

Online Appendix

to

Do universal banks finance riskier but more productive firms?

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Table O1

Sales-growth volatility of universal bank-financed firms: placebo, firm-loan-years sample

All regressions are run at the firm-year level it , limited to years in which firm i received at least one loan from one or multiple banks j , where the loans sample consists of all completed syndicated loans of publicly listed firms. For firm-loan year it , $\Delta_t \ln(\sigma(\widehat{sales}_i)^{6y})$ is the difference between the six-year standard deviation of firm i 's sales growth from t to $t + 5$ and the same measure from $t - 6$ to $t - 1$. *Universal bank loan* $_{jt}$ is an indicator variable for whether at the time of any loan transaction in year t any of the lead arrangers j was a universal bank. *Investment bank loan* $_j$ is an indicator variable for whether any of the lead arrangers j was an investment bank. *After(1993)* $_t$ is an indicator for whether the firm's loan year in question was 1994 or later. Control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the ratio of the average deal size across all loans in a given year over firm i 's assets, and the average value of the refinancing indicator. Bank fixed effects are included for all lead arrangers, i.e., all commercial, universal, and investment banks, of all loans of firm i in a given year. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry fixed effects are based on two-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the bank level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\Delta_t \ln(\sigma(\widehat{sales}_i)^{6y})$				
	(1)	(2)	(3)	(4)	(5)
Universal bank loan \times After(1993)	0.047 (0.060)	0.034 (0.059)	0.116 (0.080)	-0.028 (0.104)	-0.042 (0.112)
Universal bank loan	-0.006 (0.054)	-0.010 (0.058)	-0.034 (0.079)	0.056 (0.127)	0.064 (0.128)
Investment bank loan \times After(1993)					-0.084 (0.139)
Controls	N	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y	Y
Year FE	Y	Y	N	N	N
State-year FE	N	N	Y	Y	Y
Industry FE	N	Y	Y	N	N
Firm FE	N	N	N	Y	Y
N	3,362	3,362	3,362	3,362	3,362

Table O2

Sales-growth volatility of universal bank-financed firms: robustness, firm-loan-years sample

All regressions are run at the firm-year level it , limited to years in which firm i received at least one loan from one or multiple banks j , where the loans sample generally consists of all completed syndicated loans of publicly listed firms. Furthermore, firm-loan years in which a given firm received loans from both universal and investment banks are dropped from the sample. For firm-loan year it , $\Delta_t \ln(\widehat{\sigma(sales_i)^{6y}})$ is the difference between the logged six-year standard deviation of firm i 's sales growth from t to $t+5$ and the same measure from $t-6$ to $t-1$. *Universal bank loan_{jt}* is an indicator variable for whether at the time of any loan transaction in year t any of the lead arrangers j was a universal bank. *Investment bank loan_j* is an indicator variable for whether any of the lead arrangers j was an investment bank. *After(1996)_t* is an indicator for whether the firm's loan year in question was 1997 or later. Control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the ratio of the average deal size across all loans in a given year over firm i 's assets, and the average value of the refinancing indicator. Bank fixed effects are included for all lead arrangers, i.e., all commercial, universal, and investment banks, of all loans of firm i in a given year. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry fixed effects are based on two-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the bank level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\Delta_t \ln(\widehat{\sigma(sales_i)^{6y}})$				
	(1)	(2)	(3)	(4)	(5)
Universal bank loan \times After(1996)	0.126*** (0.048)	0.109** (0.051)	0.152* (0.081)	0.239*** (0.086)	0.233** (0.106)
Universal bank loan	-0.050 (0.052)	-0.058 (0.060)	-0.038 (0.076)	-0.058 (0.105)	-0.056 (0.104)
Investment bank loan \times After(1996)					-0.027 (0.177)
Controls	N	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y	Y
Year FE	Y	Y	N	N	N
State-year FE	N	N	Y	Y	Y
Industry FE	N	Y	Y	N	N
Firm FE	N	N	N	Y	Y
<i>N</i>	3,306	3,306	3,306	3,306	3,306

Table O3

Stock return volatility of universal bank-financed firms: robustness, firm-loan-years sample

All regressions are run at the firm-year level it , limited to years in which firm i received at least one loan from one or multiple banks j , where the loans sample generally consists of all completed syndicated loans of publicly listed firms. Furthermore, firm-loan years in which a given firm received loans from both universal and investment banks are dropped from the sample. For firm-loan year it , $\Delta_t \ln(\sigma(\text{return}_i)^{6y})$ is the difference between the logged six-year standard deviation of firm i 's stock returns from t to $t + 5$ and the same measure from $t - 6$ to $t - 1$. *Universal bank loan* $_{jt}$ is an indicator variable for whether at the time of any loan transaction in year t any of the lead arrangers j was a universal bank. *Investment bank loan* $_j$ is an indicator variable for whether any of the lead arrangers j was an investment bank. *After(1996)* $_t$ is an indicator for whether the firm's loan year in question was 1997 or later. Control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the ratio of the average deal size across all loans in a given year over firm i 's assets, and the average value of the refinancing indicator. Bank fixed effects are included for all lead arrangers, i.e., all commercial, universal, and investment banks, of all loans of firm i in a given year. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry fixed effects are based on two-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the bank level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\Delta_t \ln(\sigma(\text{return}_i)^{6y})$				
	(1)	(2)	(3)	(4)	(5)
Universal bank loan \times After(1996)	0.134*** (0.028)	0.117*** (0.027)	0.147*** (0.037)	0.125*** (0.038)	0.104** (0.043)
Universal bank loan	-0.057** (0.026)	-0.056** (0.027)	-0.056* (0.034)	-0.033 (0.042)	-0.026 (0.042)
Investment bank loan \times After(1996)					-0.096 (0.066)
Controls	N	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y	Y
Year FE	Y	Y	N	N	N
State-year FE	N	N	Y	Y	Y
Industry FE	N	Y	Y	N	N
Firm FE	N	N	N	Y	Y
N	3,493	3,493	3,493	3,493	3,493

Table O4

Idiosyncratic volatility of universal bank-financed firms: robustness, firm-loan-years sample

All regressions are run at the firm-year level it , limited to years in which firm i received at least one loan from one or multiple banks j , where the loans sample generally consists of all completed syndicated loans of publicly listed firms. Furthermore, firm-loan years in which a given firm received loans from both universal and investment banks are dropped from the sample. For firm-loan year it , $\Delta_t \ln(\sigma_{idiosyncratic,i}^{6y})$ is the difference between the logged six-year idiosyncratic volatility of firm i 's stock returns from t to $t + 5$ and the same measure from $t - 6$ to $t - 1$, estimated from the [Fama and French \(1993\)](#) three-factor model and expressed in annualized terms. *Universal bank loan* $_j$ is an indicator variable for whether at the time of any loan transaction in year t any of the lead arrangers j was a universal bank. *Investment bank loan* $_j$ is an indicator variable for whether any of the lead arrangers j was an investment bank. *After(1996)* $_t$ is an indicator for whether the firm's loan year in question was 1997 or later. Control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the ratio of the average deal size across all loans in a given year over firm i 's assets, and the average value of the refinancing indicator. Bank fixed effects are included for all lead arrangers, i.e., all commercial, universal, and investment banks, of all loans of firm i in a given year. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry fixed effects are based on two-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the bank level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\Delta_t \ln(\sigma_{idiosyncratic,i}^{6y})$				
	(1)	(2)	(3)	(4)	(5)
Universal bank loan \times After(1996)	0.084***	0.067**	0.080**	0.107***	0.087**
	(0.029)	(0.028)	(0.035)	(0.036)	(0.041)
Universal bank loan	-0.042	-0.043	-0.036	-0.059	-0.053
	(0.036)	(0.035)	(0.038)	(0.043)	(0.043)
Investment bank loan \times After(1996)					-0.090
					(0.058)
Controls	N	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y	Y
Year FE	Y	Y	N	N	N
State-year FE	N	N	Y	Y	Y
Industry FE	N	Y	Y	N	N
Firm FE	N	N	N	Y	Y
<i>N</i>	3,493	3,493	3,493	3,493	3,493

Table O5

Volatility of universal bank-financed firms: no investment banks, firm-loan-years sample

All regressions are run at the firm-year level it , limited to years in which firm i received at least one loan from one or multiple banks j , where the loans sample generally consists of all completed syndicated loans of publicly listed firms. Furthermore, all loans associated with firms that ever received a loan from any investment bank are dropped from the sample. All dependent variables are defined at the firm-loan year it . The dependent variable in the first two columns is $\Delta_t \ln(\widehat{\sigma(sales_i)^{6y}})$, the difference between the logged six-year standard deviation of firm i 's sales growth from t to $t+5$ and the same measure from $t-6$ to $t-1$. The dependent variable in the third and fourth column is $\Delta_t \ln(\sigma(return_i)^{6y})$, the difference between the logged six-year standard deviation of firm i 's stock returns from t to $t+5$ and the same measure from $t-6$ to $t-1$. The dependent variable in the last two columns is $\Delta_t \ln(\sigma_{idiosyncratic,i}^{6y})$, the difference between the logged six-year idiosyncratic volatility of firm i 's stock returns from t to $t+5$ and the same measure from $t-6$ to $t-1$, estimated from the [Fama and French \(1993\)](#) three-factor model and expressed in annualized terms. $Universal\ bank\ loan_{jt}$ is an indicator variable for whether at the time of any loan transaction in year t any of the lead arrangers j was a universal bank. $After(1996)_t$ is an indicator for whether the firm's loan year in question was 1997 or later. Control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the ratio of the average deal size across all loans in a given year over firm i 's assets, and the average value of the refinancing indicator. Bank fixed effects are included for all lead arrangers – i.e., all commercial and universal banks – of all loans of firm i in a given year. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry fixed effects are based on two-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the bank level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\Delta_t \ln(\widehat{\sigma(sales_i)^{6y}})$		$\Delta_t \ln(\sigma(return_i)^{6y})$		$\Delta_t \ln(\sigma_{idiosyncratic,i}^{6y})$	
	(1)	(2)	(3)	(4)	(5)	(6)
Universal bank loan \times After(1996)	0.106*	0.162**	0.105***	0.163***	0.058*	0.100**
	(0.057)	(0.077)	(0.032)	(0.052)	(0.032)	(0.047)
Universal bank loan	-0.047	-0.037	-0.066***	-0.082***	-0.055**	-0.066**
	(0.060)	(0.081)	(0.021)	(0.027)	(0.028)	(0.030)
Controls	Y	Y	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y	Y	Y
Year FE	Y	N	Y	N	Y	N
State-year FE	N	Y	N	Y	N	Y
Industry FE	Y	Y	Y	Y	Y	Y
N	2,732	2,732	2,885	2,885	2,885	2,885

Table O6

Universal banking and likelihood of cross-selling, loans sample

The sample consists of all completed syndicated loans (package level) of publicly listed firms, conditional on the borrower firm i of the respective loan granted in year t also receiving an underwriting product from any universal or investment bank (in the first three columns) or from any universal bank only (in the last three columns) anytime from the beginning of year $t - 2$ to the end of year $t + 2$. The dependent variable is an indicator for whether a given loan in year t was associated with a cross-sold underwriting product by the same bank from $t - 2$ to $t + 2$. UB_{jt} is an indicator variable for whether at date t of the respective loan any of the lead arrangers j was a universal bank. $UB\ Section\ 20_{jt}$ is an indicator variable for whether at date t of the respective loan any of the lead arrangers j was a universal bank established through a Section 20 subsidiary, rather than through mergers and acquisitions. $After(Aug. 1, 1996)_t$ is an indicator for whether the loan in question was issued on or after August 1, 1996. Bank fixed effects are included for all lead arrangers, i.e., all commercial, universal, and investment banks. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry fixed effects are based on two-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the bank level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	Cross-sold loan conditional on loan & underwriting $\in \{0, 1\}$					
	(1)	(2)	(3)	(4)	(5)	(6)
UB \times After(Aug. 1, 1996)	0.076 ^(*) (0.051)	0.079 [*] (0.045)	0.088 ^{***} (0.030)			
UB Section 20 \times A.(Aug. 1, 1996)				0.095 [*] (0.049)	0.092 [*] (0.050)	0.081 ^{**} (0.033)
After(Aug. 1, 1996)	-0.040 (0.049)	-0.042 (0.047)	-0.048 (0.037)	-0.057 (0.054)	-0.052 (0.058)	-0.037 (0.046)
Log of sales at close	0.031 ^{***} (0.005)	0.030 ^{***} (0.005)	0.003 (0.007)	0.032 ^{***} (0.005)	0.031 ^{***} (0.006)	0.004 (0.008)
Log of no. employees	0.020 ^{***} (0.006)	0.021 ^{***} (0.006)	0.045 ^{***} (0.013)	0.016 ^{**} (0.006)	0.017 ^{**} (0.007)	0.032 ^{***} (0.010)
Log of deal size/assets	0.052 ^{***} (0.007)	0.051 ^{***} (0.006)	0.038 ^{***} (0.007)	0.049 ^{***} (0.008)	0.048 ^{***} (0.008)	0.039 ^{***} (0.007)
Refinancing $\in \{0, 1\}$	0.016 (0.011)	0.014 (0.010)	0.012 (0.009)	0.010 (0.010)	0.009 (0.010)	0.006 (0.009)
Bank FE	Y	Y	Y	Y	Y	Y
Year FE	Y	N	N	Y	N	N
State-year FE	N	Y	Y	N	Y	Y
Industry FE	Y	Y	N	Y	Y	N
Firm FE	N	N	Y	N	N	Y
Sample	Universal and investment banks			Universal banks only		
N	12,061	12,061	12,061	10,773	10,773	10,773

Table O7

Impact of universal-bank financing on loan rates, loans sample

The sample consists of all completed syndicated loans (package level) of publicly listed firms, subject to availability of the dependent variable. The dependent variable is the natural logarithm of the all-in-drawn spread (in bps), which is the sum of the spread over LIBOR and any annual fees paid to the lender syndicate. *Universal bank loan_{jt}* is an indicator variable for whether at date *t* of the respective loan any of the lead arrangers *j* was a universal bank. *After*(Aug. 1, 1996)_{*t*} is an indicator for whether the loan in question was issued on or after August 1, 1996. Bank fixed effects are included for all lead arrangers, i.e., all commercial, universal, and investment banks. State-year fixed effects are based on the location of firm *i*'s headquarters in year *t*. Industry fixed effects are based on two-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the bank level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	ln(All-in-drawn spread)		
	(1)	(2)	(3)
Universal bank loan × <i>After</i> (Aug. 1, 1996)	0.052 (0.042)	0.041 (0.041)	-0.006 (0.035)
Universal bank loan	-0.039 (0.066)	-0.024 (0.064)	-0.002 (0.039)
<i>After</i> (Aug. 1, 1996)	-0.151*** (0.035)	-0.139*** (0.034)	-0.123*** (0.041)
Log of sales at close	-0.196*** (0.012)	-0.189*** (0.011)	-0.101*** (0.010)
Log of no. employees	-0.079*** (0.009)	-0.083*** (0.009)	-0.096*** (0.012)
Log of deal size/assets	0.038*** (0.013)	0.036*** (0.013)	-0.015 (0.010)
Refinancing ∈ {0, 1}	0.053*** (0.012)	0.051*** (0.012)	-0.015 (0.010)
Bank FE	Y	Y	Y
Year FE	Y	N	N
State-year FE	N	Y	Y
Industry FE	Y	Y	N
Firm FE	N	N	Y
<i>N</i>	16,967	16,967	16,967

Table O8

Capital expenditure of universal bank-financed firms, Compustat sample, long-run within-firm effects

The sample consists of all available observations from Compustat, the unit of observation is the firm-year level it . $CapEx_{it}$ is firm i 's capital expenditure in year t . $Universal\ bank\ loan_{jt}$ is an indicator variable for whether, given any loans received by firm i from year $t - 4$ to t , at the time of any loan transaction any of the lead arrangers j was a universal bank. $Investment\ bank\ loan_{jt}$ is an indicator variable for whether, given any loans received by firm i from year $t - 4$ to t , any of the lead arrangers j was an investment bank. $After(1996)_t$ is an indicator for whether the year in question was 1997 or later. Control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the average ratio of deal size across all loans over firm i 's assets from $t - 4$ to t , and the proportion of refinancing loans from $t - 4$ to t . Bank fixed effects are included for all lead arrangers, i.e., all commercial, universal, and investment banks, of all loans of firm i from year $t - 4$ to t . State-year fixed effects are based on the location of firm i 's headquarters in year t . Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the firm-year level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\ln(CapEx_{it})$			
	(1)	(2)	(3)	(4)
Universal bank loan \times After(1996)	0.037** (0.018)	0.017 (0.015)	0.023(*) (0.015)	0.023(*) (0.015)
Universal bank loan	0.106*** (0.017)	0.039*** (0.013)	0.037*** (0.014)	0.037*** (0.014)
Investment bank loan \times After(1996)				0.013 (0.019)
Controls	N	Y	Y	Y
Firm FE	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y
Year FE	Y	Y	N	N
State-year FE	N	N	Y	Y
N	91,686	91,686	91,686	91,686

Table O9

Market capitalization of universal bank-financed firms, Compustat sample, long-run within-firm effects

The sample consists of all available observations from Compustat, the unit of observation is the firm-year level it . $MarketCap_{it}$ is firm i 's market value of equity in year t . $Universal\ bank\ loan_{jt}$ is an indicator variable for whether, given any loans received by firm i from year $t - 4$ to t , at the time of any loan transaction any of the lead arrangers j was a universal bank. $Investment\ bank\ loan_j$ is an indicator variable for whether, given any loans received by firm i from year $t - 4$ to t , any of the lead arrangers j was an investment bank. $After(1996)_t$ is an indicator for whether the year in question was 1997 or later. Control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the average ratio of deal size across all loans over firm i 's assets from $t - 4$ to t , and the proportion of refinancing loans from $t - 4$ to t . Bank fixed effects are included for all lead arrangers, i.e., all commercial, universal, and investment banks, of all loans of firm i from year $t - 4$ to t . State-year fixed effects are based on the location of firm i 's headquarters in year t . Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the firm-year level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\ln(MarketCap_{it})$			
	(1)	(2)	(3)	(4)
Universal bank loan \times After(1996)	0.098*** (0.017)	0.092*** (0.016)	0.113*** (0.016)	0.112*** (0.016)
Universal bank loan	0.060*** (0.016)	0.016 (0.014)	0.007 (0.014)	0.007 (0.014)
Investment bank loan \times After(1996)				-0.017 (0.020)
Controls	N	Y	Y	Y
Firm FE	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y
Year FE	Y	Y	N	N
State-year FE	N	N	Y	Y
N	92,665	92,665	92,665	92,665

Table O10

Impact of bank information acquisition on capital expenditure, Compustat sample, long-run within-firm effects

The sample consists of all available observations from Compustat, the unit of observation is the firm-year level it . $CapEx_{it}$ is firm i 's capital expenditure in year t . *Loan from CB that merged with IB* $_{it}$ is an indicator variable for whether anytime from $t - 10$ to $t - 1$, firm i received a loan from a commercial or universal bank that merged with an investment bank thereafter. *Underwriting from IB that merged with CB* $_{it}$ is an indicator variable for whether anytime from $t - 10$ to $t - 1$, firm i received an underwriting product from an investment bank that merged with a commercial or universal bank thereafter. The interaction of the latter two indicator variables is to be distinguished from the explanatory variable of interest in the first row, which indicates whether anytime from $t - 10$ to $t - 1$, firm i received a loan from a commercial or universal bank, an underwriting product from an investment bank, and both banks merged with each other until year t . *Any loan* $_{it}$ and *Any underwriting* $_{it}$ are indicator variables for whether firm i received any loan or any underwriting product, respectively, from any commercial, universal, or investment bank anytime from $t - 10$ to $t - 1$. Unless mentioned otherwise, control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the average ratio of deal size across all loans over firm i 's assets from $t - 10$ to $t - 1$, and the proportion of refinancing loans from $t - 10$ to $t - 1$. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry-year fixed effects are based on one-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the firm-year level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\ln(CapEx_{it})$			
	(1)	(2)	(3)	(4)
Loan from CB, underwriting from IB, both merged with each other	0.114*** (0.019)	0.082*** (0.014)	0.057*** (0.014)	0.043*** (0.014)
Loan from CB that merged with IB × Underwriting from IB that merged with CB	-0.091*** (0.022)	-0.040** (0.017)	-0.047*** (0.017)	-0.047*** (0.017)
Loan from CB that merged with IB	0.144*** (0.016)	0.063*** (0.013)	0.054*** (0.013)	0.055*** (0.013)
Underwriting from IB that merged with CB	0.186*** (0.019)	0.032** (0.015)	0.036** (0.015)	0.031** (0.015)
Any loan × Any underwriting	-0.003 (0.019)	0.030* (0.016)	0.029* (0.016)	0.027* (0.016)
Any loan	-0.041** (0.019)	-0.119*** (0.016)	-0.111*** (0.016)	-0.098*** (0.016)
Any underwriting	0.207*** (0.013)	0.005 (0.011)	0.003 (0.011)	0.005 (0.011)
Controls	N	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	N	N
State-year FE	N	N	Y	Y
Industry-year FE	N	N	N	Y
N	91,686	91,686	91,686	91,686

Table O11

Impact of bank information acquisition on market capitalization, Compustat sample, long-run within-firm effects

The sample consists of all available observations from Compustat, the unit of observation is the firm-year level it . $MarketCap_{it}$ is firm i 's market value of equity in year t . $Loan\ from\ CB\ that\ merged\ with\ IB_{it}$ is an indicator variable for whether anytime from $t - 10$ to $t - 1$, firm i received a loan from a commercial or universal bank that merged with an investment bank thereafter. $Underwriting\ from\ IB\ that\ merged\ with\ CB_{it}$ is an indicator variable for whether anytime from $t - 10$ to $t - 1$, firm i received an underwriting product from an investment bank that merged with a commercial or universal bank thereafter. The interaction of the latter two indicator variables is to be distinguished from the explanatory variable of interest in the first row, which indicates whether anytime from $t - 10$ to $t - 1$, firm i received a loan from a commercial or universal bank, an underwriting product from an investment bank, and both banks merged with each other until year t . $Any\ loan_{it}$ and $Any\ underwriting_{it}$ are indicator variables for whether firm i received any loan or any underwriting product, respectively, from any commercial, universal, or investment bank anytime from $t - 10$ to $t - 1$. Unless mentioned otherwise, control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the average ratio of deal size across all loans over firm i 's assets from $t - 10$ to $t - 1$, and the proportion of refinancing loans from $t - 10$ to $t - 1$. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry-year fixed effects are based on one-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the firm-year level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\ln(MarketCap_{it})$			
	(1)	(2)	(3)	(4)
Loan from CB, underwriting from IB, both merged with each other	0.067*** (0.019)	0.042*** (0.016)	0.016 (0.016)	0.011 (0.016)
Loan from CB that merged with IB × Underwriting from IB that merged with CB	-0.037* (0.021)	-0.007 (0.018)	-0.002 (0.018)	-0.004 (0.018)
Loan from CB that merged with IB	0.078*** (0.015)	0.021 (0.013)	0.023* (0.013)	0.029** (0.013)
Underwriting from IB that merged with CB	0.116*** (0.017)	0.012 (0.015)	0.014 (0.015)	0.015 (0.015)
Any loan × Any underwriting	0.118*** (0.017)	0.142*** (0.015)	0.135*** (0.015)	0.136*** (0.015)
Any loan	-0.184*** (0.017)	-0.238*** (0.016)	-0.233*** (0.016)	-0.224*** (0.016)
Any underwriting	-0.040*** (0.012)	-0.181*** (0.011)	-0.176*** (0.011)	-0.170*** (0.010)
Controls	N	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	N	N
State-year FE	N	N	Y	Y
Industry-year FE	N	N	N	Y
N	92,665	92,665	92,665	92,665

Table O12

Impact of bank information acquisition on total factor productivity: robustness, Compustat sample, long-run within-firm effects

The sample consists of all available observations from Compustat, the unit of observation is the firm-year level it . $TFP_{i,t+1}$ is firm i 's total factor productivity in year $t + 1$ from Imrohorglu and Tuzel (2014). *Loan from CB that merged with IB* $_{it}$ is an indicator variable for whether anytime from $t - 8$ to $t - 1$, firm i received a loan from a commercial or universal bank that merged with an investment bank thereafter. *Underwriting from IB that merged with CB* $_{it}$ is an indicator variable for whether anytime from $t - 8$ to $t - 1$, firm i received an underwriting product from an investment bank that merged with a commercial or universal bank thereafter. The interaction of the latter two indicator variables is to be distinguished from the explanatory variable of interest in the first row, which indicates whether anytime from $t - 8$ to $t - 1$, firm i received a loan from a commercial or universal bank, an underwriting product from an investment bank, and both banks merged with each other until year t . *Any loan* $_{it}$ and *Any underwriting* $_{it}$ are indicator variables for whether firm i received any loan or any underwriting product, respectively, from any commercial, universal, or investment bank anytime from $t - 8$ to $t - 1$. Unless mentioned otherwise, control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the average ratio of deal size across all loans over firm i 's assets from $t - 8$ to $t - 1$, and the proportion of refinancing loans from $t - 8$ to $t - 1$. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry-year fixed effects are based on one-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the firm-year level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\ln(TFP_{i,t+1})$			
	(1)	(2)	(3)	(4)
Loan from CB, underwriting from IB, both merged with each other	0.026*** (0.008)	0.022*** (0.008)	0.016* (0.009)	0.017* (0.009)
Loan from CB that merged with IB × Underwriting from IB that merged with CB	-0.005 (0.010)	-0.002 (0.010)	-0.001 (0.010)	-0.001 (0.010)
Loan from CB that merged with IB	-0.012 (0.007)	-0.013* (0.007)	-0.019*** (0.007)	-0.020*** (0.007)
Underwriting from IB that merged with CB	0.007 (0.010)	-0.002 (0.009)	-0.007 (0.009)	-0.009 (0.010)
Any loan × Any underwriting	0.025*** (0.009)	0.024*** (0.009)	0.022** (0.009)	0.022** (0.009)
Any loan	-0.024*** (0.008)	-0.037*** (0.009)	-0.035*** (0.009)	-0.032*** (0.009)
Any underwriting	-0.036*** (0.006)	-0.036*** (0.006)	-0.037*** (0.006)	-0.035*** (0.006)
Controls	N	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	N	N
State-year FE	N	N	Y	Y
Industry-year FE	N	N	N	Y
N	52,435	52,435	52,435	52,435

Table O13

Impact of bank information acquisition on capital expenditure: robustness, Compustat sample, long-run within-firm effects

The sample consists of all available observations from Compustat, the unit of observation is the firm-year level it . $CapEx_{it}$ is firm i 's capital expenditure in year t . *Loan from CB that merged with IB* $_{it}$ is an indicator variable for whether anytime from $t - 8$ to $t - 1$, firm i received a loan from a commercial or universal bank that merged with an investment bank thereafter. *Underwriting from IB that merged with CB* $_{it}$ is an indicator variable for whether anytime from $t - 8$ to $t - 1$, firm i received an underwriting product from an investment bank that merged with a commercial or universal bank thereafter. The interaction of the latter two indicator variables is to be distinguished from the explanatory variable of interest in the first row, which indicates whether anytime from $t - 8$ to $t - 1$, firm i received a loan from a commercial or universal bank, an underwriting product from an investment bank, and both banks merged with each other until year t . *Any loan* $_{it}$ and *Any underwriting* $_{it}$ are indicator variables for whether firm i received any loan or any underwriting product, respectively, from any commercial, universal, or investment bank anytime from $t - 8$ to $t - 1$. Unless mentioned otherwise, control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the average ratio of deal size across all loans over firm i 's assets from $t - 8$ to $t - 1$, and the proportion of refinancing loans from $t - 8$ to $t - 1$. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry-year fixed effects are based on one-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the firm-year level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\ln(CapEx_{it})$			
	(1)	(2)	(3)	(4)
Loan from CB, underwriting from IB, both merged with each other	0.108*** (0.020)	0.073*** (0.015)	0.052*** (0.015)	0.039*** (0.015)
Loan from CB that merged with IB × Underwriting from IB that merged with CB	-0.100*** (0.022)	-0.055*** (0.017)	-0.056*** (0.017)	-0.053*** (0.017)
Loan from CB that merged with IB	0.146*** (0.015)	0.064*** (0.012)	0.056*** (0.013)	0.056*** (0.013)
Underwriting from IB that merged with CB	0.195*** (0.019)	0.043*** (0.015)	0.045*** (0.015)	0.038*** (0.015)
Any loan × Any underwriting	-0.020 (0.018)	0.017 (0.015)	0.016 (0.015)	0.014 (0.015)
Any loan	-0.030* (0.018)	-0.106*** (0.015)	-0.099*** (0.015)	-0.086*** (0.015)
Any underwriting	0.196*** (0.013)	0.010 (0.010)	0.008 (0.010)	0.007 (0.010)
Controls	N	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	N	N
State-year FE	N	N	Y	Y
Industry-year FE	N	N	N	Y
N	91,686	91,686	91,686	91,686

Table O14

Impact of bank information acquisition on market capitalization: robustness, Compustat sample, long-run within-firm effects

The sample consists of all available observations from Compustat, the unit of observation is the firm-year level it . $MarketCap_{it}$ is firm i 's market value of equity in year t . $Loan\ from\ CB\ that\ merged\ with\ IB_{it}$ is an indicator variable for whether anytime from $t - 8$ to $t - 1$, firm i received a loan from a commercial or universal bank that merged with an investment bank thereafter. $Underwriting\ from\ IB\ that\ merged\ with\ CB_{it}$ is an indicator variable for whether anytime from $t - 8$ to $t - 1$, firm i received an underwriting product from an investment bank that merged with a commercial or universal bank thereafter. The interaction of the latter two indicator variables is to be distinguished from the explanatory variable of interest in the first row, which indicates whether anytime from $t - 8$ to $t - 1$, firm i received a loan from a commercial or universal bank, an underwriting product from an investment bank, and both banks merged with each other until year t . $Any\ loan_{it}$ and $Any\ underwriting_{it}$ are indicator variables for whether firm i received any loan or any underwriting product, respectively, from any commercial, universal, or investment bank anytime from $t - 8$ to $t - 1$. Unless mentioned otherwise, control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the average ratio of deal size across all loans over firm i 's assets from $t - 8$ to $t - 1$, and the proportion of refinancing loans from $t - 8$ to $t - 1$. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry-year fixed effects are based on one-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the firm-year level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\ln(MarketCap_{it})$			
	(1)	(2)	(3)	(4)
Loan from CB, underwriting from IB, both merged with each other	0.061*** (0.020)	0.034** (0.017)	0.008 (0.017)	0.001 (0.017)
Loan from CB that merged with IB × Underwriting from IB that merged with CB	-0.069*** (0.021)	-0.042** (0.019)	-0.028 (0.019)	-0.026 (0.018)
Loan from CB that merged with IB	0.091*** (0.014)	0.034*** (0.013)	0.035*** (0.013)	0.039*** (0.013)
Underwriting from IB that merged with CB	0.156*** (0.017)	0.053*** (0.015)	0.050*** (0.015)	0.049*** (0.015)
Any loan × Any underwriting	0.099*** (0.017)	0.124*** (0.015)	0.116*** (0.015)	0.118*** (0.015)
Any loan	-0.177*** (0.016)	-0.232*** (0.015)	-0.225*** (0.015)	-0.215*** (0.015)
Any underwriting	-0.032*** (0.011)	-0.162*** (0.010)	-0.158*** (0.010)	-0.154*** (0.010)
Controls	N	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	N	N
State-year FE	N	N	Y	Y
Industry-year FE	N	N	N	Y
N	92,665	92,665	92,665	92,665

Table O15

Impact of bank information acquisition on option-implied volatility, Compustat sample, long-run within-firm effects

The sample consists of all available observations from Compustat, the unit of observation is the firm-year level it . $\sigma_{it}^{implied}$ is firm i 's 3-month implied volatility in year t , calculated using the volatility surface from option prices (source: Option Metrics), which is available starting in 1996. *Loan from CB that merged with IB* $_{it}$ is an indicator variable for whether anytime from $t - 10$ to $t - 1$, firm i received a loan from a commercial or universal bank that merged with an investment bank thereafter. *Underwriting from IB that merged with CB* $_{it}$ is an indicator variable for whether anytime from $t - 10$ to $t - 1$, firm i received an underwriting product from an investment bank that merged with a commercial or universal bank thereafter. The interaction of the latter two indicator variables is to be distinguished from the explanatory variable of interest in the first row, which indicates whether anytime from $t - 10$ to $t - 1$, firm i received a loan from a commercial or universal bank, an underwriting product from an investment bank, and both banks merged with each other until year t . *Any loan* $_{it}$ and *Any underwriting* $_{it}$ are indicator variables for whether firm i received any loan or any underwriting product, respectively, from any commercial, universal, or investment bank anytime from $t - 10$ to $t - 1$. Unless mentioned otherwise, control variables are measured in year t and include the log of firm i 's sales, the log of its number of employees, the log of the average ratio of deal size across all loans over firm i 's assets from $t - 10$ to $t - 1$, and the proportion of refinancing loans from $t - 10$ to $t - 1$. State-year fixed effects are based on the location of firm i 's headquarters in year t . Industry-year fixed effects are based on one-digit SIC codes. Public service, energy, and financial services firms are dropped. Robust standard errors (clustered at the firm-year level) are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Variable	$\ln(\sigma_{it}^{implied})$			
	(1)	(2)	(3)	(4)
Loan from CB, underwriting from IB, both merged with each other	0.055*** (0.011)	0.051*** (0.011)	0.027** (0.011)	0.023** (0.011)
Loan from CB that merged with IB × Underwriting from IB that merged with CB	-0.045*** (0.014)	-0.042*** (0.014)	-0.034** (0.014)	-0.031** (0.014)
Loan from CB that merged with IB	-0.005 (0.013)	-0.011 (0.013)	-0.023* (0.014)	-0.024* (0.013)
Underwriting from IB that merged with CB	0.028** (0.012)	0.032*** (0.012)	0.018 (0.012)	0.015 (0.012)
Any loan × Any underwriting	0.072*** (0.020)	0.060*** (0.019)	0.052*** (0.020)	0.057*** (0.019)
Any loan	-0.046** (0.021)	-0.057*** (0.021)	-0.036* (0.022)	-0.037* (0.021)
Any underwriting	-0.033*** (0.011)	-0.023** (0.011)	-0.018* (0.011)	-0.016 (0.010)
Controls	N	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	N	N
State-year FE	N	N	Y	Y
Industry-year FE	N	N	N	Y
N	24,779	24,779	24,779	24,779

Table O16

Summary statistics for universal banks established through M&A and section 20 subsidiaries

This table reports means with standard deviations in parentheses, for universal banks established through M&A in the first three columns and for Section 20 subsidiaries in the last three columns. The data are based on banks' call reports. t indicates the year of the respective call report: $t = 0$ denotes the first call report after the bank becomes a universal bank, and $t = -1$ and $t = 1$ correspond to the call reports one year before and after the call report used for $t = 0$, respectively. Cash balance is the sum of non-interest-bearing balances and currency and coin, and interest-bearing balances in US offices.

	M&A			Section 20		
	$t = -1$	$t = 0$	$t = 1$	$t = -1$	$t = 0$	$t = 1$
Total assets in 2010 \$bn	285.111 (275.350)	580.702 (636.615)	584.812 (611.766)	66.081 (75.150)	74.359 (79.660)	81.684 (86.138)
Net income in 2010 \$bn	3.389 (4.075)	2.562 (3.714)	6.549 (7.101)	0.228 (0.463)	0.105 (0.978)	0.377 (0.514)
No. employees in thds	76.319 (68.777)	123.431 (125.802)	122.145 (126.678)	16.790 (17.451)	18.973 (19.794)	20.534 (21.082)
Total equity/assets in %	6.712 (1.137)	6.602 (0.846)	7.485 (1.131)	7.181 (1.839)	7.213 (1.860)	7.442 (2.236)
Cash balance/assets in %	4.944 (2.571)	5.177 (2.764)	4.776 (2.040)	5.484 (1.663)	5.768 (2.320)	5.338 (2.027)
Total loans/assets in %	68.451 (6.435)	58.021 (15.121)	55.726 (12.795)	64.663 (6.889)	64.274 (8.121)	63.759 (8.973)
N		4			30	