

Online Appendix

Bank Supervision and Organizational Capital: The Case of Minority Lending

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1 Additional Tables

Table OA1: Number of counties with loan origination to minorities

This table presents a county-level analysis for the number of counties covered by EDO banks in which they lend to minorities. The indicator *During EDO* refers to the actual time a bank is subject to an EDO; *Pre EDO (year)* and *Post EDO (year)* correspond to indicator variables for the years before an EDO and after EDO termination.

	Average number of distinct counties where EDO banks are active (per bank)	Average number of distinct counties where EDO banks lend to minorities (per bank)	Of which: minority population greater than 50% of county population
	(1)	(2)	(3)
Pre EDO (year -3)	22	6	3
Pre EDO (year -2)	22	7	3
Pre EDO (year -1)	22	7	3
During EDO (annualized, on average)	21	6	3
Post EDO (year 1)	25	8	4
Post EDO (year 2)	27	9	4
Post EDO (year 3)	29	9	4
Post EDO (year 4)	31	10	4
Post EDO (year 5)	31	11	4

Table OA2: Robustness: Mortgage origination to minorities by EDO banks (county population-weighted estimation)

This table presents a county-level analysis of EDO banks' market shares of residential mortgage origination to minorities. The dependent variable is EDO banks' county-level market shares of residential mortgage loans to minorities. In column (1), the bank-county-level regressions are weighted by the natural logarithm of the county population, whereas in column (2), the regressions are weighted by the county's share of the total U.S. population. The indicator *During EDO* refers to the actual time a bank is subject to an EDO, whereas *Post EDO* corresponds to indicator variables for the one to five years after EDO termination. All regressions include lagged bank-level control variables (size, profitability, liquidity, capital ratio, and NPA) and a county-level macro variable (employment growth). All variables are defined in ?? of the manuscript. The z -statistics are presented in parentheses; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed).

	Market shares	Market shares
	(1)	(2)
During EDO	0.015 (1.627)	-0.038 (-1.117)
Post EDO	0.595*** (68.998)	0.260*** (8.025)
Observations	688,314	688,314
Wald χ^2	121260***	2313***
Estimation method	RE Tobit	RE Tobit
Controls	Yes	Yes
Year, County, Bank RE	Yes	Yes
Years	1994-2018	1994-2018

Table OA3: Mortgage origination to minorities by EDO banks in crisis periods

This table presents a county-level analysis of EDO banks' market shares of residential mortgage origination to minorities. The dependent variable is EDO banks' county-level market shares of residential mortgage loans to minorities. The indicator *During EDO* refers to the actual time a bank is subject to an EDO, whereas *Post EDO* corresponds to indicator variables for the one to five years after EDO termination. *Crisis* is an indicator for the years 2007 and after. All regressions include lagged bank-level control variables (size, profitability, liquidity, capital ratio, and NPA) and a county-level macro variable (employment growth). All variables are defined in ?? of the manuscript. The z -statistics are presented in parentheses; $*p < 0.1$; $**p < 0.05$; $***p < 0.01$ (two-tailed).

	Market shares (Minorities)	Market shares (Black or African American)
	(1)	(2)
During EDO	-0.380*** (-6.739)	-0.240*** (-3.306)
Post EDO	0.396*** (5.769)	0.454*** (5.340)
During EDO $\times$ Crisis	0.630*** (8.705)	0.358*** (3.992)
Post EDO $\times$ Crisis	0.371*** (4.718)	0.239** (2.403)
Observations	688,336	594,045
Wald χ^2	7437***	6249***
Estimation method	RE Tobit	RE Tobit
Controls	Yes	Yes
Year, County, Bank RE	Yes	Yes
Years	1994-2018	1994-2018

Table OA4: Descriptive statistics of EDO text-based measures

This table presents the summary statistics for the EDO text-based variables. All variables are defined in ??.

	N	Mean	Std	P1	P25	Median	P75	P99
EDO-Level Variables								
Internal audit	949	0.153	0.360	0.000	0.000	0.000	0.000	1.000
Loan policy	949	0.450	0.498	0.000	0.000	0.000	1.000	1.000
Staff training	949	0.711	0.453	0.000	0.000	1.000	1.000	1.000
Internal audit (Score)	949	2.677	1.205	0.000	2.028	2.802	3.540	4.917
Loan policy (Score)	949	2.970	1.443	0.000	2.335	3.364	4.015	4.926
Staff training (Score)	949	1.868	1.423	0.000	0.000	1.970	2.965	4.655

Table OA5: Loan denials by EDO banks (interaction with subprime)

This table presents coefficient estimates from a linear probability model for the reasons EDO banks give when they deny a loan application. The dependent variables in columns (1)–(9) are indicators of a reason for denial, conditional on a loan application being denied. The indicator *During EDO* refers to the actual time a bank is subject to an EDO, *Post EDO* corresponds to an indicator variable taking the value of one for the five years after an EDO's termination, *Minority* is an indicator taking the value of one if an application is by a minority borrower, and *Subprime* is an indicator taking a value of one if the average transaction-matched FICO score at the level of the census tract, loan origination year, loan type, loan purpose, and occupancy status of the property is 619 or below. All regressions include lagged bank-level control variables (size, profitability, liquidity, capital ratio, and NPA) and a county-level macro variable (employment growth). All variables are defined in ?? . The *t*-statistics are presented in parentheses; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed).

	Denial: Debt to income	Denial: Employment history	Denial: Credit history	Denial: Collateral	Denial: Insufficient cash	Denial: Unverifiable information	Denial: Incomplete information	Denial: Mortgage insurance denied	Denial: Unspecified
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
During EDO $\times$ Minority	-0.010* (-1.828)	-0.002 (-0.918)	-0.002 (-0.193)	-0.010 (-1.469)	-0.001 (-0.308)	-0.001 (-0.397)	0.024 (1.522)	-0.001 (-0.694)	0.016 (1.035)
Post EDO $\times$ Minority	0.001 (0.117)	-0.001 (-0.880)	-0.031*** (-3.076)	0.020** (2.355)	-0.008*** (-3.583)	0.002 (0.774)	0.018** (2.582)	-0.000 (-0.104)	0.001 (0.111)
During EDO $\times$ Minority $\times$ Subprime	-0.013 (-0.527)	-0.001 (-0.119)	-0.059*** (-2.875)	0.025 (1.008)	0.020 (1.024)	-0.005 (-0.411)	0.000 (0.008)	0.002 (1.215)	0.018 (0.574)
Post EDO $\times$ Minority $\times$ Subprime	-0.010 (-0.443)	0.003 (0.350)	0.023 (0.970)	-0.054** (-2.359)	0.003 (0.390)	-0.018*** (-2.945)	-0.012 (-1.368)	-0.001 (-0.435)	0.056** (2.213)
Observations	571,315	571,315	571,315	571,315	571,315	571,315	571,315	571,315	571,315
Adjusted R^2	0.132	0.0568	0.321	0.150	0.0271	0.0332	0.342	0.0320	0.302
Estimation method	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank $\times$ county FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Years	1994-2018	1994-2018	1994-2018	1994-2018	1994-2018	1994-2018	1994-2018	1994-2018	1994-2018

2 Excerpts from an enforcement order requiring changes to loan policy, internal audit, and staff training

In the Matter of
HAMPTON BANK
HAMPTON, MINNESOTA
(Insured State Nonmember Bank)
ORDER TO CEASE AND DESIST
FDIC-97-43b

Hampton Bank, Hampton, Minnesota ("Bank"), having been advised of its right to a Notice of Charges and of Hearing detailing the unsafe or unsound banking practices and violations of law and/or regulations alleged to have been committed by the Bank and of its right to a hearing on such alleged charges under section 8(b) of the Federal Deposit Insurance Act ("Act"), 12 U.S.C. § 1818(b), and having waived those rights, entered into a STIPULATION AND CONSENT TO THE ISSUANCE OF AN ORDER TO CEASE AND DESIST ("CONSENT AGREEMENT") with counsel for the Federal Deposit Insurance Corporation ("FDIC"), dated ____, 1997, whereby solely for the purpose of this proceeding and without admitting or denying any unsafe or unsound banking practices or violations of law and/or regulations, the Bank consented to the issuance of an ORDER TO CEASE AND DESIST ("ORDER") by the FDIC.

The FDIC considered the matter and determined that it had reason to believe that the Bank had engaged in unsafe or unsound banking practices and had violated laws and/or regulations. The FDIC, therefore, accepted the CONSENT AGREEMENT and issued the following:

[.14] 14. (a) No more than 30 days from the effective date of this ORDER, the Bank shall develop a written internal audit procedure to improve internal controls, accounting practices and recording. The procedure shall require, at a minimum:

- (i) a determination that the records of the Bank are complete and adequate, and that transactions are promptly and properly recorded in the accounts;
- (ii) a check for compliance with applicable statutes and regulations;
- (iii) a review for compliance with policies prescribed by management and/or the board of directors, including verification that loans and securities have been properly approved;
- (iv) a review of electronic data processing procedures and controls, as well as reviewing source documents to ensure that sensitive customer master file change requests have supervisory approval;
- (v) an appraisal of the performance of personnel in accomplishing assigned internal control functions and responsibilities, including tracing transactions to final disposition to ensure there are adequate audit trails;
- (vi) an appraisal of the policies and practices for wire transfer activities including dual controls, segregation of duties, and internal audit coverage;
- (vii) the preparation of a proper and complete set of working papers covering each audit; and
- (viii) the establishment and maintenance of an operating manual describing the specific procedures and techniques to be used by the auditor or auditing staff in performing the audit function.

[.8] 8. No more than 30 days from the effective date of this ORDER, the Bank shall revise its written loan policies which revision shall include, among other things, provisions to address the deficiencies described on pages 8.4 through 8.7 of the FDIC's Report of Examination of the Bank as of January 13, 1997. The revised written loan policies and any subsequent modification thereto shall be submitted to the Regional Director and the Minnesota Commissioner of Commerce for review and comment. No more than 30 days after the receipt of any comment from the Regional Director, the board of directors shall approve the written loan policies and/or any subsequent modification thereto which approval shall be recorded in the minutes of the board of directors. Thereafter, the Bank and its institution-affiliated parties shall follow the written loan policies and/or subsequent modification thereto.

[.9] 9. (a) Within 60 days from the date of this ORDER, the Bank shall establish an internal loan review and grading system ("System") to periodically identify, categorize, and monitor the Bank's potential problem extensions of credit. At a minimum, the System shall provide for:

- (i) assessing the overall quality of the Bank's portfolio of extensions of credit;
- (ii) the identification and amount of each delinquent extension of credit;
- (iii) (A) the identification of each extension of credit warranting the special attention of Bank management, and (B) a statement of the amount and the reason(s) why each extension of credit so identified merits special attention;
- (iv) credit and collateral documentation exceptions;
- (v) the identification and status of each extension of credit in violation of law, rules and regulations;
- (vi) the identification of each extension of credit not in conformity with the Bank's written lending policy, and any exception to such policy; and
- (vii) the identification of each extension of credit to any institution-affiliated party.

WASHINGTON, D.C.

FDIC-10-258b

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3 Dictionary

This appendix presents the 30 most commonly used words and phrases in our dictionary for loan policy, internal audit, and staff training.

Loan Policy	Internal Audit	Staff Training
loan_policy	internal_audit	training
loan_review	compliance	training_program
lending_policy	internal_control	appropriate_personnel
bank_loan_policy	internal	train
underwriting_standard	auditing	go_training
loan_review_program	audit_function	bank_personnel
revise_loan_policy	bank_compliance	private_personal_banking_officer
underwriting	audits	without_limitation_teller
credit_policy	ensure_compliance	training_program
appraisal_review	compliance_applicable	senior_management
appraisal_policy	control	personnel
loan_approval_process	compliance_program	job_function
risk_rating	internal_control_system	employee_training
loan_officer	audit_program	staff
credit_analysis	internal_audit_function	ongoing_training
credit_grading_system	internal_audits	independent_contractor
commercial_real	internal_external	compliance_personnel_sufficient_experience
collection_policy	system_internal_control	customer_service_representative_lend_officer
watch_list	internal_control_review	education_training
loan_administration	procedure_process	periodic_training
loan_committee	monitoring_system	lending_staff
loan_underwriting	appropriate_segregation_duty	knowledgeable
bank_loan_officer	compliance_review	comprehensive_training_program
loan_review_procedure	policy_procedure	training_competent_staff
internal_loan_grading_system	segregation_duty	staff_member
troubled_debt_restructuring	bank_policy_procedure	independent_testing_compliance
documentation_standard	compliance_policy_procedure	compliance_officer
cash_flow_analysis	system_internal	duty_responsibility
borrower_ability_repay	internal_audit_program	management_staff
lending_function	adequate_internal_control	designate_bsa_compliance_officer