Banking on Conflict: Managers and Organizational Design*

Nicola Limodio†
Luca Picariello‡
Tom Schwantje§
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Abstract

This paper investigates how the internal structure of organizations reflects multiculturalism and how shocks that amplify ethnic conflict affect their organizational design. We develop a theoretical model illustrating how conflict increases communication and information acquisition costs, thereby influencing organizational design. To test the model's predictions, we construct a novel panel dataset on the internal organization and management practices of Ethiopian bank branches, combined with detailed data on branch managers' ethnicity, banks' dominant ethnicity, city demographics and conflict. Using variation in exposure to violent ethnic conflict, we causally estimate how bank-level exposure to such conflict affects branch-level organizational design. We find that greater exposure to conflict at the bank level induces branches to hire managers who share the city's dominant ethnicity rather than the headquarters', and to implement a number of complementary changes to address the incentive problem this creates. These organizational changes allow banks to sustain lending performance, adjusting loan size and screening intensity without increasing default rates. Our results uncover a general mechanism by which diverse organizations navigate polarization, trading off local knowledge against higher internal communication costs.

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†**Bocconi University, Dept. of Finance**: nicola.limodio@unibocconi.it
‡**Univ. of Naples Federico II, Dept. of Econ. & Stat., CSEF**: luca.picariello@unina.it
§**Bocconi University, Dept. of Finance**: tom.schwantje@unibocconi.it

1 Introduction

A key role of organizations is to gather and communicate information to make decisions. As Garicano (2000) points out, internal communication between the units of an organization enables the specialized acquisition and use of knowledge. This creates a natural trade-off between communication costs and knowledge acquisition: tailoring an organization to fit local needs improves the utilization of specialized knowledge but raises internal communication and coordination costs. As a result, the optimal design of an organization can vary depending on supply factors (e.g., elements shaping the organization's ability to process and communicate information) and demand-side factors (e.g., variables affecting the need for local-specific information). The role of these elements can be exacerbated by the presence of diverse groups within an organization or country and conflict between those groups, which may alter the optimal organizational structure. We examine these issues in the context of the banking sector – an ideal setting given its reliance on information and its comparative advantage in gathering and processing data to screen and monitor customers.

Over the last decade, we have been collecting a novel dataset to study this issue, adapting the methodology of Bloom and Van Reenen (2007) to measure the management practices and organizational structure of bank branches in Ethiopia, and to construct a panel over a long horizon. We also collect data highlighting a distinctive feature of banking in Ethiopia: banks are strongly associated with specific ethnic groups, as reflected in their leadership and dominant language (Regasa, Fielding, & Roberts, 2022). In such contexts, banks operating in areas populated by other ethnic groups must choose between hiring better-informed local managers (aligning with demand factors) and less-informed coethnic managers who facilitate better communication within the bank (aligning with supply factors). To formalize this intuition, we develop a theoretical model, inspired by Garicano (2000), that captures the trade-offs banks face when determining a branch's organizational structure in this setting.

The empirical identification of how banks respond to changes in these demand and supply factors is challenging, as it requires variation exogenous to both bank-level and local conditions. To address this, we focus on a source of variation that affects the costs of information acquisition and communication within banks, without directly influencing local conditions. Specifically, we study the causal effect of banks' exposure to ethnic conflict in Ethiopia. To isolate the causal effect of conflict from local economic fluctu-

ations, we exploit variation in exposure to ethnic conflict through a bank's branch network – abstracting from local conflict – over time to study its polarizing effects (Hjort, 2014; Korovkin & Makarin, 2023; Rohner, Thoenig, & Zilibotti, 2013). Using our panel data, we track 16 banks operating 998 branches over time, spanning the periods before and after the onset of conflict. This approach allows us to analyze within-branch variation over time, examining how changes in bank-level exposure to conflict influence branch-level organization and lending outcomes.

To further validate our findings, we exploit the sudden historic migration of the Beta Israel (Ethiopian Jews) to Israel as a source of quasi-exogenous variation. Prompted by political instability, famine, and Israel's Law of Return, this migration triggered significant demographic shifts in northern Ethiopia, intensifying resource competition among the remaining groups. These tensions, exacerbated by the contentious Amhara-Tigray border drawn in 1992 in the same area in the following year, contributed to the recent Tigray conflict and subsequent disputes (Nyssen & Demissie, 2023). This quasi-experimental event induced a quasi-exogenous rise in local conflict in the recent civil war, which we leverage to validate our findings on the effect of bank-level exposure to conflict on branch-level outcomes.

Our theoretical model examines the optimal organizational design of a bank branch that evaluates prospective loans. In cities where the local population is not coethnic with the bank, headquarters face a trade-off in selecting the branch manager (BM). It can hire a bank-coethnic manager, who communicates truthfully but is less skilled at assessing loan quality, or a city-coethnic manager, who excels at assessing local borrowers but may provide biased information favoring members of their ethnic group. Headquarters can compensate for a BM's mistakes or biases by adding layers of specialized subordinates (loan officers) who provide additional information about loan applications. The model predicts that as a manager's ability to gather and convey information accurately declines, the bank compensates by adding hierarchical layers to enhance the quality of loan assessments. We view conflict between groups as shaping the relative ability of bank- and city-coethnic managers to assess loan quality and to provide truthful information to headquarters. Thus, a bank's choice of manager ethnicity and internal hierarchy allows us to infer key parameters of its decision problem.

To test the predictions of the theoretical model, we compare the effect of ethnic conflict on branches operating in cities that are not coethnic with the bank–locations where hiring a manager coethnic with both the bank and the city is not possible–with branches operating in cities that are coethnic with the bank. The

latter group serves as a placebo in which, as predicted by our model, conflict should not directly affect branch-level organization. In non-bank-coethnic cities, we first document a striking empirical fact: before the conflict, the vast majority of managers were coethnic with the bank, while only a small minority were coethnic with the city. After the conflict, however, the pattern reversed – a minority were coethnic with the bank, and the majority were coethnic with the city. According to the model, this shift suggests that before the conflict, unbiased internal communication was the primary concern, whereas after the conflict, the value of local information increased relative to unbiased communication.

To identify the causal impact of ethnic conflict on organizational design, we construct a branch-level exposure measure based on *violent* ethnic conflicts occurring elsewhere in the bank's branch network – i.e., not near the branch itself. By excluding conflicts near the branch, we can separate the effect of ethnic conflict within the organization from the direct economic disruptions that local violence causes. We then test robustness by first adding city-time fixed effects, which compare branches within the same city-year, and separately explicitly controlling for the intensity of conflict near the branch itself. Together, these steps ensure that our coefficients capture bank-level organizational responses rather than shifts in local credit demand or migration.

Empirically, we report three main findings. First, branches located in cities not coethnic with their parent bank respond to conflict by clearly shifting their managerial composition. A one-standard-deviation increase in bank-level conflict exposure makes branches 12.9 percentage points more likely to hire a manager coethnic with the local city population and 22.7 percentage points less likely to employ a bank-coethnic manager. This reallocation suggests that, under heightened polarization, the advantages of local knowledge outweigh concerns about communication bias with headquarters. In contrast, in cities where banks and local populations are coethnic, we find no significant change in managerial ethnicity, highlighting the role of ethnic distance in driving these organizational responses.

Second, we study how branches manage the incentive problem that is created by hiring a manager that is not coethnic with the bank. We first examine where these new managers come from, and see that these new managers are reallocated from other branches of the bank, rather than newly hired from the external market. In line with these findings, these new managers also have longer tenures with the bank and are relatively older. This suggests that banks actively try to manage this more tenuous relationship with a non-coethnic manager by ensuring they have a long-term relationship with these managers. These

changes are, again, isolated to branches in cities which are not coethnic with the bank. To further reduce these incentive problems these branches also improve their management practices related to monitoring branch employees' performance, and increase the number of levels in the hierarchy which is suggested to reduce corruption by (Skrastins & Vig, 2019).

Finally, we look at lending activities of the branch. We see that branches in cities not coethnic with the bank expand the area in which they serve customers, whereas branches in cities coethnic with the bank reduce the size of this area in response to bank-level violent conflict. We further find that banks adjust their lending strategies in both bank-coethnic and non-bank-coethnic cities, but in distinct ways. In coethnic cities, banks exposed to higher conflict shift towards safer loans, characterized by larger average loan sizes, stricter collateral requirements, and lower default rates. In non-coethnic cities, these banks reduce the number of loans and increase loan sizes, potentially indicating enhanced borrower screening efforts. Taken together, these patterns suggest that banks respond to conflict by emphasizing collateral in coethnic cities and enhancing borrower screening in non-coethnic cities.

We validate these findings using an instrument based on branch proximity to historically conflict-prone Beta Israel cities, confirming the causal effects of conflict exposure. We find that the results relating to manager ethnicity are clearly confirmed by the instrumental variable strategy, as well as the results related to manager relocation.

The first contribution of this paper is to the literature on organizational hierarchies, providing evidence on how polarization influences optimal organizational design. We demonstrate that the negative effects of conflict on cooperation between individuals of different ethnic groups (Fisman, Sarkar, Skrastins, & Vig, 2020; Hjort, 2014; Marx, Stoker, & Suri, 2019) manifest as changes in banks' internal organization. Interpreting these findings through the lens of our theoretical model, we show that banks address the resulting incentive problems by adding hierarchical layers and adjusting their reward structures (Skrastins & Vig, 2019) . These insights complement studies that explore how trust and communication within firms shape organizational outcomes (Bloom, Garicano, Sadun, & Van Reenen, 2014; Bloom, Genakos, Sadun, & Van Reenen, 2012), specificity of contracts (D'Acunto, Xie, & Yao, 2022) and the transfer of knowledge (Guillouet, Khandelwal, Macchiavello, Malhotra, & Teachout, 2024).

Secondly, this paper contributes to a broader literature on the costs of increased polarization (Desmet, Ortuno-Ortın, & Wacziarg, 2024). We provide novel evidence of a channel through which firms are mo-

tivated to employ out-group rather than ingroup employees, contributing to the literature on alignment of beliefs (e.g., Espinosa & Delfino, 2024; Spenkuch, Teso, & Xu, 2023) and political views (e.g., Colonnelli, Neto, & Teso, 2022; Fos, Kempf, & Tsoutsoura, 2022). In this vein, the results also contribute to the broader literature on the impact of ethnic conflict and polarization on firm performance. For example, Hjort (2014) and Korovkin and Makarin (2023) highlight the detrimental effects of ethnic divisions on respectively firms' output and trade. Finally, our results also contribute to research on the effects of ethnic fragmentation (e.g., Alesina, Spolaore, & Wacziarg, 2000; Easterly & Levine, 1997; Ferrara, 2003; Miguel & Gugerty, 2005) and the role of ethnic backgrounds in team collaboration (e.g., Lang, 1986; Lazear, 1999) by exploring how organizational design is used to address these concerns. An important contribution of this paper to this literature is to show why a diverse organization may be optimal in light of a diverse customer base.

The third contribution of this paper is to extend the World Management Survey (WMS) framework by Bloom and Van Reenen (2007) to measure management practices in banks. Building on the WMS project, several empirical studies have investigated the relationship between management practices and organizational outcomes (Bloom, Eifert, Mahajan, McKenzie, & Roberts, 2013; Bloom, Mahajan, McKenzie, & Roberts, 2020). The WMS has also been extended to other contexts, such as education (Bloom, Lemos, Sadun, & Van Reenen, 2015), civil service (Rasul & Rogger, 2018), health care (Bloom, Lemos, Sadun, & Van Reenen, 2020; Bloom, Propper, Seiler, & Van Reenen, 2015), and private equity firms (Bloom, Sadun, & Van Reenen, 2015), among others. Nonetheless, this is the first application to the banking sector. Beyond this, a limited literature has focused on the choice of the combination of management practices a firm employs (Bloom, Sadun, & Van Reenen, 2016; Lemos & Scur, 2019). This project contributes novel insights to the literature on management by design versus technology (Bloom et al., 2016) by demonstrating how banks use specific management practices to cope with polarization and changes to incentives within their organization. Our finding of an increased focus on performance-related management practices complements recent results suggesting pay-for-performance contracts can neutralise managerial taste-based biases (Ahmadi, Clochard, Lachman, & List, 2025).

The remainder of this paper is structured as follows. Section 2 presents the theoretical framework and outlines the institutional context. In Section 3, we describe the data, our empirical testing strategy for the theoretical predictions, and the quasi-experimental variation in conflict stemming from the Beta

Israel migration. Section 4 then details the empirical model and the main results. Finally, we discuss and interpret our findings in Section 5.

2 Theory and Institutional Setting

In this section, we present a theoretical model of organizational design in a multi-ethnic society, where an increase in polarization leads to changes in the optimal organizational design. We then discuss the institutional setting, including the Ethiopian banking sector, and the recent conflict in Ethiopia. Specifically, the model analyzes the optimal design of the hierarchy and the appointment of branch managers in a bank branch whose headquarters has control rights over these decisions, as well as whether to finance or not to finance local investment projects. The HQ has two separable, yet correlated strategic choices. Regarding the appointment of a BM, if the bank branch is located in a city with a different dominant ethnicity from the one in the city where the HQ is located, and available investment projects need to be evaluated before being financed, a bank coethnic BM may make evaluation mistakes due to the conflict existing between different ethnicities. However, such a BM would be loyal to the HQ and report the evaluation outcome truthfully. Different, if local, city-coethnic BM is appointed, she can better evaluate the quality of local projects; yet, she may be biased towards favoring the financing of projects, thus she may untruthfully report the outcome of her evaluation, specifically, reporting that the project is worth funding when it should not be funded. Hence, when appointing the BM, the HQ faces a tradeoff between the quality of the information about projects and potential ethnic bias.

The HQ also chooses the number of layers subordinated to the BM in the branch organizational structure. Adding layers to the hierarchy implies that the BM not only provides her information to advise the financing decision, but also gathers the information provided by specialized loan officers. Such specialized information complements that provided by the BM and therefore it improves the probability of financing worthy projects. However, adding layers is costly, and the marginal cost of additional layers may deter the HQ from extending the hierarchy's length.

Throughout our analysis, we will focus on a bank's HQ that operates branches in cities that are not

co-ethnic with the bank.[1]

The bank's objective is to finance an investment project yielding an uncertain return, $\tilde{x}$. The project quality can be either high or low, namely: $q = \{G; B\}$. A G quality project yields a return of 1. In contrast, a B quality project yields -1.[2] The HQ cannot observe the quality of projects, but knows that they are equally likely, so that $Pr(q = G) = Pr(q = B) = \frac{1}{2}$. Note that if the HQ were not to acquire further information about the project, it would not finance the project, as the project's ex-ante expected return would be zero.

The model's timeline comprises three stages.

- $t = 1$: the HQ chooses the hierarchical structure of the branch and who to appoint as the branch manager (BM).
- $t = 2$: the BM observes a signal about the quality of an investment project available on the market and reports it to the HQ, which decides whether to finance the project.
- $t = 3$: if the project is financed, it is executed and yields returns.

2.1 Hierarchy Design

A bank branch hierarchy features $L \geq 0$ layers of loan officers (or more generally, subordinates) beneath the branch manager. If the branch features no additional layers (i.e., $L = 0$), the BM alone is responsible for collecting relevant information about investment opportunities and recommending whether to finance projects of uncertain quality. If, instead, further layers are added (i.e., $L > 0$), loan officers (LOs) provide complementary information about the quality of investment projects to the BM, thus allowing the branch to make better-informed decisions.

We assume that adding layers to the organizational hierarchy has a marginal cost $\kappa \in [0, 1]$, reflecting, for instance, an increase in wages paid to employees or coordination costs resulting from organizational restructuring.

[1] As we will show, the solution in the case where the bank and city are co-ethnic can be easily deduced from the case we analyze.

[2] Generalizing the value of returns (ranked so a high-quality project yields more than a low-quality project) would not change the qualitative results presented throughout the paper. We assume such simple returns to focus our analysis on other parameters.

Let us start our analysis by studying the optimal hierarchy design. In this case, the HQ determines the number $L \geq 0$ of additional layers to be placed beneath the branch manager in the hierarchy, providing further information about the quality of investment projects. The per-layer return depends on the quality of the BM's information about the project's return; with a worse-informed branch manager, the branch benefits more from additional layers as LOs generate more informative signals about the quality of investment opportunities.

To reflect these features, we let the return function of a specific hierarchy depend on the number of layers beneath the BM and the latter's information quality: $R(L, \alpha_e)$ where $\alpha_e \in (0, 1)$ summarizes the BM's signal precision net of bias. Higher α_e implies that the BM's information is more reliable. To embed substitutability between the BM's and LO's information (similar to Garicano, 2000, where layers are needed to improve information transmission along hierarchies, albeit having a cost), we assume that $R(L, \alpha_e)$ exhibits the following features: $\frac{\partial R}{\partial L} \geq 0$, $\frac{\partial^2 R}{\partial L^2} < 0$, $\frac{\partial R}{\partial \alpha_e} \geq 0$, $\frac{\partial^2 R}{\partial L \partial \alpha_e} \leq 0$.

To sharpen the economic intuition of our results, let us consider the following functional form for the expected revenue function:

$$R(L, \alpha_e) = \frac{L + \alpha_e}{L + 1}. \tag{1}$$

The expected revenue function in (1) highlights the fact that adding layers is more convenient when the BM's signals are less informative (i.e., when α_e is small). If, instead, the BM provides more informative signals, the expected revenue increases, irrespective of the value of L. In this case, the HQ chooses the optimal number of layers by solving:

$$\max_L \ \pi(L, \alpha_e) = R(L, \alpha_e) - \kappa L \tag{2}$$

yielding

$$L^* = \sqrt{\frac{1 - \alpha_e}{\kappa}} - 1 \tag{3}$$

Lemma 1. *The HQ finds it optimal to add layers underneath the branch manager if the latter provides weakly informative signals about the quality of investment projects (i.e., if* $1 - \alpha_e > \kappa$*).*

Intuitively, the more informed the BM is, the lower the need for further layers underneath her, as the BM can process informative signals without the help of more specialized loan officers. Adding a layer

costs κ; if the per-layer cost exceeds the informative benefit of layers, the HQ will optimally keep the hierarchy short.

Proposition 1. *The optimal number of layers L^* in the internal hierarchy decreases with the BM's informativeness α_e.*

The intuition follows from Lemma 1: a better informed BM requires less help from loan officers who are specialized in information processing. Consequently, as the precision of the BM's information increases, the HQ optimally reduces the length of the hierarchy.

2.2 Branch Manager Selection

When choosing the BM's ethnicity, the HQ compares the ex-ante expected payoff for each option at hand. Based on the information collected, the BM (and the LOs if $L > 0$) sends a message denoted $m = \{g, b\}$ to the HQ, reporting the quality of the investment project at hand, based on which the HQ decides whether to fund the project or not.

The HQ chooses who to appoint as a BM and can either select a manager who is a co-ethnic with the city or bank. Specifically, the BM's ethnicity is denoted $e = \{C; B\}$ where the first entry represents the case in which the BM is *city coethnic*, while the second entry represents the case in which the BM is *bank coethnic*.

Concerning the relationship between BM's ethnicity and informativeness of her signals, we assume the city-coethnic branch manager to be better than the bank-coethnic one at collecting local information. However, the former is potentially biased in providing excessively optimistic signals about local projects, to improve the chances of granting loans to city-coethnic borrowers. Differently, the bank-coethnic manager truthfully reports her perceived quality of loans, but is less effective at gathering information. To embed these features in the model, we assume that a bank coethnic BM misreports the quality of the signal with probability $\gamma \in [0, \frac{1}{2}]$. Hence, the BM's advice is correct with probability $1 - \gamma$.

Moreover, we let a city-coethnic BM perfectly observe the quality of investment projects; however, if these are of bad quality, she will misreport that the project is of good quality with probability $\beta \in [0, 1]$, where β determines the ethnic bias a city-coethnic BM may have.

To describe the optimal BM appointment let us state the two following lemmas.

Lemma 2. *The HQ finances a project only when receiving a signal $m = g$.*

The HQ chooses to finance a project only if the BM and any LOs advise her to do so by sending a positive message about the quality of the investment opportunity. If, instead, the HQ receives no information or negative advise regarding the project quality, it would not fund it. When appointing a BM, the HQ considers the ex-ante expected return from each possible appointment strategy, generating the following result:

Lemma 3. *The payoff in a hierarchy without additional layers beneath the BM is given by the difference between the probability of financing a high-quality project and the probability of financing a low-quality project, so that:*

$$\alpha_e = \begin{cases} \frac{1-2\gamma}{2} & \text{if } e = B \\ \frac{1-\beta}{2} & \text{if } e = C \end{cases} \tag{4}$$

This lemma highlights the main tradeoff the HQ faces when choosing the BM: on the one hand, a bank-coethnic BM will truthfully report the information it collects about the quality of investment projects, albeit with a probability of making mistakes γ. On the other hand, a city-coethnic BM perfectly observes the quality of projects but has a temptation to misreport the quality of projects when these are bad with probability β.

Proposition 2. *The HQ appoints a city-coethnic BM if $\beta < 2\gamma$, and a bank-coethnic BM otherwise.*

Intuitively, if a city-coethnic BM's bias is sufficiently small compared to the probability that a bank-coethnic BM wrongly advises the HQ on investment projects, then the HQ is willing to appoint a city-coethnic BM accepting to bear the possible cost of it (i.e., financing bad quality projects). Hence, if the city-coethnic BM is severely biased, the HQ strictly prefers risking an honest mistake made by a bank-coethnic BM.

2.3 Equilibrium Outcomes

Summing up the two strategic choices described above, one can determine the optimal BM ethnicity and hierarchy design in several scenarios.

Proposition 3.

- *If $\alpha_C \geq \alpha_B$, the HQ appoints a city coethnic BM, and:*

  (i). if $1-\alpha_C < \kappa$, the HQ does not add layers underneath the BM as the latter provides sufficiently informative signals about the quality of the investment project.

  (ii). if $1 - \alpha_C \geq \kappa$ the HQ adds layers underneath the BM so that specialized LOs can provide complementary information about local investment projects on top of the BM's.

- *Let $\alpha_C < \alpha_B$, then the HQ prefers appointing a bank coethnic BM, and:*

  (i). If $1 - \alpha_B < \kappa$, the HQ does not add layers underneath the BM.

  (ii). If $1 - \alpha_B \geq \kappa$, the HQ adds layers underneath the BM so that specialized LOs can provide complementary information about local investment projects on top of the BM's.

The above prediction predicts that, given the BM's ethnicity, the HQ adds layers in the hierarchy if the marginal cost of each layer does not exceed the informational disadvantage of relying only on the information collected by the BM to take financing decisions.

Finally, in order to determine the role of inter-ethnic conflict, let P define a measure of ethnic polarization increasing with the severity of conflict across ethnic groups. We assume that polarization affects both the difficulty for a bank-coethnic BM to collect information about local investment projects, as well as the incentive for a city-coethnic BM to misreport information when a local investment project turns out to be of low quality. Specifically: $\beta'(P) > 0$ and $\gamma'(P) > 0$. This implies that polarization can affect the hierarchical design and the appointment of BMs in bank branches.

2.4 Moral hazard approach

The model can alternatively – but equivalently – be framed through a moral hazard approach. As before, city-coethnic BM have a private benefit β from misreporting the project's quality (high when the quality is low). On the other hand, bank coethnic BM reports the observed quality of the project truthfully, yet they make mistakes with probability γ. Maintain the project's features at the same level as the previous version. Suppose that the HQ pays a share of returns α to remunerate the BM. As before, the HQ finances

a project if the BM reports that the project is of good quality; otherwise, the branch invests in a risk-free asset yielding $r \in [0, 1)$. With a bank coethnic BM, the remuneration contract is determined by solving:

$$\begin{aligned} \max_{1-\alpha} \quad & (1-\alpha)\Big\{[p(1-\gamma)-(1-p)\gamma]+[p\gamma+(1-p)(1-\gamma)]r\Big\} \\ \text{s.t.} \quad & \alpha\Big\{[p(1-\gamma)-(1-p)\gamma]+[p\gamma+(1-p)(1-\gamma)]r\Big\} \geq 0. \qquad (PC) \end{aligned}$$

Differently, with a city-coethnic BM, the problem becomes:

$$\begin{aligned} \max_{1-\alpha} \quad & p(1-\alpha)+(1-p)(1-\alpha)r \ , \\ \text{s.t.} \quad & p(\alpha+\beta)+(1-p)\alpha r \geq 0, \qquad (PC) \\ & p(\alpha+\beta)+(1-p)\alpha r \geq p(\alpha+\beta)-(1-p)\alpha+(1-p)\beta. \qquad (IC) \end{aligned}$$

With limited liability and letting $p = \frac{1}{2}$ we get:

$$\alpha_B^* = 0$$

and

$$\alpha_C^* = \frac{\beta}{1+r}.$$

As a consequence, the HQ gets a payoff

$$\frac{1+r-\beta}{2} \tag{5}$$

when appointing a city-coethnic BM, and

$$\frac{1+r-2\gamma}{2} \tag{6}$$

when appointing a bank-coethnic BM. Hence, the HQ optimally appoints a local BM if $\beta \leq 2\gamma$.

2.5 Banking in Ethiopia

Ethiopia is a diverse country, home to more than 90 distinct ethnic groups. The largest groups are Oromo (31%) and Amhara (30%), followed by Somali (6%) and Tigray (6%). Ethnicity is highly salient, dis-

cernible through outward appearance and naming conventions (Abbay, 2004). This ethnic diversity is mirrored in the country's federal structure, established in 1992 following the end of military rule. The states home to the largest ethnic groups—including Oromiya, Amhara, Somali, and Tigray—are characterized by significant ethnic homogeneity, with over 85% of the population within each region belonging to a single ethnic group.[3] Figure 1 illustrates a map of Ethiopia, with regional names that generally align with the predominant ethnicity.

The Ethiopian banking sector was tightly regulated and dominated by state-owned institutions until the early 1990s, with the government exercising substantial control over credit allocation and the spatial distribution of branches. Under military rule, banking services were centralized, and financial inclusion was low, especially in rural areas. Following the military regime's collapse in 1991 and the subsequent economic reforms, the sector underwent gradual liberalization, allowing for the establishment of private banks. Although foreign entry was prohibited, a significant number of privately owned domestic banks emerged. Many of these banks initially operated within their home regions, serving ethnic constituencies or regions closely associated with their founding members. Over time, however, as competition increased and the banking sector expanded, these institutions began establishing branches outside their regions. This growth has been especially pronounced in recent years, with the number of branches more than tripling from 3,300 in 2015 to 11,300 in 2024.[4]

The banking sector in Ethiopia continues to reflect the country's multiculturalism, with strong associations between banks and specific regions or ethnic groups. This is evident in naming conventions, such as the "Commercial Bank of Oromiya," as well as in decisions about branch locations (Regasa et al., 2022), the ethnicity of C-suite executives and employees, and the predominant language used within banks. When operating in areas where different languages and cultures are predominant, this results in the trade-off our theoretical model formalizes: a bank can prioritize effective local information acquisition by hiring a city-coethnic manager, or it can emphasize better communication with headquarters by employing a bank-coethnic manager.

[3] Based on 2007 IPUMS data, based on the most recent census available, 96% of the population of Tigray is Tigrayan, 91% of the population from Amhara is Amhara and 88% of the population of Oromia is Oromo.

[4] https://nbe.gov.et/wp-content/uploads/2024/08/2023-24-Second-Quarter-Report-1.pdf

2.6 Conflict in Ethiopia

After an extended period of relative peace and high economic growth rates between 2000 and 2020, ethnic clashes and political instability have become significant challenges for Ethiopia. The escalation of tensions in 2020, marked by the breakdown in relations between the federal government and the Tigray People's Liberation Front (TPLF), triggered the Tigray War. This severe conflict, which resulted in an estimated 300,000 to 800,000 fatalities, unfolded across multiple fronts, including battles between Addis Ababa and the Tigray region in northern Ethiopia, as well as within Tigray itself. Following the Tigray conflict, instability spread to other regions, particularly Oromiya, where violence involved the Oromo Liberation Front (OLF), and Amhara, where conflict involved Fano, an Amhara youth militia.

Figure E.1 illustrates the distribution of conflict across Ethiopia during this period. Between 2015 and 2019, the number of fatalities from ethnic conflict was relatively low and geographically dispersed. However, this pattern changed dramatically with the outbreak of the Tigray conflict in November 2020. Conflict intensity initially surged in northwestern Ethiopia, concentrated within Tigray. In 2021, the TPLF launched an offensive toward Addis Ababa, resulting in a high density of violence along the corridor between Mekele, the capital of the Tigray region, and Addis Ababa. The Tigray conflict largely subsided by the end of 2021, but new conflicts erupted in Oromiya, involving the OLF, and more recently in Amhara, driven by Fano.

This conflict presents a suitable context for our analysis for several reasons. First, there is substantial variation in conflict intensity across both time and space, with some regions experiencing severe violence while others remained relatively insulated. Second, conflict involves a number of ethnic groups making it unlikely effects are driven by reorganization of banks associated to a specific ethnic group or operating in a specific region.

Importantly for our analysis, the outbreak of the conflict in 2020 was unexpected, especially at the time we finished our data collection in 2018. This strengthens the plausibility of exogeneity in the conditions of banks and branches relative to the conflict they experienced. The conflict was difficult to foresee due to the political transition preceding the conflict. The current prime minister assumed power in 2018 as part of a transitional government, signaling a policy shift from federalism to nationalism. This transition was marked by significant reforms, including the exclusion of the TPLF – the dominant political

movement in Tigray – from the ruling coalition in late 2019. This resulted in a large mismatch between the TPLF's significant military and reduced political power creating conditions conducive to future conflict Morelli, Ogliari, and Hong (2024). These political developments transformed Ethiopia's environment from one of high growth and relative stability in 2018 to a period characterized by rising ethnic tensions and widespread conflict by 2020.

3 Data and empirical strategy

3.1 Data

We use two main datasets to analyse the effect of conflict on banks. The first is a branch-level panel data that we collected covering the period before and after the beginning of the conflict. Specifically, we introduce a novel survey on management practices inspired by the World Management Survey, adapted for bank branches. Table 1 reports the specific set of questions. The second dataset contains the place, the date, and the actors involved for each violent event in Ethiopia: these data are continuously collected by the Armed Conflict Location & Event Data Project (ACLED).

The branch-level panel dataset was constructed using a questionnaire that we developed based on the World Management Survey (Bloom & Van Reenen, 2007), customized to the specific context of bank operations and lending activities. The adapted questionnaire covers four dimensions of management – performance, lean, target, and people management – each evaluated on a scale from one (worst practice) to five (best practice). In addition, we include targeted questions about branch organization, manager autonomy, and lending practices. Each dimension is assessed using open-ended questions combined with a structured scoring framework to ensure consistency and comparability across branches. These scores are aggregated into two composite indices related to performance management (performance and people management) and other management practices (lean and target management) by taking the mean of these scores. To complement this, open-ended questions and a double-scoring technique are employed to mitigate bias and improve the quality of data collection. Table 2 describes the summary statistics for the full sample for the main analysis variables related to internal organization and branch level lending. Table D.1 and Table D.2 report summary statistics for the main analysis variables related to respectively branches'

internal organization and lending activities. Appendix D describes the survey procedure in detail.

These interviews are conducted with the branch manager, i.e., the most senior manager at the branch. As ethnicity is highly salient in Ethiopia and plays a significant role in social and economic interactions, this interview allows us to determine the ethnicity of branch managers using a combination of indicators: the region they were born in, their accent, the languages they speak, and their name. The ethnicities are determined jointly by two separate interviewers, one conducting the interview and the other observing. Appendix Table C.1 reports the results from this exercise for 2018 and 2022.

First, we match specific events to specific ethnic groups based on the actors involved, and map the link of those actors to specific ethnic groups primarily using information from the Ethiopia Peace Observatory. Second, to match the data to specific bank branches and banks, we determine city locations based on publicly available data and manually verify these locations using Google Maps. We assume a branch is exposed to a conflict if the distance between the city it is based in and the conflict is less than 20 kilometers.[5] This allows us to measure both a branch's local conflict exposure and its exposure through the bank's broader branch network. The main measure of exposure to conflict used throughout our paper is the exposure to conflict through a bank's network of branches to conflict involving its own ethnic group. For bank b of ethnicity e, we define:

$$\texttt{conflict_intensity}_{ibt} = \frac{1}{N_b} \sum_{e \in \mathcal{E}_t} \underbrace{I[\text{ bank_ethnicity_conflict}]_{be} \times \text{ fatalities}_e}_{\text{Fatalities from conflict involving the banks' ethnicity}} \times \underbrace{I[\text{distance_branch_network}_{be} < 20]}_{\substack{\text{A city with a branch of bank } b \\ \text{is within 20km from event } e}} \times \underbrace{I[\text{distance}_{ie} > 20]}_{\substack{\text{The city of branch } i \text{ is further} \\ \text{than 20km from the conflict}}}, \tag{7}$$

where N_b is the number of branches of bank b, $\mathcal{E}_t$ represents the set of conflict events in period t, b in period t, $I[\text{bank_ethnicity_conflict}]_{eb}$ is an indicator that takes the value 1 if event e involves the bank's own ethnic group, and 0 otherwise. fatalities_e is the number of fatalities resulting from conflict event e. Finally, distance_branch_i is the distance from branch i in kilometers. To fit the structure of the panel data,

[5] In appendix B we test the robustness of our results to the specific choice for this cutoff.

we match conflict from 2015 to 2018 to period 1, and conflict from 2019 to 2022 to period 2.

Additionally, to capture local conflict through the variable defined for branch i in city c, we define:

$$\texttt{local_conflict_intensity}_{it} = \sum_{e \in \mathcal{E}_t} \underbrace{\text{fatalities}_e}_{\text{Number of fatalities from event } e} \times \underbrace{I[\text{distance}_{ie} < 20]}_{\substack{\text{The city of branch } i \text{ is less} \\ \text{than 20km from the event } e}}, \tag{8}$$

Figure 6 depicts the distribution of the variable `conflict_intensity` over two time spans: 2015–2018 (the years leading up to our first branch survey) and 2019–2022 (the years leading up to the second wave). See Equation 7 for details. In the first period, most banks experienced an average of fewer than five conflict-related fatalities per branch, with occasional outliers between 12 and 15 fatalities. By comparison, in the second period, conflict exposure increased significantly, exhibiting two pronounced peaks near 8 and 16 fatalities and raising the average to approximately 13 fatalities per branch.

A key step in this paper is to identify the ethnic connotation of banks and cities. Ethiopia is an ideal country for a number of reasons, one of these is the naming convention. The Ethiopian naming conventions generally follow the format of "personal name" and "father's personal name". Strictly speaking, there are no surnames in Ethiopia and conventions change by geography, as discussed in Gebre (2010), Fessha (2016) and Kefale, Kamusella, and Van der Beken (2021). To determine the ethnicity of banking groups, we collect data on bank CEOs and board members, and assigned each of these to an ethnicity. We then assign each bank to the dominant ethnicity. Finally, we determine the ethnicity of cities based on the Murdock Ethnographic Atlas. This exercise yields us measures of bank, branch manager and city ethnicity. The distribution of the ethnicities of banks and cities are reported in Appendix C

3.2 Mapping the theory to empirical predictions

To map our theoretical predictions to our empirical results, we first study the changes in branches' internal organization over time. Specifically, we analyze how banks operating in cities that are coethnic with the bank differ from those operating in non-coethnic cities. We focus on three variables addressed by the theoretical model: indicators for the manager and bank being coethnic, the manager and city being coethnic, and the number of levels in the branches' internal hierarchy.

We analyze panel data over two time periods ($t = 1, 2$) for branches (i) located in cities (c), which are part of banks (b) and situated within regions (r). The dataset spans multiple dimensions, with branches distributed across various cities, banks, and regions, observed at two distinct time points.

To establish a set of empirical facts about changes in branch organization over time, we estimate the following regression model:

$$Y_{itbc} = \alpha + \beta_1 \texttt{I[t=2022]} + \beta_2 \texttt{non_BCC}_{bc} + \beta_3 \texttt{non_BCC}_{bc} \cdot \texttt{I[t=2022]} + \varepsilon_{itbc}$$

Here, Y_{itbc} is the dependent variable representing an outcome of interest related to branch organization. `I[t=2022]` is a dummy variable equal to 1 in the second time period ($t = 2022$) and 0 otherwise. $\texttt{non_BCC}_{bc}$ is an indicator variable equal to 1 if the branch's city is not coethnic with the bank and 0 if it is coethnic. The interaction term $\texttt{non_BCC}_{bc} \cdot \texttt{I[t=2022]}$ captures the differential effect of being in a non-bank-coethnic city during the second time period.

Figure 4 reports the results from this exercise. These findings suggest that a widespread shift from hiring bank-coethnic managers to city-coethnic managers has occurred. This shift is particularly pronounced in cities that are not coethnic with the bank. Examining the number of layers in the internal hierarchy, we observe an increase in both non-bank-coethnic cities.

Based on these results, we focus on empirically testing the following predictions:

Prediction 1. *Exposure to conflict increases the cost of acquiring local information (γ) more than it worsens the willingness of managers to communicate truthfully with a non-coethnic headquarters (β),*

Prediction 2. *Exposure to conflict worsens the quality of signals for both types of managers, increasing the number of layers in the hierarchy.*

In our model, β is plausibly determined endogenously as part of an incentive problem involving the manager and loan officer. The optimal value for β is determined both by any preference the manager might have to provide more loans than is optimal for the bank, as well as by the manager's incentives as an employee of an organization. Using our data, we can test whether branches adopt better management practices related to performance tracking and review, whether good performance is rewarded, and whether

branches are able to deal with underperformers. Specifically, we test the following additional prediction:

Prediction 3. *If branches choose to hire non-bank-coethnic managers in response to exposure to conflict, they adopt better manager practices relating to tracking and rewarding performance.*

3.3 Quasi-experimental variation in conflict

The Beta Israel, commonly known as Ethiopian Jews, experienced significant migration to Israel during the 1980s and early 1990s. This movement was marked by notable operations such as Operation Moses in 1984 and Operation Solomon in 1991, where tens of thousands were airlifted to Israel. The migration was driven by a combination of factors, including political instability and famine in Ethiopia, as well as the Israeli government's Law of Return, which grants Jews worldwide the right to immigrate to Israel. This migration occurred due to political instability, famine, and civil war in Ethiopia, as well as Israeli government initiatives to support Jewish immigration. The exodus of the Beta Israel community led to notable demographic shifts in their home region within Ethiopia.

The border between the Amhara and Tigray regions, from which the Beta Israel departed, has been contentious and shifting for over 300 years. These most recent shifts took place in 1992, when Ethiopia's ethnographic regional boundaries were drawn following the fall of the military regime. During these negotiations, dominated by the Tigray People's Liberation Front (TPLF), the border shifted south, encompassing part of the area recently vacated by 40,000 Beta Israel (Nyssen & Demissie, 2023).

In recent years, these disputed borders have continued to fuel tensions. The exclusion of the TPLF from Ethiopia's governing coalition in 2018 brought these long-standing grievances to the surface. The contested borders played a key role in the Amhara regional army's involvement in the Tigray conflict, as well as the subsequent civil war, since 2023, involving Amhara militias, who feared that territory they had gained might be returned to Tigray as part of a peace agreement (Nyssen & Demissie, 2023).

This is an ideal instrument for several reasons. First, banks were unlikely to anticipate the political and demographic changes tied to the conflict when we collected the first wave of data in 2018, ensuring the exogeneity of the instrument. Second, the conflict is driven by broader political and ethnic tensions and is unlikely to be influenced by bank-level or branch-level decisions, thereby minimizing the risk of reverse causality. Finally, the instrument focuses specifically on conflicts involving Tigray and Amhara

groups, excluding conflicts involving other ethnicities. This design allows us to test the robustness of our results by isolating the effects of a subset of conflicts, ensuring that our findings are not driven by broader or unrelated ethnic tensions.

To study these cities, we extract data on the location of the main cities from which the Beta Israel departed from Kaplan (1992). We then match this to bank branches and banks using the cities in which they are located. We extend the area we consider as Beta Israel to include all cities within 100 kilometers of this area. Beta Israel Exposure, our main instrumental variable, is defines as the share of bank b's branches within 100 km of any Beta-Israel origin city.

4 Empirical model and results

We conduct our empirical analysis in two steps. First, we estimate a two-way fixed-effects model to examine within-branch effects of exposure to ethnic conflict through the bank network on branch-level outcomes.[6] Next, we use exposure to Beta Israel cities as an independent variable in a reduced-form specification to assess the robustness of our findings.

We separately analyze two sets of branches: those located in cities that share the bank's ethnicity and those that do not. Based on our theoretical framework, we treat coethnic branches as a comparison, as ethnic conflict should not affect their outcomes through our theoretical model's mechanism, while non-coethnic branches serve as our main sample. This approach allows us to isolate changes unrelated to customer ethnicity – such as common organizational responses to conflict – and focus on those affecting branches that serve customers who are not coethnic with the bank.

In our empirical specification, we consider a balanced panel over two time periods $t \in \{1, 2\}$ for branches indexed by $i \in \{1, \ldots, N\}$. These branches are located in cities $c \in \{1, \ldots, C\}$, and are part of banks $b \in \{1, \ldots, B\}$.

$$Y_{itbc} = \beta_1 \, \texttt{conflict_intensity}_{itb} + \gamma_i + \lambda_t + \varepsilon_{itbc}, \tag{9}$$

where Y_{itbc} represents branch-level outcomes such as manager ethnicity or management practices. We

[6] Because we have two periods, this is equivalent to a first-difference specification, avoiding concerns about negative weights in staggered-adoption settings (Callaway & Sant'Anna, 2021).

cluster standard errors at the branch level, and include both branch (γ_i) and time (λ_t) fixed effects.

Regression 9 exploits branch and time fixed effects to isolate how within-branch changes in exposure to violent ethnic conflict through the branch network drive variation in Y_{itbc}. By netting out time-invariant branch heterogeneity and common period shocks, it yields an estimate of the causal effect of conflict intensity on our outcomes, under the assumption that no other time-varying factors drive both conflict exposure and branch organisation.

The main threats to identification are time-varying confounders that simultaneously influence conflict intensity and our outcomes. As a robustness check, we re-estimate 9 with city-time fixed effects ($\lambda_{c,t}$) and controlling for the intensity of local conflict.[7]

Finally, to explicitly test whether bank-level exposure to conflict affects branches in coethnic and non-coethnic cities differently, we estimate the following interaction specification:

$$\begin{aligned} Y_{itbc} = {} & \beta_1 \, \texttt{conflict_intensity}_{itb} + \\ & \beta_2 \, \texttt{conflict_intensity}_{itb} \cdot \texttt{I[non_bank_city_coethnic]}_{bc} + \\ & \gamma_i + \lambda_{t,ce} + \varepsilon_{itbc}, \end{aligned} \tag{10}$$

We include bank-coethnic $\times$ time fixed effects ($\lambda_{t,\text{ce}}$), which absorb any conflict related changes between branches in coethnic relative to non-coethnic cities. Throughout the results section, we report the p-value for testing the null hypothesis that $\beta_2 = 0$, which implies that conflict exposure has the same effect on branches in coethnic and non-coethnic cities.

The remainder of this section presents two-way fixed effects estimates for four categories of branch-level outcomes: manager ethnicity, manager reallocation, management practices and internal hierarchy, and lending activities. We then provide a separate IV analysis leveraging variation in proximity to Beta Israel cities, showing that our findings for both organizational structure and lending outcomes are robust to this alternative identification strategy.

[7] Specifically, $Y_{itbc} = \beta_1 \, \texttt{conflict_intensity}_{itb} + \beta_2 \, \texttt{local_conflict_intensity}_{itb} + \gamma_i + \lambda_t + \varepsilon_{itbc}$,

4.1 Ethnic Conflict and Manager Ethnicity

Our model predicts that polarization increases the two frictions in our model - both information acquisition and communication between non-coethnic people become more costly. Section 3.2 showed that between 2018 and 2022, banks shifted towards hiring managers coethnic with the city they work in, instead of managers coethnic with the bank. Here, we study whether this reallocation is driven by branches' exposure through the branch network to violent ethnic conflict.

We find strong empirical support for this model prediction. As shown in Table 3, Panel A confirms that branches in coethnic cities exhibit no significant change in manager ethnicity following increased conflict exposure. Panel B shows a large, statistically significant shift in manager ethnicity in cities not coethnic with the bank. Our main specification – columns (1) and (4) – shows that in these cities a one standard-deviation increase in bank conflict intensity (1.080 log-points) raises the share of city-coethnic managers by 12.9 percentage points (p.p.) (a 70% increase over the 2018 mean of 18.5%), and lowers the share of bank-coethnic managers by 22.7 p.p. (a 29% drop from 77.0%).

This result is mostly robust to controlling for either city-time fixed effects, or to controlling for the intensity of local violent conflict. We find that this reorganisation is significantly *different* between cities coethnic with the bank versus cities that are not across all but one set of estimates. Only in column (2) is the difference insignificant at the 5% level. The coefficient estimates suggests that branches in cities coethnic with the bank are less likely to engage the off-equilibrium behaviour of not employing a manager coethnic with both the bank and city.

In summary, in coethnic cities – where the bank's and city's ethnicities align – managerial appointments are not affected by conflict. In contrast, in non-coethnic cities, greater conflict leads to a reallocation toward city-coethnic managers. We interpret this shift as reflecting a conflict-induced change in relative signal precision (α_C vs. α_B). This suggests that, in response to conflict, the cost of acquiring information from a non-coethnic customer increases disproportionately relative to the bias of employing a manager not coethnic with the bank.

4.2 Who are these managers?

We have thus established a clear change in the choice of the ethnicity of managers that are employed by branches. We next ask where these new managers are coming from – are they reallocated or newly hired – and whether they are more or less experienced than other managers. As conflict causes branches to hire city-coethnic managers, understanding whether these managers are redeployed insiders or outside hires speaks directly to the mechanism of bias versus information acquisition.

To first study where these managers are coming from we use the cross-section of our survey collected in 2022. We first define two variables capturing (i) whether the manager was hired at the bank after the outbreak of the conflict (from 2021), and (ii) whether the manager was hired at the branch after the outbreak of the conflict. We then decompose the latter effect based on where the new manager comes from: We define (iii) a dummy `reallocated manager` which is equal to one when the manager was hired at the branch after the outbreak of the conflict, but at the bank before. We also define (iv) a dummy `new manager` which is equal to one when the manager was hired at both the branch and bank after the outbreak of the conflict. We cannot study promotions directly, as we only observe how long a manager has been employed by the branch and bank, not when they became a manager. We estimate the following model using the 2022 dataset:

$$Y_{ibc} = \beta_1 \, \texttt{conflict_intensity}_{ib} + \varepsilon_{ibc}, \tag{11}$$

We find that, in response to conflict, branches located in cities coethnic with the bank tend to hire new managers who are entirely new to the bank, whereas branches in non-coethnic cities bring in new managers who are reallocated from other branches. Table 4 reports these results, showing that branches in cities not coethnic with the bank become around 8.5 p.p. more likely to employ a manager reallocated following the outbreak of the civil war when exposed to one standard deviation higher conflict intensity. Taken together, the results suggest that, in non-coethnic cities, conflict leads branches to appoint city-coethnic managers who are reallocated from other branches rather than hired externally. In cities coethnic with the bank, the branch is happy to employ managers coethnic with the bank hired from the external labour market. These results are consistent with a strategy in which the bank wishes to limit bias by hiring non-coethnic managers with whom it has a pre-existing relationship.

Building on the previous findings, we test whether branches exposed to conflict appoint non-coethnic managers with longer bank-specific tenure. We assemble a brief manager CV comprising tenure at the bank, tenure at the branch, age, a university-degree indicator, and gender. Using our panel, we re-estimate specification 9 for each characteristic, separately for cities that are coethnic with the bank and those that are not. Table 5 shows that, in non-coethnic cities, branches indeed select managers who have longer tenure at the bank (but not at the branch) and are older. We find no conflict-driven change in educational attainment – unsurprising given that virtually all managers hold a university degree – and only a modest shift in gender composition.

We have shown that, in response to conflict, branches appoint city-coethnic managers to improve information acquisition from local borrowers. These managers already have long tenure at the bank and are reallocated from other branches, rather than hired externally. This pattern suggests that the bank mitigates the incentives a non-bank-coethnic manager might have to over-extend credit to local clients by assigning someone with whom it already has a long-term relationship.

4.3 Branch-level organisation

Another tool through which the bank may reduce the incentive problems created by hiring a manager coethnic with the city rather than bank is the branch's internal organisation. To study this, we examine both whether our measure of management practices and the number of levels in the internal hierarchy of the branch are affected by conflict. From our survey we construct an overall management index and four sub-indices – lean operations, performance monitoring, target setting, and people management – each normalised to mean zero and unit variance in 2018. For organisational depth, we use the log of the number of hierarchical levels in the branch, winsorised at the 99th percentile to mute the influence of extreme outliers. We include this measure because steeper branch-level hierarchies have been shown to reduce managerial corruption in a large Indian bank (Skrastins & Vig, 2019). We again use our panel data to implement regression 9.

First, on management practices, branches in non-coethnic cities improve their overall management score by roughly 0.10 standard deviations, compared with 0.06 s.d. in coethnic cities. The gap is mainly driven by performance-management practices, which rise by 0.184 s.d. in non-coethnic cities but fall by

0.057 s.d. in coethnic ones – a difference that is statistically significant $p = 0.031$. The two questions in this sub-index ask whether performance is tracked appropriately and reviewed with sufficient frequency, suggesting that branches use tighter monitoring to offset incentive misalignment when the manager is not bank-coethnic. Second, we find a small, marginally significant increase in the number of hierarchical layers for branches in cities not coethnic with the bank, providing additional – if weaker – evidence that branches adopt steeper hierarchies to improve information flow and reduce this potential bias.

4.4 Branch-level lending activities

Table 7 reports estimates from specification 9 using a set of dependent variables related to branch-level lending and operational activities. We begin by examining each branch's operational radius – the geographic area from which it attracts borrowers. In response to conflict, branches located in co-ethnic cities reduce their geographic reach, whereas those in non-co-ethnic cities expand them. This pattern suggests that managers who share the majority ethnicity of the city are better able to serve a wide market than their predecessors, who were not co-ethnic with the local population.

Turning to credit supply, branches in non-co-ethnic cities extend fewer but larger loans, an adjustment that likely lowers monitoring costs for headquarters. Conflict does not affect the average lending rate, collateralization, or default rate in these locations. By contrast, branches in co-ethnic cities increase lending volumes (larger size for the same number of loans) while shifting to more conservative lending – raising collateral requirements and reducing default rates.

Taken together, the evidence suggests that co-ethnic branches continue lending during conflict by leveraging local trust networks and tightening collateral to manage risk. Non-co-ethnic branches, facing greater informational frictions, instead reduce lending and concentrate lending in a small number of large, more easily monitored loans.

4.5 Robustness using exposure to Beta Israel Cities

To validate our main results, we construct an instrument based on banks' proximity to Beta Israel cities, which are areas that became increasingly prone to ethnic conflict following the decline of Tigrayan influence in the federal government (see Section 3). Specifically, we calculate the share of a bank's branches

located within 100 kilometers of historically significant Beta Israel cities and interact this measure with a post-2018 time dummy to capture the effect in the uptick in conflict over time.

Formally, for each bank b, we define:

$$\texttt{share_branch_beta_100}_b = \frac{\frac{\sum_{c \in \mathcal{C}_b} I[\texttt{Beta_Israel_100}_{ic}]}{N_b}}{\max_{b' \in \mathcal{B}} \left(\frac{\sum_{c \in \mathcal{C}_{b'}} I[\texttt{Beta_Israel_100}_{ic}]}{N_{b'}} \right)},$$

where N_b is the total number of branches operated by bank b, $\mathcal{C}_b$ is the set of branches for bank b, and $I[\texttt{Beta_Israel_100}_{ic}]$ is an indicator for whether branch i is within 100 kilometers of a Beta Israel city. The resulting index is normalized to range from 0 to 1 and is interacted with a post-conflict dummy to construct a time-varying instrument for conflict exposure. We use this instrument in a reduced-form IV version of specification 9, replacing `conflict_exposure` with `share_branch_beta_100` $\times$ $I[t = 2022]$. We first examine six organizational outcomes, and then turn to lending outcomes.

Table 8 reports the results for manager ethnicity and reallocation; we focus on these results for our IV specification. In line with our baseline estimates, we find no significant effects in bank–coethnic cities. In non–bank-coethnic cities, by contrast, the instrumented exposure leads to a significant decrease in the probability of appointing a bank-coethnic manager and an increase in the probability of appointing a city-coethnic manager. We see these managers have (non-significantly) longer tenures than their counterparts in bank-coethnic cities, and that they are significantly older. This confirms our main result that banks' shift towards hiring managers coethnic with local customers instead of one coethnic with the bank itself.

5 Discussion

This paper provides novel evidence on the effect of conflict polarizing differences between ethnic groups on the internal structure of firms operating in a multi-ethnic environment. We develop a theoretical model to study the trade-off between information acquisition and communication within organizations and show that, in Ethiopia, bank-level exposure to ethnic conflict increases the importance of information acquisition over internal communication. We find that banks attempt to address the biases introduced by hiring individuals from another ethnic group by employing managers they have a longer relationship with and by

implementing better performance tracking and reward systems.

An important contribution of our theoretical model and analysis is the mechanism it provides for understanding how organizations might mitigate the costs of polarization. Specifically, by adjusting their organizational structure to prioritize communication with local customers, firms can reduce the negative effects of polarization on internal processes. This mechanism highlights the dual role of organizational design: not only as a response to internal inefficiencies but also as a strategy to strengthen external communication and trust with customers.

These results have broad applicability in an increasingly polarized world. In many settings, organizations must interact with a diverse set of customers — whether in terms of ethnicity, political views (Colonnelli et al., 2022; Fos et al., 2022), or other salient identity markers (Espinosa & Delfino, 2024). As polarization rises, organizations may find that diversity among their own employees and managers becomes critical to optimally serve heterogeneous customer bases. Although ethnic diversity is particularly pronounced in the Ethiopian banking sector, similar challenges are increasingly common across firms operating in multicultural or politically divided environments worldwide (Desmet et al., 2024).

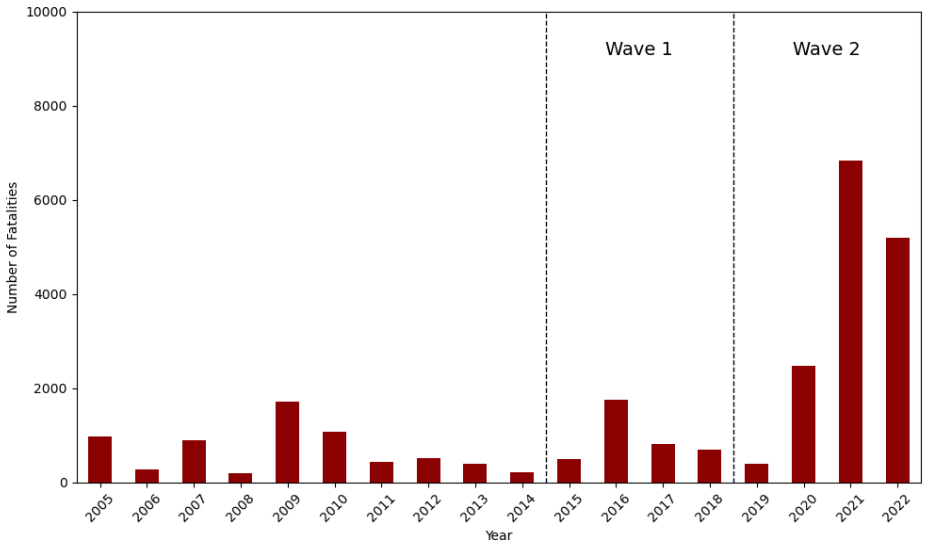
In further developing this research, we will formalize the theoretical link between better rewarding performance, and reductions in the bias of a non bank-coethnic manager. Additionally, we intend to study the effect of conflict on local economic outcomes and lending, and how bank-level reorganization can reduce the negative effects of conflict.

Figure 1: Regions of Ethiopia



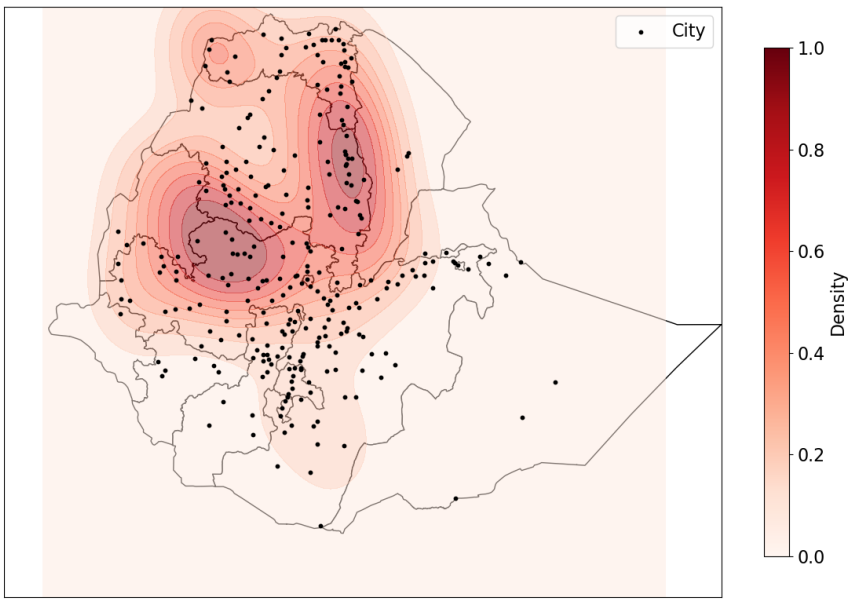
Notes: This figure displays the twelve regions in Ethiopia and two administrative councils, Addis Ababa and Dire Dawa. To ensure regions stay the same over time in our analysis, we combine Central Ethiopia, South West Ethiopia, South Ethiopia and Sidama into the Southern Nations, Nationalities and Peoples' Region (SNNPR). This region was split into four between 2020 and 2023, and remains one of the most ethnically diverse regions of the country.

Figure 2: Ethnic conflict over time



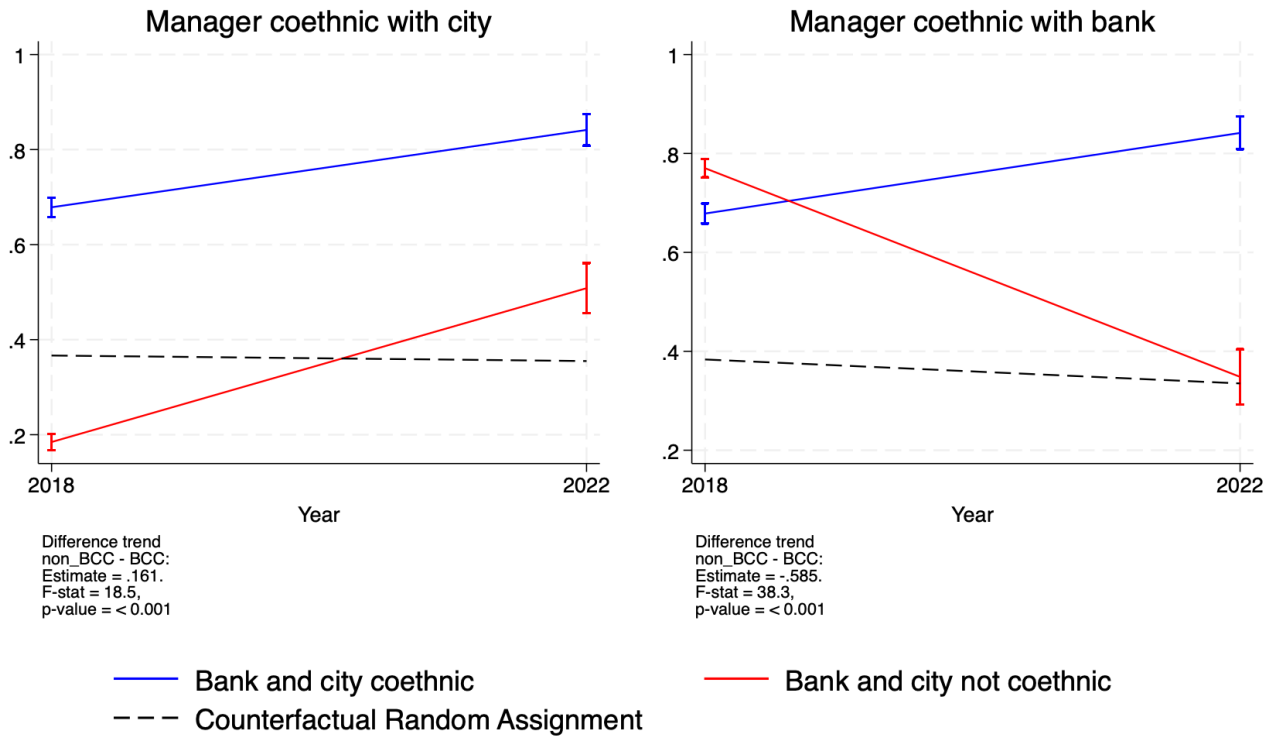
Notes: This figure displays the number of fatalities from ethnic conflict in Ethiopia over time. The variable on the y-axis includes all fatalities from conflict involving at least one ethnic group in the ACLED database. This figure uses all events in the ACLED datasets without accounting for potential double-reporting of events.

Figure 3: Ethnic conflict over space



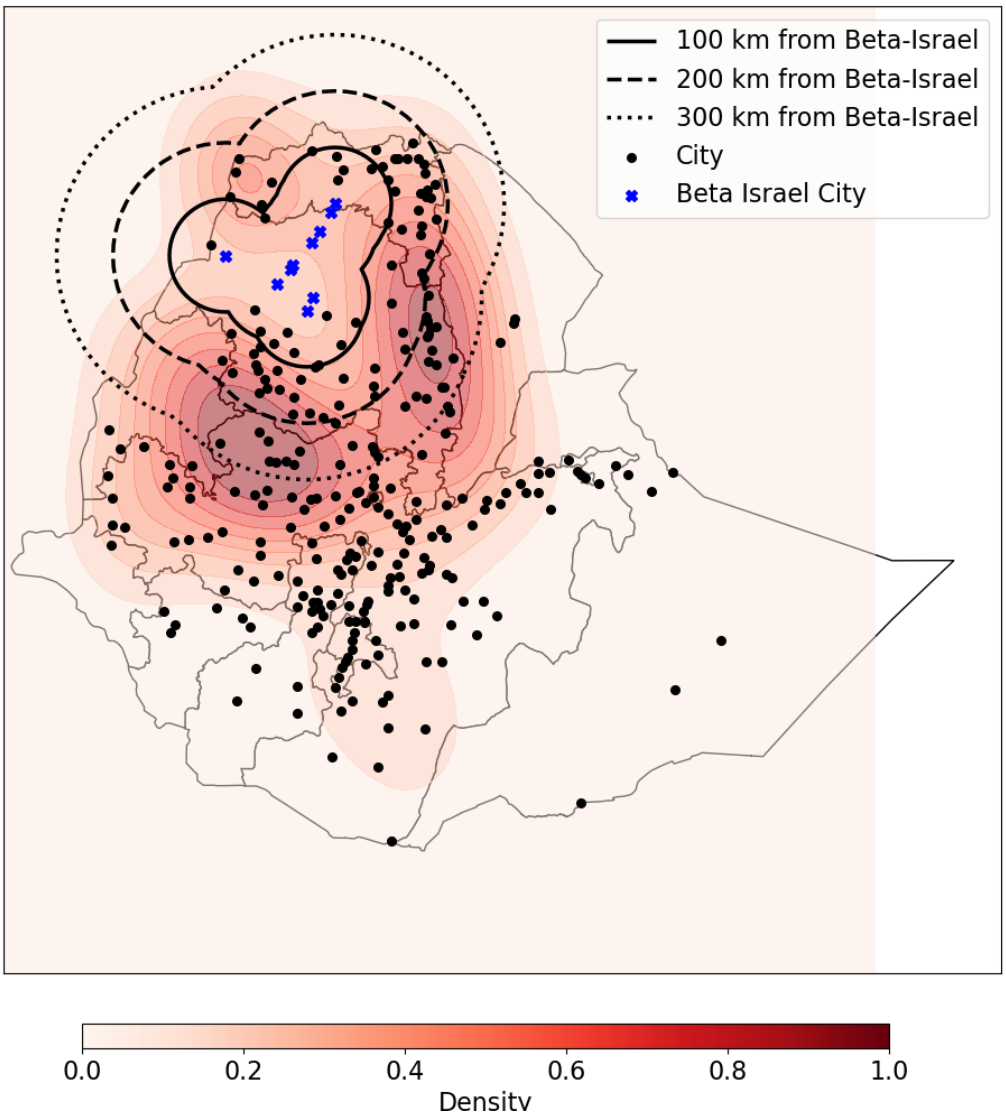
Notes: This map displays the lethality-weighted spatial intensity of ethnic conflict in Ethiopia from January 1, 2019 through December 31, 2022. Shaded areas are a continuous kernel-density estimate of conflict events, weighted by reported fatalities and linearly scaled for the colorbar. Black lines denote regional boundaries; black dots mark major cities. Moving clockwise, the high-intensity conflict in the west is concentrated in Oromiya, primarily involving the Oromo Liberation Army. In the northwest, the conflict involves Tigray and Amhara militias, while in the north, it is predominantly driven by clashes between the government and its allies and the Tigray Liberation Front.

Figure 4: Changes in organizational structure over time



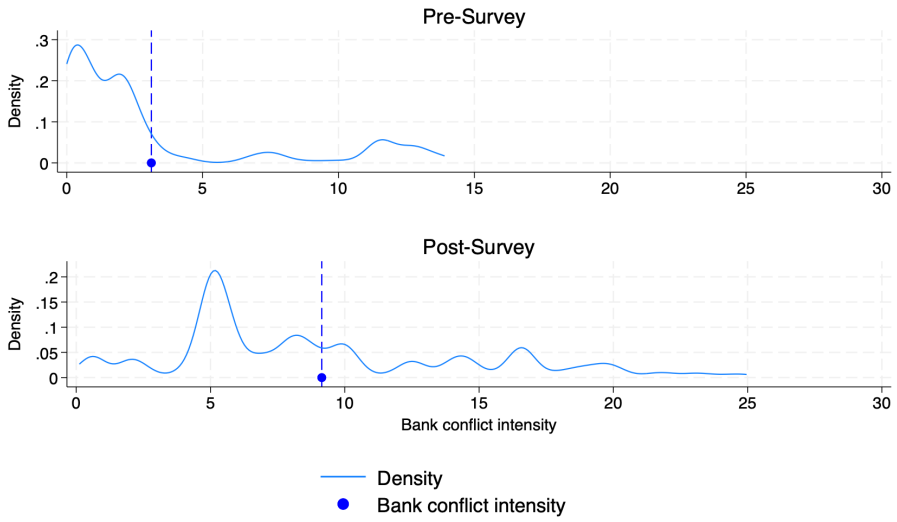
Notes: This figure presents the changes in organizational structure over time for three main outcome variables: An indicator for the manager and bank being coethnic and an indicator for the manager and city being coethnic. These figures present the changes in unconditional means for these outcomes, separately for branches operating in cities coethnic with the bank (bank coethnic city) and for branches operating in cities not coethnic with the bank (non bank coethnic city.) Finally, for the coethnicity variables we report the expected share of coethnic managers if the same sample of managers were to be randomly assigned to bank branches. We conduct this exercise 200 times and report the average of these simulations.

Figure 5: Beta-Israel Cities and Conflict



Notes: This figure displays the distribution of conflict events and the locations of Beta Israel cities in Ethiopia. Beta Israel cities are marked in red, while other cities are marked in black. The contours indicate distances of 100 km, 200 km, and 300 km from the nearest Beta Israel city, with the 100 km contour represented by a solid black line, the 200 km contour by a dashed black line, and the 300 km contour by a dotted black line. The density plot shows the weighted distribution of fatalities from ethnic conflict between 2015 and 2022, with darker regions representing higher densities. The map uses the Web Mercator projection (EPSG:3857) for accurate distance calculations.

Figure 6: Distribution of bank-level conflict exposure over time



Notes: This figure displays the distribution of the variable `Conflict_Intensity` from Equation 7 for two periods: 2015–2018 (top panel) and 2019–2022 (bottom panel). Each panel shows a kernel density (Gaussian, bandwidth 0.5) of `Conflict_Intensity` across our sample of branches, along with the mean value of `Conflict_Intensity` for that period.

Table 1: Survey Indicators

(1) Indicator	(2) Objective	(3) Measure
	1 Lean Management	
1.1	Introduction of new management techniques	Tests whether operational efficiencies have been introduced and why
1.2	Good use of human resources	Tests whether incoming demand is segmented appropriately and the efficiency at matching supply and demand of skills
	2 Performance Management	
2.1	Performance tracking	Tests whether performance is tracked using meaningful metrics and with appropriate regularity
2.2	Review of performance	Tests whether performance is reviewed with appropriate frequency and communicated with staff
	3 Target Management	
3.1	Target balance	Tests whether targets cover a sufficiently broad set of metrics
3.2	Target interconnections	Tests whether targets are tied to company objectives and how well they cascade down the organization
	4 People Management	
4.1	Building a high performance culture	Tests whether good performance is rewarded proportionately
4.2	Making room for talent	Tests whether the branch is able to deal with underperformers

Notes: This table illustrates our survey's section on management performance. To measure good managerial practices, we evaluate them along four main categories, i.e., lean management, performance management, target management, and people management. Each category is scored on two dimensions on a scale from 1 (bad practice) to 5 (good practice). Our final management performance index is calculated by standardizing each of the eight resulting scores and by taking their unweighted average. Each of the sub-indices is calculated in the same way using a combination of two metrics (respectively, the lean, performance, target and people management practices).

Table 2: Summary statistics of analysis variables

	N	Mean	Std. Dev.	Min	Max
Bank coethnic manager	1,958	0.65	0.48	0	1
City coethnic manager	1,958	0.54	0.50	0	1
Management score	1,957	-0.01	0.70	-1.99	2.00
Levels branch hierarchy	1,942	3.78	1.38	1	9
Branch employees	1,951	17.57	10.04	3	110
Branch operational distance	1,700	6.80	4.85	0.05	50.00
Focus on loans	1,958	0.20	0.40	0	1
Lending rate	1,637	0.15	0.02	0.10	0.20
Ln Number Loans	1,510	2.43	1.35	0.00	8.52
Ln loan size	1,506	13.29	3.77	0.00	17.86
Collateral	1,449	0.95	0.19	0.50	1.50
Share loans defaulting	1,578	0.07	0.14	0.00	1.00

Notes: This table provides summary statistics of the main analysis variables based on the branch survey. Bank coethnic manager and city coethnic manager are dummy indicators for whether respectively the manager and bank, or the manager and city are coethnic. Management is the mean of the normalised management scores. Levels branch hierarchy is the number of levels between the branch manager and the lowest level employee in the branch. Branch employees is the number of employees in the branch. Branch operational distance is the maximum distance at which a branch services customers. Focus on loans is an indicator equal to one if the branch indicates focussing on both deposits and loans rather than only deposits. Collateral percentage is the typical level of collateral on a loan given out as a share of the total loan size Ln Number Loans is the log number of loans, Ln loan size is the log of loan size expressed in ETB 1000, lending rate percentage is the average lending percentage on the past 10 loans given out. Share default is the share of loan default on loans given out in the past year. We report the number of observations, the mean, standard deviation, minimum and maximum of these variables.

Table 3: Bank-level exposure to ethnic conflict and branch manager ethnicity

	Panel A: Branches in Bank-Coethnic Cities					
	City coethnic manager			Bank coethnic manager		
	(1)	(2)	(3)	(4)	(5)	(6)
Bank Conflict Intensity	0.014	0.043	0.018	0.014	0.043	0.018
	(0.040)	(0.073)	(0.040)	(0.040)	(0.073)	(0.040)
Local conflict intensity			0.023*			0.023*
			(0.014)			(0.014)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	No	Yes	Yes	No	Yes
City-Time FE	No	Yes	No	No	Yes	No
2018 Mean dep. var	0.679	0.679	0.679	0.679	0.679	0.679
N (Branches)	896	744	896	896	744	896

	Panel B: Branches in Non-Bank-Coethnic Cities					
	City coethnic manager			Bank coethnic manager		
Bank Conflict Intensity	0.119***	0.074**	0.124***	-0.196***	-0.161***	-0.208***
	(0.033)	(0.036)	(0.033)	(0.032)	(0.037)	(0.032)
Local conflict intensity			-0.018			0.040***
			(0.014)			(0.015)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	No	Yes	Yes	No	Yes
City-Time FE	No	Yes	No	No	Yes	No
2018 Mean dep. var	0.185	0.185	0.185	0.770	0.770	0.770
p-value	0.042	0.700	0.039	0.000	0.012	0.000
N (Branches)	1062	928	1062	1062	928	1062

Notes: The dependent variable is an indicator that equals 1 when a branch's manager is co-ethnic with the ethnic group associated with the city (columns 1–3) or with the ethnic group associated with the branch's bank (columns 4-6). Bank conflict intensity is the log intensity of bank-level exposure to conflict involving the bank's ethnic group, excluding conflict near the branch of interest, defined in equation 7. Local conflict intensity the log of conflict intensity near the city as defined in equation 8. The mean (SD) of the within-branch change in log bank conflict intensity from 2018 to 2022 is 1.022 (1.080). Panel A restricts the sample to branches in cities coethnic with the bank, while Panel B focuses on branches in cities that are not. Standard errors, clustered at the branch level, are reported in parentheses. The reported p-value is for the test that the slope on bank conflict intensity is identical in bank coethnic and non bank coethnic cities. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Table 4: Bank-level exposure to ethnic conflict and manager reallocation

	Panel A: Branches in Bank-Coethnic Cities			
	New manager bank	New manager branch	Reallocated employee	New hire
	(1)	(2)	(3)	(4)
Bank Conflict Intensity	0.038***	0.051	0.020	0.031**
	(0.015)	(0.041)	(0.041)	(0.014)
Mean dep. var	0.034	0.397	0.370	0.027
N (Branches)	447	446	446	446
	Panel B: Branches in Non-Bank-Coethnic Cities			
	New manager bank	New manager branch	Reallocated employee	New hire
	(1)	(2)	(3)	(4)
Bank Conflict Intensity	-0.011	0.067**	0.077***	-0.010
	(0.009)	(0.030)	(0.029)	(0.009)
Mean dep. var	0.017	0.362	0.347	0.015
N (Branches)	528	528	528	528

Notes: This table uses only data collected in 2022. The four outcome variables are (1) an indicator whether the manager joined the bank in 2021 or 2022 (after the outbreak of conflict in November 2020), (2) whether the manager joined the branch in 2021 or 2022, and whether conditional on joining the branch in 2021 or 2022 they were (3) reallocated from a different branch of the same bank or (4) joined the bank as a new employee in 2021 or 2022. Bank conflict intensity is the log intensity of bank-level exposure to conflict, excluding local conflict, defined in equation 7. The mean (SD) of the within-branch change in log bank conflict intensity from 2018 to 2022 is 1.022 (1.080). Panel A restricts the sample to branches in cities coethnic with the bank, while Panel B focuses on branches in cities that are not. Standard errors, clustered at the branch level, are reported in parentheses. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Table 5: Bank-level exposure to ethnic conflict and manager characteristics

	Panel A: Branches in Bank-Coethnic Cities				
	Tenure in bank	Tenure in branch	Age of manager	University degree	Male manager
	(1)	(2)	(3)	(4)	(5)
Bank Conflict Intensity	-0.046	-0.272	-0.339	-0.003	0.050
	(0.358)	(0.191)	(0.526)	(0.005)	(0.036)
Branch FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
2018 Mean dep. var	6.857	2.386	33.895	0.993	0.868
N	894	892	834	896	896
	Panel B: Branches in Non-Bank-Coethnic Cities				
	Tenure in bank	Tenure in branch	Age of manager	University degree	Male manager
Conflict Main	1.177***	0.232	2.133***	-0.000	0.030
	(0.315)	(0.216)	(0.446)	(0.004)	(0.031)
Branch FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
2018 Mean dep. var	6.845	2.360	33.546	0.987	0.864
p-value	0.003	0.315	0.000	0.523	0.714
N	1056	1056	1000	1058	1058

Notes: This table focuses on five outcome variables (1) the manager's tenure at the bank in years, (2) the manager's tenure at the branch in years, (3) the age of the manager in years, (4) whether the manager has a university degree (BA or MA), and (5) whether the manager is male. Bank conflict intensity is the log intensity of bank-level exposure to conflict, excluding local conflict, defined in equation 7. Local conflict intensity the log of conflict intensity near the city as defined in equation 8. The mean (SD) of the within-branch change in log bank conflict intensity from 2018 to 2022 is 1.022 (1.080). Panel A restricts the sample to branches in cities coethnic with the bank, while Panel B focuses on branches in cities that are not. Standard errors, clustered at the branch level, are reported in parentheses. The reported p-value is for the t-test that the parameter estimates for branches in bank-coethnic cities (Panel A) and in non bank-coethnic cities are the same. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Table 6: Bank-level exposure to ethnic conflict and management practices

	Panel A: Bank-City Coethnic					
	Management score (1)	Lean management (2)	Performance management (3)	Target management (4)	People management (5)	Levels branch hierarchy (6)
Bank Conflict Intensity	0.055	0.162**	-0.056	0.110	-0.016	-0.001
	(0.069)	(0.081)	(0.084)	(0.077)	(0.082)	(0.026)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
2018 Mean dep. var	0.095	1.776	1.790	1.461	1.459	1.491
N	896	896	894	894	894	876
	Panel B: Not Bank-City Coethnic					
	Management score	Lean management	Performance management	Target management	People management	Levels branch hierarchy
Conflict Main	0.098*	0.139**	0.177**	0.066	-0.004	0.039*
	(0.054)	(0.058)	(0.069)	(0.064)	(0.075)	(0.023)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
2018 Mean dep. var	0.220	1.855	1.779	1.638	1.715	1.451
p-value	0.333	0.520	0.030	0.885	0.601	0.052
N	1060	1060	1056	1060	1060	1050

Notes: The dependent variables are the management score, the mean of all eight normalised management scores, and the performance, people, lean and target management score which are the means of the two normalised management scores of each of these subsets of the questionnaire, and the log of the number of levels in the branch's internal hierarchy winsorized at the 99% level. Bank conflict intensity is the log intensity of bank-level exposure to conflict, excluding local conflict, defined in equation 7. The mean (SD) of the within-branch change in log bank conflict intensity from 2018 to 2022 is 1.022 (1.080). Panel A restricts the sample to branches in coethnic cities, while Panel B focuses on branches in non-coethnic cities. The regressions include branch and time fixed effects. Standard errors, clustered at the branch level, are reported in parentheses. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Table 7: Bank-level exposure to ethnic conflict and branch-level lending

	Panel A: Bank-City Coethnic					
	Operational distance (1)	Log number of loans (2)	Log average loan size (3)	Average lending rate (4)	Collateral percentage (5)	Share loan default (6)
Conflict Main	-2.300***	0.000	0.763**	0.002	0.062***	-0.046**
	(0.677)	(0.137)	(0.314)	(0.002)	(0.021)	(0.023)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
2018 Mean dep. var	7.743	2.184	12.724	0.146	1.010	0.050
N	618	448	444	584	404	546
	Panel B: Not Bank-City Coethnic					
	Operational distance	Log number of loans	Log average loan size	Average lending rate	Collateral percentage	Share loan default
Conflict Main	1.214***	-0.417***	1.201***	0.002	-0.025	0.001
	(0.384)	(0.107)	(0.326)	(0.002)	(0.016)	(0.015)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
2018 Mean dep. var	7.514	1.931	12.689	0.148	0.997	0.046
p-value	0.004	0.029	0.035	0.155	0.000	0.122
N	824	614	610	732	536	652

Notes: The dependent variables are the operational distance of the branch, i.e. how far away from the branch is serves customers, the log of the number of loans the branch has outstanding, the log of the average size of outstanding loans, the lending rate on a typical loan,the percentage of collateral on a typical loan and the share of loans that default. Bank conflict intensity is the log intensity of bank-level exposure to conflict, excluding local conflict, defined in equation 7. The mean (SD) of the within-branch change in log bank conflict intensity from 2018 to 2022 is 1.022 (1.080). Panel A restricts the sample to branches in coethnic cities, while Panel B focuses on branches in non-coethnic cities. The regressions include branch and time fixed effects. Standard errors, clustered at the branch level, are reported in parentheses. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Table 8: Bank-level exposure to Beta-Israel cities and branch managers

	Panel A: Bank-City Coethnic				
	City coethnic manager (1)	Bank coethnic manager (2)	Tenure in bank (3)	Tenure in branch (4)	Age of the manager (5)
Beta Israel Exposure	0.020	0.020	-0.730	-1.303**	0.248
	(0.105)	(0.105)	(1.238)	(0.513)	(1.481)
Branch FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
2018 Mean dep. var	0.679	0.679	6.857	2.386	33.895
N	896	896	894	892	834
	Panel B: Not Bank-City Coethnic				
	City coethnic manager	Bank coethnic manager	Tenure in bank	Tenure in branch	Age of the manager
Beta Israel Exposure	0.296***	-0.414***	0.839	-0.223	5.229***
	(0.100)	(0.101)	(1.013)	(0.749)	(1.480)
Branch FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
2018 Mean dep. var	0.185	0.770	6.845	2.360	33.546
p-value	0.058	0.003	0.327	0.235	0.018
N	1062	1062	1056	1056	1000

Notes: The dependent variables are an indicator that equals 1 when a branch's manager is co-ethnic with the ethnic group associated with the city (column 1), or the ethnic group associated with the branch's bank (columns 2), the log of the number of levels in the hierarchy (column 3), the number of branch employees (column 4) and the overall management score (column 5). Beta Israel Exposure is the share of branches within 100km of a historic Beta Israel city. Panel A restricts the sample to branches in coethnic cities, while Panel B focuses on branches in non-coethnic cities. Standard errors, clustered at the branch level, are reported in parentheses. The reported p-value is for the t-test that the parameter estimates for branches in bank-coethnic cities (Panel A) and in non bank-coethnic cities are the same. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

A Proofs theoretical model

A.1 Proof Lemma 1

Proof. The first-order condition for the HQ's program when choosing the number of hierarchical layers is

$$\frac{1-\alpha_e}{(L+1)^2} - \kappa = 0$$

and the second-order condition is:

$$\frac{2(L+1)(1-\alpha_e)}{(L+1)^4} < 0$$

implying that the optimization program delivers a unique maximum.

Working the first-order condition out yields $L^* = \sqrt{\frac{1-\alpha_e}{\kappa}} - 1$.

By inspection of the above equation, it is immediate to see that $L^* > 0$ if $1 - \alpha_e > \kappa$. □

A.2 Proof Proposition 1

Proof. Let us consider the first derivative of L^* as described in (3) with respect to α_e:

$$\frac{\partial L^*}{\partial \alpha_e} = -\frac{1}{2\sqrt{k(1-\alpha_e)}} < 0.$$

Implying a negative relationship between the two variables for any κ and α_e. □

A.3 Proof of Lemma 2

Proof. Consider the case in which the HQ appoints a bank-coethnic BM. If the latter sends a message $m = b$ then the HQ's posterior belief that the projects has q=G is $Pr(q = G|m = b) = \gamma$ and thus the expected return of the project is

$$2\gamma - 1 > 0 \iff \gamma > \frac{1}{2}$$

so that, conditional on the BM sending a bad message, the projects yields negative expected return. Differently, if the BM sends a message $m = g$ the HQ has posterior belief $Pr(q = G|m = g) = 1 - \gamma$ and the project yields expected return

$$1 - 2\gamma > 0 \iff \gamma < \frac{1}{2}$$

which is satisfied given our parametric assumptions.

Suppose now that the HQ appoints a city coethnic BM. If the latter sends a message $m = b$ the HQ has posterior belief $Pr(q = G|m = b) = 0$ implying that the project yields a negative conditional expected

return. If instead the BM sends $m = g$ the HQ's posterior belief is $Pr(q = G|m = g) = \frac{1}{1+\beta}$. □

The conditional expected return of the project is then positive as

$$\frac{1-\beta}{1+\beta} > 0 \iff \beta < 1.$$

A.4 Proof of Lemma 3

Proof. Let us first consider the case in which the HQ appoints a bank-coethnic branch manager. In this scenario, an investment opportunity yields an ex-ante expected return

$$\alpha_B = \frac{1}{2}(1-\gamma) - \frac{1}{2}\gamma = \frac{1-2\gamma}{2}.$$

If the HQ appoints a city-coethnicn BM, instead, an investment opportunity delivers ex-ante expected return

$$\alpha_C = \frac{1}{2} - \frac{\beta}{2}$$

□

B Robustness Test

B.1 Robustness to changing the matching of conflict to cities

To test the robustness of our results to the type of conflict we match, we vary the set $\mathcal{E}_{bt}$ in equation 7 by changing the set to all conflict within 15 and 25 kilometers of a branch of bank b. First, we consider matching only conflict within 15 kilometers of the city, for which we report the results relating to manager ethnicity in Table B.1. Next, we focus on conflict within 25km of the city, we report the results relating to manager ethnicity in Table B.2. Finally, we show that the results are not driven by CBE, the large, state-owned bank in Table B.3. The regressions for the other outcome variables are also robust to these tests, and will be reported in the online appendix. These tables show that results are not driven by the specific choice of distance we use to match conflict to cities. All results are similar both quantitatively and qualitatively, with coefficients shrinking as we increase the amount of conflict we match reflecting the variance the independent variable.

Table B.1: Bank-level exposure to ethnic conflict and branch manager ethnicity - 15 kilometer radius

	Panel A: Branches in Bank-Coethnic Cities					
	City coethnic manager			Bank coethnic manager		
	(1)	(2)	(3)	(4)	(5)	(6)
Bank Conflict Intensity (15km)	0.029	0.038	0.031	0.029	0.038	0.031
	(0.040)	(0.066)	(0.040)	(0.040)	(0.066)	(0.040)
Local conflict intensity			0.023*			0.023*
			(0.014)			(0.014)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	No	Yes	Yes	No	Yes
City-Time FE	No	Yes	No	No	Yes	No
2018 Mean dep. var	0.679	0.679	0.679	0.679	0.679	0.679
N (Branches)	896	744	896	896	744	896
	Panel B: Branches in Non-Bank-Coethnic Cities					
	City coethnic manager			Bank coethnic manager		
Bank Conflict Intensity (15km)	0.118***	0.067*	0.123***	-0.200***	-0.158***	-0.213***
	(0.034)	(0.037)	(0.034)	(0.034)	(0.038)	(0.034)
Local conflict intensity			-0.018			0.039**
			(0.014)			(0.015)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	No	Yes	Yes	No	Yes
City-Time FE	No	Yes	No	No	Yes	No
2018 Mean dep. var	0.185	0.185	0.185	0.770	0.770	0.770
p-value	0.091	0.704	0.081	0.000	0.010	0.000
N (Branches)	1062	928	1062	1062	928	1062

Notes: This table replicates Table 3 using a 15km instead of 20km radius to match ethnic conflict to bank branches in equation 7. The dependent variable is an indicator that equals 1 when a branch's manager is co-ethnic with the ethnic group associated with the city (columns 1–3) or with the ethnic group associated with the branch's bank (columns 4-6). Bank conflict intensity is the log intensity of bank-level exposure to conflict involving the bank's ethnic group, excluding conflict near the branch of interest, defined in equation 7. Local conflict intensity the log of conflict intensity near the city as defined in equation 8. The mean (SD) of the within-branch change in log bank conflict intensity from 2018 to 2022 is 1.022 (1.080). Panel A restricts the sample to branches in cities coethnic with the bank, while Panel B focuses on branches in cities that are not. Standard errors, clustered at the branch level, are reported in parentheses. The reported p-value is for the test that the slope on bank conflict intensity is identical in bank coethnic and non bank coethnic cities. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Table B.2: Bank-level exposure to ethnic conflict and branch manager ethnicity - 25 kilometer radius

	Panel A: Branches in Bank-Coethnic Cities					
	City coethnic manager			Bank coethnic manager		
	(1)	(2)	(3)	(4)	(5)	(6)
Bank Conflict Intensity (25km)	-0.009	0.024	-0.004	-0.009	0.024	-0.004
	(0.036)	(0.080)	(0.036)	(0.036)	(0.080)	(0.036)
Local conflict intensity			0.022			0.022
			(0.014)			(0.014)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	No	Yes	Yes	No	Yes
City-Time FE	No	Yes	No	No	Yes	No
2018 Mean dep. var	0.679	0.679	0.679	0.679	0.679	0.679
N (Branches)	896	744	896	896	744	896
	Panel B: Branches in Non-Bank-Coethnic Cities					
	City coethnic manager			Bank coethnic manager		
Bank Conflict Intensity (25km)	0.121***	0.078**	0.129***	-0.195***	-0.166***	-0.212***
	(0.031)	(0.036)	(0.031)	(0.031)	(0.037)	(0.031)
Local conflict intensity			-0.022			0.045***
			(0.014)			(0.015)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	No	Yes	Yes	No	Yes
City-Time FE	No	Yes	No	No	Yes	No
2018 Mean dep. var	0.185	0.185	0.185	0.770	0.770	0.770
p-value	0.007	0.530	0.005	0.000	0.030	0.000
N (Branches)	1062	928	1062	1062	928	1062

Notes: This table replicates Table 3 using a 25km instead of 20km radius to match ethnic conflict to bank branches in equation 7. The dependent variable is an indicator that equals 1 when a branch's manager is co-ethnic with the ethnic group associated with the city (columns 1–3) or with the ethnic group associated with the branch's bank (columns 4-6). Bank conflict intensity is the log intensity of bank-level exposure to conflict involving the bank's ethnic group, excluding conflict near the branch of interest, defined in equation 7. Local conflict intensity the log of conflict intensity near the city as defined in equation 8. The mean (SD) of the within-branch change in log bank conflict intensity from 2018 to 2022 is 1.022 (1.080). Panel A restricts the sample to branches in cities coethnic with the bank, while Panel B focuses on branches in cities that are not. Standard errors, clustered at the branch level, are reported in parentheses. The reported p-value is for the test that the slope on bank conflict intensity is identical in bank coethnic and non bank coethnic cities. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Table B.3: Bank-level exposure to ethnic conflict and branch manager ethnicity - only private banks

	Panel A: Branches in Bank-Coethnic Cities					
	City coethnic manager			Bank coethnic manager		
	(1)	(2)	(3)	(4)	(5)	(6)
Bank Conflict Intensity	0.012	0.026	0.015	0.012	0.026	0.015
	(0.043)	(0.080)	(0.043)	(0.043)	(0.080)	(0.043)
Local conflict intensity			0.019			0.019
			(0.015)			(0.015)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	No	Yes	Yes	No	Yes
City-Time FE	No	Yes	No	No	Yes	No
2018 Mean dep. var	0.674	0.674	0.674	0.674	0.674	0.674
N (Branches)	700	542	700	700	542	700
	Panel B: Branches in Non-Bank-Coethnic Cities					
	City coethnic manager			Bank coethnic manager		
Bank Conflict Intensity	0.099***	0.083**	0.101***	-0.179***	-0.171***	-0.183***
	(0.035)	(0.037)	(0.035)	(0.034)	(0.038)	(0.034)
Local conflict intensity			-0.007			0.021
			(0.018)			(0.019)
Branch FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	No	Yes	Yes	No	Yes
City-Time FE	No	Yes	No	No	Yes	No
2018 Mean dep. var	0.214	0.214	0.214	0.736	0.736	0.736
p-value	0.114	0.513	0.118	0.001	0.025	0.000
N (Branches)	802	716	802	802	716	802

Notes: This table replicates Table 3 excluding the state-owned banks; i.e. branches of CBE and CBB. The dependent variable is an indicator that equals 1 when a branch's manager is co-ethnic with the ethnic group associated with the city (columns 1–3) or with the ethnic group associated with the branch's bank (columns 4-6). Bank conflict intensity is the log intensity of bank-level exposure to conflict involving the bank's ethnic group, excluding conflict near the branch of interest, defined in equation 7. Local conflict intensity the log of conflict intensity near the city as defined in equation 8. The mean (SD) of the within-branch change in log bank conflict intensity from 2018 to 2022 is 1.022 (1.080). Panel A restricts the sample to branches in cities coethnic with the bank, while Panel B focuses on branches in cities that are not. Standard errors, clustered at the branch level, are reported in parentheses. The reported p-value is for the test that the slope on bank conflict intensity is identical in bank coethnic and non bank coethnic cities. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

B.2 The effect of conflict on employees being local

Table B.4: Bank-level exposure to ethnic conflict and local staff

	Panel A: Branches in Bank-Coethnic Cities	
	Share local employees	Local manager
Bank Conflict Intensity	-0.003	-0.014**
	(0.003)	(0.007)
Branch FE	Yes	Yes
Time FE	Yes	Yes
2018 Mean dep. var	0.556	0.419
N	852	428
	Panel B: Branches in Non-Bank-Coethnic Cities	
	Share local employees	Local manager
Bank Conflict Intensity	-0.002	-0.011
	(0.003)	(0.010)
Branch FE	Yes	Yes
Time FE	Yes	Yes
2018 Mean dep. var	0.584	0.448
p-value	0.768	0.820
N	1030	500

Notes: This table shows the results of a regression on two measures of whether staff comes from the same region as the branch. Share local employees is the share of employees that was born in the same city as the branch, local manager is a dummy for whether the manager was born in the same region as the branch. Note that this question was added to the survey after around 500 branches were interviewed in 2018 resulting in a small sample size. Bank conflict intensity is the log intensity of bank-level exposure to conflict involving the bank's ethnic group, excluding conflict near the branch of interest, defined in equation 7. Local conflict intensity the log of conflict intensity near the city as defined in equation 8. The mean (SD) of the within-branch change in log bank conflict intensity from 2018 to 2022 is 1.022 (1.080). Panel A restricts the sample to branches in cities coethnic with the bank, while Panel B focuses on branches in cities that are not. Standard errors, clustered at the branch level, are reported in parentheses. The reported p-value is for the test that the slope on bank conflict intensity is identical in bank coethnic and non bank coethnic cities. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

C Ethnicity of banks, cities and managers

C.1 List of banks and bank-ethnicities

Bank	Bank ethnicity	Branches	Share total branches (%)
Abay	Amhara	81	8.1
Addis	Amhara	5	.5
Awash	Oromo	101	10.2
BOA	Amhara	39	3.9
Berhan	Amhara	75	7.5
Bunna International	Amhara	47	4.7
CBB	Amhara	19	1.9
CBE	Amhara	211	21.2
CBO	Oromo	55	5.5
Dashen	Amhara	56	5.6
Debub	SNNP	17	1.7
Lion	Tigray	14	1.4
NIB International	SNNP	86	8.7
OIB	Oromo	76	7.6
United	Amhara	53	5.3
Wegagen	Tigray	59	5.9
Total		994	100

Notes: This Table reports the ethnicity assigned to specific banks, and the number of branches and share of total branches belonging to this bank in our sample. The bank ethnicity is assigned based on the ethnicity of the C-Suite managers of the bank in 2018.

C.2 Number of cities by ethnic group

City Ethnicity	Branches	Share total branches (%)
Afar	6	.6
Amhara	531	53.4
Benishangul-Gumuz	13	1.3
Oromo	295	29.7
SNNP	121	12.2
Somali	21	2.1
Tigray	7	.7
Total	994	100

Notes: This Table reports the results from our assignment of cities to specific ethnic groups based on data from Murdock's Ethnographic Atlas.

C.3 Number of managers by ethnic group by period

Table C.1: Manager Ethnicities

Manager Ethnicity	Number (2018)	Share (2018)	Number (2022)	Share (2022)
Afar	1	.1	6	.6
Agew	0	0	8	.8
Amhara	500	50.3	442	44.5
Benishangul-Gumuz	10	1	2	.2
Oromo	291	29.3	386	38.8
SNNP	109	11	109	11
Somali	2	.2	19	1.9
Tigray	81	8.1	21	2.1

This table reports the number and share of managers belonging to each ethnic group in 2018 and 2022. The data was collected through a phone survey with branch managers, and their ethnicity was determined based on a combination of factors: the manager's name, place of birth, accent, spoken languages, and, where comfortable, their self-reported identity. Given the high salience of ethnicity in this context, these methods provide a reasonable basis for accurately assigning managers to their respective ethnic groups. For approximately 10% of managers whose ethnicity could not be determined through these methods, we applied the following rule: If the manager was born in the same region where the branch operates, they are assumed to be coethnic with the region. If the manager was not born in this region and the branch is located in a region that is not coethnic with the bank, we assume the manager is coethnic with the bank.

D Management Practices Survey and Methodology

D.1 Scoring Management Performances

The concept of "good management practice" is often relative and contingent to a specific market or sector. However, international best practices in the banking sector have been widely studied, allowing the literature to reach a consensus on what constitutes a "good" practice. We evaluate and score management practices by defining the concept of "good" and "bad" practice and codifying it from 1 (worst practice) to 5 (best practice) across eight key dimensions. These practices are grouped into four areas: lean management, performance management, target management, and people management.[8]

The lean management section evaluates the efficiency of day-to-day operations (e.g., organization of the workflow, management of slack time, method of staff assignment to specific tasks, etc.) and assesses whether the branch has adopted recognized best practices. The performance management part measures how performance is tracked and reviewed (e.g., what KPIs are used, who oversees the performance review, how frequently the performance measures are revised, etc.). The target management section reviews the nature and scope of a branch's targets (e.g., the relative importance of financial targets compared to non-financial ones, how these targets are linked to performance measures, etc.) and assesses whether they align with the bank's objectives. Finally, the people management part tests whether good performance is appropriately rewarded and whether bad performance is sanctioned (e.g., adoption of an articulated appraisal system, use of a reward plan, presence of sanctions for underperformers, etc.).

An overview of these four sections is presented in Table 1. After the completion of the survey, we combine these scores to obtain a unique index of management practices. Since the scaling may vary across practices in the econometric estimation, we normalize the final scores to z-scores (i.e., mean zero and standard deviation one). To build our final management index, we take the unweighted average across all z-scores as our primary measure of overall management practice.

D.2 Responses Collection

The information content and precision of our management performance index crucially depend on the quality of the responses collected through our survey. For this reason, we structured our questions to allow respondents to provide accurate and unbiased answers. As pointed out by (Bertrand & Mullainathan, 2001), responses are typically biased by the presence of a scoring scale, which may prompt respondents to provide the interviewer's expected answer. Additionally, interviewers may have preconceptions toward the interviewed managers. Apart from these issues, many background factors correlated with management behavior may systematically bias survey data.

[8] Note, this section is taken directly from a previously circulated working paper (Gennaioli, Limodio, & Strobbe, 2019)

To counter these potential negative effects, we adopt a combination of strategies tested in the existing literature. First, we ensure accurate responses by conducting telephone surveys without informing managers that their answers will be evaluated against a scoring grid, allowing us to gather information about actual management practices. Second, we ask a series of open-ended questions (e.g., "What types of targets are set for the bank in general? What are the goals for your branch?") and record responses until an accurate assessment of management practices is possible. Third, to correct any inconsistent interpretation of responses, we ensure interviewers conduct a minimum number of training interviews during a pilot survey phase. Furthermore, since almost all our interviewers conducted over 40 interviews (with an average of 200 interviews per interviewer), we are able to control for interviewer fixed effects in a robustness section. Fourth, we adopt a double-scoring technique, where another interviewer silently listens and scores the responses provided during the interview. Finally, we collect information on a large set of manager characteristics (e.g., age, education, ethnicity, etc.) to control for potential confounders.

D.3 Manager Participation

The average duration of an interview was approximately 27 minutes. Interviews were conducted between January 2015 and February 2018 by locally recruited research assistants (RAs). The initial survey phase consisted of a pilot involving 265 branches, which allowed us to refine the survey and train interviewers. After this stage, we surveyed the universe of Ethiopian bank branches (3,232 in total). We achieved a relatively high response rate (59%, 1,911 branches) through specific strategies. First, the survey was introduced as a neutral exercise, avoiding discussion of the bank's financial position or individual branch accounts. This ensured that interviewers were blind to financial data and helped maximize participation. Second, questions focused on evident practices within the branch, enabling branch managers to provide reliable answers. Finally, endorsement and support from the World Bank and the National Bank of Ethiopia encouraged participation by emphasizing the initiative's importance and official backing.

D.4 Additional Data Collected

In addition to management practices, our survey collected extensive data on respondent and branch characteristics. The introductory section gathered baseline information about the branch (e.g., name, geographic location, number of employees, opening date) and the manager (e.g., age, gender, education, previous employment).

A second set of questions addressed the organizational nature of the branch (e.g., management structure, autonomy from headquarters) and operations (e.g., average loan size, collateral requirements, share of defaulted loans).

D.5 Summary statistics by wave

Tables D.1 and D.2 report summary statistics on the main analysis variables by survey wave for respectively organizational characteristics and characteristics related to lending activities.

Table D.1: Summary statistics of analysis variables by wave related to organizational outcomes

	N	Mean	Std. Dev.	Min	Max
Bank coethnic manager	1,958	0.65	0.48	0	1
First Wave (2018)	979	0.73	0.45	0	1
Second Wave (2022)	979	0.57	0.49	0	1
City coethnic manager	1,958	0.54	0.50	0	1
First Wave (2018)	979	0.41	0.49	0	1
Second Wave (2022)	979	0.66	0.47	0	1
Levels branch hierarchy	1,942	3.78	1.38	1	9
First Wave (2018)	979	3.60	1.58	1	9
Second Wave (2022)	963	3.96	1.11	1	9
Branch employees	1,951	17.57	10.04	3	110
First Wave (2018)	979	14.77	10.33	3	110
Second Wave (2022)	972	20.39	8.90	5	78
Lean management practices	1,957	-0.02	0.86	-2.37	1.95
First Wave (2018)	979	0.24	0.99	-2.31	1.95
Second Wave (2022)	978	-0.28	0.59	-2.37	1.95
Performance management practices	1,954	-0.01	0.86	-2.31	1.84
First Wave (2018)	979	0.19	0.95	-2.23	1.84
Second Wave (2022)	975	-0.22	0.70	-2.31	1.84
Target management practices	1,956	-0.00	0.80	-2.26	2.17
First Wave (2018)	979	0.04	0.93	-2.26	2.17
Second Wave (2022)	977	-0.04	0.65	-2.26	2.17
People management practices	1,956	0.01	0.87	-1.70	2.02
First Wave (2018)	979	0.18	1.08	-1.70	2.02
Second Wave (2022)	977	-0.16	0.54	-1.70	2.02

Notes: This table provides summary statistics of the main analysis variables based on the branch survey. Bank coethnic manager and city coethnic manager are dummy indicators for whether respectively the manager and bank, or the manager and city are coethnic. Levels branch hierarchy is the number of levels between the branch manager and the lowest level employee in the branch. Branch employees is the number of employees in the branch. Management is the mean of the normalised management scores. Lean, performance, target and people management are the mean of the normalized subsections of the survey. We report the number of observations, the mean, standard deviation, minimum and maximum of these variables.

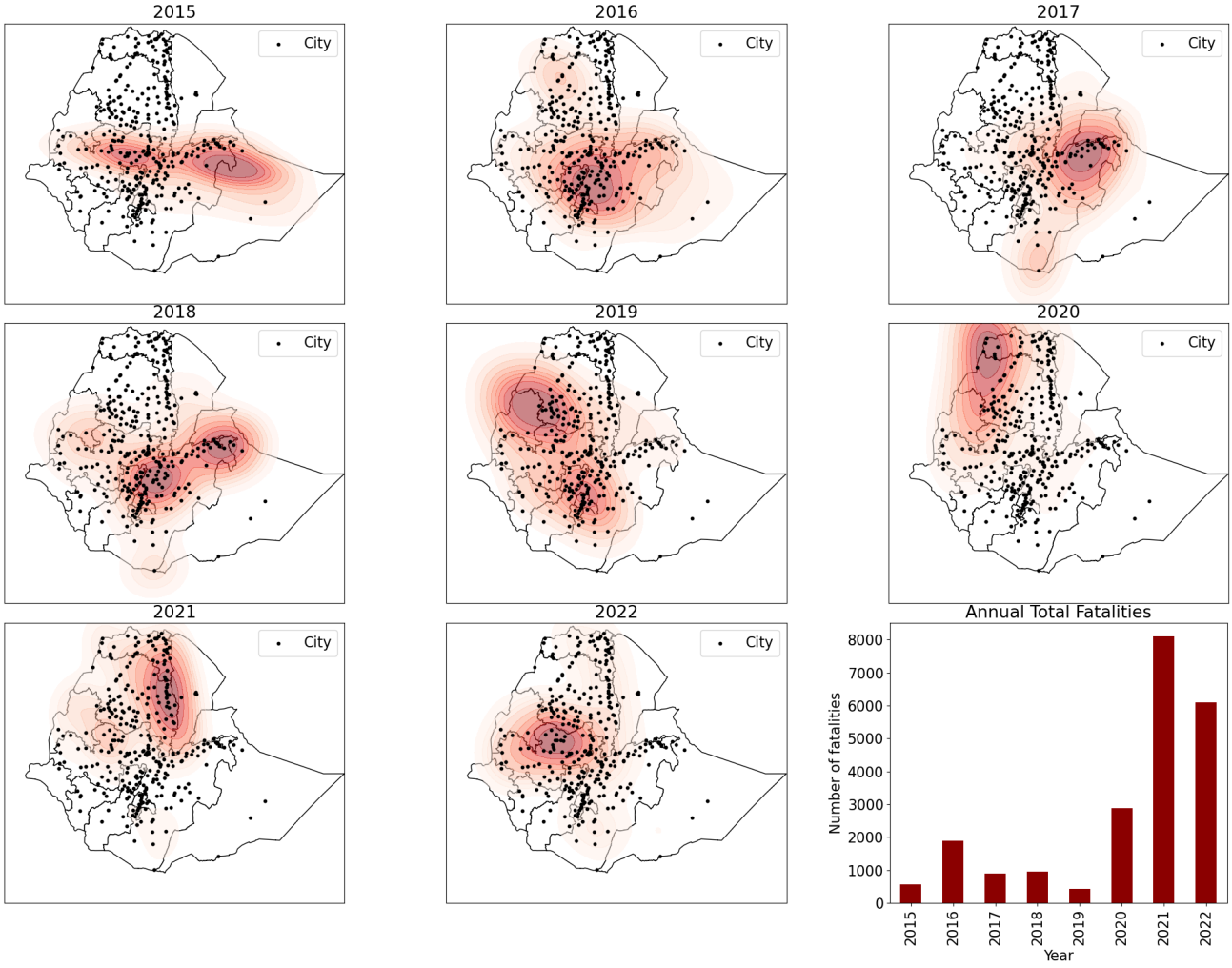
Table D.2: Summary statistics of analysis variables by wave related to lending activities

	N	Mean	Std. Dev.	Min	Max
Branch operational distance	1,700	6.80	4.85	0.05	50.00
First Wave (2018)	979	7.62	2.62	3.00	30.00
Second Wave (2022)	721	5.70	6.64	0.05	50.00
Focus on loans	1,958	0.20	0.40	0	1
First Wave (2018)	979	0.07	0.26	0	1
Second Wave (2022)	979	0.33	0.47	0	1
Lending rate	1,637	0.15	0.02	0.10	0.20
First Wave (2018)	979	0.15	0.02	0.10	0.20
Second Wave (2022)	658	0.15	0.02	0.10	0.20
Ln Number Loans	1,510	2.43	1.35	0.00	8.52
First Wave (2018)	979	2.05	1.27	0.00	6.01
Second Wave (2022)	531	3.14	1.18	0.00	8.52
Ln loan size	1,506	13.29	3.77	0.00	17.86
First Wave (2018)	979	12.70	4.54	0.00	17.86
Second Wave (2022)	527	14.37	0.65	13.30	16.12
Collateral	1,449	0.95	0.19	0.50	1.50
First Wave (2018)	979	1.00	0.19	0.50	1.50
Second Wave (2022)	470	0.83	0.13	0.50	1.00
Share loans defaulting	1,578	0.07	0.14	0.00	1.00
First Wave (2018)	979	0.05	0.09	0.00	1.00
Second Wave (2022)	599	0.09	0.20	0.00	1.00

Notes: This table provides summary statistics of the main analysis variables based on the branch survey. Bank coethnic manager and city coethnic manager are dummy indicators for whether respectively the manager and bank, or the manager and city are coethnic. Levels branch hierarchy is the number of levels between the branch manager and the lowest level employee in the branch. Branch employees is the number of employees in the branch. Management is the mean of the normalised management scores. Lean, performance, target and people management are the mean of the normalized subsections of the survey. We report the number of observations, the mean, standard deviation, minimum and maximum of these variables.

E Ethnic conflict over time and space

Figure E.1: Ethnic conflict in Ethiopia



Notes: This figure illustrates the spatial distribution of fatalities due to ethnic conflict in Ethiopia over time. The map on the left presents the distribution of conflict fatalities as a Kernel Density Estimate (KDE) plot, with darker regions indicating areas of higher conflict density. Cities are plotted on the map, represented in black, as well as administrative boundaries of the regions presented in Figure 1. The bottom right bar plot shows the total number of conflict fatalities for each year, with the height of each bar corresponding to the total fatalities from ethnic conflict in that year.

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