# Appendix

Table of Contents A Measurement of Outcome Variables 3 Behavioral Measures of Empowerment 10  $\mathbf{C}$ Research Ethics 12 D Validity of the RD Estimation Strategy 13  ${f E}$ Additional Figures and Tables 18 **Analysis of Political Outcomes** 29 List of Tables Summary Statistics on Demographics and Women's Property Rights . . . . A.2 Summary Statistics on Economic Outcomes and Women's Empowerment 9 Financial Incentives are Unrelated to Women's Demand for Autonomy . . 11 16 17 19 Financial Incentives are Unrelated to Women's Agency in Expenditure De-22 Robustness Check: Controlling for Education and Household Size . . . . . 24 Financial Incentives are Unrelated to Political Outcomes . . . . . . . . . 30 List of Figures A.1 Distribution of Land Holdings as Reported by Husbands and Wives . . . . 6 D.1 Household Characteristics Above and Below the Ten-Acre Threshold . . . 14 15 The Effect of Financial Incentives on Formal Property Rights . . . . . . . 18

The Effect of Financial Incentives on Loan and Economic Outcomes . . .

20

E.3The Effect of Financial Incentives on Women's Agency: Agricultural Deci-21 The Effect of Financial Incentives on Women's Agency: Expenditure Deci-E.423 E.525 E.626 E.727 Coefficient Plots for Agency Outcomes: Agricultural Decisions . . . . . . 28 E.8 Coefficient Plots for Agency Outcomes: Expenditure Decisions . . . . . .

### A Measurement of Outcome Variables

### Respondent Characteristics

Our main estimation sample consists of 1,657 households, in which both the man and the woman report non-zero ownership of land.<sup>1</sup> The average age of our survey respondents was 48 for women and 51 for men, and households consisted of 4.6 members on average.<sup>2</sup> Women are less educated than men: 17% of men had completed secondary school compared to only 11% of women (Table A.1, panel A). The median land holding reported in our estimation sample was 8 acres, the mean was 12 acres, the 5th percentile was 2 acres and the 95th percentile was 35 acres of land. Only 12% of households owned more than two plots. The distribution of land holdings reported by women is nearly identical to the distribution of land holdings reported by men (see histogram in Figure A.1). Note that there is a tendency to report land holdings in multiples of five, since the histogram shows distinct spikes in the frequency of reporting 5, 10, 15 or 20 acres. We address the inferential implications of this heaping in Appendix D below.

The majority of survey questions were asked separately to both partners, enabling a comparison of their responses and assessment of each partner's independent knowledge of household activities. The survey included modules on the household's land holdings and associated land rights, agricultural activities (crop patterns, input choices, revenues), other economic activities within the household (including engagement in non-farm enterprises), legal literacy, and knowledge of land rights. Several modules that implemented measurements of women's empowerment were administered only to women, with strict confidentiality protocols put in place (see Appendix C).

### Formal Land Rights and Economic Outcomes

In our sample, a very high proportion (88%) of households report possession of at least one Form 7. Interestingly, more than 30% of plots with at least one Form 7 are reported to have multiple Form 7s associated with them. The most common reasons stated for such multiplicity are boundary differences between the land holder and the land authority (40%), acquisition of different parts of the plot from different owners or at different times (39%), and for the purpose of applying for multiple loans (8%).

We observe significant gender differences between men and women regarding knowledge of the household's land documentation. To the question of how many Form 7s are associated with a given plot, men answer "don't know" on about 19% of a household's plots, compared

We surveyed six households in which men did not report land holding size while women did, and eight households in which women did not report land holding size while men did. These are excluded from our analysis.

<sup>&</sup>lt;sup>2</sup> Because the research design is focused on owners of relatively large agricultural plots, the mean age in our analysis sample is higher than the national average.

to nearly 23% for women—a difference that is statistically significant.<sup>3</sup> As a result, women report 2.16 total Form 7s in the household compared to the 2.23 reported by men.

To measure the extent of women's formal land rights in our data, we use the following two variables: an indicator for whether the wife has her name on any Form 7 for any household plot (this could be co-registered with the husband or someone else), and whether the wife has only her name listed on the Form 7 for an entire plot (this reflects the woman's sole legal control over that plot). Women's formal claims to land assets are very low in this setting. Only 9.4% of households have any Form 7 with the wife's name attached, according to women's responses (men report this figure at 8.9%), and only 5.8% of households report any plot of land with the wife's name exclusively on the Form 7 (Table A.1, panel B).

In our analysis, we focus on indicators of economic participation for which the literature predicts improvement associated with an increase in formal access to land. These include indicators of financial access (the number of land-collateralized loans taken out by women and men separately) and indicators of economic activity and success (agricultural income generated by a given plot, non-agricultural revenue earned by the wife, and total household agricultural revenue). Overall, very few women report having taken out land-collateralized loans; the average number of such loans for women is 0.06 compared to 0.74 for men. In addition, only 21% of men and 19% of women report being engaged in any non-agricultural activities, and the revenue generated from such activities is only about 5% of the revenue from agricultural activities (Table A.2, panel A).

#### Measuring Women's Empowerment

We use a range of indicators to capture women's empowerment, since there is no universally accepted measure of this concept. First, we compute an index of household decision-making for agricultural activities and expenditures. We asked questions about women's involvement in decisions such as hiring agricultural labor, livestock raising, gardening, choosing crops, buying/selling/renting land, and whether decisions were made by the wife alone, jointly with another person, or wholly by another person. We code the wife as being involved in decision-making in a given domain if she reports making decisions alone or jointly with someone else (see Table A.3 for summary statistics of each component). We sum up all these components and construct a standardized index for agricultural decision-making.<sup>4</sup>

Based on their self-reports, we find that women are rarely involved in decisions about land transactions or livestock raising, but are more involved in decisions about gardening or hiring labor (Table A.3). Interestingly, the index of women's agricultural decision-making as reported by men is much higher than the index as reported by women (Table A.2, panel B).

Similarly, we construct a second index of household decision-making based on women's involvement in decisions relating to child care, health care, cooking, education, children's expenditure, food consumption, religious expenditure, and fertility. Based on self-reports,

<sup>&</sup>lt;sup>3</sup> Here we assess statistical significance via a simple t-test comparing the mean responses of women versus men.

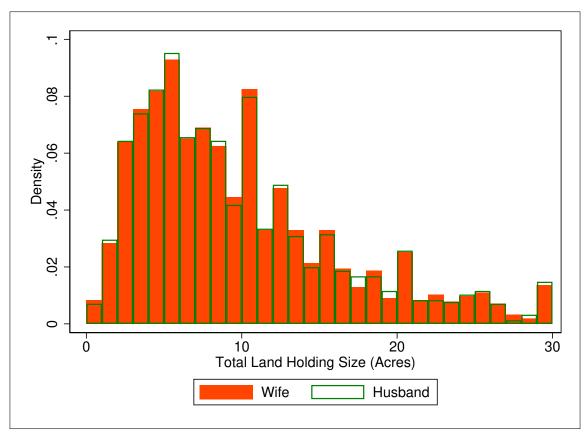
<sup>&</sup>lt;sup>4</sup> The index is constructed as a standard z-score, obtained by subtracting the sample mean from each respondent's raw component sum and dividing by the sample standard deviation.

women are more involved in these decisions relative to the agricultural sphere—except for fertility decisions, where only 17% of women report being involved (Table A.3). Unlike before, where men reported higher levels of women's participation in *agricultural* decision-making, measures of women's involvement in *expenditure* decisions are considerably lower in men's reports relative to women's reports (Table A.2, panel B).

As previously discussed, in addition to having agency over household decisions, an important dimension of empowerment relates to how that agency is exercised: is power taken by the individual, or are they permitted to exercise this power by someone else? We attempt to measure this concept by categorizing women who report higher levels of decision-making authority than their partners report about them as "power-takers," and women who report less decision-making authority than their partners report about them as "power-receivers" (Donald et al. 2020). If both partners report that the woman is involved in decision-making, we categorize these as domains in which the husband and wife agree, while domains in which both partners report no involvement by the woman are not included in this measure. We find that, on average, both husband and wife report no involvement by the wife in four out of five components of agricultural decision-making, while households report power-taking behavior in two out of eight components of expenditure decision-making (Table A.2, panel B).

Finally, we conducted an elicitation exercise designed to measure women's demand for autonomy by asking how much money they would be willing to give up to retain sole control of a specific amount of money or land. This methodology is based on the idea that women with very little within-household autonomy would be willing to give up larger amounts to retain control (see details in Appendix B). Interestingly, despite the patriarchal nature of Myanmar society and limited levels of empowerment measured by the decision-making indices, we find that a sizeable fraction of women in our survey do not have a preference for sole control. However, since this measure was gathered post-treatment, after households may have already redistributed property rights, it may simply reflect satisfaction with current allocations.

Figure A.1: Distribution of Land Holdings as Reported by Husbands and Wives



Notes: This histogram shows the distribution of land holding assessments as reported by husbands and wives in our survey; we restrict the sample to those reporting at least 2 acres and no more than 30 acres of land. The high degree of overlap between men's and women's reports shows that there was not much discrepancy in the size of land holdings as reported by the two household heads. We also observe high probabilities of reporting land holdings in multiples of five, as shown by the spike in frequencies at 5, 10, 15 and 20 acre values.

**Table A.1:** Summary Statistics on Demographics and Women's Property Rights

	Female	Male	Total
Panel A: Demographics			
Age of Respondent	48.437 $(10.422)$	50.810 (10.332)	49.623 (10.443)
Respondent has Less than Primary Education	0.047 $(0.211)$	0.040 $(0.196)$	0.043 $(0.204)$
Respondent has at least Primary but Less than Secondary Education	0.785 $(0.411)$	0.722 $(0.448)$	0.753 $(0.431)$
Respondent has at least Secondary Education	0.111 $(0.315)$	$0.172 \\ (0.377)$	$0.142 \\ (0.349)$
Number of Household Members	$4.564 \\ (1.642)$	$4.563 \\ (1.642)$	$4.563 \\ (1.642)$
Panel B: Formal Property Rights			
Number of plots with nonmissing plot size	1.551 $(0.889)$	1.555 $(0.885)$	1.553 $(0.887)$
Total number of Form 7's in hh	2.156 $(1.685)$	2.232 $(1.821)$	2.195 $(1.756)$
Household has at least 1 Form 7 in Wife's name	0.094 $(0.292)$	0.089 $(0.285)$	0.092 $(0.288)$
HH has at least 1 Form 7 in Wife's name (exclusive)	0.057 $(0.233)$	0.059 $(0.235)$	0.058 $(0.234)$

Notes: This table shows sample means for each variable separately by gender, as well as a combined figure; standard deviations are reported in parentheses. In all figures, the sample is restricted to those who report non-zero land holdings.

**Table A.2:** Summary Statistics on Economic Outcomes and Women's Empowerment Measures

	Total	Wife	Husband
Panel A: Economic Outcomes			
Number of Loans in Wife's Name (Land Collateralized)	0.058 $(0.252)$	$0.063 \\ (0.265)$	0.053 $(0.239)$
Number of Loans in Husband's Name (Land Collateralized)	0.738 $(0.708)$	0.710 $(0.693)$	0.765 $(0.723)$
Total Agricultural Revenue from Plots with Female Name on Form 7 (1000s MMK)	3689.738 $(5103.612)$	3747.073 $(5352.020)$	3632.402 $(4856.312)$
Total Paddy Revenue from Plots with Female Name on Form 7 (1000s MMK)	3070.249 $(5173.931)$	3083.982 $(5400.424)$	3056.517 $(4951.652)$
Total non-Agricultural Income from Wife (1000s MMK)	$65.698 \\ (349.708)$	69.068 $(366.594)$	$62.329 \\ (332.041)$
Total Agricultural Revenue from all Plots (1000s MMK)	$2888.101 \\ (7672.391)$	$2727.815 \\ (4701.593)$	3048.388 $(9778.037)$
Total Agricultural Revenue from all Paddy Plots (1000s MMK)	$2061.691 \\ (7534.968)$	1910.314 (4443.200)	$2213.069 \\ (9684.915)$
Panel B: Women's Agency			
Index of Female Agency in Agricultural Decisions (Standardized Sum)	0.197 $(0.967)$	$0.106 \\ (0.659)$	0.287 $(1.192)$
Index of Female Agency in Expenditure Decisions (Standardized Sum)	-0.022 $(0.999)$	$0.125 \\ (0.787)$	-0.168 (1.156)
Agriculture decisions index: Woman takes power	0.651 $(0.857)$		
Agriculture decisions index: Husband gives power	0.031 $(0.202)$		
Agriculture decisions index: Wife and husband agree	$0.300 \\ (0.646)$		
Expenditure decisions index: Woman takes power	2.312 $(1.842)$		
Expenditure decisions index: Husband gives power	0.406 $(0.872)$		
Expenditure decisions index: Wife and husband agree	1.203 $(1.362)$		

Notes: This table shows sample means for each variable separately by gender, as well as a combined figure; standard deviations are reported in parentheses. In all figures, the sample is restricted to those who report non-zero land holdings.

Table A.3: Components of Decision-Making Indices

	Female	Male	Total
Panel A: Agricultural Decisions Index			
Wife Involved in Decisions About Selling/Renting/Buying Land	0.0754 $(0.264)$	0.261 $(0.439)$	0.168 $(0.374)$
Wife Involved in Decisions About Livestock Raising	0.0221 $(0.147)$	0.273 $(0.446)$	0.148 $(0.355)$
Wife Involved in Decisions About Gardening	$0.646 \\ (0.478)$	$0.462 \\ (0.499)$	0.554 $(0.497)$
Wife Involved in Decisions About Hiring Agricultural Labor	0.480 $(0.500)$	$0.426 \\ (0.495)$	0.453 $(0.498)$
Wife Involved in Decisions About Choosing Crops	0.263 $(0.441)$	0.378 $(0.485)$	0.320 $(0.467)$
Panel B: Expenditure Decisions Index			
Wife Involved in Decisions About Child Care	0.403 $(0.491)$	0.457 $(0.498)$	0.430 $(0.495)$
Wife Involved in Decisions About Healthcare	0.731 $(0.444)$	$0.616 \\ (0.486)$	0.674 $(0.469)$
Wife Involved in Decisions About Cooking	0.966 $(0.182)$	0.484 $(0.500)$	0.725 $(0.447)$
Wife Involved in Decisions About Expenditures for Education	0.529 $(0.499)$	0.536 $(0.499)$	0.533 $(0.499)$
Wife Involved in Decisions About other Expenditures for Children	0.558 $(0.497)$	0.557 $(0.497)$	0.557 $(0.497)$
Wife Involved in Decisions About Expenditures for Food Consumption	0.906 $(0.292)$	0.711 $(0.453)$	0.808 $(0.394)$
Wife Involved in Decisions About Religious Expenditures	0.861 $(0.346)$	0.732 $(0.443)$	0.797 $(0.402)$
Wife Involved in Decisions About Fertility	0.164 $(0.370)$	0.291 $(0.454)$	0.227 $(0.419)$

Notes: This table shows sample means for each individual component of the *Index of Women's Agency* in both *Agricultural* and *Expenditure Decisions* for men and women separately, as well as a combined figure; standard deviations are reported in parentheses. In all figures, the sample is restricted to those who report non-zero land holdings.

### B Behavioral Measures of Empowerment

As part of the household survey, we collected information from a behavioral exercise designed to capture an important aspect of women's economic empowerment. Building on the work of Almas et al. (2018), we elicited the amount (price) that women would be willing to pay in order to control a small cash transfer, following the intuition that women's willingness to pay more to control additional resources decreases when their control of existing resources is greater. The exercise asked women to choose between keeping a certain sum of money for themselves (e.g., 2750 MMK) versus giving a larger sum to their spouse (e.g., 3000 MMK). This choice was repeated with different monetary amounts, until we arrived at the amount for which the woman was indifferent between keeping the smaller sum and giving away the larger sum. For instance, if a woman opts to keep 2750 MMK for herself (as opposed to 3000 MMK for her spouse), but does not prefer to keep 2500 MMK, we infer that her willingness to pay for sole control is between 250 and 500 MMK. Such an elicitation is based on the well known Becker-DeGroot-Marschak (BDM) demand elicitation method.

We find that a sizeable fraction of the women in our survey do not have a preference for sole control; 10% of women would choose to hand over the entire amount of 3000 MMK to their spouse rather than keep it for themselves and 30% of women would choose to do the same even when offered sole control over 3250 MMK (indicating a negative willingness-to-pay for autonomy). These unexpected responses do not stem from a misunderstanding of the questions asked. We repeated the entire BDM elicitation mechanism with choices over land assets rather than cash, and obtained a similar pattern of results. In fact, the correlation between the willingness-to-pay (WTP) measures for cash and for land is a statistically significant 0.62. Interestingly, the correlation of these WTP measures with the self-reported measures of women's decision making is extremely low (between -0.01 and -0.05). Finally, as seen in Table B.1 below, we note that the demand elicitation outcomes seem to be unaffected by the bank incentives examined in this paper.

**Table B.1:** Financial Incentives are Unrelated to Women's Demand for Autonomy

	(1) Amount Willing to Accept for Autonomy in Cash Game (Min)	(2) Amount Willing to Accept for Autonomy in Cash Game (Max)	(3) Amount Willing to Accept for Autonomy in Land Game (Min)	(4) Amount Willing to Accept for Autonomy in Land Game (Max)
Above 10 Acres	-270.988 (439.167)	-188.380 (430.670)	-0.589 $(0.746)$	-0.571 $(0.736)$
RI p-Value Control Mean	0.066 2417.918	0.184 2585.788	0.070 4.462	0.062 4.692
Observations Bandwidth	$431 \\ 2.741$	$565 \\ 3.035$	574 3.363	$575 \\ 3.429$

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Coefficients represent the robust RD effect estimates—with a cutoff defined at ten acres—for women's responses. Robust standard errors are shown in parentheses, and the dependent variable for each specification is indicated in the column header. Alternative p-values derived from the randomization inference procedure are displayed directly beneath standard errors. "Control Mean" is defined as the average of the dependent variable for observations between the lower limit of the RD bandwidth and RD cutoff, while "Observations" indicates the total number of observations used for the RD estimate, i.e., the number of observations that fall within the chosen bandwidth. "Bandwidth" reports the size of the RD bandwidth (in acres), as calculated by the CCT optimal bandwidth procedure.

### C Research Ethics

Research ethics are a critical part of any study involving human subjects. Investigators must carefully consider trade-offs between the potential costs and/or harms to research participants and the benefits that can be generated by the findings. Our research team, in collaboration with our implementation partners—Innovations for Poverty Action (IPA) and Landesa, a land rights NGO with long established connections to Myanmar government and civil society—took several steps to ensure that the research was conducted ethically.

Research team members consulted with and received feedback on all project stages (including research design, survey creation, and data collection) from their respective universities, local partners, and funding organizations. IRB approval was obtained from affiliated universities as well as IPA's own internal process, and permission for survey work was obtained from the Government of Myanmar.<sup>5</sup> Participants were compensated for their time in accordance with local and international standards for this type of survey research. Perhaps most critically, for survey questions that were understood to be sensitive, including questions about the dynamics of the relationship between husbands and wives, multi-part ethics protocols were followed. First, enumerators received special training on how to ask sensitive questions, which were administered privately so that women would be assured of the confidentiality of their responses. During survey administration, respondents heard the questions read aloud over headphones and input their responses directly into a tablet. Finally, strict reporting mechanisms were put in place to manage any adverse events.

<sup>&</sup>lt;sup>5</sup> Survey protocols are listed in Ayeyarwaddy regional government decision No. 16 at the cabinet meeting No. (35/2019). Protocols used for this study will be made available in the interest of research transparency, and on condition that such use does not jeopardize ongoing work or create risk for any participant.

### D Validity of the RD Estimation Strategy

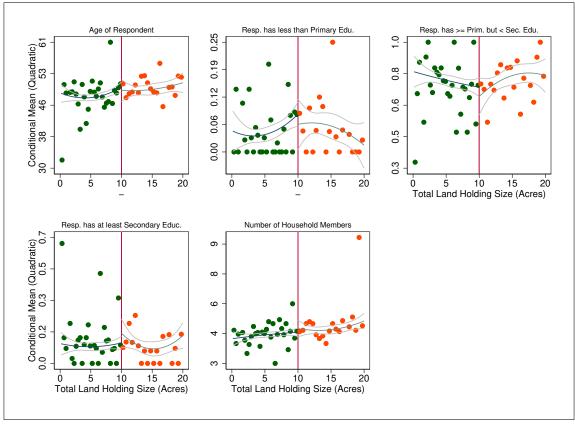
In order to make the claim that RD effect estimates are driven by behavioral responses to the MADB lending policy, we need to verify that other important factors do not show discontinuities at the ten-acre threshold. Figure D.1 illustrates how characteristics such as age, education, and household size change with land holdings. Note that these characteristics vary continuously at the ten-acre threshold, validating the assumption that our comparison is not confounded by differences in household characteristics on either side of the cutoff.

We also examine whether the "running variable" (land holding size) is smoothly distributed at the ten-acre threshold. We would be concerned if households strategically obtained (or sold) land in order to exceed (or fall below) the loan policy cutoff, but we believe this to be unlikely in our context, as it would be illogical for families to do so (indeed the MADB policy guarantees there is no financial incentive in such behavior). Following the norms in the literature, we present a McCrary density test in Figure D.2, and while the graph indicates a discontinuity in land holding at the ten-acre threshold, we do not interpret this as evidence of sorting. Rather, we believe it results from a natural bunching of self-reported land holdings at multiples of five: we can see in Figure D.2 that a similar discontinuity in land holding size distribution is visible at 5, 15, and 20 acre cutoffs as well, even though none of these are relevant to bank lending policies.

Next, since the incentive to subdivide an individual plot is only active for plots strictly larger than ten acres, households reporting exactly ten acres of land are considered to be below the RD threshold in our analysis. This may cause measurement error if some households are assigned to the "control group" (below the RD cutoff)—even though their true land holding is above ten acres—simply because of reporting a rounded number. If the decision to report a rounded number was made randomly by each respondent, then the likelihood of being incorrectly assigned to the control group would be uncorrelated with outcomes, and this misreporting would not be a confounding factor. In Table D.1, we check this condition by comparing respondents who report owning exactly ten acres (comprising both rounders and non-rounders) with respondents who report owning between 9 and 10 or 10 and 11 acres of land (i.e. comprising only non-rounders). Among the baseline characteristics previously reported in Figure D.1, we observe balance in three out of five variables, but find that non-rounders are significantly more likely to have a high school education and come from smaller households. We therefore conduct robustness tests for our main regression results by including controls for education and household size.

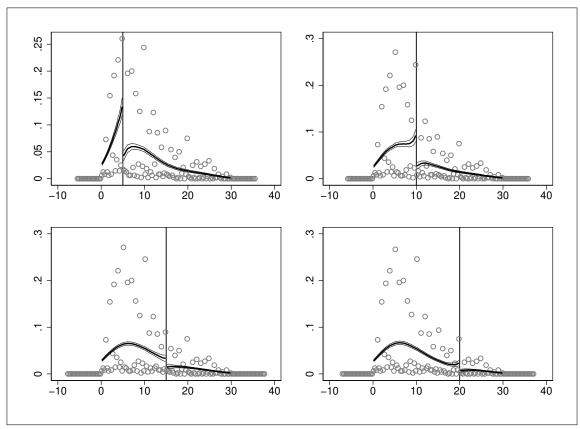
Finally, we need to confirm that our methods are sufficiently powered to identify true effects in the data and to avoid Type-II estimation errors. Following Stommes, Aronow and Savje (2021), we conduct power calculations to determine the number of observations necessary within the RD optimal bandwidth to estimate a minimum detectable effect of a given size. We find that our sample size is sufficient to detect effect sizes of 0.8 standard deviations at 80% power for 46% of our outcome variables for women respondents and 56% for men. This proportion increases to nearly 80% for women respondents after decreasing power to 60% or increasing the effect size to 1 standard deviation (see Table D.2).

Figure D.1: Household Characteristics Above and Below the Ten-Acre Threshold



Notes: In each figure, the conditional mean of the indicated dependent variable (based on women's responses) is plotted for bins of fixed width in the running variable (Total Land Holding Size). The horizontal red line indicates the RD cutoff at ten acres, and separate quadratic lines are fit below the cutoff (between 0 and 10 acres) and above the cutoff (between 10 and 20 acres); 90% confidence intervals for the best-fit lines are also indicated in gray. These figures show no evidence of discontinuities in relevant household characteristics.

Figure D.2: Density of Land Holdings as Reported by Wives



Notes: These figures represent McCrary style density tests for manipulation in the running variable. We plot the density of reported land holding size for women, and test whether the distribution exhibits a discontinuity at a specific cutoff. We see that the distribution exhibits statistically significant discontinuities at the 5-acre, 10-acre, 15-acre and 20-acre integer values. The estimated size of the discontinuities and associated standard errors are, respectively, -1.250 (0.136), -1.288 (0.162), -0.803 (0.203) and -1.284 (0.293). The fractions of households that report owning exactly 5, 10, 15 or 20 acres of land are 8.0%, 7.5%, 2.7% and 2.3%, respectively. We interpret these graphs as evidence that reporting of land values is bunched at integer values rather than evidence of intentional sorting.

Table D.1: Comparison of Rounders vs. Non-Rounders

	Non-Rounders	Rounders	Diff.
Age of Respondent	51.90	52.08	-0.183 (1.646)
Respondent has Less than Primary Education	0.03	0.06	-0.028 $(0.034)$
Respondent has at least Primary but Less than Secondary Education	0.71	0.74	-0.035 $(0.065)$
Respondent has at least Secondary Education	0.24	0.12	0.126** (0.051)
Number of Household Members	4.09	4.65	-0.567** (0.229)
Observations	58	225	

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. This table compares mean values of select characteristics between "rounders" and "non-rounders". "Rounders" are individuals that report owning exactly ten acres of land, and "non-rounders" are those that report owning between 9 and 10 or 10 and 11 (exclusive) acres of land. Standard Errors are reported in parentheses.

 Table D.2: Power Calculations

#### Wives' Responses

		Power	
Effect Size	60%	80%	95%
0.1	0.00	0.00	0.00
0.2	0.00	0.00	0.00
0.5	0.12	0.00	0.00
0.8	0.77	0.46	0.08
1.0	0.77	0.77	0.42

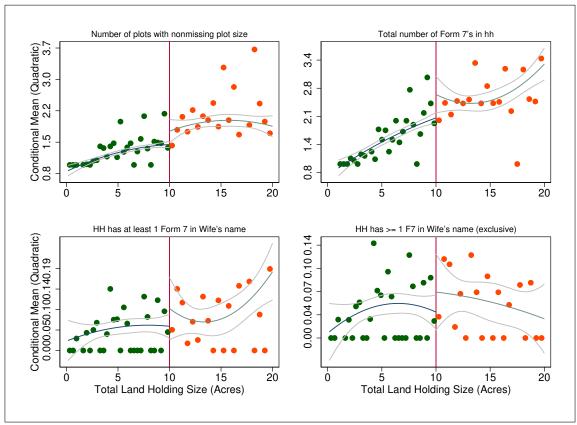
#### **Husband's Responses**

		Power	
Effect Size	60%	80%	95%
0.1	0.00	0.00	0.00
0.2	0.00	0.00	0.00
0.5	0.19	0.13	0.06
0.8	0.69	0.56	0.19
1.0	0.69	0.69	0.44

Notes: For any given effect size and power level, these tables indicate the proportion of outcome variables for which our effective sample size (as determined by the optimal bandwidth procedure in Calonico, Cattaneo and Titiunik 2014) is sufficient. Results are presented separately for Women's and Men's responses.

## E Additional Figures and Tables

Figure E.1: The Effect of Financial Incentives on Formal Property Rights



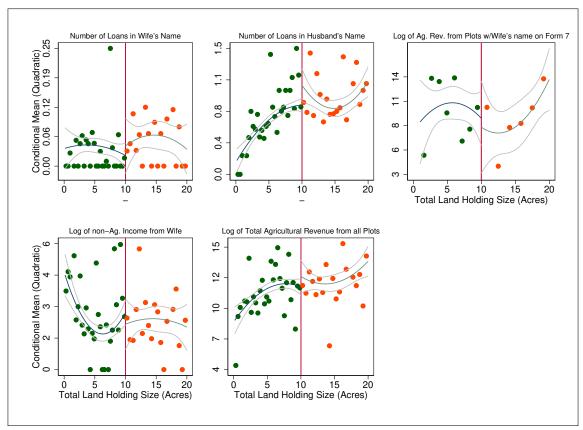
Notes: In each figure, the conditional mean of the indicated dependent variable is plotted for bins of fixed width in the running variable (Total Land Holding Size). The horizontal red line indicates the RD cutoff at ten acres, and separate quadratic lines are fit below the cutoff (between 0 and 10 acres) and above the cutoff (between 10 and 20 acres); 90% confidence intervals for the best fit lines are also indicated in gray. All plots are based on women's responses only.

Table E.1: RD Results: Husband's Responses

		Pr	Property Rights			Есопо	Economic Outcomes		
	(1)	(2)	(3)	(4)	(5)	(9)	(7) Log Total	(8)	(6)
	Number of Plots with nonmissing plot size	Total num. of Form 7s in HH	Household has at least 1 Form 7 in Wife's name	HH has at least 1 Form 7 in Wife's name (exclusive))	Number of Loans in Wife's Name (Land Collateralized)	Number of Loans in Husband's Name (Land Collateralized)	Agricultural Revenue from Plots with Wife's Name on Form 7	Log Total non- Agricultural Income from Wife	Log Total Agricultural Revenue from all Plots
Conventional	0.847***	-0.078 (0.288)	0.207* (0.110)	0.210*	0.330 (0.225)	0.197 (0.235)	-2.188 (3.268)	-2.084** (0.954)	-0.669 (1.230)
Bias-corrected	1.350*** $(0.238)$	0.050 $(0.288)$	0.282** (0.110)	0.281** (0.111)	0.536** $(0.225)$	0.642*** (0.235)	2.349 (3.268)	-1.221 $(0.954)$	-0.438 (1.230)
Robust	1.350*** $(0.331)$	0.050 $(0.436)$	0.282 $(0.234)$	0.281 $(0.235)$	0.536 $(0.472)$	0.642* $(0.343)$	2.349 (4.186)	-1.221 (1.281)	-0.438 (1.792)
RI p-Value Control Mean Observations Bandwidth	0.000 1.438 404 2.133	0.688 2.032 353 2.402	0.000 0.048 428 2.625	0.000 0.045 427 2.599	0.000 0.051 404 2.188	0.052 0.888 404 2.163	0.186 12.197 78 6.161	0.000 2.235 434 2.945	0.222 12.338 574 3.362

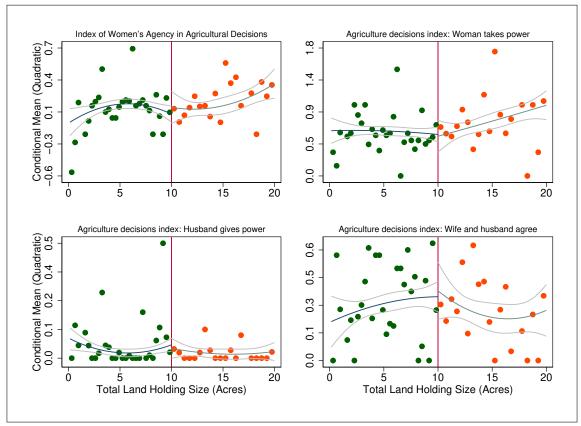
RD estimates with robust variance estimator. (See Calonico, Cattaneo and Titiunik 2014 for more details.) Standard errors are shown in parentheses, and alternative p-values derived from the randomization inference procedure are displayed beneath the results. "Control Mean" is defined as the average of the dependent variable for observations between the lower limit of the RD bandwidth and RD cutoff, while "Observations" indicates the total number of observations used for the RD estimate, i.e., the number of observations that fall within the chosen bandwidth. "Bandwidth" reports the size of the RD bandwidth (in acres), as calculated by the CCT optimal bandwidth procedure. Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Coefficients represent the RD effect estimates—with a cutoff defined at ten acres—for men's responses. Since men's responses provide noisier measures The following estimates are reported: (i) conventional RD estimates with conventional variance estimator; (ii) bias-corrected RD estimates with conventional variance estimator; (iii) bias-corrected than women's responses, we present less conservative RD estimates in addition to the robust estimates reported in all other tables in the paper, i.e., estimate procedure (iii) as described below.

Figure E.2: The Effect of Financial Incentives on Loan and Economic Outcomes



Notes: In each figure, the conditional mean of the indicated dependent variable is plotted for bins of fixed width in the running variable (Total Land Holding Size). The horizontal red line indicates the RD cutoff at ten acres, and separate quadratic lines are fit below the cutoff (between 0 and 10 acres) and above the cutoff (between 10 and 20 acres); 90% confidence intervals for the best-fit lines are also indicated in gray. All plots are based on women's responses only.

Figure E.3: The Effect of Financial Incentives on Women's Agency: Agricultural Decisions



Notes: In each figure, the conditional mean of the indicated dependent variable is plotted for bins of fixed width in the running variable (Total Land Holding Size). The horizontal red line indicates the RD cutoff at ten acres, and separate quadratic lines are fit below the cutoff (between 0 and 10 acres) and above the cutoff (between 10 and 20 acres); 90% confidence intervals for the best-fit lines are also indicated in gray. The aggregate index for agricultural decisions presented in the first panel is based on the women's responses only. The remaining power indices are defined from a combination of men's and women's responses.

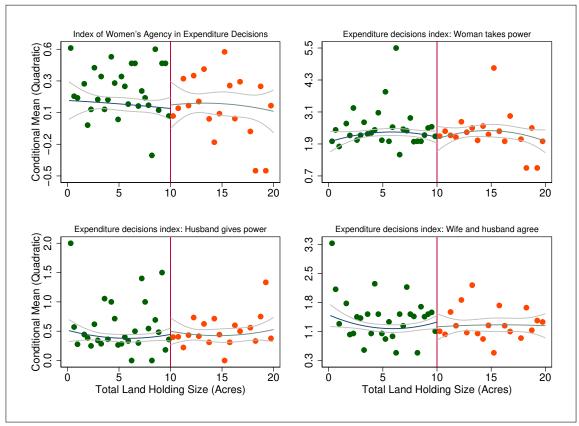
**Table E.2:** Financial Incentives are Unrelated to Women's Agency in Expenditure Decisions

	(1) Index of	(2) Index of	(3)	(4)	(5)
	Women's Agency in Expenditure Decisions, Wife's Response	Women's Agency in Expenditure Decisions, Husband's Response	Expenditure Decisions index: Wife takes power	Expenditure Decisions index: Husband gives power	Expenditure Decisions index: Wife and husband agree
Above 10 Acres	-0.056	0.390	-0.109	0.830	0.290
	(0.298)	(0.404)	(0.563)	(0.521)	(0.569)
RI p-Value	0.902	0.040	0.838	0.000	0.248
Control Mean	0.103	-0.117	2.236	0.415	1.282
Observations	431	396	569	270	403
Bandwidth	2.731	2.153	3.170	1.890	2.074

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Coefficients represent the robust RD effect estimates—with a cutoff defined at ten acres—for women (column 1) and men (column 2) responses. (Columns 3–5 are derived from a combination of men's and women's responses.) Robust standard errors are shown in parentheses, and the dependent variable for each specification is indicated in the column header. Alternative p-values derived from the randomization inference procedure are displayed directly beneath standard errors. "Control Mean" is defined as the average of the dependent variable for observations between the lower limit of the RD bandwidth and RD cutoff, while "Observations" indicates the total number of observations used for the RD estimate, i.e., the number of observations that fall within the chosen bandwidth. "Bandwidth" reports the size of the RD bandwidth (in acres), as calculated by the CCT optimal bandwidth procedure.

Figure E.4: The Effect of Financial Incentives on Women's Agency: Expenditure

Decisions



Notes: In each figure, the conditional mean of the indicated dependent variable is plotted for bins of fixed width in the running variable (Total Land Holding Size). The horizontal red line indicates the RD cutoff at ten acres, and separate quadratic lines are fit below the cutoff (between 0 and 10 acres) and above the cutoff (between 10 and 20 acres); 90% confidence intervals for the best-fit lines are also indicated in gray. The aggregate index for expenditure decisions presented in the first panel is based on the women's responses only. The remaining power indices are defined from a combination of men's and women's responses.

Table E.3: Robustness Check: Controlling for Education and Household Size

		Property Rights	7 Rights			Econ	<b>Economic Outcomes</b>	omes			Agency	Agency in Ag. Decisions	ecisions	
	(1)	(2)	(3)	(4)	(5)	(9)	(7)	(8)	(6)	(10)	(11)	(12)	(13)	(14)
Above 10 Acres	1.010***	1.010*** 0.940*** 0.140*	* 0.140*	0.136*	0.168*	0.860*** -1.590	* -1.590	-2.394*	1.665	0.084	0.443	-0.487	0.198	0.479
	(0.287)	(0.287) $(0.355)$ $(0.084)$	(0.084)	(0.081)	(0.094)	(0.279)	(4.447)	(1.228)	(1.215)	(0.175)	(0.434)	(0.345)	(0.221)	(0.508)
Control Mean	1.446	1.983	0.069	0.055	0.032	0.814	10.494	2.253	11.626	0.077	0.424	0.636	0.069	0.330
Observations	404	353	428	427	404	404	28	434	574	580	403	271	267	271
Bandwidth	2.133	2.402	2.625	2.599	2.188	2.163	6.161	2.945	3.362	3.659	2.333	1.983	1.848	1.987

rate and household size. Robust standard errors are shown in parentheses beneath each regression coefficient. "Control Mean" is defined as the average of the dependent variable for observations between the lower limit of the RD bandwidth and RD cutoff, while "Observations" indicates the total number of observations used for the RD estimate, i.e., the number of Log Total non-Agricultural Income from Wife; (9) Log Total Agricultural Revenue from all Plots; (10) Index of Women's Agency in Agricultural Decisions, Wife's Responses; (12) Agricultural Decisions index: Husband's Responses; (12) Agricultural Decisions index: Husband gives power; (14) \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Coefficients represent the robust RD effect estimates—with a cutoff defined at ten acres—for women's responses (note that column 11 is actually based on men's responses, while Columns 12-14 are derived from a combination of men's and women's responses.) All regressions include controls for secondary education observations that fall within the chosen bandwidth. "Bandwidth" reports the size of the RD bandwidth (in acres), as calculated by the CCT optimal bandwidth procedure. The order of regression models follows that of the paper's main tables, with each number indicating a different dependent variable, as follows: (1) Number of Plots with nonmissing plot size, (2) Total num. of Form 7s in HH; (3) Household has at least 1 Form 7 in Wife's name (joint); (4) HH has at least 1 Form 7 in Wife's name (excl. and no other man); (5) Number of Loans in Wife's Name (Land Collateralized); (6) Number of Loans in Husband's Name (Land Collateralized); (7) Log Total Agricultural Revenue from Plots with Wife's Name on Form 7; (8) Agricultural Decisions index: Wife and husband agree.

Number of plots with nonmissing plot size Total number of Form 7's in hh 1.5 Effect Size Ţ Ŋ HH has at least 1 Form 7 in Wife's name HH has >= 1 F7 in Wife's name (exclusive) ဖ Effect Size 0 Ŋ 0 ٦. RD Cutoff (Acres) RD Cutoff (Acres)

Figure E.5: Coefficient Plots for Land Outcomes

Notes: Each figure plots the RD Effect for the indicated outcome ( $\beta_{RD}$  from Equation 1) using 11 different cut-off points in the running variable (Total Land Holding Size), ranging from 5 acres to 15 acres. For each different cut-off value, the point estimate for  $\beta_{RD}$  is plotted along with the 90% confidence interval. All results are based on women's responses only.

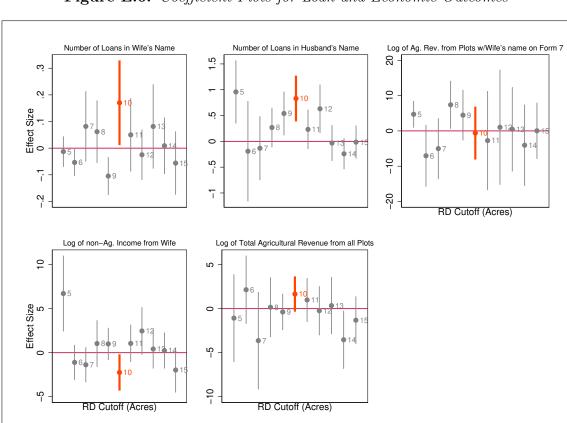
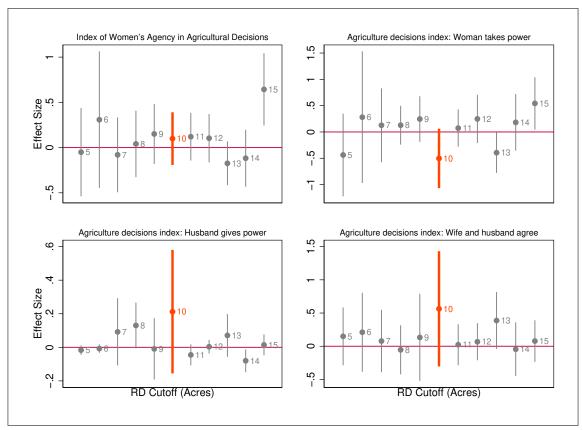


Figure E.6: Coefficient Plots for Loan and Economic Outcomes

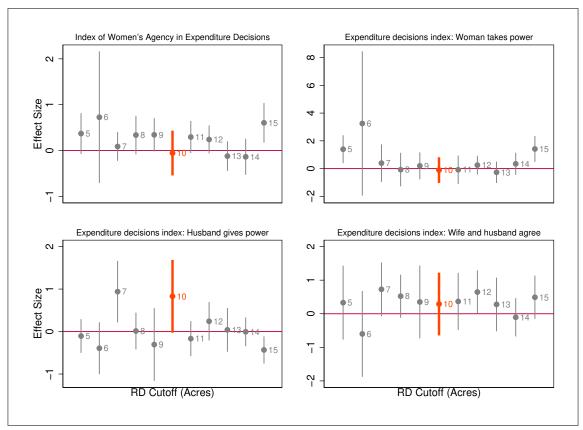
Notes: Each figure plots the RD Effect for the indicated outcome ( $\beta_{RD}$  from Equation 1) using 11 different cut-off points in the running variable (Total Land Holding Size), ranging from 5 acres to 15 acres. For each different cut-off value, the point estimate for  $\beta_{RD}$  is plotted along with the 90% confidence interval. All results are based on women's responses only.

Figure E.7: Coefficient Plots for Agency Outcomes: Agricultural Decisions



Notes: Each figure plots the RD Effect for the indicated outcome ( $\beta_{RD}$  from Equation 1) using 11 different cut-off points in the running variable (Total Land Holding Size), ranging from 5 acres to 15 acres. For each different cut-off value, the point estimate for  $\beta_{RD}$  is plotted along with the 90% confidence interval. The aggregate index for expenditure decisions presented in the first panel is based on the women's responses only. The remaining power indices are defined from a combination of men's and women's responses.

Figure E.8: Coefficient Plots for Agency Outcomes: Expenditure Decisions



Notes: Each figure plots the RD Effect for the indicated outcome ( $\beta_{RD}$  from Equation 1) using 11 different cut-off points in the running variable (Total Land Holding Size), ranging from 5 acres to 15 acres. For each different cut-off value, the point estimate for  $\beta_{RD}$  is plotted along with the 90% confidence interval. The aggregate index for expenditure decisions presented in the first panel is based on the women's responses only. The remaining power indices are defined from a combination of men's and women's responses.

### F Analysis of Political Outcomes

The existing literature on democratization and political participation finds that historically, greater land equality is related to increased demands for democracy (Ansell and Samuels 2010; Albertus 2015). To examine whether formal property rights can influence the political participation of women, we explore five basic measures of political knowledge and behavior: (1)–(2) whether respondents could name political leaders in the Ayerarwaddy regional government (the Chief Minister and the Village Tract Administrator), (3) whether they were planning to vote in the upcoming national election, (4) whether they thought democratic processes were preferable to other forms of government, and (5) their general satisfaction with democracy in Myanmar. Overall, we find little to no effects. While we do not observe any evidence that women in households above the ten-acre threshold are more politically aware or have different democratic preferences, we note that men in such households are more likely to know the name of the village tract administrator (VTA). One possible explanation of this result is that men spend time interacting with local officials, including the VTA, while transferring land titles to their wives. The fact that we observe this effect for men—and not women—suggests that the administrative process of land registration is handled primarily by the benefactor rather than the beneficiary of the transfer. Given that we do not find strong effects of de jure property rights transfers on other economic or empowerment outcomes, this set of largely null results for women's political engagement is not unexpected.

<sup>&</sup>lt;sup>6</sup> The latter question elicited responses based on an integer scale ranging from 1 ("Very Satisfied") to 4 ("Not at all satisfied").

**Table F.1:** Financial Incentives are Unrelated to Political Outcomes

	(1)	(2)	(3)	(4) Dem.	(5)
	Name CM of Ayeyarwaddy correctly	Name VTA correctly	Plan to vote in upcoming National election	always preferable to any other gov.	Satisfaction with democracy in Myanmar
Panel A: Wife	0.004 $(0.063)$	0.010 $(0.073)$	-0.119 (0.091)	0.163 $(0.119)$	-0.023 (0.143)
RI p-Value	0.496	0.872	0.000	0.022	0.478
Control Mean	0.058	0.943	0.977	0.442	1.849
Observations	583	568	569	565	672
Bandwidth	3.795	3.116	3.163	3.027	4.240
Panel B: Husband	-0.138*	0.060***	-0.132	-0.078	0.311
	(0.083)	(0.021)	(0.148)	(0.254)	(0.333)
RI p-Value	0.256	0.000	0.000	0.406	0.302
Control Mean	0.142	0.964	0.992	0.614	1.678
Observations	583	568	569	565	672
Bandwidth	3.795	3.116	3.163	3.027	4.240

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Coefficients represent the robust RD effect estimates—with a cutoff defined at ten acres—for women's and men's responses separately. Robust standard errors are shown in parentheses, and the dependent variable for each specification is indicated in the column header. Alternative p-values derived from the randomization inference procedure are displayed directly beneath standard errors. "Control Mean" is defined as the average of the dependent variable for observations between the lower limit of the RD bandwidth and RD cutoff, while "Observations" indicates the total number of observations used for the RD estimate, i.e., the number of observations that fall within the chosen bandwidth. "Bandwidth" reports the size of the RD bandwidth (in acres), as calculated by the CCT optimal bandwidth procedure.

### References

- Albertus, Michael. 2015. Autocracy and redistribution. Cambridge University Press.
- Almas, Ingvild, Alex Armand, Orazio Attanasio and Pedro Carniero. 2018. "Measuring and changing control: Women's empowerment and targeted transfers." *The Economic Journal* 128:F609–F639.
- Ansell, Ben and David Samuels. 2010. "Inequality and democratization: A contractarian approach." Comparative Political Studies 43(12):1543–1574.
- Calonico, Sebastian, Matias Cattaneo and Rocio Titiunik. 2014. "Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs." *Econometrica* 6(6):2295–2326.
- Donald, Aletheia, Gayatri Koolwal, Jeannie Annan, Kathryn Falb and Markus Goldstein. 2020. "Measuring women's agency." Feminist Economics 26(3):200–226.
- Stommes, Drew, P.M. Aronow and Fredrik Savje. 2021. "On the reliability of published findings using the regression discontinuity design in political science." Working paper.