Forgone Investment: Civil Conflict and Agricultural Credit in Colombia

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Do producers forgo otherwise profitable investments due to conflict?

- Forgone investment may lead to low growth and persistent violence, but the effect of conflict (sign, magnitude) remains unclear
- Answering this question faces two major empirical challenges:
  - How to measure willingness to invest? (demand vs supply)
  - How to identify the causal effect of conflict?
- Is conflict the binding constraint on investment in remote, rural areas with weak property rights and limited access to markets?

We study the effect of conflict on Colombian farmers' credit demand

- We use administrative data on the universe of business loans to small producers by Colombia's largest agricultural bank (2009-2019)
  - 2.9 million loans, 1.7 million applicants ($\approx$ 64% of agr. producers)
  - Detailed data on loans and applicants (incl. credit scores and default)
- We exploit variation in conflict from the 2016 peace agreement between the Colombian government and FARC insurgency
  - Classify municipalities based on exposure to FARC between 1996-2008
  - Difference-in-difference design with municipality and dpt-month FE
- We use a simple model of investment decisions to guide our analysis of potential mechanisms

Preview of results: Peace leads to a sizable increase in investment

- Credit disbursements experience a relative increase in FARC municipalities after the end of conflict ($\approx$ 17% of sample mean)
  - More loan applications, no changes to supply-side factors
  - No effect during interim negotiations period despite less violence
  - No effect in municipalities located far from markets
  - Increases in new bank clients (w/ lower wealth) and in loan maturity
- No change in delinquency rates or in misuse of funds
  - Conflict seemingly affects investment returns more than risk
  - Increase in night lights suggests a positive economic impact of peace
- Overall, evidence suggests that producers forgo a sizable amount of profitable investments due to conflict

Literature: Civil conflict and agriculture in developing countries

- Literature on economic costs of conflict is relatively underdeveloped (Abadie and Gardeazabal, 2003; Miguel and Roland, 2011; Besley and Mueller, 2012)
  - Changes in rural production and assets correlated with conflict (Deininger, 2003; Verpoorten, 2009; Arias et al., 2019)
  - Colombian peace agreement (Namen et al., 2020; Prem et al., 2020a,b)

- Literature on rural financial markets in developing countries is mostly focused on market imperfections (Banerjee, 2003; Conning and Udry, 2007)

- **This paper:** Exogenous variation + administrative data to estimate the causal impact of armed conflict on producers' investment decisions

Roadmap

Introduction

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Main Results

Mechanisms: Theory and Evidence

Conclusions

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Colombia's civil conflict: 50+ years and over 200,000 victims

- FARC was a Marxist insurgency created in 1964, mostly involved in low-intensity fighting and local extortion in its early decades

- Conflict intensifies in 1990s:
  - FARC's involvement with drug trade and military power both increase
  - Vicious fighting with right-wing paramilitaries in rural areas
  - Failed peace effort (98-02) followed by strong military campaign

- Peace negotiations begin in 2012 and culminate in 2016 agreement
  - FARC demobilizes, abandons drug trade and helps in demining
  - FARC gets temporary seats in Congress and transitional justice
  - Government also agrees to implement policies for rural development
  - Victims Bill in June 2011 allows for reparations and land restitution

BAC plays a key role in Colombia's agricultural credit market

- Banco Agrario de Colombia (BAC) is a public bank required to allocate at least 70% of its portfolio to agricultural activities
- Main source of agricultural credit for small producers (93% in 2019)
- Present in 1,063 municipalities (95%): branches in 710 municipalities (63%) + field officers in others
- BAC allocates rediscount resources from second-tier bank FINAGRO:
  - Subsidized interest rates + government collateral + loan audits

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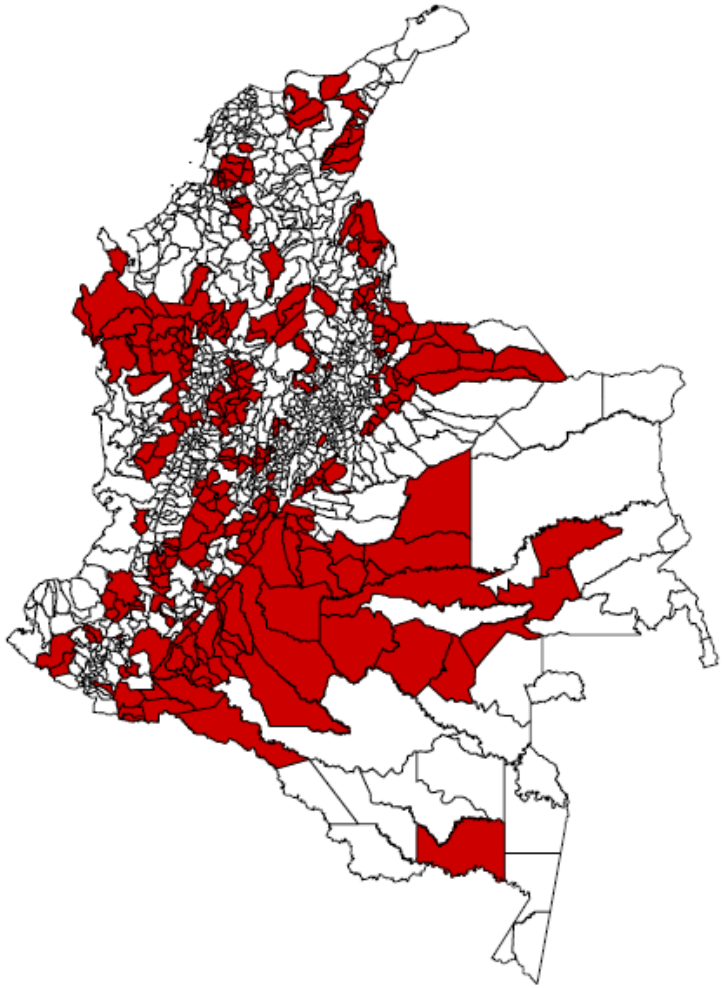
We measure FARC exposure using an event-based conflict dataset

- Source: Universidad del Rosario
- We calculate total FARC attacks between 1996-2008 (per 10,000 inh.) Time series
- Our preferred measure of FARC exposure is a dummy for municipalities in top 25% of aggregate attacks



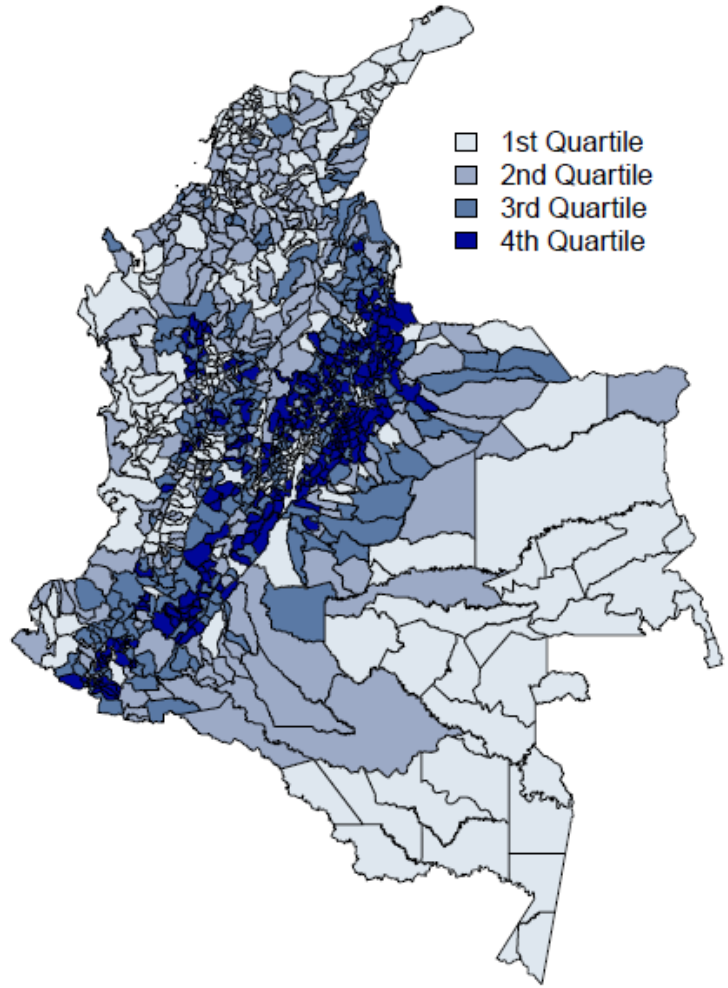
FARC municipalities

We use granular administrative data on agricultural credit from BAC

- Universe of business loans to small producers between 2009-2019: 2.9 million loans, 1.7 million applicants

- Detailed data starting at the application stage (including credit scores and default) [scoring models since 2012/07]

- We aggregate most outcomes at the municipality-month level and normalize by population



Loan applications per 10,000 inh.

We compare areas with $\neq$ FARC exposure before-after peace deal

$$y_{ijt} = \alpha_i + \delta_{jt} + \beta_1 \text{FARC}_i \times \text{Neg}_t + \beta_2 \text{FARC}_i \times \text{Agr}_t + X_{it} + \epsilon_{ijt}$$

- y_{ijt}: outcome in municipality i, department j, month t
- α_i and δ_{jt}: municipality and department-month FE
- We divide sample period into **pre-period** (2009-01/2011-05), **negotiations** (2011-06/2016-10) and **agreement** (2016-11/2019-12)
- X_{it}: month FE interacted with (i) quartiles of rural pop, (ii) shares of land devoted to 10 main crops, (iii) dummy for coca cultivation
- ϵ_{ijt}: error clustered two-way by municipality and department-year

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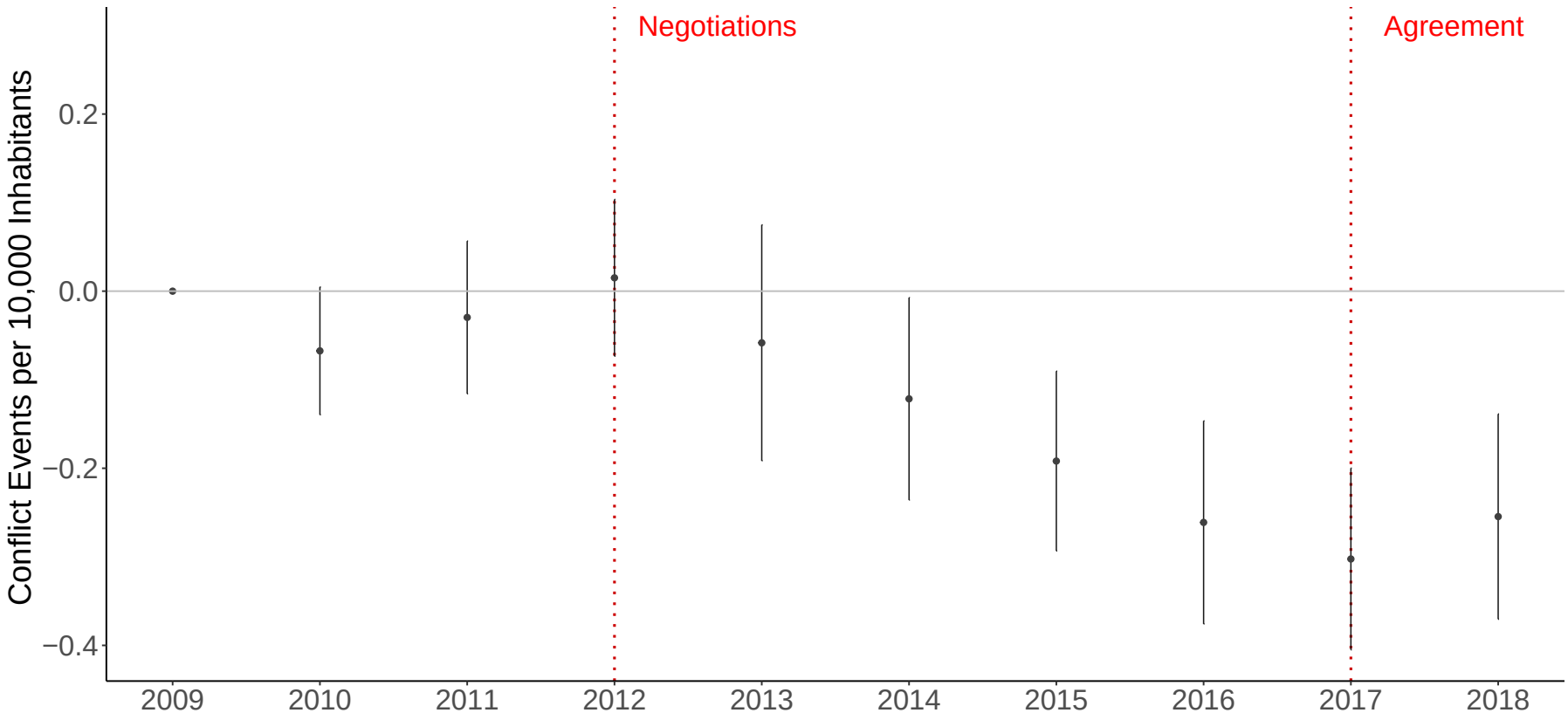
Negotiations lead to reduced conflict intensity in FARC municipalities

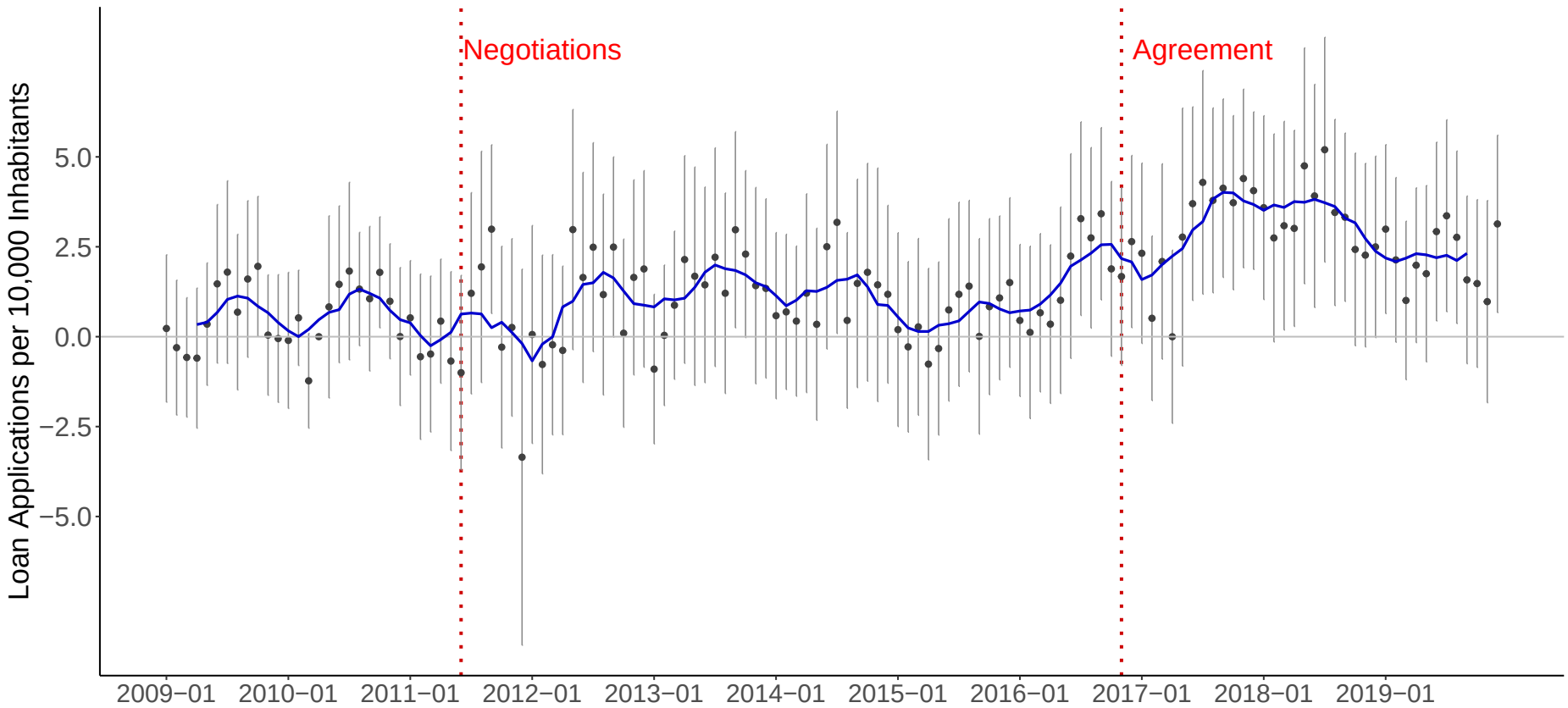


$$\text{Conflict events}_{ijt} = \alpha_i + \delta_{jt} + \sum_{\tau} \beta_\tau \text{FARC}_i + X_{it} + \epsilon_{ijt}$$

Source: National Agency for Reparation of Victims

Disaggregate results by event type

Loan applications increase in FARC municipalities after the agreement



$$\text{Loan applications rate}_{ijt} = \alpha_i + \delta_{jt} + \sum_{\tau} \beta_\tau \text{FARC}_i + X_{it} + \epsilon_{ijt}$$

Quarter-level estimates

Loan applications and disbursements increase after peace agreement

	Loan Applications per 10,000 inh.			Disbursement rate	
				Number	Value
	(1)	(2)	(3)	(4)	(5)
FARC$_i$ x Negotiations$_t$ [a]			0.567	0.701	7.611
			(0.643)	(0.489)	(4.639)
FARC$_i$ x Agreement$_t$ [b]	2.325***	1.917***	2.308***	2.077***	19.112***
	(0.572)	(0.498)	(0.743)	(0.627)	(5.686)
Municipality FE	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes
Baseline controls	No	Yes	Yes	Yes	Yes
Observations	148,104	148,104	148,104	148,104	148,104
R-squared	0.692	0.707	0.707	0.707	0.695
Mean DV	17.963	17.963	17.963	14.382	114.661
p-value H_0: [a] = [b]	-	-	0.000	0.001	0.001

- Effect on monthly disbursements in column 5 (millions of 2019 COP per 10,000 inh.), equivalent to $14,500 increase using PPP-adjusted exchange rate (17% of sample mean)

Results are robust to changes in data sources, controls, or sample

- Choice of controls:
  - Population, munic. category Table
  - LASSO regression Table
  - Prop. score weights Table Figure
- FARC exposure:
  - Different cut-offs Figure
  - Shorter pre-period Figure
  - Continuous measure Table
  - Alternative data source Table
  - Including other armed groups Table
- Sample composition:
  - Excluding departments Figure
  - Excluding coca producers Table
  - Shorter sample period Figure

Roadmap

A stylized model of investment guides our study of mechanisms

- Farmer with CRRA utility function that depends on wealth w:

$$u(w) = \frac{w^{1-\rho} - 1}{1-\rho}, \quad \rho \geq 0, \ \rho \neq 1$$

- Investment opportunity with cost $c > 0$ requires taking out a loan
  - Cost of loan b depends on size l, interest rate i and application cost a
  - Success w/ prob. $q \in (0, 1)$ yields return $r > 0$.
  - Failure w/ prob. $1 - q$ and cost $k > 0$ (lost wealth, lower credit score)

- Indifference condition for investment, given initial wealth w_0:

$$q(w_0 + r - b(l(c), i, a))^{1-\rho} + (1-q)(w_0 - k)^{1-\rho} = w_0^{1-\rho}$$

- Investment increasing in r, q and w_0, decreasing in ρ and b

We distinguish between treatment and selection effects of conflict

- We aim to understand **how** does conflict affect investment (treatment) and **who** are the affected farmers/projects (selection)
  - Parameters in the model could be fixed or stochastic (i.e. sources of heterogeneity) Example
- Potential treatment channels include:
  - Changes in application costs or BAC policies [e.g., approval rates] (b)
  - Lower returns due to "stationary bandits" or less economic activity (r)
  - Higher risk due to ongoing hostilities or "roving bandits" (q)
- We study changes in the composition of applicants and loans, as well as heterogeneous effects of peace deal on credit demand

Mechanisms: Preview of results

- Peace deal attracts new clients with lower wealth (financial inclusion)
- Negligible role of supply-side factors: BAC branches, approval rates
- No evidence of changes in risk (q): credit scores, default rates
- Suggestive evidence of changes in project returns (r): increase in loan maturity, greater impact near markets, increase in night-time lights
- Some evidence of complementarity w/ land restitution: higher share of loans w/ own collateral, larger impact in areas w/ more claims

Supply-side factors are not driving the increase in credit demand

	Loan Application rate	Share of Applications				Average Interest Rate
		Field	Approved			
	(1)	(2)	(3)	(4)	(5)	(6)
$FARC_i$ x $Negotiations_t$ [a]	0.569	-0.027*	0.011*			0.071
	(0.640)	(0.015)	(0.007)			(0.348)
$FARC_i$ x $Agreement_t$ [b]	2.366***	0.020	-0.004	-0.003	-0.002	0.200
	(0.738)	(0.018)	(0.007)	(0.004)	(0.004)	(0.425)
Distance to BAC branch $(Km)_{it}$	-0.292***					
	(0.053)					
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes
Individual-level controls	No	No	No	Yes	No	No
Credit scores + Analyst FE	No	No	No	No	Yes	No
Observations	148,104	110,648	136,055	1,176,743	1,176,743	133,576
R-Squared	0.708	0.641	0.305	0.074	0.101	0.654
Mean DV	17.963	0.323	0.778	0.822	0.822	11.807
p-value H_0: [a] = [b]	0.000	0.000	0.000	-	-	0.645

Peace deal attracts new clients with lower wealth

	All applicants			Scoring models	
	Share New	Share Female	Mean Age	Mean Assets	Mean Income
	(1)	(2)	(3)	(4)	(5)
FARC$_i$ x Negotiations$_t$ [a]	-0.005	0.006	0.225		
	(0.009)	(0.005)	(0.138)		
FARC$_i$ x Agreement$_t$ [b]	0.024**	0.010	-0.016	-1.351***	-0.017
	(0.011)	(0.007)	(0.171)	(0.514)	(0.062)
Municipality FE	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes	Yes
Observations	136,055	136,055	136,055	82,562	82,562
R-Squared	0.324	0.313	0.289	0.498	0.531
Mean DV	0.376	0.414	44.436	58.857	3.988
p-value H_0: [a] = [b]	0.000	0.418	0.035	-	-

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	(0.011)	(0.007)	(0.171)	(0.514)	(0.062)
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Baseline controls	Yes	Yes	Yes	Yes	Yes
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Mean DV	0.376	0.414	44.436	58.857	3.988
p-value H_0: [a] = [b]	0.000	0.418	0.035	-	-

- Changes in demographics could reflect heterogeneity in risk aversion (ρ) or returns (r)

- Change in wealth consistent with poorer farmers (low w_0) selecting out of investment under conflict (CRRA $\Rightarrow$ DARA) or with poorer farmers being more exposed to conflict

Loan maturity and share with own collateral increase after peace

	Average Loan Size	Share of Disbursed Loans			
		w/ Own Collateral	Maturity (Years)		
			≤ 2	3-5	≥ 6
	(1)	(2)	(3)	(4)	(5)
FARC$_i$ x Negotiations$_t$ [a]	-0.056	-0.002	0.009	-0.005	-0.004
	(0.120)	(0.012)	(0.012)	(0.010)	(0.011)
FARC$_i$ x Agreement$_t$ [b]	-0.080	0.027*	0.004	-0.031**	0.028*
	(0.149)	(0.014)	(0.016)	(0.014)	(0.016)
Municipality FE	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes	Yes
Observations	133,576	133,576	133,576	133,576	133,576
R-Squared	0.481	0.636	0.556	0.485	0.562
Mean DV	7.863	0.250	0.371	0.368	0.261
p-value H_0: [a] = [b]	0.837	0.003	0.626	0.019	0.010

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$FARC_i$ x $Negotiations_t$ [a]	-0.056	-0.002	0.009	-0.005	-0.004
	(0.120)	(0.012)	(0.012)	(0.010)	(0.011)
$FARC_i$ x $Agreement_t$ [b]	-0.080	0.027*	0.004	-0.031**	0.028*
	(0.149)	(0.014)	(0.016)	(0.014)	(0.016)
Municipality FE	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes	Yes
Observations	133,576	133,576	133,576	133,576	133,576
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Mean DV	7.863	0.250	0.371	0.368	0.261
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- Higher share of loans w/ own collateral could reflect improved property rights under land restitution program (De Soto, 2000) $\Rightarrow$ lower application costs (a)

- Change in loan maturity consistent with projects with lower returns (DPV) or higher risk (1-q) being forgone due to conflict

No change in credit scores, misuse of funds or delinquency rates

	Average Credit Score	Share of Audits w/ Irregularities	Share of Loans 60 Days Past Due		
			Disbursed		Outstanding
			Year 1	Years 1-2	
	(1)	(2)	(3)	(4)	(5)
$FARC_i$ x $Negotiations_t$ [a]			0.002	0.001	0.003
			(0.002)	(0.004)	(0.005)
$FARC_i$ x $Agreement_t$ [b]	-1.247	0.003	0.001	-0.002	-0.002
	(0.757)	(0.007)	(0.002)	(0.005)	(0.007)
Municipality FE	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes	Yes
Sample start (MM/YY)	07/12	07/11	01/09	01/09	01/09
Sample end (MM/YY)	02/19	08/18	12/17	12/17	12/19
Observations	82,040	63,767	108,470	108,470	143,881
R-Squared	0.690	0.201	0.225	0.288	0.774
Mean DV	913.857	0.138	0.026	0.083	0.11
p-value H_0: [a] = [b]	-	-	0.507	0.351	0.286

- Treatment or selection effects on project risk (q) should be reflected in delinquency rates

Event study | Alternative measures of default

Increase in credit demand driven by municipalities close to markets

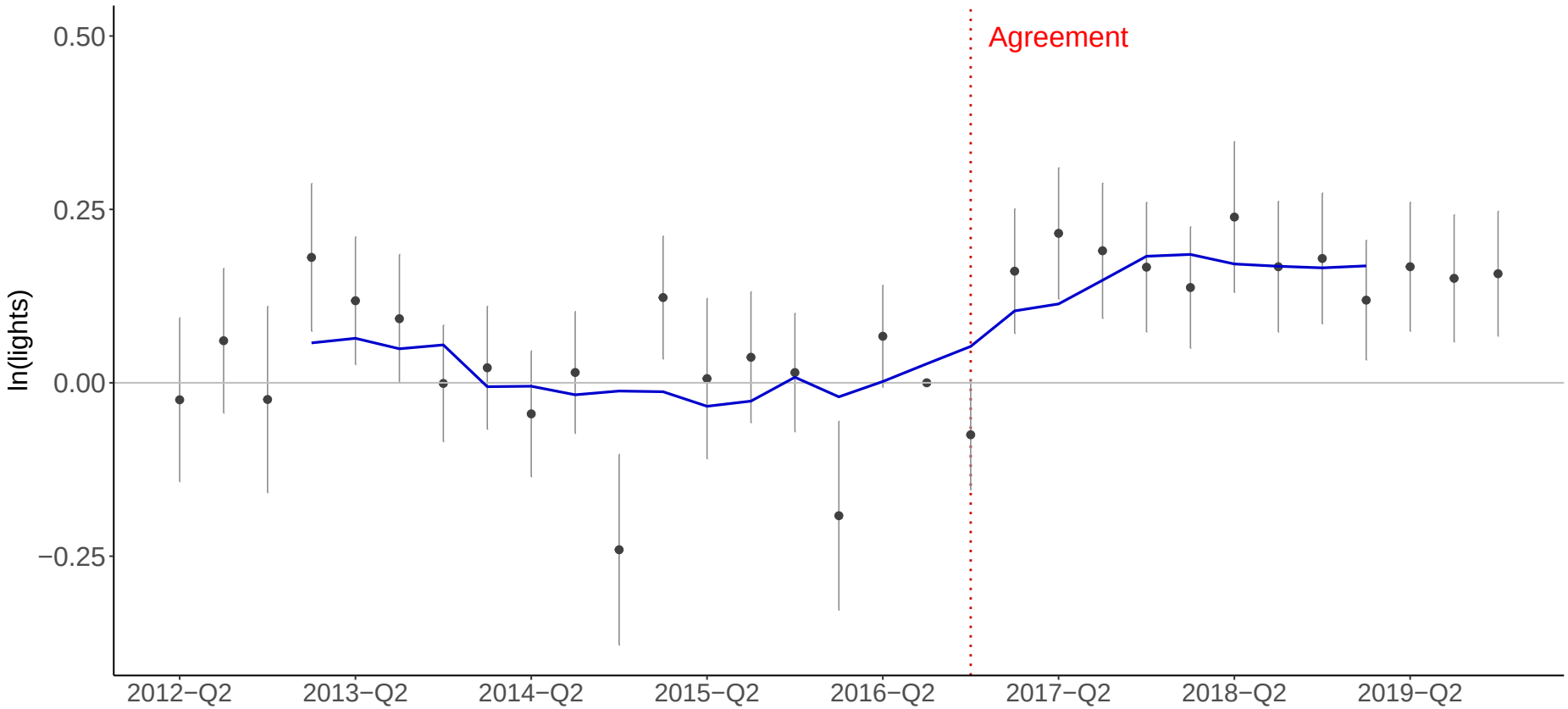
Dependent variable: Loan Applications per 10,000 inh.				
	Source of heterogeneity:			
	Access to			Land Restitution
	Market	Dpt. capital	Bogotá	
	(1)	(2)	(3)	(4)
FARC$_i$ x Agreement$_t$ (Low) [a]	-0.189	0.698	0.936	1.606
	(0.831)	(0.844)	(0.850)	(0.986)
FARC$_i$ x Agreement$_t$ (High) [b]	4.530***	3.899***	3.559***	3.203***
	(1.100)	(1.054)	(1.095)	(0.910)
Municipality FE	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes
Observations	148,104	148,104	148,104	148,104
R-Squared	0.708	0.708	0.708	0.708
Mean DV	17.963	17.963	17.963	17.963
p-value H_0: [a] = [b]	0.000	0.008	0.045	0.187

- We divide FARC municipalities into two same-sized groups based on predetermined characteristics and recode such that "High" corresponds to more desirable attribute

- Land restitution (column 4): Total applications 2011-2019 (per 10,000 inh.)

Other heterogeneity

Night-time lights increase in FARC municipalities after peace deal



- Increase in night lights (VIIRS) suggests greater economic activity $\Rightarrow$ higher r

Table

Conclusions

- The end of conflict leads to a large increase in investment in affected municipalities (17% increase in monthly disbursements)

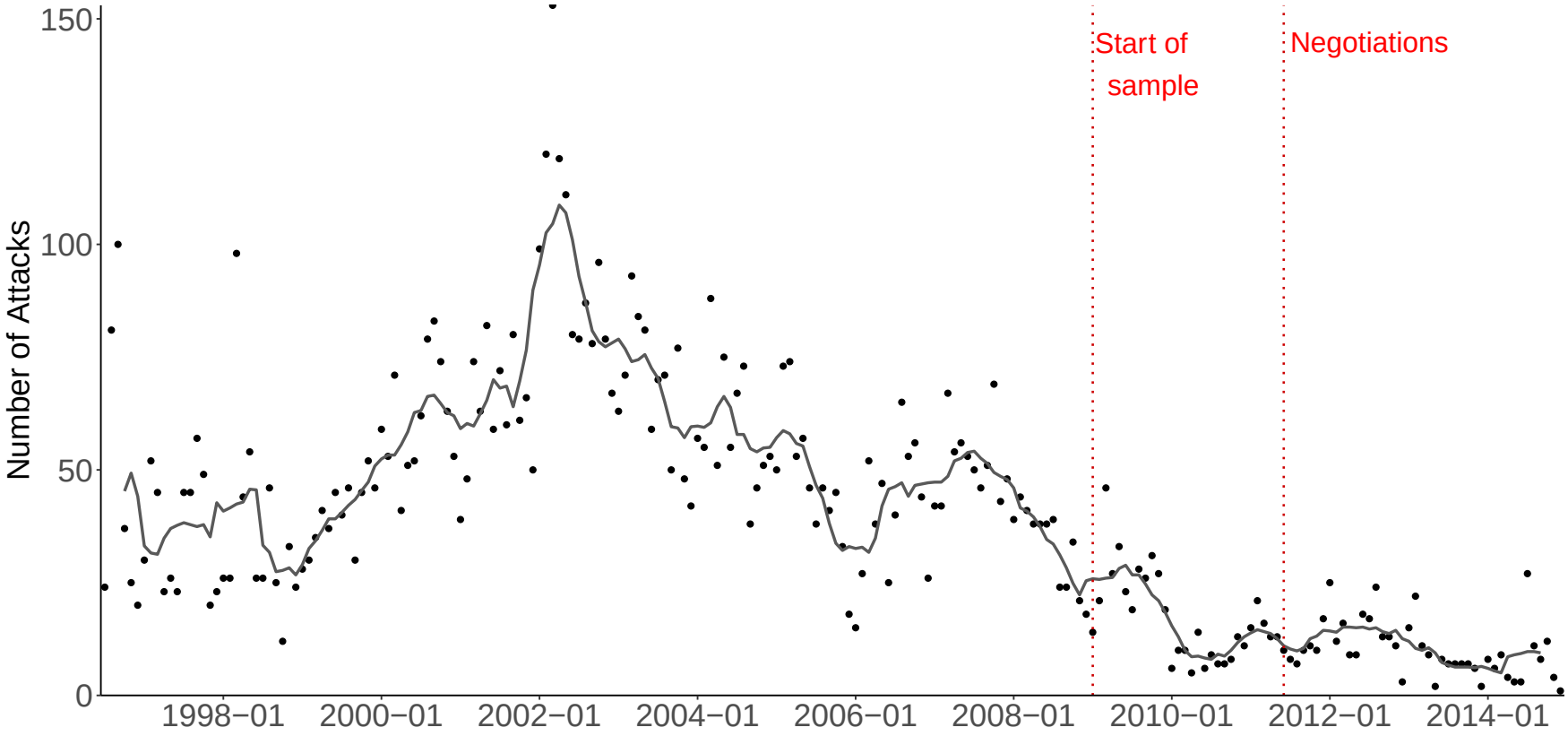
- New loans disproportionately correspond to producers w/ lower wealth and long-term projects, with no change in default or misuse of funds

- Overall, evidence suggests that producers forgo a sizable amount of profitable investments due to conflict

- However, conflict is not the binding constraint on investment in remote areas with low access to markets and weak property rights

APPENDIX

Our FARC measure captures the most intense period of conflict



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Conflict intensity decreases after start of negotiations

	Variables per 10,000 Inhabitants												
	Family of Outcomes	Land Theft	Terrorism	Threats	Sexual Violence	Forced Disappearance	Forced Displacement	Homicide	Land Mines	Property Loss	Kidnapping	Torture	Underage Recruitment
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
$FARC_i$ x $Negotiations_t$ [a]	-0.097***	-0.018	0.801	5.632***	0.018	-0.163	-20.507*	-2.111***	-0.870***	-1.710	-0.084*	-0.028	-0.031
(2012-2016)	(0.033)	(0.017)	(0.644)	(1.312)	(0.046)	(0.139)	(12.309)	(0.535)	(0.191)	(1.041)	(0.044)	(0.042)	(0.042)
$FARC_i$ x $Agreement_t$ [b]	-0.202***	-0.014	-0.479	0.395	0.0003	-0.351***	-35.945*	-3.210***	-1.042***	-1.988*	-0.182***	-0.091	-0.102***
(2017-2018)	(0.045)	(0.016)	(0.471)	(1.585)	(0.119)	(0.113)	(19.294)	(0.585)	(0.202)	(1.081)	(0.065)	(0.076)	(0.037)
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220
R-Squared	0.656	0.228	0.374	0.678	0.386	0.277	0.541	0.550	0.396	0.429	0.401	0.436	0.379
Mean DV	0	0.012	1.371	9.772	0.223	0.262	75.727	2.236	0.246	2.151	0.153	0.046	0.078
p-value H_0: [a] = [b]	0.001	0.517	0.104	0.002	0.877	0.039	0.349	0.000	0.005	0.727	0.044	0.123	0.035

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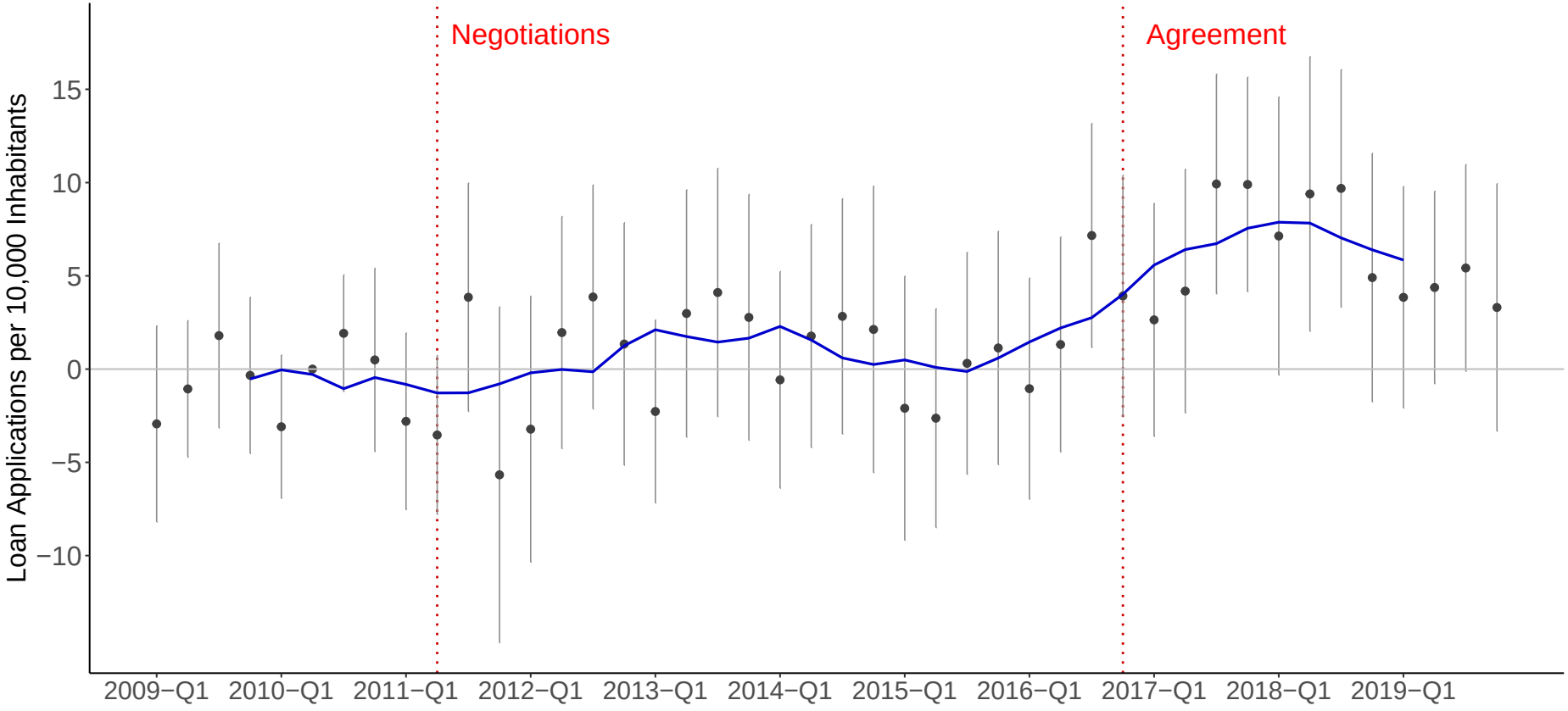
Loan applications increase in FARC municipalities after the agreement



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$$\text{Loan applications rate}_{ijt} = \alpha_i + \delta_{jt} + \sum_{\tau} \beta_\tau \text{FARC}_i + X_{it} + \epsilon_{ijt}$$

Results are robust to changes in variables and controls

	Dependent variable: Loan Application rate						
	Δ Negotiation Start Date	Quarter-level Aggregation	Size Controls		FARC Exposure		
			Population	Category	Continuous	CEDE	Other groups
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$FARC_i$ x $Negotiations_t$ [a]	0.680	1.418	0.408	0.461	0.075**	1.351**	1.740***
	(0.562)	(1.929)	(0.684)	(0.656)	(0.038)	(0.651)	(0.625)
$FARC_i$ x $Agreement_t$ [b]	2.278***	6.718***	2.170***	2.238***	0.164***	3.551***	3.162***
	(0.649)	(2.250)	(0.765)	(0.757)	(0.041)	(0.732)	(0.772)
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Population quartile x Month FE	No	No	Yes	No	No	No	No
Municipal category x Month FE	No	No	No	Yes	No	No	No
Observations	148,104	49,368	148,104	144,936	148,104	145,068	148,104
R-squared	0.707	0.799	0.709	0.703	0.708	0.704	0.708
Mean DV	17.963	53.890	17.963	18.342	17.963	18.306	17.963
p-value H_0: [a] = [b]	0.001	0.000	0.000	0.000	0.002	0.000	0.006

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Results are robust to LASSO controls or propensity-score weights

	Dependent variable: Loan Application rate					
	LASSO			Propensity Score		
	No missings	Few missings	All	No missings	Few missings	All
	(1)	(2)	(3)	(4)	(5)	(6)
$FARC_i$ x $Negotiations_t$ [a]	0.905	0.190	0.227	1.066	0.555	0.800
	(0.624)	(0.660)	(0.666)	(0.775)	(0.914)	(1.064)
$FARC_i$ x $Agreement_t$ [b]	2.636***	1.922**	2.163***	2.609***	2.067**	2.159*
	(0.736)	(0.773)	(0.798)	(0.867)	(0.980)	(1.160)
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes	Yes
LASSO controls	Yes	Yes	Yes	No	No	No
Propensity score weights	No	No	No	Yes	Yes	Yes
First-stage variables		37	45		37	45
Observations	148,104	144,804	144,804	99,924	90,024	57,156
R-squared	0.703	0.699	0.697	0.693	0.686	0.690
Mean DV	17.963	18.356	18.356	19.400	20.236	23.595
p-value H_0: [a] = [b]	0.001	0.001	0.001	0.005	0.006	0.064

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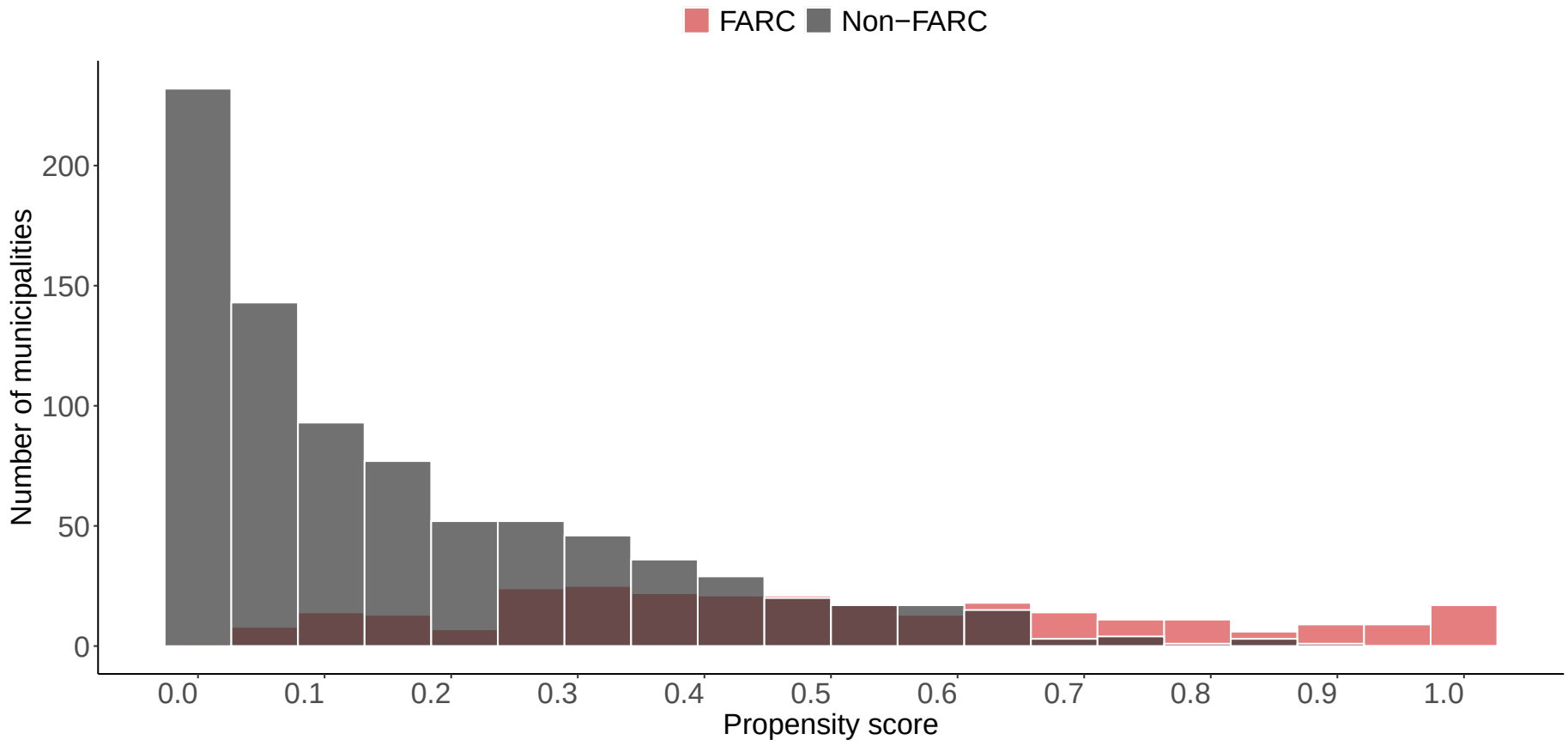
Distribution of Propensity scores for FARC exposure



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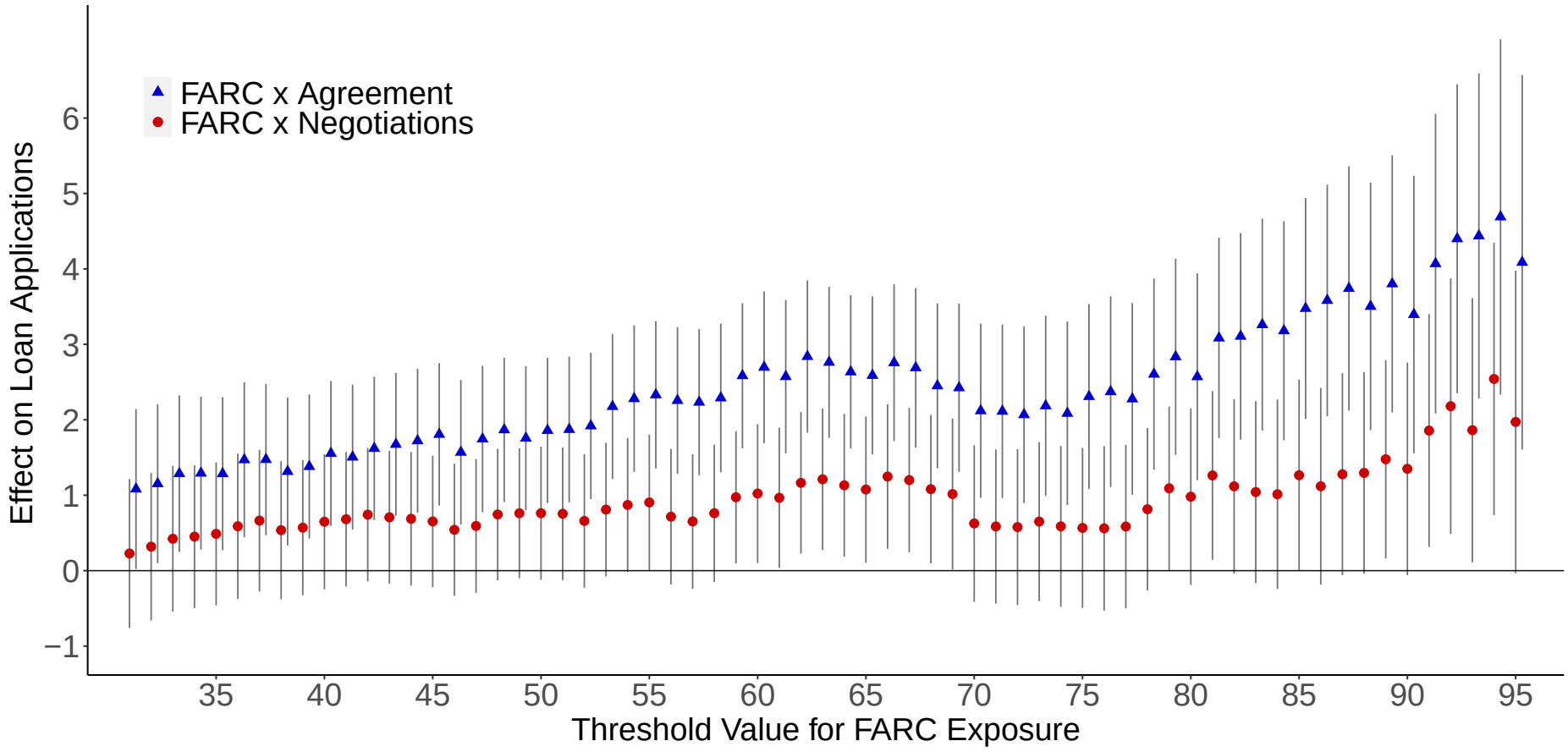
Changing the cutoff for FARC exposure



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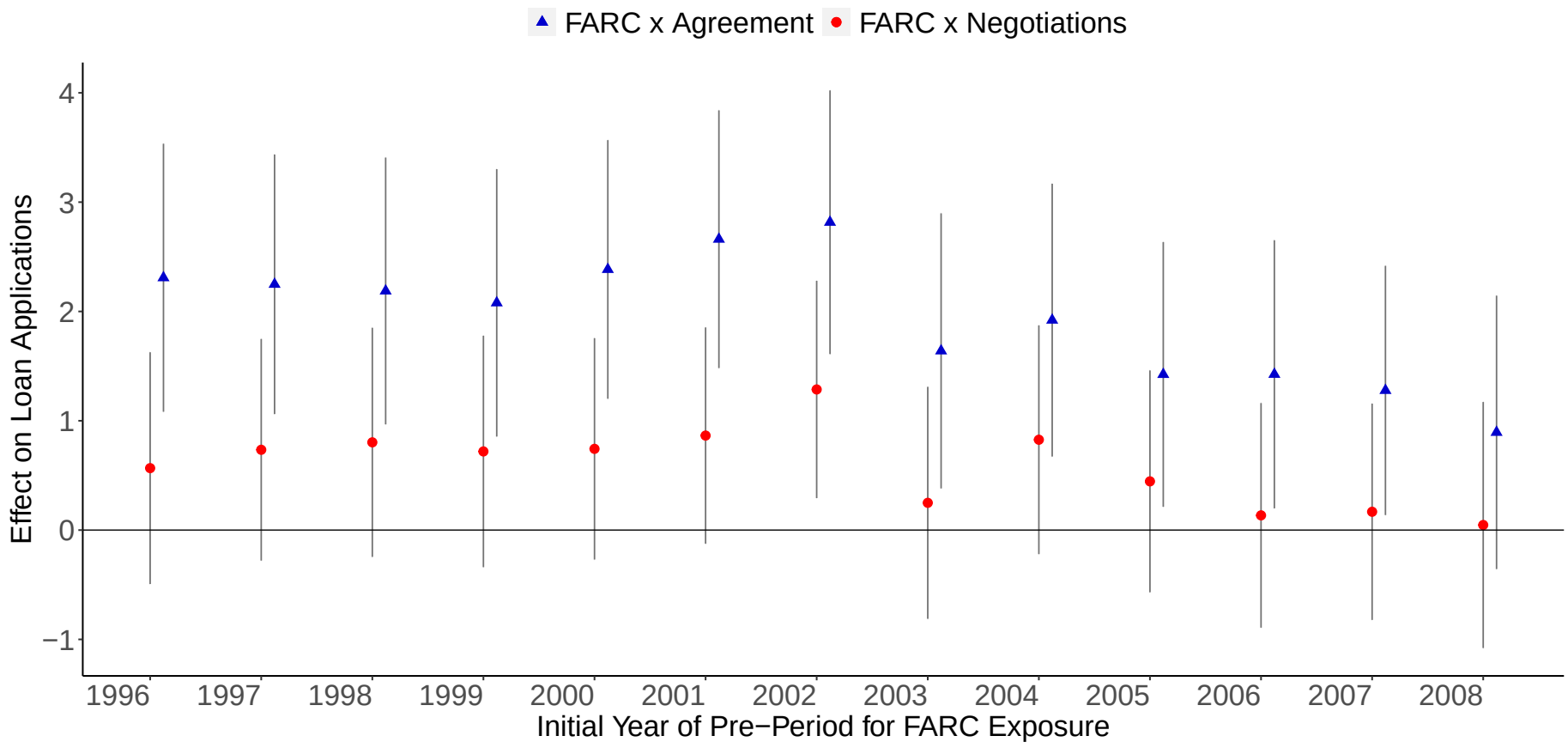
Changing the pre-period used to measure FARC exposure



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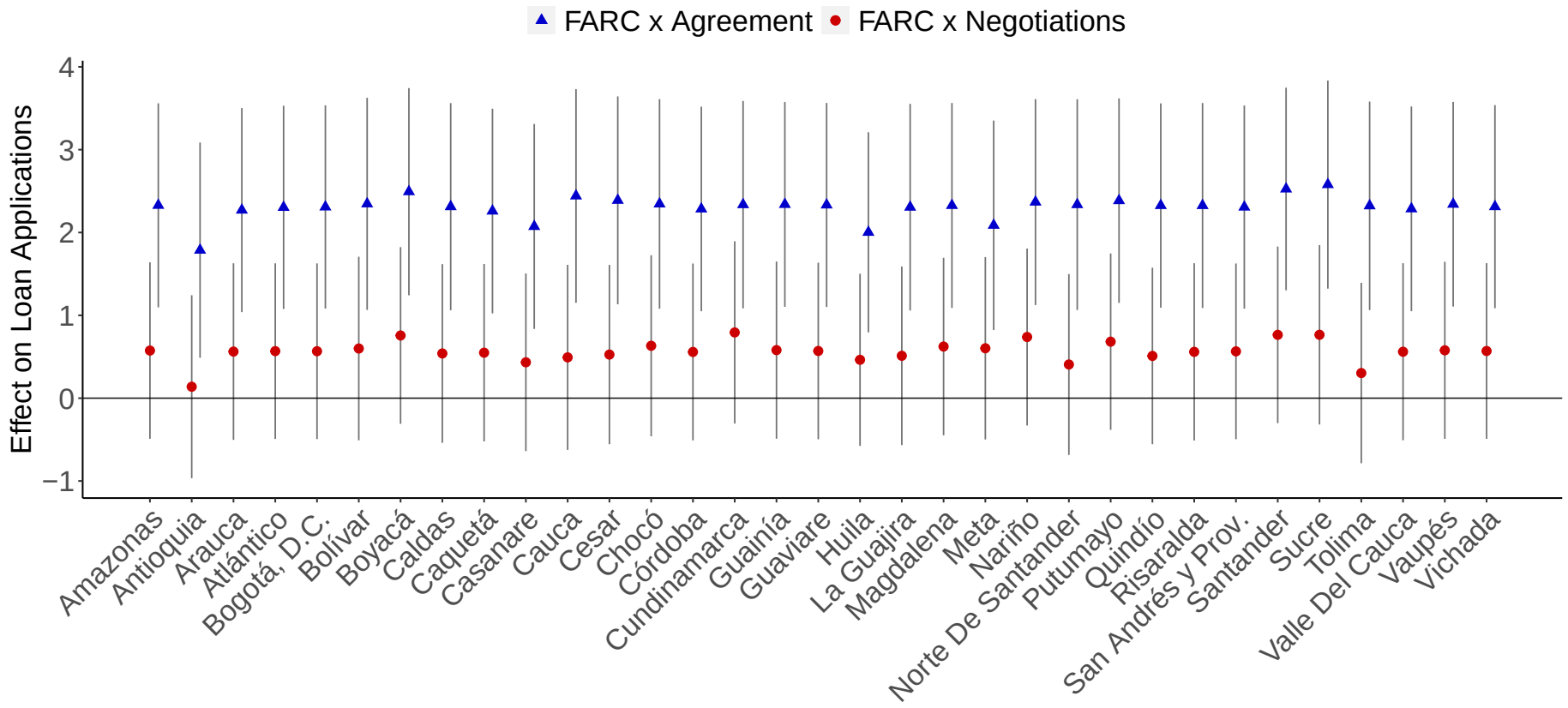
Results are robust to the exclusion of any department



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Results are robust to excluding Coca-growing municipalities

	DV: Loan Application rate	
	(1)	(2)
$FARC_i$ x $Negotiations_t$ [a]	0.838	1.106
	(0.830)	(0.878)
$FARC_i$ x $Agreement_t$ [b]	2.760***	2.902***
	(0.966)	(1.026)
Municipality FE	Yes	Yes
Department x Month FE	Yes	Yes
Rural pop quartiles x Month FE	Yes	Yes
Crop quantiles x Month FE	Yes	Yes
Excluded Coca-growing municipalities	2000-2008	2000-2018
Observations	110,220	105,204
R-squared	0.712	0.713
Mean DV	19.115	19.496
p-value H_0: [a] = [b]	0.002	0.006

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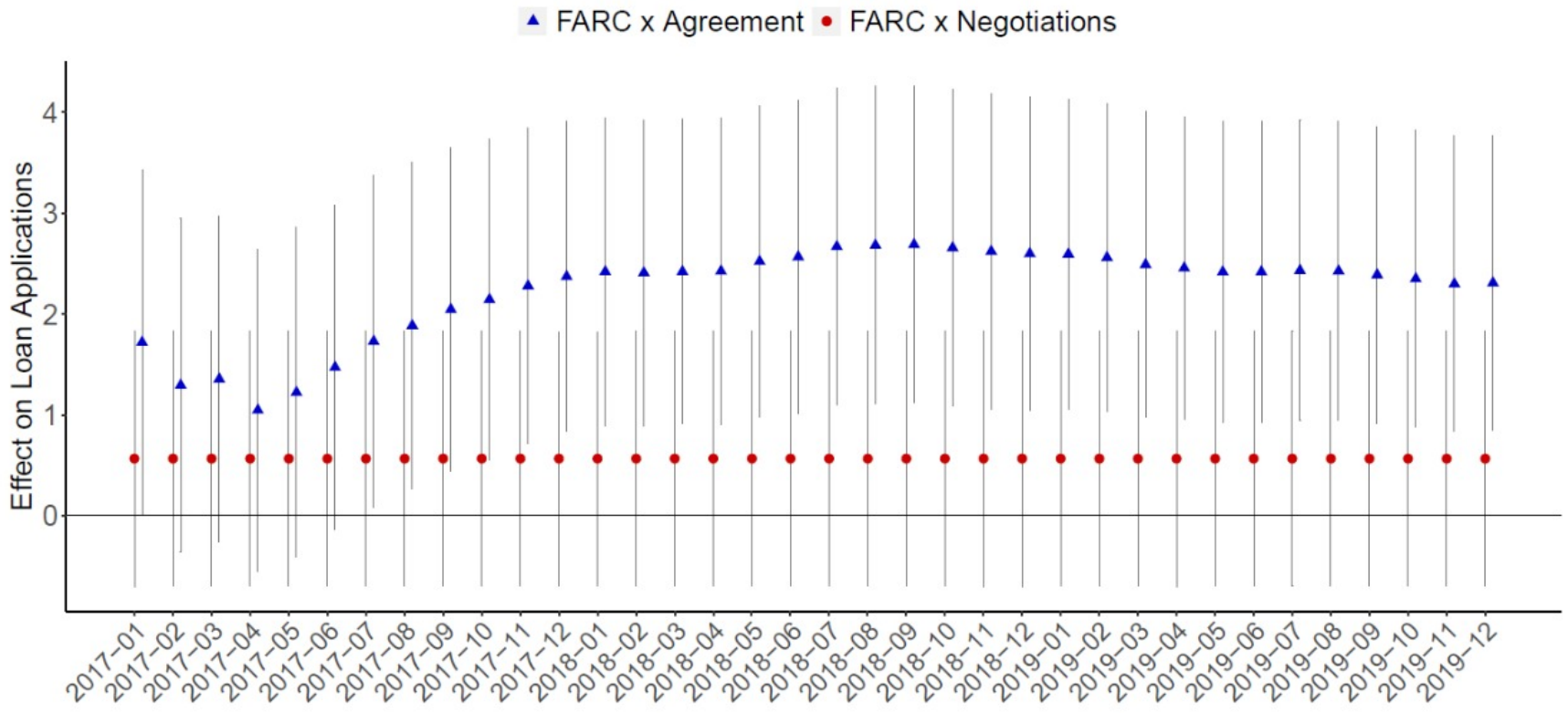
Results are robust to changing the end date of the sample period



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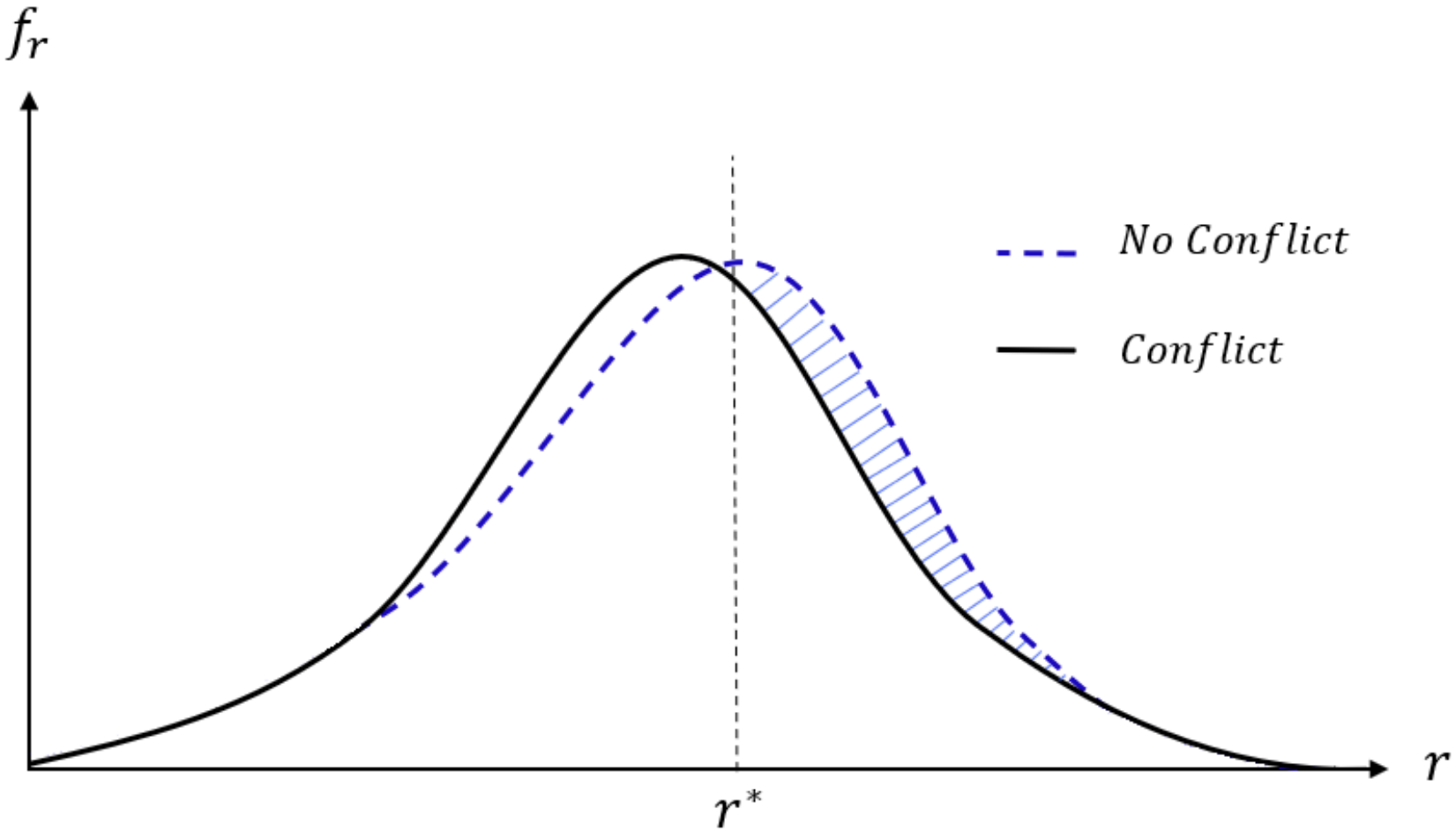
Example: Conflict shifts distribution of project returns to the left



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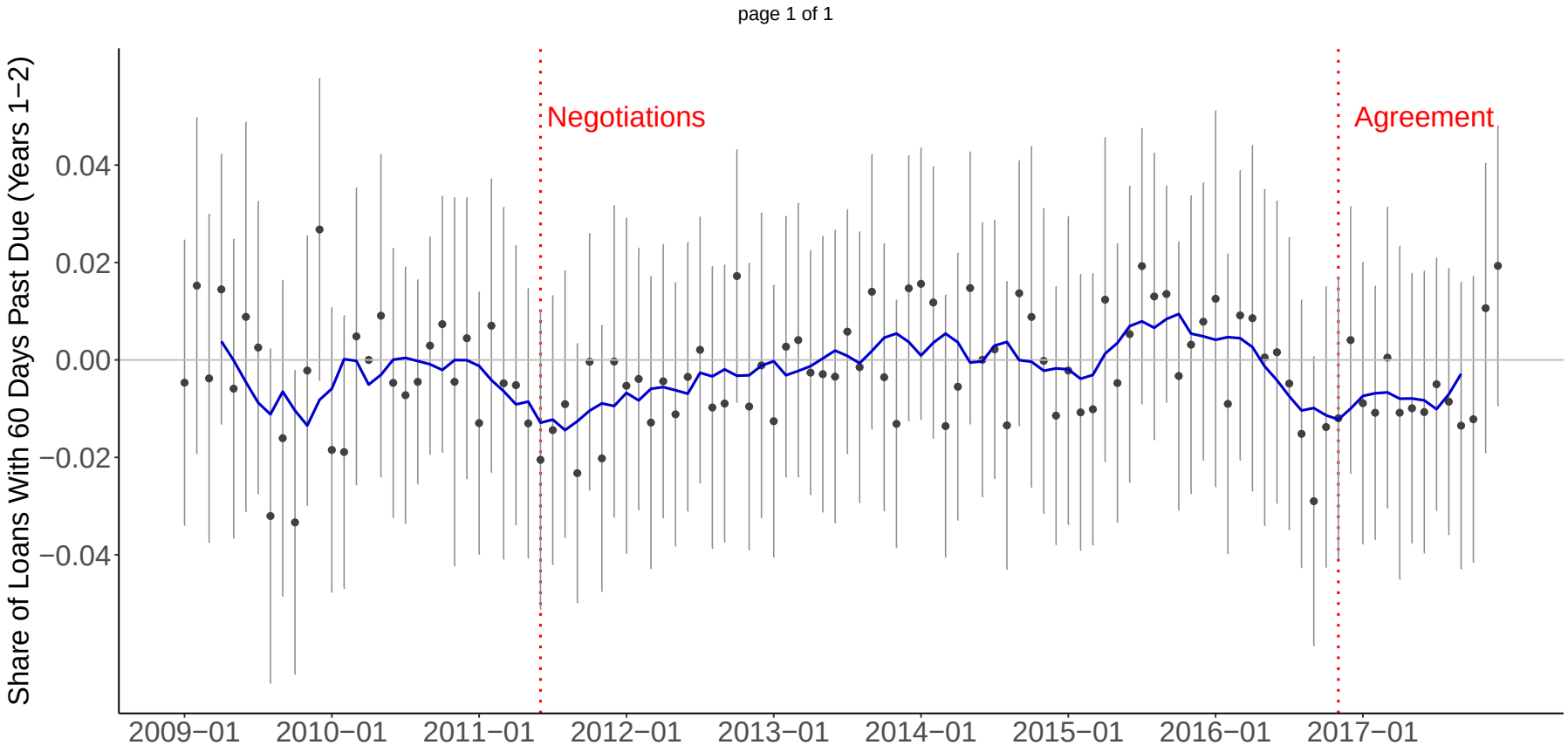
No evidence of changes in default rates after peace deal



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Results on default are robust to alternative measures

	Share of Disbursed Loans						
	30 Days Past Due		120 Days Past Due		Outstanding		Extended
	Year 1	Years 1-2	Year 1	Years 1-2	30 Days	120 Days	Payments
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$FARC_i$ x $Negotiations_t$ [a]	0.004*	0.005	0.002	0.0001	0.004	0.003	0.001
	(0.002)	(0.004)	(0.001)	(0.003)	(0.005)	(0.005)	(0.007)
$FARC_i$ x $Agreement_t$ [b]	0.003	0.003	0.0002	-0.004	-0.002	-0.003	0.008
	(0.003)	(0.006)	(0.002)	(0.004)	(0.007)	(0.006)	(0.009)
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample Start (MM/YY)	01/09	01/09	01/09	01/09	01/09	01/09	01/09
Sample end (MM/YY)	12/17	12/17	12/17	12/17	12/19	12/19	12/17
Maturity of Loans	Any	Any	Any	Any	Any	Any	$\leq$ 2 Years
Observations	108,470	108,470	108,470	108,470	143,881	143,881	83,021
R-Squared	0.249	0.295	0.182	0.271	0.777	0.771	0.248
Mean DV	0.04	0.112	0.015	0.062	0.12	0.1	0.143
p-value H_0: [a] = [b]	0.774	0.637	0.356	0.115	0.295	0.286	0.305

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Limited evidence of heterogeneous effects along other dimensions

	Heterogeneity based on:					
	Extensive margin		Above/below Median			
	PDET	FARC camps	Soil quality		Other Armed Groups	
			Accretion	Suitability	1987-2008	2009-2014
	(1)	(2)	(3)	(4)	(5)	(6)
$FARC_i$ x $Negotiations_t$ (Low) [a]	0.763	0.620	0.339	0.561	0.387	0.593
	(0.774)	(0.651)	(0.694)	(0.886)	(0.888)	(0.729)
$FARC_i$ x $Negotiations_t$ (High) [b]	0.132	-0.413	0.773	0.552	0.729	0.489
	(0.909)	(1.765)	(0.958)	(0.775)	(0.811)	(0.849)
$FARC_i$ x $Agreement_t$ (Low) [c]	2.637***	2.400***	2.420***	2.910***	2.568**	2.277***
	(0.936)	(0.763)	(0.855)	(1.011)	(1.088)	(0.862)
$FARC_i$ x $Agreement_t$ (High) [d]	1.581*	0.615	2.335**	1.749*	2.073**	2.399***
	(0.875)	(1.237)	(1.102)	(0.911)	(0.903)	(0.912)
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
Department x Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	148,104	148,104	146,784	146,784	148,104	148,104
R-Squared	0.707	0.707	0.707	0.707	0.707	0.707
Mean DV	17.963	17.963	17.963	17.963	17.963	17.963
p-value H_0: [c] = [d]	0.366	0.156	0.947	0.339	0.708	0.909
p-value H_0: [b] = [d]	0.013	0.438	0.031	0.078	0.034	0.004

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Night-time lights increase in FARC municipalities after peace deal

	ln(lights)	
	(1)	(2)
$FARC_i$ x $Agreement_t$	0.231***	0.140***
	(0.039)	(0.025)
Municipality FE	Yes	Yes
Department x Time FE	Yes	Yes
Baseline controls	Yes	Yes
Time unit	Month	Quarter
Observations	104,346	34,782
R-Squared	0.864	0.945
Mean DV	-1.556	-1.33

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