Does a Diverse Leadership Board at a Lending Institution Increase Credit Access to Minority Farmers?

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Does a Diverse Leadership Board at a Lending Institution Increase Credit Access to Minority Farmers?

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INTRODUCTION

- Despite of having fair lending laws, many statistical analyses continue to uncover loan denial inequalities between white and minority loan applicants (Tempkin et al., 1999).
- A string of lawsuits specially after 1990s have been reported in both farm and non-farm sectors. Corporations were found guilty of charging higher interest rates and fees to minority and female borrowers (Feder & Cowan, 2013; Dhakal et al., 2019).
- In Farm Credit institutions, lender-borrower relationships appear to be more significant in terms of increasing credit availability and approval (Behr et al., 2011).
- The Farm Credit System is made up of four banks, 67 associations and six service corporations. (Farm Credit Administration, 2021)
- In 2020 the Farm Credit System (FCS) surpassed commercial banks in real estate loans and was the second largest lender in non real estate loans (USDA/ERS, 2022).
- We investigate whether a larger diversity of governing boards and senior management has any linkages to lending to minority farmers and Socially Disadvantaged Farmers and Ranchers (SDFR). SDFR are farmers or ranchers who face discrimination due to their race, ethnicity, or gender (Socially Disadvantaged, Beginning, Limited Resource, and Female Farmers and Ranchers | USDA/ERS, 2022).

OBJECTIVE OF THE STUDY

- The objectives of the study are three-fold:

1. Estimate the level of diversity of leadership in Farm Credit Institutions.
2. Identify linkages between the diversity of leadership in Farm Credit Institutions and lending patterns to SDFR using the Paycheck Protection Program approval loans.
3. Identify linkages between the diversity of leadership in Farm Credit Institutions and the county level farmer characteristics.

LITERATURE REVIEW

- SDFR farms have lower output value and less operators. SDFR earn less in government payments, have fewer total assets, higher current ratios, and lower debt-to-asset ratios, compared to non-SDFRs (McDonald et al., 2021). This may make credit access challenging.
- Access to credit can impact farm productivity, investment, yield, and farmer welfare (Feder et al., 1990; Houensou et al., 2021).
- Demko and Sant'Anna (2021) identified discrepancies in the Paycheck Protection Program loan amounts awarded to small business owners of different race and gender.
- Ghimire et al., (2020) concluded that minority borrowers are given smaller loans, face higher interest rates, and shorter repayment terms than White American borrowers.

METHODOLOGY AND DATA

- Data on the members of the board of directors and top senior management was collected for all institutions that are part of the Farm Credit System. We classified members into groups of gender, race and ethnicity according to their names, biographies and photos. Gender identification was split into female and male while that of race was split into Asian, African American, and into ethnicity. Races that we could not identify were placed into a non-white category.
- This study uses **Herfindahl-Hirschman Index (HHI)**, following Hunt, Layton, and Prince (2015) to quantify the levels of diversity among the board of directors and top managers of Farm Credit lending institutions:

$$HHI_I = \sum_{i=1}^{N} s_i^2$$

where, **i** represents each institution up to N institutions and, s^i is the share of individuals in the leadership by race and gender. Each race is counted separately and has a separate share calculated for it.

- HHI varies from 0 to 1. An HHI of 1 means that all members of the board are of the same race or gender (i.e. no diversity). The smaller HHI is the more diverse the board members are.
- The proportion of minority farmers in a county is the division of the number of farmers of non-white race and ethnicity in a county over the total number of principal producers using information from the 2017 Agricultural Census.
- We also identify SDFRs using data from the Small Business Administration on the Paycheck Protection Program .
- Correlations to identify any linkages between the level of diversity in the leadership at Farm Credit Institutions and borrowers were calculated using the Pearson Correlation Method in Stata (Rodgers & Nicewander, 1988). As borrowers we considered those that were awarded a PPP loan and as potential borrowers the share of minority farmers in a county.

PRELIMINARY RESULTS

- Table 1 presents the descriptive statistics of the information on gender, race and ethnicity collected from Farm Credit leadership, as well as on farmers (at the county level).
- On average the majority of Farm Credit leaders are white and are males.
- On average there is a larger share of women in senior management than as members in the board of directors. The same can be said for individuals of other race and ethnicity.
- HHI summary statistics indicate lack of diversity among Farm Credit leadership. HHI by race and gender shows greater diversity in the senior management than among the board of directors.
- Note that Farm Credit Institutions in counties with large presence of minorities (e.g. Puerto Rico) also display less diversity on the leadership because then all members are of other race and/or ethnicity.
- County level data on women in farming and minority farmers show that on average ~30% of farmers are minority or women farmers.

Table 1: Race, gender and ethnicity of Farm Credit leadership and farmers

Variables	# Observations	Mean	Standard Deviation	Minimum	Maximum
Board of Directors					
GENDER:					
Male (%)	75	86.25	8.41	66.67	100
Female (%)	75	13.75	8.41	0.00	33.00
HHI by gender	75	0.76	0.12	0.56	1.00
RACE/ETHNICITY:					
White (%)	75	97.27	11.94	0.00	100.00
Other race/ethnicity (%)	75	2.73	11.94	0.00	100.00
HHI by race and ethnicity	75	0.97	0.06	0.72	1.00
HHI by race/ethnicity and gender	75	0.76	0.14	0.50	1.00
Senior Management:					
GENDER:					
Male (%)	63	73.04	17.34	25.00	100.00
Female (%)	63	26.96	17.34	0.00	75.00
HHI by gender	63	0.67	0.16	0.50	1.00
RACE/ETHNICITY:					
White (%)	63	96.16	13.88	0.00	100.00
Other race/ethnicity (%)	63	3.84	13.88	0.00	100.00
HHI by race and ethnicity	63	0.96	0.10	0.50	1.00
HHI by race/ethnicity and gender	63	0.65	0.18	0.28	1.00
Producers:					
Share of Minority Farmer	3,072	0.30	0.07	0.10	1.00
Share Female Farmer	3,068	0.28	0.07	0.07	0.86

\# = Number, HHI is the Herfindahl-Hirschman Index. Minority considers race and ethnicity, not gender.

- Table 2 shows the average level of diversity according to the SDFRs that were awarded a PPP loan.
- On average SDFRs received a larger loan amount than non-SDFR. This could be due to the larger number of SDFR in comparison to non-SDFR..
- The levels of diversity between the Farm Credit Institutions that awarded loans to SDFR versus those that awarded loans to non-SDFR are very close, for both board of directors and senior management.
- Table 3 shows the correlations between PPP borrowers that are SDFR, and the percentage of minority farmers in a county, as well as, the percentage of female farmers in a county.
- As the percentage of minority farmers increases the board of directors becomes more diverse. In the case of the senior management it becomes less diverse.

PRELIMINARY RESULTS

Table 2: Diversity and the Paycheck Protection Program: Amount awarded and HHI.

		SDFR PPP	Non-SDFR PPP	Unanswered
Awarded Loan	Mean	34107	25233	37016
	Standard deviation	94266	24515	131907
	# Observations	1294	40	41316
HHI (BOD)	Mean	0.70	0.71	0.71
	Standard deviation	0.14	0.12	0.13
	# Observations	1214	40	41316
HHI (SM)	Mean	0.73	0.71	0.73
	Standard deviation	0.12	0.15	0.18
	# Observations	1294	40	40820

Table 3: Correlations between SDFR, minority and female farmers and the level of diversity in Farm Credit leadership.

Variable	HHI by race, ethnicity and gender: Board of directors	Senior Management
SDFR_PPP	0.027	0.008
	[1275]	[1361]
% Minority Farmer	-0.18 ***	0.04 *
	[1640]	[1705]
% Female Farmer	-0.14 ***	-0.002
	[1640]	[1705]

[ ] = Number of observations. *, **, *** indicates 10%, 5% and 1% levels of statistical significance

- As the percentage of women farmers in a county increases the board of directors of the Farm Credit institution in that county becomes more diverse.
- There is statistically significant relationship between SDFR that were awarded a PPP loan and the level of diversity of the leadership in the Farm Credit Institution they applied through.
- Preliminary findings point to an attempt from Farm Credit lending institutions to represent the producer demographics in terms of race, ethnicity and gender, in the counties they serve.
- A representative BOD or SM could mean greater understanding of the challenges facing SDFRs and could imply greater credit access to them. We will investigate this in the next steps of this project.
- Nevertheless, Farm Credit Institutions would benefit from having a more diverse leadership. Future studies could investigate whether having a more diverse leadership in lending institutions can increase the number of SDFRs in a county.
- Current findings can guide agricultural lenders and policy makers by shedding light on the demographic composition of governing boards and leadership staffs and whether they relate to the diversity of producers in the county they serve.

LIMITATIONS OF THE STUDY

- These results are preliminary and have a number of limitations:

1. Race and ethnicity of the board members were not self-identified in this study. It was determined by researchers. Our results could be underestimating the level of diversity in Farm Credit institutions.
2. Correlations are limited to the counties that had a PPP loan approved, in the next steps we will include all counties that the Farm Credit institution serves.
3. There is a large number of unanswered observations in the PPP loan dataset. This could be distorting our results. We plan on researching the borrowers to reduce the number of unanswered observations in the future.

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