

Risk aversion and social preferences – The effects of CEO gender and conservatism on lending decisions

Online Supplemental Appendix

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Appendix A: Variable Descriptions in Loan Level Analysis

Table A1: Description of Variables Used in Loan Level Analysis

Variable	Description
Loan denial	Indicator variable: 1 if the loan is denied or a preapproval request is denied. 0 if the loan is either originated or approved and not accepted by the applicant.
Income	Natural logarithm of applicant income in thousands of dollars.
Loan amount	Natural logarithm of loan amount in thousands of dollars.
Debt to income (DTI) ratio	Ratio of the loan amount divided by the applicant's income.
Piggyback loan	Indicator variable: 1 if a loan applicant simultaneously applies for a loan to use as part of the down payment in order to avoid purchase of primary mortgage insurance. See Avery et al. (2007) for further details.
Preapproval sought	Indicator variable: 1 if a loan applicant seeks preapproval of their loan application. Preapproval differs from prequalification, as the former involves a formal commitment by the lender. Avery et al. (2007) theorizes preapprovals may use different underwriting policies than loan applications in general.
Female applicant	Indicator variable: 1 if loan applicant is female. If a co-applicant is present, then both are female.
Minority neighborhood	Indicator variable: 1 if census tract where property is located has a minority population of more than 50%.
Hispanic applicant	Indicator variable: 1 if applicant is Hispanic based on a hierarchical classification (Avery et al., 2007) of an applicant's reported race(s) and ethnicity. An applicant is identified as black if one of the races they report is black. Applicants, who are not black are identified as Hispanic if their reported ethnicity is Hispanic. Applicants who are not black or Hispanic are then identified as Native American if one of the races they report is Native American. This is then repeated separately for Pacific Islanders and Asian applicants, with white applicants defined as individuals who only report their race as being white.
Asian applicant	Indicator variable: 1 if applicant is Asian based on hierarchical classification (Avery et al., 2007) described above.
Black applicant	Indicator variable: 1 if applicant is Black based on hierarchical classification (Avery et al., 2007) described above.
Female CEO	Indicator variable: 1 if the CEO is female based on name reported on call report and profile salutation as described in text.
Female Board (%)	The percentage of board members who are female based on profile salutation as described in text.

Conservative CEO	Indicator variable: 1 if a credit union's CEO is a net contributor to Republican candidates or the Republican Party in federal elections (1997-2014).
Liberal CEO	Indicator variable: 1 if a credit union's CEO is a net contributor to Democratic candidates or the Democratic Party in federal elections (1997-2014).
CEO Tenure	The number of years an individual has been CEO at a particular credit union. (1997 – 2015)

Table A2: Descriptive Statistics of Mortgage Application Sample

	Mean	SD
Loan Denial Rate	0.132	0.338
Income (LN)	4.321	0.635
Loan amount (LN)	5.104	0.684
Debt to income (DTI) ratio	2.539	3.199
Piggyback loan	0.005	0.071
Pre-approval sought	0.280	0.449
Female applicant	0.227	0.419
Minority neighborhood	0.134	0.341
Hispanic applicant	0.080	0.271
Asian applicant	0.052	0.222
Black applicant	0.065	0.246

The mean and standard deviation (SD) are computed over 180,845 loan applications. LN is the natural logarithm.

Appendix B: Robustness to Using a Sample of Political Contributors

In this appendix, we limit our analysis to a sample of credit unions whose CEO gave exclusively to one political party. This eliminates CEOs who did not make political contributions and limits our analysis to liberal or conservative CEOs.

Table B1: The Impact of CEO Conservatism and Gender on Risk Aversion

	(2)	(3)
Income	-0.0371*** (0.0116)	-0.0350*** (0.0122)
Loan amount	-0.0307*** (0.0077)	-0.0326*** (0.0081)
Debt to income ratio (DTI)	0.0070*** (0.0022)	0.0069*** (0.0022)
Piggyback loan	-0.0121 (0.0244)	-0.0120 (0.0244)
Pre-approval sought	-0.1168*** (0.0213)	-0.1167*** (0.0213)
Female applicant	-0.0001 (0.0053)	-0.0000 (0.0053)
Minority neighborhood	0.0233*** (0.0068)	0.0231*** (0.0068)
Hispanic applicant	0.0431*** (0.0069)	0.0433*** (0.0069)
Asian applicant	0.0408*** (0.0155)	0.0406*** (0.0155)
Black applicant	0.0957*** (0.0180)	0.0958*** (0.0180)
DTI x CEO Conservative	0.0076** (0.0035)	0.0085** (0.0041)
DTI x Female CEO		0.0239** (0.0114)
DTI x Female CEO x CEO Conservative		-0.0266** (0.0126)
Constant	0.4905*** (0.0417)	0.4888*** (0.0417)
Observations	51360	51360

OLS estimates of a credit union's decision whether to reject a mortgage loan application using a sample of observations where the CEO is an exclusive donor to one political party. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. DTI is an abbreviation for the debt-to-income ratio. Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Table B2: The Impact of CEO Ideology on Social Preferences

	(1)	(2)
Income	-0.0409*** (0.0121)	-0.0408*** (0.0120)
Loan amount	-0.0277*** (0.0085)	-0.0278*** (0.0085)
Debt to income ratio (DTI)	0.0103*** (0.0028)	0.0104*** (0.0028)
Piggyback loan	-0.0120 (0.0247)	-0.0134 (0.0250)
Pre-approval sought	-0.1171*** (0.0213)	-0.1171*** (0.0212)
Female applicant	-0.0113*** (0.0039)	-0.0005 (0.0053)
Minority neighborhood	0.0234*** (0.0067)	0.0235*** (0.0068)
Hispanic applicant	0.0429*** (0.0069)	0.0395*** (0.0078)
Asian applicant	0.0409*** (0.0156)	0.0249** (0.0108)
Black applicant	0.0962*** (0.0178)	0.0742*** (0.0105)
Female applicant x CEO Conservative	0.0212*** (0.0065)	
Hispanic applicant x CEO Conservative		0.0065 (0.0148)
Asian applicant x CEO Conservative		0.0274 (0.0270)
Black applicant x CEO Conservative		0.0603*** (0.0227)
Constant	0.4897*** (0.0432)	0.4963*** (0.0426)
Observations	51360	51360

OLS estimates of a credit union's decision whether to reject a mortgage loan application using a sample of observations where the CEO is an exclusive donor to one political party. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Appendix C: Female and Minority Applicants

Table C: The Impact of CEO Conservatism on Lending to Female Minority Applicants

	(1)
Income	-0.0673*** (0.0063)
Loan amount	-0.0137*** (0.0045)
Debt to income ratio (DTI)	0.0045*** (0.0014)
Piggyback loan	-0.0602*** (0.0184)
Pre-approval sought	-0.1113*** (0.0216)
Female applicant	-0.0051 (0.0055)
Minority neighborhood	0.0250*** (0.0041)
Hispanic applicant	0.0364*** (0.0114)
Asian applicant	0.0522** (0.0245)
Black applicant	0.1284*** (0.0211)
Female and Hispanic applicant	0.0349* (0.0191)
Female and Asian applicant	0.0056 (0.0318)
Female and Black applicant	0.0240 (0.0270)
Female applicant x Liberal CEO	-0.0101 (0.0063)
Female applicant x Non-partisan CEO	-0.0075 (0.0065)
Hispanic applicant x Liberal CEO	0.0067 (0.0174)
Hispanic applicant x Non-partisan CEO	0.0174 (0.0140)
Asian applicant x Liberal CEO	-0.0312 (0.0262)
Asian applicant x Non-partisan CEO	-0.0406 (0.0258)
Black applicant x Liberal CEO	-0.0410 (0.0273)

Black applicant x Non-partisan CEO	-0.0024 (0.0252)
Female x Hispanic applicant x Liberal CEO	-0.0118 (0.0235)
Female x Hispanic applicant x Non-partisan CEO	-0.0193 (0.0210)
Female x Asian applicant x Liberal CEO	0.0153 (0.0367)
Female x Asian applicant x Non-partisan CEO	-0.0008 (0.0331)
Female x Black applicant x Liberal CEO	-0.0206 (0.0290)
Female x Black applicant x Non-partisan CEO	-0.0069 (0.0290)
Constant	0.4455*** (0.0564)
Observations	179610

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Appendix D: Analysis of CEOs' Social Preferences on the Interest Rate Spread

Our analysis of social preferences focused on a credit union's willingness to lend to disadvantaged applicants but did not consider whether there were differences in the interest rates charged. Differences in social preferences may potentially affect the pricing of loans to disadvantaged applicants. In our HMDA dataset, we only observe the interest rate offered relative to the prime mortgage rate (i.e. rate spread) if the loan is originated and the rate spread is greater than 1.5%. We therefore only observe the actual rate spread for 8,005 of the 147,556 loans originated, which limits our ability to examine pricing differences. To allow use of every loan originated, we model the rate spread as an ordinal index for various ranges in values and estimate similar models to those used previously. We find that a CEO's gender has no effect on the pricing of loans made to women or minorities (Appendix Table D1). Similarly, we did not find (Appendix Table D2) that a CEO's ideology influences loan pricing to minority applicants. However, we did find weak evidence (p-value 0.07) that liberal CEO's price loans lower to women applicants than do conservative CEOs.

Appendix D: Analysis of Social Preferences on the Interest Rate Spread

Table D1: The Impact of CEO Gender on the Interest Rate Spread

	(1)	(2)
Income	0.0056 (0.0066)	0.0056 (0.0066)
Loan amount	-0.0420*** (0.0053)	-0.0420*** (0.0053)
Debt to income ratio (DTI)	0.0003 (0.0006)	0.0003 (0.0006)
Piggyback loan	-0.0128 (0.0091)	-0.0128 (0.0091)
Pre-approval sought	0.0117 (0.0126)	0.0116 (0.0126)
Female applicant	-0.0034* (0.0017)	-0.0039*** (0.0014)
Minority neighborhood	0.0121 (0.0075)	0.0119 (0.0074)
Hispanic applicant	0.0153** (0.0074)	0.0134 (0.0082)
Asian applicant	-0.0039 (0.0031)	-0.0045 (0.0035)
Black applicant	0.0612* (0.0342)	0.0653* (0.0379)
Female applicant x Female CEO	-0.0035 (0.0055)	
Hispanic applicant x Female CEO		0.0122 (0.0254)
Asian applicant x Female CEO		0.0045 (0.0064)
Black applicant x Female CEO		-0.0400 (0.0420)
Constant	0.2320 (0.1883)	0.2319 (0.1884)
Observations	147556	147556

The dependent variable is an ordinal indicator of the rate spread range, where 0 = [0 - 1.5), 1 = [1.5 - 3), 2 = [3 - 4.5), 3 = [4.5 - 6) 4 = [6 - 7.5) 5 = [7.5 - 9] and 6 = > 9. OLS estimates of a credit union's rate spread on loans originated. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Table D2: The Impact of CEO Ideology on the Interest Rate Spread

	(1)	(2)
Income	0.0055 (0.0067)	0.0054 (0.0067)
Loan amount	-0.0422*** (0.0053)	-0.0419*** (0.0053)
Debt to income ratio (DTI)	0.0004 (0.0006)	0.0003 (0.0006)
Piggyback loan	-0.0124 (0.0090)	-0.0125 (0.0090)
Pre-approval sought	0.0116 (0.0126)	0.0115 (0.0124)
Female applicant	-0.0031 (0.0051)	-0.0039*** (0.0015)
Minority neighborhood	0.0127* (0.0075)	0.0128* (0.0073)
Hispanic applicant	0.0162** (0.0075)	0.0071 (0.0071)
Asian applicant	-0.0040 (0.0031)	-0.0009 (0.0037)
Black applicant	0.0617* (0.0343)	0.0275 (0.0209)
Female applicant x Liberal CEO	-0.0079* (0.0044)	
Female applicant x Non-partisan CEO	0.0016 (0.0077)	
Hispanic applicant x Liberal CEO		-0.0103 (0.0073)
Hispanic applicant x Non-partisan CEO		0.0192 (0.0164)
Asian applicant x Liberal CEO		-0.0045 (0.0046)
Asian applicant x Non-partisan CEO		-0.0027 (0.0061)
Black applicant x Liberal CEO		-0.0248 (0.0212)
Black applicant x Non-partisan CEO		0.0757 (0.0551)
Constant	0.2331 (0.1889)	0.2333 (0.1891)
Observations	146605	146605

The dependent variable is an ordinal indicator of the rate spread range, where 0 = [0 - 1.5), 1 = [1.5 - 3), 2 = [3 - 4.5), 3 = [4.5 - 6), 4 = [6 - 7.5), 5 = [7.5 - 9) and 6 = > 9. OLS estimates of a credit union's rate spread on loans originated. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Appendix E: Cross-sectional Comparison of Credit Union Performance

Table E1: Description of Variables Used in Performance Analysis

Variable	Description
Loan delinquency (%)	Delinquent loans divided by total assets.
Cash and S.T. investments (%)	Cash and securities divided by total assets
Size	Natural logarithm of total assets in thousands of dollars.
Credit card loan concentration (%)	Share of loans in credit-cards.
Auto loan concentration (%)	Share of loans in new and used vehicles.
Unsecured loan concentration (%)	Share of assets in unsecured loans
Loans / Deposits (%)	Loans divided by deposits
Unemployment Rate (%)	The unemployment rate of the MSA where the credit union is headquartered. County-level data is used if not located within an MSA. Source data: Bureau of Labor Statistics
Bank Deposit Concentration	The Herfindahl-Hirschman Index of bank deposit concentration for the MSA where the credit union is headquartered. County-level data is used if not located within an MSA. Source data: FDIC survey of deposits.
Change in housing price index (%)	The change in housing prices for the MSA where the credit union is headquartered. County-level data is used if not located within an MSA. Source data: FHFA data
Female or Conservative CEO	Indicator variable: 1 if a credit union's CEO is either female or conservative.

Table E2: Performance Comparisons of Credit Unions with Risk Averse CEOs

	(1)	(2)
Size	-0.0651*** (0.0127)	-0.6575*** (0.1709)
Credit card loan concentration	-0.0042 (0.0035)	-0.0167 (0.0535)
Auto loan concentration	-0.0019* (0.0011)	-0.0343*** (0.0116)
Unsecured loan concentration	0.0101** (0.0048)	0.0274 (0.0465)
Loans / Deposits	0.0098*** (0.0011)	-0.2247*** (0.0117)
Unemployment Rate	0.0042 (0.0089)	0.1670* (0.0890)
Bank Deposit Concentration	0.0302 (0.0295)	-0.3491 (0.2993)
Change in housing price index (%)	-1.7581 (2.7767)	-75.8858** (36.9833)
Female or Conservative CEO	-0.0522** (0.0253)	0.6958* (0.3620)
Constant	0.9858*** (0.3168)	46.3326*** (5.0326)
Observations	1680	1680

OLS estimates of loan delinquency as a share of total assets (1) and the share of assets held in cash (2) for a cross-section of credit unions. Each specification includes a MSA level fixed effect, which is not reported. The omitted loan category are real-estate loans. Heteroskedasticity robust standard errors are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Appendix F: Analysis of CEO Tenure on Lending Decisions

Table F1: The Impact of CEO Gender, Conservatism, and Tenure on Risk Aversion

	(1)	(2)	(3)	(4)
Income	-0.0666*** (0.0063)	-0.0646*** (0.0062)	-0.0656*** (0.0062)	-0.0629*** (0.0063)
Loan amount	-0.0145*** (0.0046)	-0.0163*** (0.0045)	-0.0150*** (0.0044)	-0.0173*** (0.0044)
Debt to income ratio (DTI)	0.0045** (0.0022)	0.0043** (0.0022)	0.0045** (0.0021)	0.0044** (0.0021)
Piggyback loan	-0.0607*** (0.0187)	-0.0608*** (0.0186)	-0.0602*** (0.0185)	-0.0608*** (0.0187)
Pre-approval sought	-0.1127*** (0.0215)	-0.1127*** (0.0215)	-0.1112*** (0.0217)	-0.1119*** (0.0217)
Female applicant	-0.0085*** (0.0023)	-0.0084*** (0.0023)	-0.0085*** (0.0023)	-0.0082*** (0.0023)
Minority neighborhood	0.0256*** (0.0041)	0.0256*** (0.0041)	0.0252*** (0.0041)	0.0250*** (0.0041)
Hispanic applicant	0.0524*** (0.0050)	0.0523*** (0.0050)	0.0527*** (0.0051)	0.0525*** (0.0051)
Asian applicant	0.0239*** (0.0077)	0.0239*** (0.0077)	0.0242*** (0.0077)	0.0241*** (0.0077)
Black applicant	0.1220*** (0.0122)	0.1220*** (0.0122)	0.1210*** (0.0121)	0.1211*** (0.0122)
DTI x CEO Tenure	-0.0010 (0.1731)	0.0019 (0.1684)	-0.0510 (0.1682)	-0.0489 (0.1674)
DTI x Female CEO		0.0066** (0.0027)		0.0091** (0.0045)
DTI x Conservative CEO			0.0051** (0.0023)	0.0056** (0.0028)
DTI x Female CEO x Cons. CEO				-0.0094* (0.0056)
Constant	0.4440*** (0.0543)	0.4420*** (0.0542)	0.4434*** (0.0547)	0.4409*** (0.0546)
Observations	180845	180845	179610	178398

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. DTI is an abbreviation for the debt-to-income ratio. Tenure is the number of years an individual has been CEO of the credit union since 1997. The coefficient and standard error for the interaction with CEO tenure were multiplied by 1000 for reporting. Credit unions whose CEO changed in 2015 are excluded from the analysis if the ideology of the CEO changed (3, 4) or if their gender changed (1, 2, 4). Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Table F2: The Impact of CEO Gender, Ideology, and Tenure on Social Preferences for Women

	(1)	(2)	(3)
Income	-0.0666*** (0.0063)	-0.0666*** (0.0063)	-0.0671*** (0.0064)
Loan amount	-0.0145*** (0.0046)	-0.0145*** (0.0046)	-0.0137*** (0.0046)
Debt to income ratio (DTI)	0.0045*** (0.0014)	0.0045*** (0.0014)	0.0045*** (0.0014)
Piggyback loan	-0.0607*** (0.0187)	-0.0607*** (0.0187)	-0.0601*** (0.0185)
Pre-approval sought	-0.1127*** (0.0215)	-0.1127*** (0.0215)	-0.1113*** (0.0217)
Female applicant	-0.0049 (0.0046)	-0.0044 (0.0047)	0.0016 (0.0068)
Minority neighborhood	0.0256*** (0.0041)	0.0256*** (0.0041)	0.0253*** (0.0041)
Hispanic applicant	0.0524*** (0.0050)	0.0524*** (0.0050)	0.0528*** (0.0051)
Asian applicant	0.0239*** (0.0077)	0.0239*** (0.0077)	0.0243*** (0.0077)
Black applicant	0.1221*** (0.0122)	0.1221*** (0.0122)	0.1211*** (0.0119)
Female applicant x CEO Tenure	-0.3238 (0.3464)	-0.3266 (0.3469)	-0.1940 (0.3551)
Female applicant x Female CEO		-0.0035 (0.0055)	
Female applicant x Liberal CEO			-0.0133** (0.0065)
Female applicant x Non-partisan CEO			-0.0086 (0.0063)
Constant	0.4434*** (0.0539)	0.4433*** (0.0538)	0.4432*** (0.0534)
Observations	180845	180845	179610

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Tenure is the number of years an individual has been CEO of the credit union since 1997. The coefficient and standard error for the interaction with CEO tenure were multiplied by 1000 for reporting. Credit unions whose CEO changed in 2015 are excluded from the analysis if the ideology of the CEO changed (3) or if their gender changed (1, 2). Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Table F3: The Impact of CEO Gender, Ideology, and Tenure on Social Preferences for Minorities

	(1)	(2)	(3)
Income	-0.0666*** (0.0063)	-0.0666*** (0.0063)	-0.0671*** (0.0064)
Loan amount	-0.0145*** (0.0046)	-0.0145*** (0.0046)	-0.0137*** (0.0045)
Debt to income ratio (DTI)	0.0045*** (0.0014)	0.0045*** (0.0014)	0.0045*** (0.0014)
Piggyback loan	-0.0607*** (0.0187)	-0.0607*** (0.0187)	-0.0604*** (0.0185)
Pre-approval sought	-0.1127*** (0.0215)	-0.1127*** (0.0215)	-0.1113*** (0.0216)
Female applicant	-0.0085*** (0.0023)	-0.0085*** (0.0023)	-0.0086*** (0.0023)
Minority neighborhood	0.0257*** (0.0041)	0.0257*** (0.0041)	0.0252*** (0.0041)
Hispanic applicant	0.0398*** (0.0106)	0.0404*** (0.0111)	0.0289** (0.0145)
Asian applicant	0.0446** (0.0177)	0.0461** (0.0183)	0.0691*** (0.0245)
Black applicant	0.1494*** (0.0201)	0.1504*** (0.0205)	0.1435*** (0.0238)
Hispanic applicant x CEO tenure	1.2862 (0.9056)	1.2769 (0.9070)	1.5422* (0.8997)
Asian applicant x CEO tenure	-2.2847* (1.3114)	-2.2385* (1.2863)	-2.1211** (0.9943)
Black applicant x CEO tenure	-2.2009 (1.7910)	-2.2209 (1.7900)	-0.4678 (1.4875)
Hispanic applicant x Female CEO		-0.0040 (0.0133)	
Asian applicant x Female CEO		-0.0141 (0.0102)	
Black applicant x Female CEO		-0.0063 (0.0211)	
Hispanic applicant x Liberal CEO			-0.0008 (0.0161)
Hispanic applicant x Non-partisan CEO			0.0143 (0.0134)
Asian applicant x Liberal CEO			-0.0206 (0.0193)
Asian applicant x Non-partisan CEO			-0.0375* (0.0203)

Black applicant x Liberal CEO			-0.0477*
			(0.0261)
Black applicant x Non-partisan CEO			-0.0067
			(0.0238)
Constant	0.4448***	0.4450***	0.4462***
	(0.0553)	(0.0554)	(0.0561)
Observations	180845	180845	179610

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Tenure is the number of years an individual has been CEO of the credit union since 1997. The coefficient and standard error for the interaction with CEO tenure were multiplied by 1000 for reporting. Credit unions whose CEO changed in 2015 are excluded from the analysis if the ideology of the CEO changed (3) or if their gender changed (1, 2). Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Appendix G: Comparison of Credit Unions by CEO Gender and Ideology

Table G: Credit Unions and Their Market Environment

Panel A: Comparison of credit unions by CEO gender.			
	Male CEO	Female CEO	Normalized Difference
Return on average assets (%)	0.57	0.51	-0.11
Net worth / Total Assets	10.86	11.41	0.19
Cash and S.T. Inv./ Total Assets	14.42	16.66	0.28
Loans / Deposits	73.99	68.62	-0.28
Credit card loan concentration	4.72	5.42	0.18
Auto loan concentration	34.44	35.92	0.09
Unsecured loan concentration	4.89	5.85	0.21
Size	19.52	18.94	-0.49
Unemployment Rate	5.13	5.26	0.10
Bank Deposit Concentration	1699.84	1688.19	-0.01
Change in housing price index (%)	0.01	0.01	0.07
Observations	1223	436	

Panel B: Comparison of credit unions by CEO ideology			
	Liberal CEO	Conservative CEO	Normalized Difference
Return on average assets (%)	0.63	0.68	0.06
Net worth / Total Assets	10.71	10.68	-0.01
Cash and S.T. Inv./ Total Assets	13.72	13.17	-0.08
Loans / Deposits	76.07	80.40	0.24
Credit card loan concentration	5.05	4.86	-0.05
Auto loan concentration	32.25	36.44	0.25
Unsecured loan concentration	4.23	4.14	-0.02
Size	20.25	20.10	-0.12
Unemployment Rate	5.20	5.19	-0.01
Bank Deposit Concentration	1637.95	1699.91	0.07
Change in housing price index (%)	0.01	0.01	0.33
Observations	129	182	

Each column reports the mean of credit unions led by a CEO with the indicated characteristics. The normalized difference is equal to the difference in mean values for each group divided by the square root of the average of the two groups' variances.

Appendix H: Analysis of Member Ideology on Lending decisions

Table H1: The Impact of CEO Gender, Conservatism, and Member Ideology on Risk Aversion

	(1)	(2)	(3)	(4)
Income	-0.0669*** (0.0064)	-0.0648*** (0.0063)	-0.0656*** (0.0063)	-0.0628*** (0.0063)
Loan amount	-0.0140*** (0.0047)	-0.0159*** (0.0045)	-0.0147*** (0.0044)	-0.0171*** (0.0045)
Debt to income ratio (DTI)	0.0056** (0.0024)	0.0058** (0.0023)	0.0061*** (0.0023)	0.0061*** (0.0022)
Piggyback loan	-0.0608*** (0.0187)	-0.0608*** (0.0186)	-0.0604*** (0.0185)	-0.0610*** (0.0186)
Pre-approval sought	-0.1136*** (0.0215)	-0.1135*** (0.0215)	-0.1122*** (0.0217)	-0.1127*** (0.0218)
Female applicant	-0.0084*** (0.0023)	-0.0083*** (0.0023)	-0.0084*** (0.0024)	-0.0081*** (0.0024)
Minority neighborhood	0.0260*** (0.0042)	0.0260*** (0.0042)	0.0257*** (0.0042)	0.0254*** (0.0042)
Hispanic applicant	0.0522*** (0.0051)	0.0522*** (0.0051)	0.0526*** (0.0051)	0.0524*** (0.0052)
Asian applicant	0.0240*** (0.0078)	0.0240*** (0.0078)	0.0243*** (0.0078)	0.0243*** (0.0078)
Black applicant	0.1225*** (0.0127)	0.1225*** (0.0127)	0.1214*** (0.0125)	0.1215*** (0.0126)
DTI x Conservatism share	-0.0027 (0.0047)	-0.0036 (0.0045)	-0.0051 (0.0045)	-0.0053 (0.0044)
DTI x Female CEO		0.0071** (0.0027)		0.0095** (0.0045)
DTI x Conservative CEO			0.0057** (0.0024)	0.0061** (0.0028)
DTI x Female CEO x Cons. CEO				-0.0091 (0.0056)
Constant	0.4438*** (0.0543)	0.4418*** (0.0542)	0.4430*** (0.0548)	0.4403*** (0.0546)
Observations	178243	178243	176986	175796

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. DTI is an abbreviation for the debt-to-income ratio. Conservatism share is the percentage of votes received by the Republican candidate in the 2014 federal election in the congressional district where the credit union is located. Credit unions whose CEO changed in 2015 are excluded from the analysis if the ideology of the CEO changed (3, 4) or if their gender changed (1, 2, 4). Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Table H2: The Impact of CEO Gender , Ideology, and Member Ideology on Social Preferences for Women

	(1)	(2)	(3)
Income	-0.0666*** (0.0064)	-0.0666*** (0.0064)	-0.0671*** (0.0064)
Loan amount	-0.0142*** (0.0046)	-0.0142*** (0.0046)	-0.0135*** (0.0046)
Debt to income ratio (DTI)	0.0045*** (0.0014)	0.0045*** (0.0014)	0.0044*** (0.0014)
Piggyback loan	-0.0607*** (0.0187)	-0.0607*** (0.0187)	-0.0601*** (0.0185)
Pre-approval sought	-0.1136*** (0.0215)	-0.1136*** (0.0215)	-0.1123*** (0.0217)
Female applicant	-0.0100* (0.0053)	-0.0096* (0.0054)	0.0006 (0.0077)
Minority neighborhood	0.0260*** (0.0042)	0.0260*** (0.0042)	0.0257*** (0.0042)
Hispanic applicant	0.0522*** (0.0051)	0.0522*** (0.0051)	0.0526*** (0.0051)
Asian applicant	0.0240*** (0.0078)	0.0240*** (0.0078)	0.0244*** (0.0078)
Black applicant	0.1225*** (0.0127)	0.1225*** (0.0127)	0.1214*** (0.0124)
Female applicant x Conservatism Share	0.0035 (0.0108)	0.0041 (0.0108)	-0.0023 (0.0110)
Female applicant x Female CEO		-0.0043 (0.0057)	
Female applicant x Liberal CEO			-0.0145** (0.0066)
Female applicant x Non-partisan CEO			-0.0084 (0.0064)
Constant	0.4437*** (0.0543)	0.4437*** (0.0542)	0.4431*** (0.0535)
Observations	178243	178243	176986

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Conservatism share is the percentage of votes received by the Republican candidate in the 2014 federal election in the congressional district where the credit union is located. Credit unions whose CEO changed in 2015 are excluded from the analysis if the ideology of the CEO changed (3) or if their gender changed (1, 2). Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Table H3: The Impact of CEO Gender, Ideology, and Member Ideology on Social Preferences for Minorities

	(1)	(2)	(3)
Income	-0.0666*** (0.0064)	-0.0666*** (0.0064)	-0.0671*** (0.0064)
Loan amount	-0.0142*** (0.0046)	-0.0142*** (0.0046)	-0.0134*** (0.0046)
Debt to income ratio (DTI)	0.0045*** (0.0014)	0.0045*** (0.0014)	0.0044*** (0.0014)
Piggyback loan	-0.0605*** (0.0186)	-0.0605*** (0.0186)	-0.0603*** (0.0185)
Pre-approval sought	-0.1136*** (0.0215)	-0.1136*** (0.0215)	-0.1124*** (0.0217)
Female applicant	-0.0084*** (0.0023)	-0.0084*** (0.0023)	-0.0085*** (0.0023)
Minority neighborhood	0.0263*** (0.0041)	0.0263*** (0.0041)	0.0258*** (0.0041)
Hispanic applicant	0.0410*** (0.0147)	0.0417*** (0.0148)	0.0270 (0.0193)
Asian applicant	0.0231 (0.0165)	0.0239 (0.0167)	0.0604* (0.0320)
Black applicant	0.1002*** (0.0262)	0.1004*** (0.0265)	0.1275*** (0.0255)
Hispanic applicant x Conservatism Share	0.0268 (0.0300)	0.0282 (0.0296)	0.0315 (0.0305)
Asian applicant x Conservatism Share	0.0016 (0.0269)	0.0052 (0.0258)	-0.0161 (0.0301)
Black applicant x Conservatism Share	0.0539 (0.0461)	0.0559 (0.0457)	0.0194 (0.0396)
Hispanic applicant x Female CEO		-0.0089 (0.0134)	
Asian applicant x Female CEO		-0.0165 (0.0113)	
Black applicant x Female CEO		-0.0092 (0.0218)	
Hispanic applicant x Liberal CEO			0.0113 (0.0174)
Hispanic applicant x Non-partisan CEO			0.0177 (0.0138)
Asian applicant x Liberal CEO			-0.0287 (0.0242)
Asian applicant x Non-partisan CEO			-0.0419*

			(0.0241)
Black applicant x Liberal CEO			-0.0472*
			(0.0248)
Black applicant x Non-partisan CEO			-0.0035
			(0.0234)
Constant	0.4438***	0.4440***	0.4462***
	(0.0541)	(0.0543)	(0.0556)
Observations	178243	178243	176986

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Conservatism share is the percentage of votes received by the Republican candidate in the 2014 federal election in the congressional district where the credit union is located. Credit unions whose CEO changed in 2015 are excluded from the analysis if the ideology of the CEO changed (3) or if their gender changed (1, 2). Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Appendix I: Analysis of 2014 and Pooled (2014-2015) Applications

Table II: The Impact of CEO Conservatism and Gender on Risk Aversion (2014, 2014-2015)

	(1)	(2)	(3)	(4)
Income	-0.0620*** (0.0062)	-0.0617*** (0.0062)	-0.0643*** (0.0053)	-0.0635*** (0.0054)
Loan amount	-0.0231*** (0.0037)	-0.0235*** (0.0037)	-0.0196*** (0.0033)	-0.0203*** (0.0034)
Debt to income ratio (DTI)	0.0046*** (0.0010)	0.0045*** (0.0011)	0.0044*** (0.0009)	0.0042*** (0.0009)
Piggyback loan	-0.0674*** (0.0179)	-0.0673*** (0.0179)	-0.0588*** (0.0138)	-0.0592*** (0.0139)
Pre-approval sought	-0.1252*** (0.0233)	-0.1255*** (0.0233)	-0.1081*** (0.0220)	-0.1086*** (0.0221)
Female applicant	-0.0114*** (0.0024)	-0.0114*** (0.0024)	-0.0098*** (0.0017)	-0.0097*** (0.0017)
Minority neighborhood	0.0196*** (0.0065)	0.0194*** (0.0065)	0.0227*** (0.0045)	0.0225*** (0.0045)
Hispanic applicant	0.0674*** (0.0064)	0.0671*** (0.0064)	0.0602*** (0.0048)	0.0599*** (0.0048)
Asian applicant	0.0277*** (0.0062)	0.0278*** (0.0063)	0.0264*** (0.0058)	0.0264*** (0.0058)
Black applicant	0.1271*** (0.0121)	0.1271*** (0.0122)	0.1255*** (0.0120)	0.1256*** (0.0121)
DTI x Conservative CEO	0.0063*** (0.0024)	0.0056** (0.0025)	0.0053*** (0.0018)	0.0052*** (0.0020)
DTI x Female CEO		0.0010 (0.0025)		0.0038 (0.0031)
DTI x Female CEO x Cons. CEO		0.0061 (0.0048)		-0.0020 (0.0045)
Constant	0.4655*** (0.0773)	0.4577*** (0.0826)	0.4629*** (0.0547)	0.4569*** (0.0560)
Observations	152118	151461	331728	329859

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Columns (1-2) use application data from 2014, whereas columns (3-4) used pooled data from 2014-2015. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Columns (3-4) also include a time fixed effect. DTI is an abbreviation for the debt-to-income ratio. Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Table I2: The Impact of CEO Gender on Social Preferences (2014, 2014-2015)

	(1)	(2)	(3)	(4)
Income	-0.0692*** (0.0067)	-0.0692*** (0.0067)	-0.0685*** (0.0055)	-0.0685*** (0.0055)
Loan amount	-0.0156*** (0.0048)	-0.0156*** (0.0048)	-0.0156*** (0.0040)	-0.0156*** (0.0040)
Debt to income ratio (DTI)	0.0032** (0.0014)	0.0032** (0.0014)	0.0039*** (0.0010)	0.0039*** (0.0010)
Piggyback loan	-0.0646*** (0.0171)	-0.0648*** (0.0171)	-0.0585*** (0.0136)	-0.0585*** (0.0137)
Pre-approval sought	-0.1286*** (0.0220)	-0.1285*** (0.0220)	-0.1102*** (0.0211)	-0.1102*** (0.0213)
Female applicant	-0.0113*** (0.0026)	-0.0110*** (0.0024)	-0.0095*** (0.0021)	-0.0097*** (0.0017)
Minority neighborhood	0.0201*** (0.0063)	0.0202*** (0.0063)	0.0231*** (0.0045)	0.0232*** (0.0046)
Hispanic applicant	0.0665*** (0.0060)	0.0684*** (0.0071)	0.0600*** (0.0046)	0.0613*** (0.0053)
Asian applicant	0.0329*** (0.0072)	0.0366*** (0.0078)	0.0287*** (0.0071)	0.0314*** (0.0080)
Black applicant	0.1283*** (0.0121)	0.1249*** (0.0126)	0.1266*** (0.0120)	0.1251*** (0.0131)
Female applicant x Female CEO	0.0023 (0.0070)		-0.0011 (0.0053)	
Hispanic applicant x Female CEO		-0.0122 (0.0153)		-0.0089 (0.0126)
Asian applicant x Female CEO		-0.0297** (0.0150)		-0.0214* (0.0110)
Black applicant x Female CEO		0.0359 (0.0301)		0.0159 (0.0244)
Constant	0.5474*** (0.0897)	0.5477*** (0.0899)	0.5120*** (0.0642)	0.5121*** (0.0648)
Observations	160023	160023	340868	340868

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Columns (1-2) use application data from 2014, whereas columns (3-4) used pooled data from 2014-2015. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Columns (3-4) also include a time fixed effect. Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.

Table I3: The Impact of CEO Conservatism on Social Preferences (2014, 2014-2015)

	(1)	(2)	(3)	(4)
Income	-0.0641*** (0.0061)	-0.0641*** (0.0061)	-0.0660*** (0.0052)	-0.0660*** (0.0052)
Loan amount	-0.0214*** (0.0039)	-0.0215*** (0.0039)	-0.0182*** (0.0035)	-0.0181*** (0.0035)
Debt to income ratio (DTI)	0.0050*** (0.0011)	0.0050*** (0.0011)	0.0048*** (0.0009)	0.0048*** (0.0009)
Piggyback loan	-0.0674*** (0.0178)	-0.0674*** (0.0178)	-0.0587*** (0.0138)	-0.0589*** (0.0138)
Pre-approval sought	-0.1254*** (0.0233)	-0.1253*** (0.0233)	-0.1082*** (0.0220)	-0.1082*** (0.0220)
Female applicant	-0.0157*** (0.0057)	-0.0115*** (0.0024)	-0.0071* (0.0038)	-0.0099*** (0.0017)
Minority neighborhood	0.0196*** (0.0065)	0.0198*** (0.0064)	0.0227*** (0.0045)	0.0227*** (0.0045)
Hispanic applicant	0.0674*** (0.0064)	0.0673*** (0.0142)	0.0603*** (0.0048)	0.0544*** (0.0108)
Asian applicant	0.0279*** (0.0062)	0.0295*** (0.0107)	0.0265*** (0.0058)	0.0430*** (0.0147)
Black applicant	0.1271*** (0.0122)	0.1750*** (0.0177)	0.1256*** (0.0120)	0.1554*** (0.0158)
Female applicant x Liberal CEO	0.0057 (0.0070)		-0.0056 (0.0044)	
Female applicant x Non-partisan CEO	0.0048 (0.0064)		-0.0027 (0.0049)	
Hispanic applicant x Liberal CEO		-0.0103 (0.0208)		-0.0018 (0.0165)
Hispanic applicant x Non-partisan CEO		0.0037 (0.0179)		0.0106 (0.0134)
Asian applicant x Liberal CEO		-0.0125 (0.0133)		-0.0205 (0.0163)
Asian applicant x Non-partisan CEO		0.0014 (0.0143)		-0.0213 (0.0166)
Black applicant x Liberal CEO		-0.0730*** (0.0224)		-0.0608*** (0.0223)
Black applicant x Non-partisan CEO		-0.0468* (0.0268)		-0.0224 (0.0236)
Constant	0.4684*** (0.0771)	0.4686*** (0.0772)	0.4646*** (0.0543)	0.4657*** (0.0549)
Observations	152118	152118	331728	331728

OLS estimates of a credit union's decision whether to reject a mortgage loan application. Columns (1-2) use application data from 2014, whereas columns (3-4) used pooled data from 2014-2015. Each specification includes a lender level fixed effect and a MSA level fixed effect, which are not reported. Columns (3-4) also

include a time fixed effect. Robust standard errors clustered by lender are reported in parentheses, where *, **, *** indicate the estimates are statistically different from zero at the 10%, 5%, and 1% level, respectively.