

# Mortgage Lending Decisions

## Summary Findings

*Mark Russeff, Renato Albolea, Shuai Ma*

Controlling for relevant characteristics, is race/ethnicity associated with the outcome of a mortgage loan application?

Table 1: Descriptive statistics - **All**

Statistic	Mean	St. Dev.	Min	Max
Approved	0.88	0.33	0	1
Meets credit guidelines	0.91	0.28	0	1
Other obligations (% of income)	32.37	8.25	0	95
Loan to purchase price (%)	76.08	16.76	2	100
Married	0.66	0.47	0	1

Table 2: Descriptive statistics - **Race**

Statistic	Mean	St. Dev.	Min	Max
<b>White</b> (n = 1641)				
Approved	0.91	0.29	0	1
Meets credit guidelines	0.94	0.24	0	1
Other obligations (% of income)	31.99	8.18	0	95
Loan to purchase price (%)	74.78	17.17	2	100
Married	0.66	0.47	0	1
<b>Black</b> (n = 192)				
Approved	0.67	0.47	0	1
Meets credit guidelines	0.72	0.45	0	1
Other obligations (% of income)	35.03	8.13	5.60	63
Loan to purchase price (%)	82.89	12.63	28.99	100
Married	0.61	0.49	0	1
<b>Hispanic</b> (n = 104)				
Approved	0.78	0.42	0	1
Meets credit guidelines	0.87	0.34	0	1
Other obligations (% of income)	33.32	8.56	14.60	62
Loan to purchase price (%)	83.91	10.92	40	100
Married	0.71	0.46	0	1

Table 3: Estimated Logit Model

	<i>Dependent variable:</i>	
	Approved Loan	
	Estimate	Odds Ratio
Meets credit guidelines	3.766*** (0.221)	43.227
Other obligations (% of income)	-0.034*** (0.011)	0.967
Loan to purchase price (%)	-0.016** (0.007)	0.984
Married	0.482*** (0.185)	1.619
Black	-0.869*** (0.243)	0.419
Hispan	-0.860*** (0.323)	0.423
Constant	1.233* (0.685)	3.431
Observations	1,937	
Log Likelihood	-462.546	
Akaike Inf. Crit.	939.091	
<i>Notes:</i> *p<0.1; **p<0.05; ***p<0.01		
<i>Reference category:</i> white		
Standar Errors in parenthesis		

Table 4: Predicted Probability of Loan Approval - **Logit**

	White	Black	Hispanic
Meets credit guidelines, Married	96.0%	90.9%	91.0%
Meets credit guidelines, Single	93.7%	86.1%	86.2%
Does not meet credit guidelines, Married	35.6%	18.8%	19.0%
Does not meet credit guidelines, Single	25.5%	12.5%	12.6%
<i>Notes:</i> Other obligations set at sample mean of 32.37%			
Loan to purchase price set at sample mean of 76.08%			

Table 5: Estimated Probit Model

Race	<i>Dependent variable:</i>
	Approved Loan
Meets credit guidelines	2.169*** (0.123)
Other obligations (% of income)	-0.016*** (0.005)
Loan to purchase price (%)	-0.007** (0.003)
Married	0.239*** (0.092)
Black	-0.450*** (0.128)
Hispanic	-0.444*** (0.169)
Constant	0.435 (0.337)
Observations	1,937
Log Likelihood	-462.491
Akaike Inf. Crit.	938.982
<i>Notes:</i> *p<0.1; **p<0.05; ***p<0.01	
<i>Reference category:</i> white	
Standar Errors in parenthesis	

Table 6: Predicted Probability of Loan Approval - **Probit**

	White	Black	Hispanic
Meets credit guidelines, Married	96.1%	90.4%	90.5%
Meets credit guidelines, Single	93.6%	85.7%	85.9%
Does not meet credit guidelines, Married	34.0%	19.4%	19.6%
Does not meet credit guidelines, Single	25.8%	13.5%	13.7%

*Notes:* Other obligations set at sample mean of 32.37%

Loan to purchase price set at sample mean of 76.08%