	(3.645)	(3.094)	(2.982)
GROWTH_EFFICIENCY	Y	Y	N	N	N	N
FIRM_CHARACTERISTICS	N	Y	N	Y	N	Y
Firm FE	Y	Y	Y	Y	Y	Y
RB × Year FE	Y	Y	Y	Y	Y	Y
<b>Panel B (Subsample Analysis)</b>						
MERGER_EXP	-0.261*	-0.281*	0.412	0.317	0.342*	0.265
	(0.158)	(0.161)	(0.272)	(0.265)	(0.207)	(0.199)
GROWTH_EFFICIENCY	Y	Y	N	N	N	N
FIRM_CHARACTERISTICS	N	Y	N	Y	N	Y
Firm FE	Y	Y	Y	Y	Y	Y
RB × Year FE	Y	Y	Y	Y	Y	Y
Industry × Year FE	Y	Y	Y	Y	Y	Y
<b>Panel C</b>						
MERGER_EXP	-0.294*	-0.314**	0.459*	0.423*	0.389**	0.424**
	(0.150)	(0.152)	(0.255)	(0.256)	(0.196)	(0.190)
LOW_Q_EXP	Y	Y	Y	Y	Y	Y
HIGH_LEV_EXP	Y	Y	Y	Y	Y	Y
LOW_Q	Y	Y	Y	Y	Y	Y
HIGH_LEV	Y	Y	Y	Y	Y	Y
GROWTH_EFFICIENCY	Y	Y	N	N	N	N
FIRM_CHARACTERISTICS	N	Y	N	Y	N	Y
Firm FE	Y	Y	Y	Y	Y	Y
RB × Year FE	Y	Y	Y	Y	Y	Y
Industry × Year FE	Y	Y	Y	Y	Y	Y
<b>Panel D (Inverse Propensity Score Weighting)</b>						
MERGER_EXP	-0.388*	-0.426**	0.889*	0.604	0.706**	0.561**
	(0.213)	(0.216)	(0.466)	(0.436)	(0.280)	(0.258)
GROWTH_EFFICIENCY	Y	Y	N	N	N	N
FIRM_CHARACTERISTICS	N	Y	N	Y	N	Y
Firm FE	Y	Y	Y	Y	Y	Y
RB × Year FE	Y	Y	Y	Y	Y	Y
Industry × Year FE	Y	Y	Y	Y	Y	Y

**Table A5: Bank Concentration and Corporate Outcomes: Financial Distress (Subsample Analysis)**

See Table 1 for the definition of variables. The subsample includes only firms that were affiliated at least once with the banks involved in bank mergers between 1995 and 2004. The dependent variables are CAPEX, MARKUP, and EBITDA. The independent variables of interest are the interaction BANK\_INDUSTRY\_HHI  $\times$  DISTRESS in Panel A and DISTRESS\_MERGER\_EXP in Panel B. DISTRESS\_MERGER\_EXP is the cumulative frequency of being affected by a connection-creating bank merger conditional on being financially distressed in the previous year. DISTRESS is a dummy variable equal to one if, in the previous year, the debt-to-EBITDA ratio of a firm was in the top tercile where debt is measured as the total of long- and short-term debt obligations. GROWTH\_EFFICIENCY includes TOBINS\_Q, SALES\_GROWTH, ROA, and CASHFLOW. FIRM\_CHARACTERISTICS includes SIZE, CASH, LEVERAGE, CASHFLOW\_STD, and DIVERSIFICATION. GROWTH\_EFFICIENCY and FIRM\_CHARACTERISTICS are one-year lagged values. All potentially unbounded variables are winsorized at 0.5% and 99.5%. Robust standard errors clustered at the sector level (Panel A) and firm level (Panel B) are reported in parentheses. The number of observations and R-squared are given in the last two rows. Statistical significance (two-sided) at the 10%, 5%, and 1% level is denoted by \*, \*\*, and \*\*\*, respectively.

	1	2	3	4	5	6
	CAPEX	CAPEX	MARKUP	MARKUP	EBITDA	EBITDA
<b>Panel A</b>						
BANK_INDUSTRY_HHI	-2.291 (1.522)	-2.856* (1.558)	3.365 (3.506)	2.588 (3.288)	2.351 (2.736)	2.420 (2.611)
BANK_INDUSTRY_HHI $\times$ DISTRESS	-2.555* (1.305)	-2.817** (1.242)	5.519** (2.521)	6.057** (2.419)	6.642*** (2.279)	9.082*** (2.287)
DISTRESS	0.030 (0.243)	0.363 (0.255)	-2.428*** (0.434)	-1.770*** (0.403)	-2.788*** (0.383)	-2.560*** (0.366)
GROWTH_EFFICIENCY	Y	Y	N	N	N	N
FIRM_CHARACTERISTICS	N	Y	N	Y	N	Y
Firm FE	Y	Y	Y	Y	Y	Y
RB $\times$ Year FE	Y	Y	Y	Y	Y	Y
N	29,223	29,184	34,990	30,092	33,089	28,572
R-squared	0.311	0.318	0.903	0.911	0.749	0.767
<b>Panel B</b>						
MERGER_EXP	-0.033 (0.167)	-0.054 (0.170)	0.186 (0.262)	0.122 (0.255)	0.209 (0.220)	0.066 (0.214)
DISTRESS_MERGER_EXP	-0.571*** (0.208)	-0.584*** (0.212)	0.374 (0.431)	0.388 (0.409)	0.350 (0.273)	0.674** (0.263)
DISTRESS	-0.329*** (0.104)	-0.014 (0.104)	-1.211*** (0.128)	-0.647*** (0.147)	-1.392*** (0.115)	-0.845*** (0.135)
GROWTH_EFFICIENCY	Y	Y	N	N	N	N
FIRM_CHARACTERISTICS	N	Y	N	Y	N	Y
Firm FE	Y	Y	Y	Y	Y	Y
RB $\times$ Year FE	Y	Y	Y	Y	Y	Y
Industry $\times$ Year FE	Y	Y	Y	Y	Y	Y
N	29,101	29,063	34,972	29,973	33,054	28,438
R-squared	0.398	0.404	0.924	0.931	0.794	0.810