

Culture and Contracts: The Historical Legacy of Forced Labour

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June 5, 2019

Motivation

- ▶ Hutu-Tutsi divide has been one of the most contentious inter-group relationships in the postcolonial era
 - ▶ Despite same language / religion (Desmet et al, 2011)
 - ▶ Despite not being economic competitors (Jha, 2013)
- ▶ Prominent narrative: Belgian colonizers imposed arbitrary ethnic divisions that had not previously existed, favoured the Tutsi politically, sparking a rivalry
 - ▶ Suggests socio-political construction of ethnic rivalry that hasn't been systematically explored.
- ▶ Why understudied? difficult measurement challenge
 - ▶ Measurement of ethnic distrust in post-conflict / reconciliation region
 - ▶ Even measurement of ethnicity itself is not straightforward in this context

"The rigid dichotomy between Hutu and Tutsi was constructed by colonial authorities in collaboration with Rwandan elites and hardened as a result of political conflict."
(Fearon, 2000)

Survey & lab data from 143 villages in Rwanda and Burundi

- ▶ Forced labour in the '30s is thought to have exacerbated ethnic rivalry
 - ▶ Under forced labour Tutsi chiefs mistreated (only) Hutu farmers
 - ▶ Do their grandchildren now use an ethnicity-heuristic for trust?
- ▶ Examine persistent effects of historical forced labour on ethnic preferences & contract outcomes
 - ▶ Study crop insurance, where we expect inter-ethnic agreements



(Some) related work

1. *Origins of Attitudes*

- ▶ Nunn and Wantchekon (2011); Alesina, Giuliano and Nunn (2013); Voors et al. (2012); Guiso, Sapienza, Zingales (2014)

2. *Institutions and development*

- ▶ Acemoglu, Johnson, Robinson (2001); Glaeser et al (2004); Sanchez de la Sierra (2014); Nunn (2008)

3. *Culture and economic outcomes*

- ▶ Alesina and Giuliano (2013); Algan and Cahuc (2010); Knack and Keefer (1997)

4. *Forced Labour*

- ▶ Dell (2010); Bobonis and Morrow (2013); Acemoglu and Wolitzky (2011); Chwe (1990); Lowes and Monterro (2019)

Historical background: before colonization

Not much precolonial evidence of Hutu/Tutsi conflict - but also - no written record

- ▶ Prominent lineages acted as government, offered protection of land rights, resolved disputes, etc.
- ▶ This service was offered in exchange for: (1) cattle; (2) taking care of cattle; (3) labour (called *Ubureetwa*)
 - ▶ Only Tutsi kept cattle so (1) & (2) common in Tutsi villages. (3) used in Hutu villages
- ▶ Transformed under king Rwabugiri (r. 1863-1895). The Tutsi king began appointing Tutsi chiefs almost everywhere and made (3) mandatory for Hutu
 - ▶ 1st version of Hutu “forced labour” - but still quite close to *Ubureetwa*
 - ▶ This version existed throughout German colonization

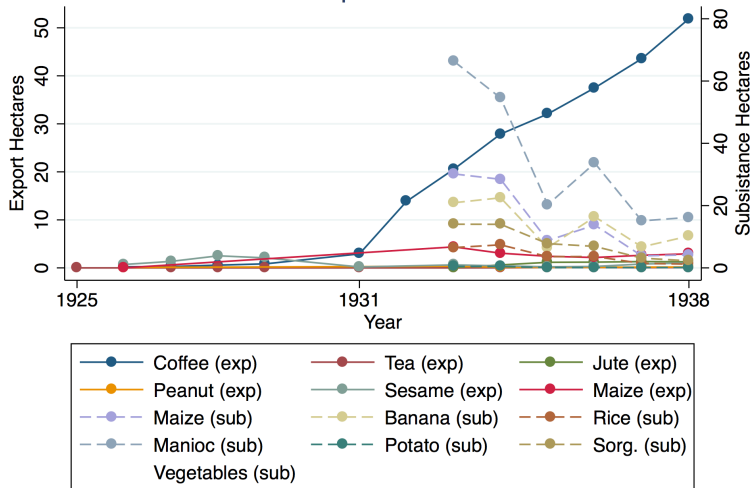
Historical background: Belgian colonization (post-WW1)

Belgium's main goal was modernization: abolishing traditional institutions & transitioning away from barter economy:

- ▶ Coffee was pushed to increase exports.
- ▶ 1931: export quotas introduction, to be filled with forced labour *if necessary*
 - ▶ Coffee started to dominate industry.
 - ▶ Chiefs retained profit from trees, which was taxed by colonizer
 - ▶ **Uniform quotas across all villages**
 - ▶ Variation in coffee suitability meant quotas were binding for some and not others

*"In 1927 colonial authorities in Rwanda began aggressively promoting coffee production. By 1931 they adopted official policies enabling chiefs and sub-chiefs to **force their subjects to cultivate coffee for export**. Tutsi chiefs were encouraged to use their 'traditional authority' to levy labour tribute, or Ubureetwa, forcing the peasantry to work on the chiefs plantations."* (Kamola, 2007)

Production of crops in 1000 H 1925-1938



Quotas and forced labour: who was impacted?

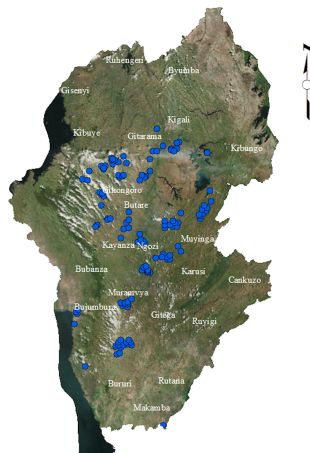
“This was ubureetwa, one ‘imposed specifically on Hutu’ and left unreformed because officials argued that to do away with it would be to ‘undermine the chiefs’ authority over the population. The chief who came out of the interwar period was expected to enforce and supervise obligatory cultivation of food exports...and even to become majority coffee producers by using corvée labour.” (Mamdani, 2014)

Some differences between Belgian forced labour and traditional *Ubureetwa*:

1. Workers worked on chiefs plantations producing the (coffee) crop that chiefs needed to produce; previously farmers were free to pay with the production of any crop
2. Coffee farmers were targeted as the population from which to draw recruits, and faced severe migration restrictions
3. Punishments for rejecting or fleeing forced labour were brutal: *‘You whip the Hutu or we will whip you.’* (Gourevitch, 1998)

Data overview

- ▶ Total of 869 farmers from 143 different villages
- ▶ Of 869: 619 are Hutu, and 258 of those played the trust game against a Tutsi, the rest played against another Hutu
- ▶ Tutsi were in 83 of 143 villages, but at least 1 Tutsi was at each session
- ▶ Sessions included about 20 people from 4-5 villages in a district



Before getting into empirical details

There are a few major challenges to studying this question in this context:

1. It is off-limits in Rwanda to ask respondents about their ethnicity.
2. Measuring ethnic attitudes is not trivial, especially when the government doesn't allow anything that may prime ethnicity (rules out any survey questions regarding inter-trust, inter-ethnic business relationships, etc.)
3. Forced labour variation is at the ancestral location level, we will get at best a noisy measure.

Outcomes: Collecting ethnicity in Rwanda

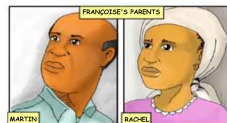
- ▶ Do not want to make ethnicity very salient - can't even ask in Rwanda
- ▶ Proxy for ethnicity in RW using eligibility for FARG - a genocide reparations fund for "genocide survivors"
 - ▶ Hutu victims are officially recognized by the government as *"victims of massacres that occurred during the genocide against the Tutsi"*
 - ▶ Tutsi from genocide regions are officially recognized by the government as *"Survivors of the genocide against the Tutsi"*
- ▶ We know ethnicity (without error) in Burundi and can restrict results to this sample
 - ▶ Estimates from just Burundi are similar - slightly larger - relative combined sample: any error likely orthogonal to FL

Also respondents need to be able to infer ethnicity

- ▶ I *need* the experimental data to overcome the ethnicity issue
 - ▶ Only works if resp. can tell who's Tutsi/Hutu
- ▶ Genetic studies: Tutsi are Afro-Asiatic and Hutu are Bantu
 - ▶ Genetic differences do not guarantee physical differences, and it is frequently not obvious.
 - ▶ Even if **purely** socio-political construct (gov't teaches this): possible physical differences due to assortative matching



RW Gov't Pub.: Tutsi Cartoon



RW Gov't Pub.: Hutu Cartoon

Interethnic attitudes: the trust game

The trust game is a standard way to elicit ethnic tensions (Fershtman and Gneezy (2001))

- ▶ How is the trust game played?
 - ▶ Player 1 shares into a pot
 - ▶ Pot is multiplied by enumerator
 - ▶ Divided between players by Player 2
- ▶ 2 strangers play face-to-face for high stakes (endowment = \$1US)
- ▶ One-shot game: ethnicity
'rules-of-thumb' to get at cultural aspect of trust (Boyd & Richardson (2005), Nunn (2012))



Interethnic attitudes: Partner Preferences

We asked each respondent to provide the ID-tag number of their 5 most preferred people at their session, not from their village, that they would like to do a lab-game with

- ▶ The lab-game wasn't for the trust game, it was a game we had in mind for another project on feelings of victimhood and collaboration in the inter-ethnic post-genocide context.
- ▶ We don't have information on ranking other than a group of 5 (i.e. it's not clear that the first choice of 5 is the most preferred)
- ▶ We take the share of possible choices that could have been made from the other ethnicity

$$preference_{is} = \frac{\#OtherEthnicityChosen_i}{\min(\#OtherEthnicityAttended_s, 5)} \quad (1)$$

Survey data: contract outcomes

- ▶ Measurement Challenge:
 - ▶ I'd like to investigate how inter-ethnic trust influences economic relationships
 - ▶ I'm not allowed to ask respondents about willingness to do business with Hutu / Tutsi
- ▶ Solution:
 - ▶ Analyze a type of contract where incentives are strongly to making inter-ethnic partnerships
 - ▶ Agricultural insurance contracts
- ▶ Outcomes:
 - ▶ Revealed preference: are forced labour Hutu less likely to make these agreements?
 - ▶ Outcomes: Does low trust induce default? What kind of default?

Survey data: contract data

- ▶ Survey data on inter-household crop insurance contracts
 - ▶ Historically different agricultural practices between Hutu/Tutsi
 - ▶ Incentive to enter into mixed-ethnicity contracts (for typical households)
 - ▶ In my data: still a Hutu/Tutsi crop/cattle divide
- ▶ All respondents who answer that they find this type of agreement “important to them” answer questions about these (real world) contracts (about 65% do)
 - ▶ Self-reported, so I don’t focus on outcomes implying ‘bad’ respondent behaviour
- ▶ Main outcomes of interest: do they enter into these contracts; reasons for default (honesty/effort vs. quality of partner match)

Data Challenge 3: Family history

To know who may have been exposed to forced labour we need to know where they lived. To get this:

- ▶ Family migration histories going back 3 generations
 - ▶ Matched as early as possible
 - ▶ Have tried matching based on father of father (ethnicity is determined patrilineally) & averaging across all ancestors
- ▶ I exploit grandparent village level variation in FL - within a grandparent district - between two people who currently live in the same district.

Parameter of Interest

- ▶ Of interest is $E(T_{1i} - T_{0i} | FL_i = 1)$.
 - ▶ FL_i denotes whether individual i has ancestors that were exposed to forced labour
 - ▶ T_{1i} denotes the level of trust of individual i , for those exposed to forced labour
- ▶ The best we could hope to observe in the data is $E(T_{1i} | FL_i = 1)$ and $E(T_{0i} | FL_i = 0)$
- ▶ The difference between these means is $E(T_{1i} - T_{0i} | FL_i = 1) + E(T_{0i} | FL_i = 1) - E(T_{0i} | FL_i = 0)$.
- ▶ Of particular concern is that $E(T_{0i} | FL_i = 1) < E(T_{0i} | FL_i = 0)$
 - ▶ that Hutu who were distrustful of Tutsi anyway were more likely to be assigned to forced labour.

Measuring FL_i

To account for this endogeneity, consider the two criteria that determined selection into forced labour:

- ▶ An individual had to live in a forced labour region, and be selected for forced labour themselves
 - ▶ Let μ_{lgp} capture that some grandparent locations (denoted l^{gp}) were exposed to forced labour and others were not
 - ▶ Let θ_i , captures that some individuals *within* each village were selected into forced labour by the chief, and others not.
- ▶ This implies $FL_i = \mu_{lgp} \cdot \theta_i$
 - ▶ Big measurement challenge: We don't observe θ_i and therefore FL_i . I can measure μ_{lgp} , though crudely
 - ▶ Big identification challenge: μ_{lgp} is endogenous.

Measuring FL_i

Accordingly, consider the causal model of interest:

$$T_i = \alpha_0 + \alpha_1 FL_i + \alpha_2 \theta_i + \Gamma_{igp} + \lambda_{lr} + \gamma' X_i + \varepsilon_i \quad (2)$$

Γ_{igp} is grandparent location fixed effects; λ_{lr} is respondent location fixed effects; $\gamma' X_i$ is a set of controls

Measuring FL_i

The best we can do is to proxy for FL_i (no hope of measuring θ_i)

- ▶ Propose exploiting that coffee farmers were overwhelmingly selected to work on the Chiefs' coffee plantations.
- ▶ Consider C_i , a proxy denoting whether the grandparents of the individual produced coffee prior to 1931.
 - ▶ Accordingly, in the survey I asked respondents about grandparent crop production

- ▶ Define:

$$\tilde{FL}_i = \mu_{IGP} \cdot C_i \quad (3)$$

- ▶ This is observable, but we still don't want to think of μ_{IGP} as exogenous.
 - ▶ Let me hold-off on the measurement of μ_{IGP} for a few slides, and discuss exogenous variation in it first.

Data: GIS and archival price data

Land characteristics may be related to FL_i through μ_{lsp} **if** forced labour was used to meet coffee quotas

1. Potential Quantity

- GIS data from FAO: potential produceable tonnes per hectare for all crops

2. Colonial Prices

- Archival price data for all crops from Belgian colonial records
- Supplemented with the Blattman export data where needed (and these data mostly agree[!])

Marchandises	Importations — Invoer				Exportations	
	Totales — Totalen		de Belgique uit België		Uitvoer	
	Tonnes		Tonnes		Tonnes	
	Tonnen	1.000 fr.	Tonnen	1.000 fr.	Tonnen	1.000 fr.
I. — Animaux vivants	32	128	.....	3	4	253
II. — Objets d'alimentation et boissons.						
Beurre	377	6,724	113	2,174	13	264
Margarine et beurres artificiels	30	281	3	46	.....	2
Saindoux et graisse de bœuf	155	13,530	148	1,289	.....	4
Biscuits	127	1,512	124	1,184	3	11
Cacao en fèves . . . . .	.....	.....	.....	.....	1,110	6,768
Cacao préparé	109	2,508	68	1,242	.....	8
Café non torréfié	1	10	.....	5	10,038	68,038
Riz	13	264	10	202	5	36
Froment	501	1,193	73	202	1,074	1,461
Maïs	2,807	7,475	722	2,280	106	281
Autres céréales	378	853	.....	1	11,353	5,168
Autres produits de la menuiserie	242	209	35	68	48	24
Épicerie	50	367	7	40	.....	1
Fromages	31	535	13	253	.....	.....
Fruits frais	169	2,801	48	840	4	91
Fruits conservés	371	2,479	41	380	1,268	853
Fruits secs	395	2,678	57	511	3	22
Huiles alimentaires	53	603	23	262	.....	.....
Lait	254	2,591	145	1,404	1	7
Légumes frais	827	5,181	387	1,770	13	50
Légumes secs	113	592	80	337	29	253
Pommes de terre	928	1,339	654	744	266	265
Légumes conservés	925	1,417	770	1,143	164	185
.....	500	3,083	297	1,575	6	81

Exogenous variation in FL_i

- ▶ Match FAO data to crop price information 1929-1930 (pre-quota); compute 'historical local profits' for each crop, s :

$$\pi_s = q_{l_{gp},s}^{FAO} p_s \quad (4)$$

- ▶ Consider the profitability of coffee relative to the next most profitable crop:

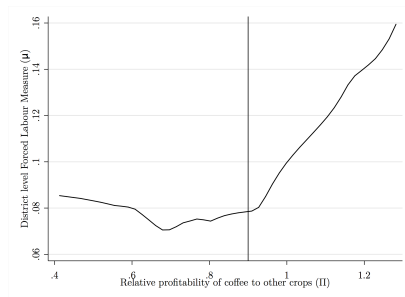
$$\Pi_{l_{gp}} = \frac{\max\{\pi_{l_{gp},s} | s \neq c\}}{\pi_{l_{gp},c}} \quad (5)$$

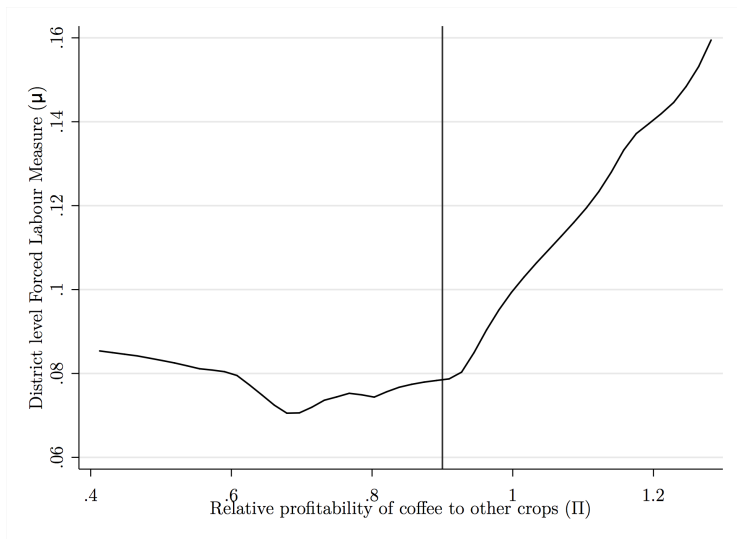
- ▶ c denotes coffee and s can be any crop

Measuring μ_{jgp} . Is Π_{jgp} correlated with μ_{jgp} ?

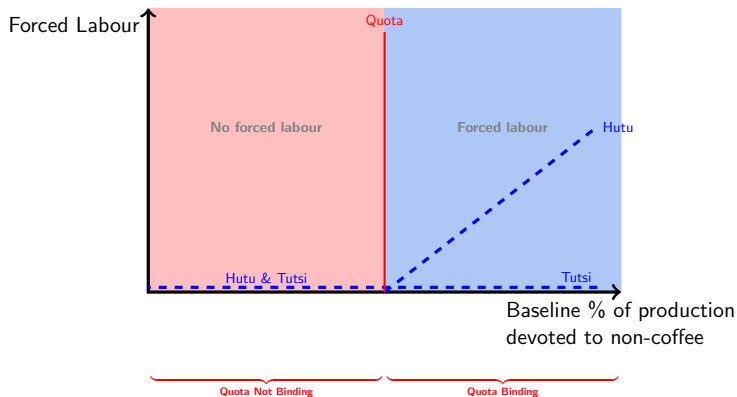
Actual forced labour data wasn't kept by Belgium (as far as I can tell), which represents an obvious challenge

- ▶ Text Analysis: reports of forced labour in Google Books (incl. digitized colonial reports)
- ▶ Code runs in two steps:
 1. any mention of a colonial era district in my data
 2. mention of that district paired with 'Ubureetwa'
- ▶ Use % of mentions associated with forced labour to account for very active administrators
 - ▶ to do: target **only** colonial reports

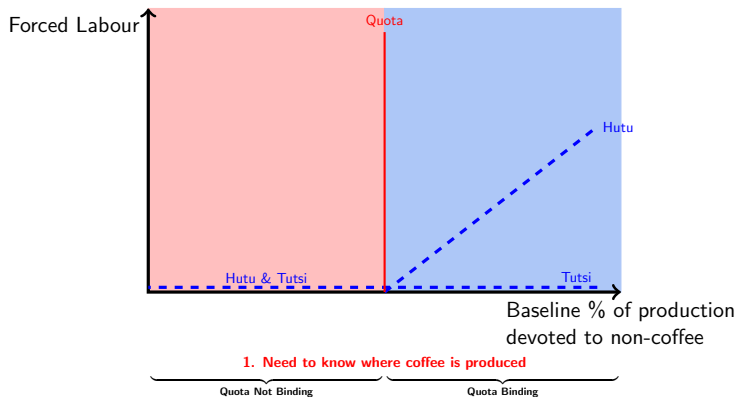




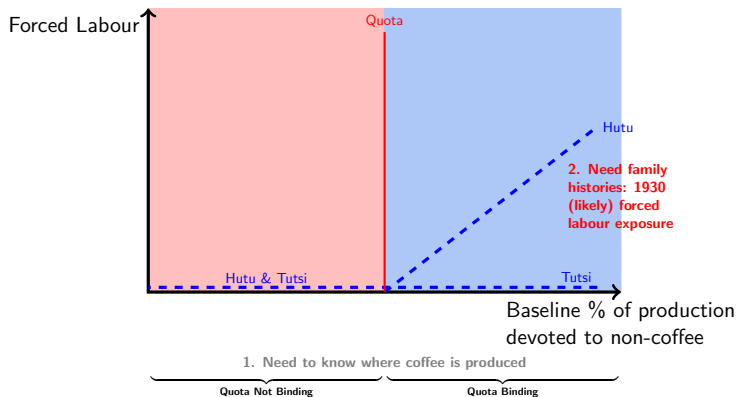
Summary of identification / data



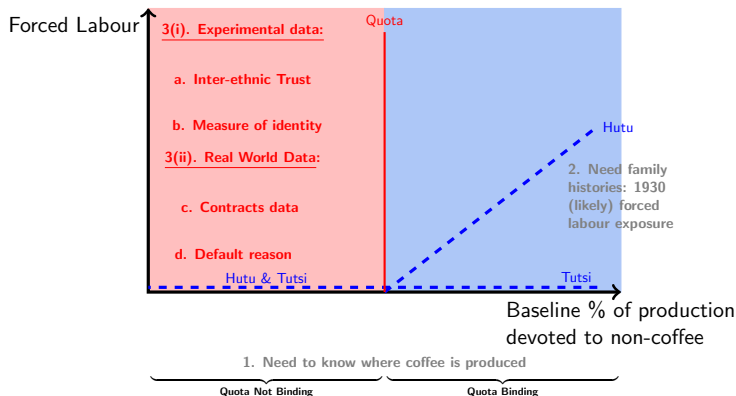
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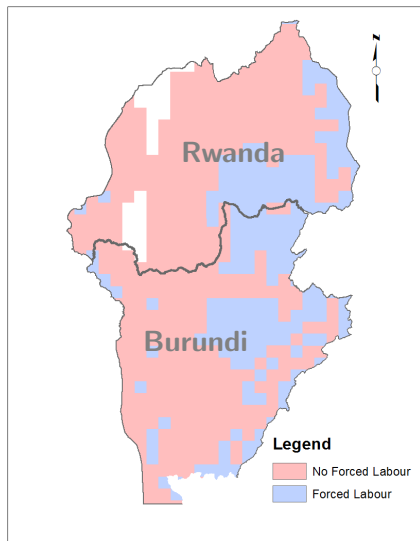
Summary of identification / data



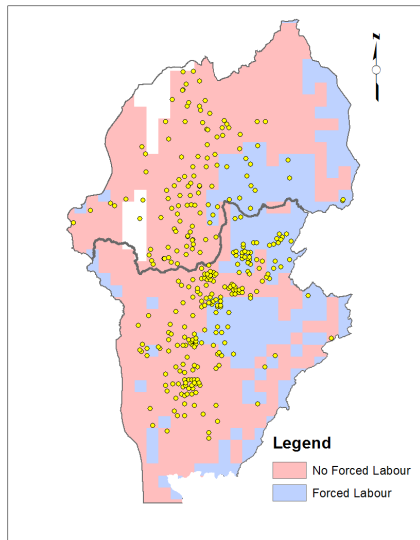
Summary of identification / data



Map of calculated forced labour



Map of colonial era family locations



Summarizing the model of interest

Γ_{lgp} is grandparent location fixed effects; λ_{lr} is respondent location fixed effects; $\gamma'X_i$ is a set of controls; $\zeta_i = \Pi_{lgp} \cdot C_i$:

$$T_i = \beta_0 + \beta_1 \zeta_i + \beta_2 C_i + \Gamma_{lgp} + \lambda_{lr} + \gamma'X_i + \epsilon_i \quad (6)$$

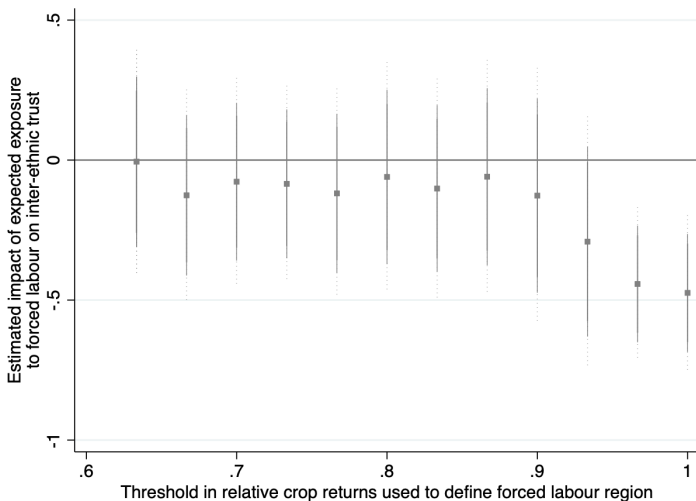
β_1 identifies a lower bound of the causal effect of differences in FL_i on differences in T_i under the following assumptions:

1. $cov(\Pi_{lgp}, \epsilon_i) = 0$ and $cov(C_i, \epsilon_i) = 0$ (not testable)
2. $cov(\Pi_{lgp}, \varepsilon_i) = 0$ and $cov(C_i, \varepsilon_i) = 0$ (suggestive evidence)
3. $0 < \frac{cov(\theta_i, C_i | lgp)}{var(C_i | lgp)} \leq 1$ (not testable since θ_i is not observable)
and $\frac{cov(\mu_{lgp}, \Pi_{lgp})}{var(\Pi_{lgp})} > 0$ (suggestive evidence available)
4. $\frac{cov(\mu_{lgp}, \Pi_{lgp})}{var(\Pi_{lgp})} \leq 0 \forall lgp$ and $\frac{cov(\theta_i, C_i | lgp)}{var(C_i | lgp)} \geq 0 \forall i$ (not testable)

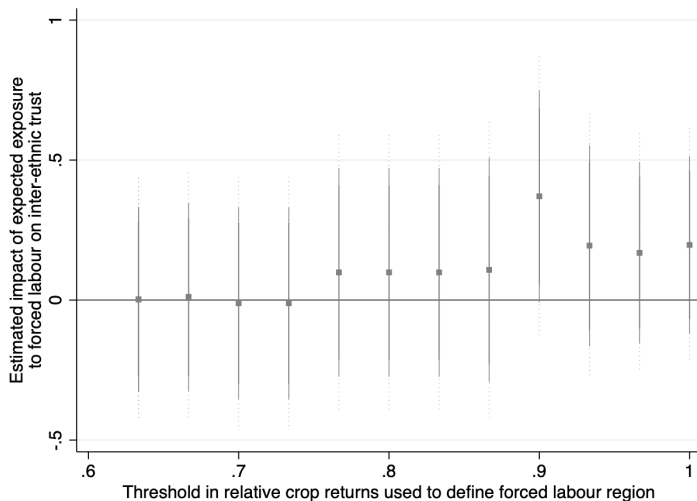
Summary statistics

Variable	Yes			No		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
<i>Panel A: Hutu</i>						
Inter-ethnic Trust Game Offer	263.5	108.5	52	273.8	104.0	206
Co-ethnic Trust Game Offer	286.4	116.6	59	316.2	123.2	302
Partner Preference	48%	38%	111	39%	36%	508
Insurance Agreements	1.98	4.24	111	3.12	7.51	508
Insurance Failure Rate	73%	34%	111	58%	35%	508
Gender: Female	25%	0.43	111	37%	0.48	508
Country: Burundi	71%	0.45	111	38%	0.49	508
Age	40.0	12.6	111	40.5	13.2	508
Education Years	5.35	2.88	111	5.45	3.31	508
Cognitive score	5.18	1.73	111	4.91	1.97	508
Risk Survey	1.51	0.50	111	1.55	0.49	508
Distance to Capital	52.5	31.0	111	53.3	47.5	508
<i>Panel B: Tutsi</i>						
Inter-ethnic Trust Game Offer	313.6	132.0	22	316.9	126.9	106
Co-ethnic Trust Game Offer	286.9	132.5	23	268.4	98.0	98
Partner Preference	62%	33%	45	63%	29%	204
Insurance Agreements	2.07	2.94	45	4.25	15.11	204
Insurance Failure Rate	64%	36%	45	63%	35%	204
Gender: Female	47%	0.50	45	53%	0.50	204
Country: Burundi	60%	0.49	45	45%	0.49	204
Age	43.6	13.1	45	43.2	12.91	204
Education Years	5.64	3.18	45	5.78	3.83	204
Cognitive score	5.02	1.83	45	4.88	1.97	204
Risk Survey	1.58	0.50	45	1.59	0.49	204
Distance to Capital	45.1	26.3	45	46.3	35.1	204

Differential Hutu trust of Tutsi with diff. forced labour definitions



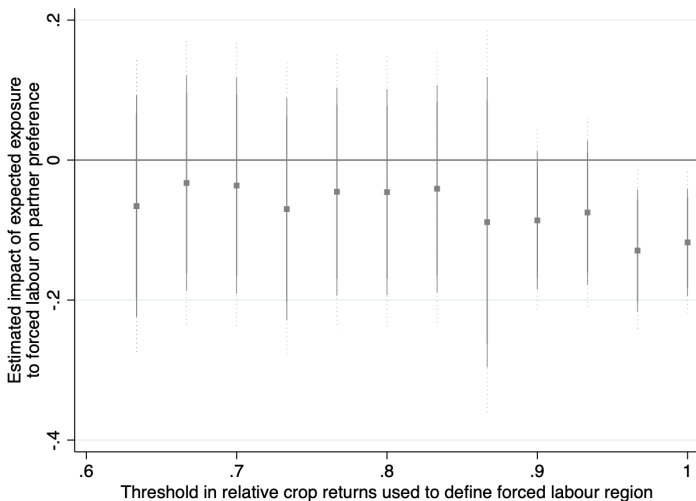
Differential Tutsi trust of Hutu with diff. forced labour definitions



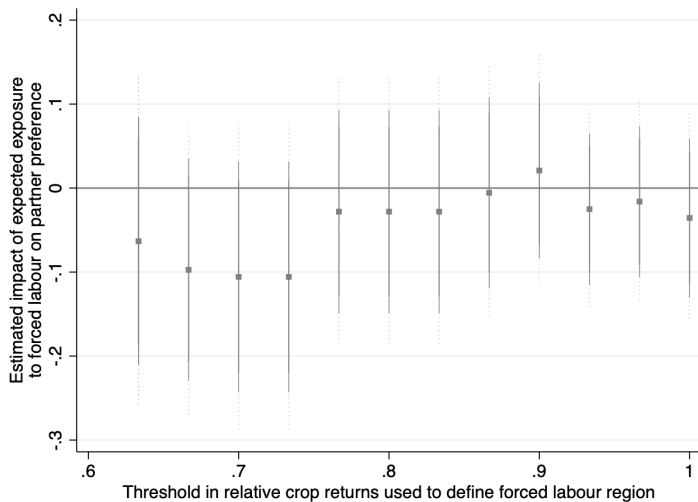
Some additional robustness tests for inter-ethnic trust

	Hutu to Tutsi (1)	Tutsi to Hutu (2)	Hutu to Hutu (3)	return offers (4)
ζ_i	-79.01 (16.49)***	44.47 (43.65)	-16.62 (19.93)	8.62 (34.65)
District FE	Y	Y	Y	Y
GP District crop suitability	Y	Y	Y	Y
Enumerator FE	Y	Y	Y	Y
Education	Y	Y	Y	Y
Gender	Y	Y	Y	Y
Age	Y	Y	Y	Y
Raven Score	Y	Y	Y	Y
Risk Preference	Y	Y	Y	Y
Trust Game Offer	N/A	N/A	N/A	Y
Clusters: Historical Districts	60	42	62	60
R^2	0.41	0.48	0.28	0.81
N	245	128	339	245

Hutu partner preference with diff. forced labour definitions



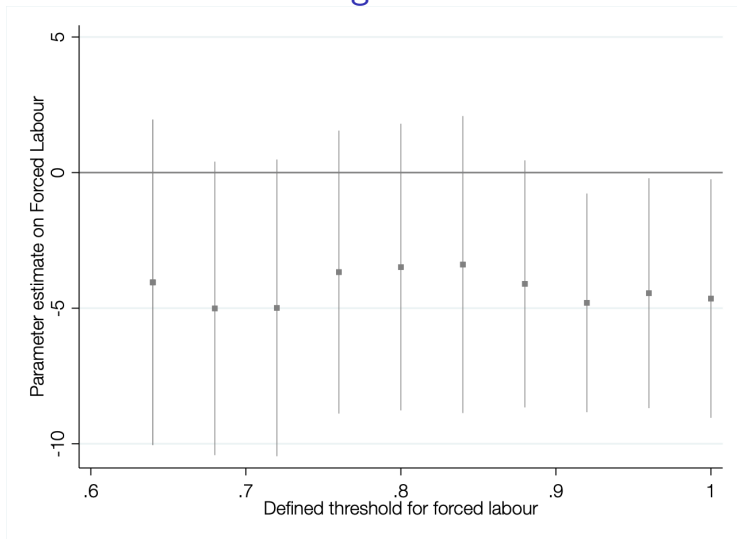
Tutsi partner preference with diff. forced labour definitions



Implications for value of insurance contracts?

- ▶ Could go either way:
 1. Increased reliance on ethnic community ↑ information flow, monitoring, ↓ enforcement inefficiencies, ↑ co-ordination (Greif, 1993; Ostrom, 1990; Munshi, 2003)
 - ▶ **better** contract outcomes
 2. Restricting partnerships to ethnic community ↓ search/match efficiency → ↓ partnership suitability
 - ▶ **worse** contract outcomes
- ▶ Assess value of inter-ethnic contracts using revealed preference approach
 - ▶ **How often do people agree to a particular type of contract that is typically inter-ethnic in nature?**

Hutu with inter-household ag. insurance contracts



Mechanism 1: low agreement value driven directly by inter-ethnic distrust?

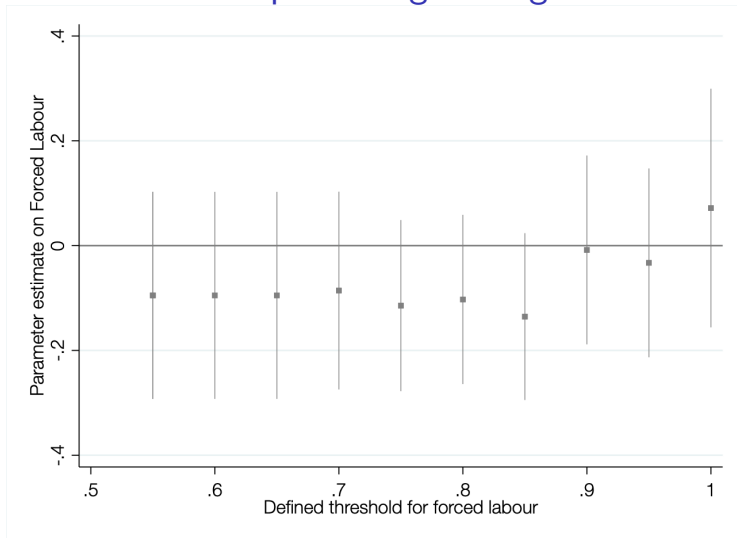
Mechanism 1: If the continuation value of the relationship is low due to low inter-ethnic trust, we might expect strategic default in these relationships (e.g. Blouin and Macchiavello, 2019)

Tests:

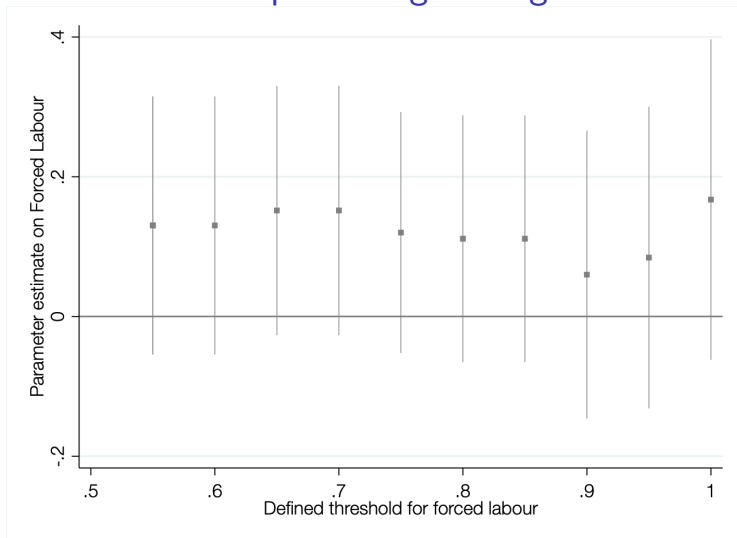
- ▶ Differences in perceived **strategic default**?
- ▶ Chose some variation for default reason of: "Found a better partner match with someone else."



Mechanism 1: Hutu experiencing strategic default



Mechanism 1: Tutsi experiencing strategic default



Mechanism 2: low value driven by Hutu-Hutu partnerships?

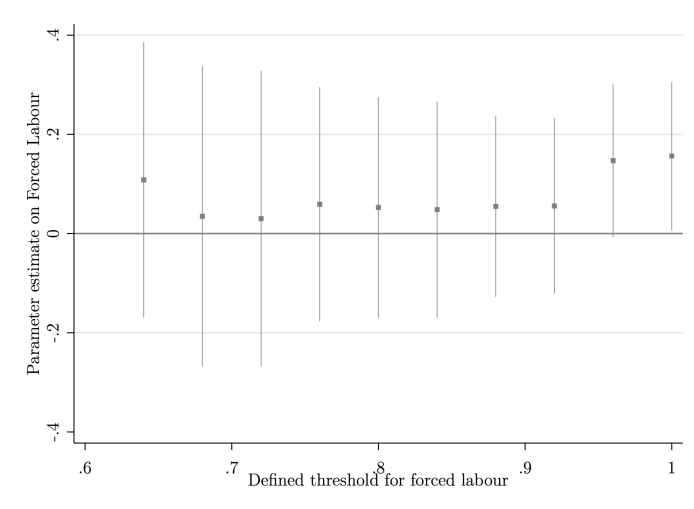
Another possibility: Insurance contracts are less valuable because Hutu avoid Tutsi contracts, and insure with Hutu partners that have more correlated incomes and are therefore **unable** to insure.

Question:

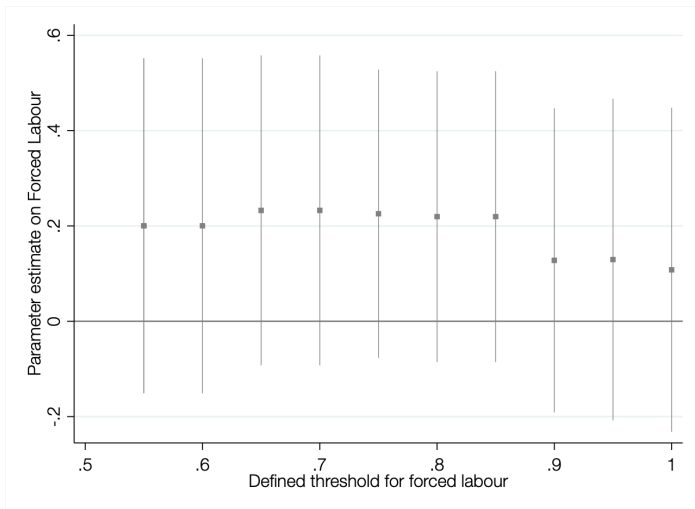
- ▶ Default reason: “Did not have the financial ability to follow through on the agreement.”
- ▶ Note: inability due to illness is a separate category (and nothing shows up using that)



Hutu defaults due to financial ability (correlated shocks)



Tutsi defaults due to financial ability (correlated shocks)



Closing thoughts

1. Historical institutions → trust → economic outcomes
 - ▶ Control for current institutions and human capital
2. Social capital and ethnic networks: deepening ethnic ties can be a double edged sword
3. Micro-empirical evidence using experimental data used to link 'culture' to economic outcomes