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**Divide and Rule: An Origin of Polarization and
Ethnic Conflict**

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Abstract

We propose a theory of ethnic conflict where political elites strategically initiate conflicts in order to polarize society and thus sustain their own power. We provide a micro-foundation for this divide-and-rule strategy by modelling polarization as a lack of trust. Trust is shaped by economic interactions between different groups as in Rohner, Thoenig, and Zilibotti (2013a). Low trust reduces the expected gains from trade. By starting a conflict and thus interrupting trade, the elite can prevent trust from emerging. The elite will follow this strategy whenever it faces a large threat of revolution which originates in the common interest of people to reap gains from trade without being taxed by the elite. This is likely to be the case if current trust levels are high and if the cost of revolution is low.

JEL-Classification: F15, D74, D83, H56, N40

Keywords: Polarization, divide and rule, ethnic conflict, ethnic violence, autocracy, trade, trust

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1 Introduction

Violent conflict causes enormous costs for people, and yet we often observe wide support in the population for political elites that initiate conflicts. A recent literature has argued theoretically and empirically that ethnic polarization is an important determinant of the incidence of conflict (see for example Esteban, Mayoral, and Ray, 2012). Many recent civil wars were indeed fought along ethnic lines. Conflicts between Hutu and Tutsi in Rwanda have led to around 800,000 deaths from genocide and triggered further violence in the form of counter-attacks and civil wars in the larger region (Prunier, 2009).¹ For the vast majority of people the consequences of this ethnic violence were catastrophic.

How can ethnic groups be so highly polarized that deadly violence erupts on a large scale? Predetermined differences can hardly be an explanation, as the same groups have lived in peace for long periods of time. For example, there is no evidence of political violence between Hutu and Tutsi before 1959 (Gourevitch, 1998) and the ethnic labels did not even have a political meaning until the mid 19th century (Pottier, 2002). In contrast, there are numerous examples in Rwanda and elsewhere showing that ethnic violence was a *strategic choice* of a political elite. Fearon and Laitin (2000: 846) emphasize this in their review of conflict studies:

“If there is a dominant or most common narrative in the texts under review, it is that large-scale ethnic violence is provoked by elites seeking to gain, maintain, or increase their hold on political power.”

By initiating conflict along ethnic lines, elites can deepen ethnic divisions and thus increase polarization (Horowitz, 2000). The polarization in society strengthens the position of the elite and allows it to exploit power. This strategy is well known as “divide-and-rule” (Posner, Spier, and Vermeule, 2010).²

We propose a model of divide-and-rule where the ethnic polarization between groups is endogenous. Polarization is modeled as a lack of trust between ethnic

¹Ethnicity is also a key component of conflicts in Yugoslavia. Section 3 provides a more detailed description of these cases.

²Posner, Spier, and Vermeule (2010) discuss divide-and-rule strategies from a theoretical perspective. See also Acemoglu, Robinson, and Verdier (2004).

groups. High levels of trust threaten the autocratic elite because it may be overthrown if trust is high and the common interest among the ethnic groups in society becomes large. A key question for such a divide-and-rule argument is how an elite can induce people to polarize. Fearon and Laitin (2000: 853) describe this challenge as follows:

“The puzzle for such theoretical arguments is to explain how elites can convince their followers to adopt false beliefs and take actions that the followers would not want to take if they understood what the leaders were up to.”

Our contribution is to provide a micro-foundation for how elites can polarize society when people are rational. This is achieved by embedding a model of trade and trust (Rohner, Thoenig, and Zilibotti, 2013a) into a political economy framework that allows for war and revolution (Besley and Persson, 2011).

The model society has two ethnic groups of equal size, one of which initially being the incumbent group. Within each group, there is a small political elite that derives rents from being in power. We start from a situation of autocracy where the elite of the incumbent group sets policies. The incumbent elite faces a threat from the other group (transition of power) and from the people of its own group (revolution). A revolution leads to a regime switch to democracy where people of both groups trade with each other without being expropriated by an elite. The threat of revolution therefore depends on the expected gains from trade.

Similar to Rohner, Thoenig, and Zilibotti (2013a), we model the expected outcome of trade as a function of trust between trade partners. More specifically, the outcome of trade is stochastic and the likelihood of a good trade outcome depends on how mutually beneficial trade is (e.g. the complementarity between the trade partners), which is unknown. Agents hold a prior belief about how beneficial trade is. A belief that trade is beneficial implies a high level of trust. Trust can increase through Bayesian updating of this belief after good trade outcomes occur. However, trade can only take place during peaceful times such that trust cannot emerge while there is war. The ruling elite can therefore prevent trust from emerging by starting a war. This enables the elite to limit the threat of revolution that originates in the common interest of people when trust is high.

The precise tradeoffs faced by the people and by the elite are as follows. A currently ruling elite taxes people in both groups but redistributes part of the revenues as transfers to the people of its own group. When trust is very low and therefore expected gains from trade small, then transfers are relatively more important for the people of the incumbent group than the gains from trade. They therefore prefer their own elite to stay in power. The probability that the currently ruling group stays in power is higher when it fights a war against the other group than when it is in peace. Elite and people of the incumbent group therefore both support war when trust is very low. When trust increases somewhat, the people start to prefer peace because they want to reap the gains from trade with the other group. But the elite still prefers war over peace because it is afraid of losing power to the other group. The people are less concerned about such a transition of power because they know that they will still have part of the trade surplus even if the other group takes over. This setting therefore generates that the elite stays at war for longer than is optimal for the people, because the elite has more at stake from being in power.

At intermediate levels of trust, both elite and people of the incumbent group support peace and trade with the other group. Both also prefer to maintain the autocracy because it allows them to exploit the other group. The interest of elite and people of the incumbent group are therefore aligned again for these intermediate levels of trust. But when trust increases further to a high level, the interests start to diverge once more: income from trade surplus becomes so high that it is more important for the people of the incumbent group than the transfers through their elite. The people may therefore start a revolution and establish a peaceful democracy with the other group in order to reap the full benefits from trade without being taxed by an elite. The elite on the other hand loses all its rents when there is a revolution. At high levels of trust, we therefore again get the result that the elite starts a war in order to lower the chances of losing power, while people would prefer to trade in peace.

In summary, an autocratic elite that knows that trust is relatively high has to decide if it should allow for peace or start a war. It faces the following tradeoff: (1) During peace, people can trade across groups and this may (depending on whether trade outcomes are good) generate trade surpluses that the elite can tax. However, good trade outcomes also imply that people update their beliefs such that trust can

emerge. The expectation of high gains from trade (based on high trust) increases the threat of revolution, since people may become willing to incur the cost of revolution in order to not have the trade surplus taxed by the elite. (2) If the elite starts a war, then there is no trade and the elite therefore cannot tax the trade surplus. But it also prevents trust from emerging between the two ethnic groups, which limits the risk of a revolution. A key implication of this setup is that the elite can apply a divide-and-rule strategy: when the threat of revolution is high, it starts a conflict between the groups, which harms trust, polarizes society, and limits the common interest of people. This strategy is against the interest of both groups of people in society, since they may be better off under a democracy where they trade and are not exploited by an elite.

The rest of the paper is organized as follows. Section 2 reviews the related literature, including empirical studies on conflict and ethnic polarization as well as theoretical work on the divide-and-rule strategy. In section 3, we discuss the anecdotal evidence on the divide-and-rule strategy, in particular the cases of Rwanda and Yugoslavia. Section 4 presents a simple benchmark model to illustrate how the tradeoff between peace and war depends on trust. In section 5, the benchmark model is extended to a dynamic setting to study how trust evolves over time and how it can be manipulated by the elite. Finally, we conclude in section 6.

2 Related Literature

This paper is related to several strands in the existing literature. First, we relate to a large literature on civil conflict (Blattman and Miguel, 2010, provide a survey). Fearon and Laitin (2003) estimate that there were about 127 major civil wars between 1945 and 1999 with more than 16 million fatalities overall. Our analysis is particularly related to the strand in the civil war literature focusing on conflict between ethnic groups. Esteban and Ray (2011), Esteban, Mayoral, and Ray (2012), and Rohner (2011) show that the polarization of societies along ethnic lines is associated with high degrees of conflict. Esteban and Ray (2008) argue that coalitions along ethnic lines are more likely to emerge than along classes. Caselli and Coleman (2013) point out that certain ethnic characteristics that are easily observable (such as skin color) allow to distinguish between winners and losers of a conflict

and therefore make starting a conflict along these lines more profitable. Besley and Persson (2011) provide a framework where repression and civil war can depend on polarization between groups. We contribute to this literature by endogenizing ethnic polarization. In our framework, a ruling elite can strategically affect polarization between people in order to sustain its own power. Such patterns of “divide-and-rule” have been described also outside of the economic literature.³ Related papers have argued that a political elite can expropriate its supporting group because of their fear that otherwise an even less favorable elite would take over (Figueiredo and Weingast, 1997; Padro i Miquel, 2007)

The findings on the salience of ethnic conflict are complemented by a set of theoretical papers on divide-and-rule strategies. Posner, Spier, and Vermeule (2010) analyze divide-and-rule strategies in two simple game theoretic models, the Prisoner’s Dilemma and the Stag Hunt Game. They consider how an outsider (the elite) that is affected by the cooperation of the agents can influence outcomes.⁴ They state that two conditions are important for such strategies: “(1) A unitary actor bargains with or competes against a set of multiple actors. (2) The unitary actor follows an intentional strategy of exploiting problems of coordination or collective action among the multiple actors.” They consider different ways to apply a divide-and-rule strategy: destroying communication channels, payment of bribes, imposition of penalties, generating distrust, limiting interaction, and mixing agents with heterogeneous interests. Our model is best described by the category “generating distrust”. However, Posner, Spier, and Vermeule (2010) implement this by the elite being able to directly manipulate agents beliefs about the other agents’ private payoffs. In contrast, we provide a setting where the elite cannot directly manipulate beliefs, but it can limit the learning process between agents by starting conflict. In this sense our setting also relates to the category “limiting interaction”, although

³See for example the review of case studies by Fearon and Laitin (2000). Similarly, Horowitz (2000) writes “By appealing to electorates in ethnic terms, by making ethnic demands on government, and by bolstering the influence of ethnically chauvinist elements within each group, parties that begin by merely mirroring ethnic divisions help to deepen and extend them. Hence the oft-heard remark in such states that the politicians have created ethnic conflict.”

⁴Posner, Spier, and Vermeule (2010) use the term “divide-and-conquer”, which is equivalent to “divide-and-rule”. The Oxford Dictionary (2014) defines both terms as “[t]he policy of maintaining control over one’s subordinates or opponents by encouraging dissent between them, thereby preventing them from uniting in opposition.”

their use of this strategy refers to limiting the time horizon of repeated interactions.

Acemoglu, Robinson, and Verdier (2004) consider a divide-and-rule strategy that falls into the category described by Posner, Spier, and Vermeule (2010) as “payment of bribes”. In Acemoglu, Robinson, and Verdier (2004), elites can exploit people because they can prevent them from cooperating in a revolution. The kleptocratic elite achieve this by bribing one of two groups in society in order to induce them to reject offers by the other group to cooperate in a revolution. They show that such kleptocratic regimes are more likely to arise if the regime faces fractionalized opponents instead of large players that can solve the coordination problem internally and thus put a constraint on the behaviour of the ruler.

We model polarization as a lack of common interest, which in turn depends on trust between trade partners. This is based on Rohner, Thoenig, and Zilibotti (2013a) where trust and cooperation is shaped by Bayesian updating during interactions with the trade partner. Rohner, Thoenig, and Zilibotti (2013a) show that even accidental conflicts can be persistent and generate cycles of recurring conflict due to the destruction of trust. Such cycles are also a feature of Acemoglu, Ticchi, and Vindigni (2010), although without the link to trade. Rohner, Thoenig, and Zilibotti (2013b) provide empirical evidence on the effect of conflict on trust in Uganda. A related literature has analyzed social learning (for example Banerjee, 1992; Acemoglu and Wolitzky, 2014). Our contribution to this literature is to show that a conflict can be started strategically by the currently ruling elite in order to affect people’s beliefs and to sustain its own power.

The channel through which in this framework polarisation can be manipulated by a political elite is trade. We therefore relate to the literature on the relationship between conflict and trade – without the link to trust. The “liberal peace” argument postulates that increased economic interdependence through trade between countries reduces the likelihood of conflict. However, recent contributions find that this relationship is more complex. Barbieri (1996) finds that strong economic interdependence is positively associated with militarised conflict. Martin, Mayer, and Thoenig (2008) show theoretically and empirically that increases in multilateral trade increases the risk of conflict, especially between neighboring states.⁵ In our

⁵The liberal peace argument has recently also been challenged by other authors, for example Goldsmith (2013) or Gowa and Hicks (2014).

framework, an increase in trade may fail to prevent conflict for a different reason: a forward looking autocratic elite fears that high levels of economic interaction will augment the common interest of people because this increases the threat that the elite may be overthrown by the people.

3 Evidence on Divide-And-Rule Strategies

Our model provides a micro-foundation for why and how an elite strategically polarizes society in order to sustain its own power. Such patterns have frequently been described in the literature (Fearon and Laitin, 2000). The evidence suggests that provoking conflict is a way of polarizing society. We discuss two cases below that illustrate the role of violence for polarization. These examples will show that ethnic conflict was initiated by elites with the purpose of dividing society, which allowed them to strengthen their role as the ruling elite. We first discuss the case of Rwanda in detail and then show that similar developments have occurred in Yugoslavia.

3.1 Rwanda

The history of Rwanda and of its neighbouring countries contains several episodes of large-scale ethnic violence. The conflict between Tutsi and Hutu is often associated with extreme hatred and violence between deeply divided ethnic groups.⁶ But the ethnic cleavages were not just due to pre-existing differences between people. Neither is there evidence that ethnic groups in Rwanda have always been in violent conflict with each other. On the contrary, it seems that there has been no systematic political violence between Hutu and Tutsi before 1959 (Gourevitch, 1998).

The history of Rwanda is an example of how ethnicity is to some extent “constructed” by elites for their own benefit.⁷ We show below that the motivation for creating ethnic tensions often was the elite’s aim to sustain its power in response to political or socio-economic changes. Contrary to the belief that predetermined

⁶Hutu (Bantu) are the majority group in Rwanda with 84% of the population. Tutsi (Hamitic) account for 15% and Twa (Pygmy) for 1% (CIA World Factbook, 2014).

⁷See Fearon and Laitin (2000) for a comprehensive discussion of the “construction” of ethnic differences and the implications for violent conflict.

ethnic differences triggered conflict, it seems that the conflict in the 1990s “had its origin in modern struggles for power and wealth” (Pottier, 2002).

Evidence on how the terms Hutu and Tutsi were initially used prior to colonisation is scant. But it appears that before 1860 there was substantial social mobility and “ethnicity was not a principal organising factor” (Pottier, 2002). From the mid 19th century on, it is known that the Tutsi king Rwabugiri started to polarise the Rwandan people with discriminating rules concerning the ownership of cattle (Newbury, 1988). Families rich in cattle were regarded as Tutsi while poorer families were labeled Hutu. Therefore, “[...] wealth, not race, was the basis of the ethnic distinction between Hutu and Tutsi” (Pottier, 2002: 14).

In her study of the impact on the region of Kinyaga, Newbury (1978) states that “social stratification” was among the most important transformation due to the new rule. The king established chiefs from outside of the community in order to collect taxes and these chiefs were typically Tutsi. This led to a strong association of the sharpened ethnic distinction with social status and a notion of inferiority of the Hutus. However, it did not yet lead to systematic violence. The use of external chiefs also broke up the ties within clans and led to struggles among the groups to be favoured by the rulers. This weakened the people and strengthened the rule of the elite (Newbury, 1978). Therefore, while ethnicity initially played a minor role in Rwanda, it became an increasingly important factor due to policies that polarised society.

With colonization, ethnic identity gained further relevance. The European colonizers used the Tutsi administration in order to control the country and even helped it in expanding its region of influence. The Hutus were under “dual colonialism” by the Tutsi administration and Belgian colonizers (Newbury, 1998).⁸ Belgian colonizers actively divided society further. In 1933-34, they introduced identity cards that labeled individuals as either “Hutu”, “Tutsi”, or “Twa” (Gourevitch, 1998). This labelling drastically reduced the mobility between Hutu and Tutsi, which previously was relatively high. Gourevitch (1998: 57) explains how ethnicity gained importance with the identity cards:

“The identity cards made it virtually impossible for Hutus to become

⁸The Belgium support of the Tutsi elite ended only shortly before independence when it started supporting the Hutu majority (Pottier, 2002).

Tutsis, and permitted the Belgians to perfect the administration of an apartheid system rooted in the myth of Tutsi superiority. [...] Whatever Hutu and Tutsi identity may have stood for in the precolonial state no longer mattered; the Belgians had made “ethnicity” the defining feature of Rwandan existence.”

Rwanda therefore had several episodes that show how ethnic differences were constructed by an elite for their own benefit. This polarization of Rwanda through dividing people along ethnic lines had a persistent effect on the relationship between Hutu and Tutsi. It repeatedly led to large scale conflict over several decades in Rwanda and in its neighbouring countries. The ethnic distinction that was initially strengthened by the king and then by colonial powers was since shortly before independence repeatedly used by the elites of both Hutu and Tutsi in order to gain political power.

According to Prunier (1995), the ethnic identity was a key aspect in the mobilization of Hutu peasants in the genocide that started in 1994. One channel through which elites could affect polarization was trust. Prior to the start of the genocide, Hutu extremists purposely fostered conflict in order to harm the interaction between moderate Hutu and Tutsi and to reduce trust. Their success with this strategy of limiting the relevance of moderate Hutus strengthened their position within the Hutu group. This allowed them to mobilize the masses for the genocide. Fearon and Laitin (2000: 865) describe this episode as follows:

“In 1992, two years before the genocide, moderate Hutus gained some control over the tense situation and negotiated a cease-fire with the Rwandan Patriotic Front (RPF, a guerrilla movement that despite seeking a multiethnic constituency, represented Tutsi interests) at Arusha. But Hutu extremists led by the president’s wife, Agathe Habyarimana, began taking to the streets against the ensuing peace process. She and her three brothers helped form the “Zero Network” death squads, the institutional precursors of the genocide. After a formal power-sharing deal was signed in January 1993, and the day the International Commission on Human Rights mission left, the extremist Hutus sent their

squads to the northwest region where they were strong, and three hundred Tutsis were killed in six days of violence. The in-exile Tutsi-led army then broke the cease-fire and marched across the Ugandan border toward the Rwanda capital, with many of the soldiers defying their own moderate leadership. These wildcats engaged in counterviolence, scaring many Hutus who escaped to Zaire. [...] Unable to assign blame for the failure of the cease-fire with certainty, Hutu moderates increased their estimate that the RPF could not be trusted in political negotiations, exactly what the extremists had sought in their violent attacks.”

The legacy of ethnic conflict and polarisation went much beyond the genocide. After Tutsi groups gained power and ended the genocide of Tutsis by Hutus, there were repeated counter-killings undertaken by Tutsi extremists. The large refugee flows destabilised the entire region and contributed to the two Congo Wars (Prunier, 2009). These wars drew several countries of the region into violence and were the deadliest since the Second World War. A key figure in the first Congo War was Mobutu, president of the Democratic Republic of Congo. He also followed the strategy of “ethnicizing the political situation” (Prunier, 2009: 78) in order to sustain his own power. He purposely destabilised the region by manipulating refugees and constantly changing who is favoured by his regime. Acemoglu, Robinson, and Verdier (2004) describe him as a clear example of a kleptocratic leader that applied a divide-and-rule strategy to sustain his own power.

3.2 Yugoslavia

In the late 1980s, Yugoslavia was a relatively open country that allowed for free travel of people and movement of goods. As Woodward (1995) points out, Yugoslavia was in a good position to make a successful transition to a free market economy and it was moving towards an integration with the West.⁹ This trend changed abruptly after 1989 and over the following two years Yugoslavia experienced wars, disintegration, and the creation of new states. War in Croatia led to 20,000 deaths and more than 200,000 refugees. In Bosnia-Herzegovina, it generated 2 million refugees and 70,000 fatalities.

⁹Unless otherwise noted, the historical exposition below is based on Woodward (1995).

Although intrinsic ethnic differences are often used as an explanation for the eruption of violence in the region, the case of Yugoslavia actually provides yet another example of how political elites *construct* ethnicity in order to divide people and sustain their own power. Referring to the Balkan conflict, Fearon and Laitin (2000: 867) state that violence was used strategically:

“[. . . to] foment outrage among their own moderates, ethnic leaders will provoke interethnic violence.”

An important episode discussed by Woodward (1995: 90) describes how Slobodan Milösević polarized politics:

“The Serbian shift was part of a factional struggle within the Serbian party, which culminated at the eighth party plenum (September 23-24 [1987]), when Slobodan Milösević made a successful move to oust his former patron and friend Ivan Stambolić as president of Serbia and to engineer a coup against its Belgrade party organization, Serbia’s most powerful (and liberal). Milösević accused Stambolić’s crowd of being too lenient on Albanians in Kosovo and of failing to protect Serbian territorial integrity and Serbs and Montenegrins from forced expulsion.”

One interpretation of this description is that Slobodan Milösević strategically sought to polarize in order to gain power within his own group. By provoking fear of other groups, he could convince his own people that cooperation with them was not an option. That Milösević was acting strategically – and not just motivated by his own extremist ideas – is confirmed by the former US ambassador to Yugoslavia from 1989 to 1992, Warren Zimmermann. In his review of this period, he writes (Zimmermann, 1995: 5):

“Milösević is an opportunist, not an ideologue, a man driven by power rather than nationalism. He has made a Faustian pact with nationalism as a way to gain and hold power.”

Zimmermann (1995: 12) also makes clear that the nationalism that emerged in Yugoslavia during this period was the product of elite’s manipulation by way of triggering ethnic violence:

“The breakup of Yugoslavia is a classic example of nationalism from the top down – a manipulated nationalism in a region where peace has historically prevailed more than war and in which a quarter of the population were in mixed marriages. The manipulators condoned and even provoked local ethnic violence in order to engender animosities that could then be magnified by the press, leading to further violence.”

The descriptions above show that elites can strategically start ethnic conflict in order to affect trust and to divide societies. They may apply such a policy of divide-and-rule to strengthen their power. The incentives to do so depend on the rents from being in power and the gains from peaceful trade. The model in the next section allows us to analyse this tradeoff.

4 The Benchmark Model

In this section, we discuss a static model as a benchmark. This allows us to discuss the basic tradeoffs of the elite between war and peace and the people’s decision to revolt. Section 5 will then extend the model to a dynamic setting to discuss the evolution of trust over time and how it can be affected by the elite.

4.1 Environment

The model is based on Besley and Persson (2011) and consists of two ethnic groups, A and B . One group is the incumbent group, while the other is the opponent group. In this section, we assume that group A initially is the incumbent group. Within each group, there are two types of agents: an elite and the people. The elites do not produce. People in each group can produce at home and also benefit from trade with the other group. The incomes of people in the incumbent and the opponent group through home production are y_I and y_O , respectively, and the income from trade as y_T , which for simplicity is assumed to be the same for both groups. In the following, we always denote the people in the incumbent and the opponent group as I and O , respectively. Moreover, we denote the elite in the incumbent group as

E .¹⁰

There are two types of political systems: autocracy and democracy. In autocracy, the elite of the incumbent group controls the government and makes the following decisions. First, it decides whether to be at war or peace with the opponent group. Second, it sets economic policies: taxes and transfers. The role of the people of the incumbent group is to trade with the other group (only under peace) and to choose whether to revolt against the ruling elite. If a revolution occurs, the regime switches to democracy. In democracy, the elite plays no role anymore, people from both groups together run the government, and the equilibrium is *laissez-faire*. In other words, we assume away tyranny of the majority in democracy. This means that we avoid the case where one group decides policies and exploits the other group.¹¹ We use superscript W , P , and R to indicate the possible states of the world, i.e. war, peace and revolution, respectively.

The outcome of trade can be “good”, in which case it yields the surplus y_H for both groups, or “bad”, in which case the surplus is $y_L < y_H$. The probability of getting the good outcome depends on the type of relation between the two ethnic groups. If the relation is of type “beneficial”, the outcome is good with probability q_H and bad with probability $1 - q_H$; if it is “harmful”, the outcome is bad with probability q_L and good with probability $1 - q_L$.¹² Naturally, we assume $q_H > 1 - q_L$, that is to say, if the relation is beneficial, the probability of a good trade outcome is higher than under a “harmful” relation. The agents don’t know the type of relation for sure, but hold a common belief about the probability of the relation being beneficial, denoted by p .

We interpret this framework as follows. The type of the relation between two ethnic groups, or equivalently, the likelihood of getting good outcomes from trade, depends on the characteristics of the two groups. For example, if two groups have complementary skills, it is more likely that trade and cooperation between them lead to good outcomes. If the two groups can’t communicate well during the trade,

¹⁰The elite of the opponent group plays no role in the model, as we will see later, which is why we refer to the incumbent elite simply as the elite and use the index E .

¹¹Note that we assume that the two groups are of equal size. However, even in this case a majority decision could favour one group.

¹²Although in our model the expected gains from trade cannot be negative even for the “harmful” relation, this could well be the case in reality. We therefore use the term “harmful”, although “not beneficial” would also be an accurate description.

for example due to conflicting cultures, then there may be very costly frictions in trade that lead to a low trade surplus. Moreover, we interpret p as trust: the higher is trust in the relation (believing that with high probability the relation is beneficial), the higher is the expected trade surplus. It also implies a larger common interest between the two groups. We therefore view trust as the opposite of ethnic polarization, since the latter emphasizes the conflicting interests across groups.

The timing is shown in Figure 1 and it is described in detail below:

1. At the beginning of the period, the political regime is autocracy. The level of trust p is given.
2. I people decide to revolt or not.
 1. If revolution happens, I people pay the (exogenous) cost f^R and the political system switches to democracy. The elite pays the cost f_E^R and disappears. Then, both groups of people live in the laissez-faire equilibrium and the game ends.
 2. If there is no revolution, then autocracy survives. The elite stays in government and the game moves to step 3.
3. With a continuing autocracy, the elite decides whether to wage war against O or to retain peace.
 1. If war occurs, I people pay the cost f^W . There is no trade and the game goes to step 5.
 2. If peace is chosen, I people can trade with O people and the game goes to step 4.
4. Trade: If trade occurs – either in democracy or in peaceful autocracy – then its outcome can either be good (y_H) or bad (y_L) as described in the text above.
5. Political turnover: In autocracy, with probability π^s , the existing incumbent group remains as the incumbent group, and with probability $1 - \pi^s$, the other group becomes the new incumbent. The superscript $s \in \{W, P\}$ denotes the state the the world: war or peace. Turnover is less likely when there is war,

such that $\pi^P < \pi^W$. In democracy, as both groups of people live in the laissez-faire equilibrium, the distinction of incumbent and opponent group no longer exists.

6. Tax and transfer: In autocracy, the elite from the incumbent group chooses the tax rate on the total income of people, including production and trade surplus. Moreover the elite decides transfer to the people. In democracy, the laissez-faire equilibrium implies that there are no taxes and transfers.
7. Finally, trade outcome realizes and incomes, taxes, and transfers are allocated.

Following Beasley and Persson (2011), we assume that the maximal tax rate is exogenously determined by the state capacity, denoted by τ . The minimal transfer to I people is a θ fraction of total taxes, which is also exogenously determined by checks and balances. Transfers to O people are 0. To understand the state capacity, we can think of the following case: tax payers can hide each unit of income at cost τ . The more capable the state is, the higher costs tax payers have to pay to hide their income. The state, in order to maximize the tax income, prefers to set the tax rate as high as τ , but it can not set it higher, as the Laffer curve goes down towards 0 for tax rates higher than τ . Moreover, the elite sets transfers as low as possible. Therefore, in autocracy, the transfers to I people are a θ fraction of total tax and to O people they are 0. Note that transfers happen after the revolution decision by the people. This implies that a promise by the elite to transfer more than the minimum amount given by checks and balances is not credible. Therefore, a promise of transfers cannot be used by the elite to prevent revolution.

4.2 Incomes

The equilibrium concept is sub-game perfect Nash equilibrium. We solve the model by backward induction. First of all, we calculate the payoffs of the game, i.e. the incomes of the agents – the elite and the incumbent people – in all the states of the world, i.e. in war, peace, and revolution.

4.2.1 I People

The expected trade surplus given belief p is the following:

$$\begin{aligned} E[y_T] &= p(q_H y_H + (1 - q_H) y_L) + (1 - p)(q_L y_L + (1 - q_L) y_H) \\ &= p(q_H + q_L - 1)(y_H - y_L) + (q_L y_L + (1 - q_L) y_H). \end{aligned}$$

Recall that $q_H > 1 - q_L$. We know that y_P is positively correlated with p , namely, the higher trust, the higher is the expected trade surplus. To simplify the expression, we set

$$\begin{aligned} y_H &= \frac{q_L}{q_H + q_L - 1}, \\ y_L &= \frac{q_L - 1}{q_H + q_L - 1}, \end{aligned}$$

which leads to

$$E[y_T] = p.$$

The key relationship between the trade surplus and the belief of the other group is preserved, so this normalization is without loss of generality and does not change the results of this model.

The final expected income of I people includes production, trade surplus, and transfers minus taxes. I people get positive transfers if group I stays the incumbent group. If a political turnover occurs, I people become the opponent group and get 0 in transfers. This implies the following incomes of the I people in each state of the world:

- Peace: $y_I^P = (1 - \tau)(y_I + p) + \pi^P \theta \tau (y_I + y_O + 2p)$.
- War: $y_I^W = (1 - \tau)y_I + \pi^W \theta \tau (y_I + y_O - f^W)$.
- Revolution: $y_I^R = y_I + p - f^R$.

We assume that $\pi^W > \pi^P$, implying that for group I , there is a tradeoff between peace and war: in peace, there is extra income from trade, while in war, the probability of staying as the incumbent group is higher. Peace dominates war for I people

if and only if trust, or equivalently, the expected gain from trade, p , is large enough. In this case, $y_I^P \geq y_I^W$, which is equivalent to the following:

$$\begin{aligned} (1 - \tau)(y_I + p) + \pi^P \theta \tau (y_I + y_O + 2p) &\geq (1 - \tau)y_I + \pi^W \theta \tau (y_I + y_O - f^W) \iff \\ p &\geq \frac{(\pi^W - \pi^P) \theta \tau (y_I + y_O) - \pi^W \theta \tau f^W}{1 - \tau + 2\pi^P \theta \tau} \\ &\doteq p^W. \end{aligned}$$

In other words, if $p < p^W$, I people strictly prefer to go to war instead of peace. When do I people prefer revolution to peace? Under the condition that $\theta < \frac{1}{2\pi^P}$, we can derive the threshold for revolution:

$$\begin{aligned} y_I^R &\geq y_I^P \iff \\ y_I + p - f^R &\geq (1 - \tau)(y_I + p) + \pi^P \theta \tau (y_I + y_O + 2p) \iff \\ p &\geq \frac{\pi^P \theta \tau y_O - (1 - \pi^P \theta) \tau y_I + f^R}{\tau(1 - 2\pi^P \theta)} \\ &\doteq p^R. \end{aligned}$$

The condition that $\theta < \frac{1}{2\pi^P}$ implies that the transfer to I people can not be too large. If it is violated, I people expect to get more transfers than what they pay in taxes. Their income would then increase by more than 1 unit when trust and the trade surplus for them increase by 1 unit. This would lead to the case that I and O people cooperate to start the revolution only when trust between them is very low. This case is unlikely to happen in the real world and we therefore rule it out. We maintain this as an assumption throughout the paper:

Assumption 1. $\theta < \frac{1}{2\pi^P}$.

4.2.2 Elite

If it can maintain its power, then the final income of the elite consists of taxes minus transfers. If there is a revolution, then it incurs a high cost because it is thrown out of the government. The payoffs for each state of the world are therefore as follows:

- Peace: $y_E^P = \pi^P(1 - \theta)\tau(y_I + y_O + 2p)$.

- War: $y_E^W = \pi^W(1 - \theta)\tau(y_I + y_O - f^W)$.
- Revolution: $y_E^R = -f_E^R$.

If there is no revolution, then the elite prefers peace to war when p is large enough:

$$\begin{aligned}
y_E^P &\geq y_E^W \iff \\
\pi^P(1 - \theta)\tau(y_I + y_O + 2p) &\geq \pi^W(1 - \theta)\tau(y_I + y_O - f^W) \iff \\
p &\geq \frac{(\pi^W - \pi^P)\tau(y_I + y_O) - \pi^W\tau f^W}{2\pi^P\tau} \\
&\doteq p_E^W.
\end{aligned}$$

It can be verified that $p_E^W > p^W$ by observing the following:

$$\begin{aligned}
p^W &= \frac{(\pi^W - \pi^P)\theta\tau(y_I + y_O) - \pi^W\theta\tau f^W}{1 - \tau + 2\pi^P\theta\tau} \\
&= \frac{(\pi^W - \pi^P)\tau(y_I + y_O) - \pi^W\tau f^W}{\frac{1-\tau}{\theta} + 2\pi^P\tau} \\
&< \frac{(\pi^W - \pi^P)\tau(y_I + y_O) - \pi^W\tau f^W}{2\pi^P\tau} \\
&\doteq p_E^W.
\end{aligned}$$

This implies that the elite, compared to the people, is more willing to go to war when the trust is relatively low. The reason is that if the political turnover occurs, the elite loses more compared to I people, who can still get the after-tax income even under the rule of the other group. This difference between the elite and the people in the willingness to go to war is frequently discussed in the literature. For example, Rohner, Thoenig, and Zilibotti (2013a) use such an argument to generate a random war that is out of the control of people. Jackson and Morelli (2007) argue that if the political process is captured by a biased political elite, then the war occurs against the interest of people. Here we offer an explanation for why the elite is more eager to go to war than the people. One reason is the fear of political turnover. But there is another reason, which is the fear of revolution when trust is high. This second reason will be discussed in section 5 where we present the dynamic model.

4.3 Equilibrium Outcomes

Given the incomes of agents, we can discuss the choices of the elite and the I people for different levels of trust. This is summarized formally in the following proposition.

Proposition 1. *If trust is sufficiently low ($p \leq p^W$), both the elite and the incumbent people prefer war over peace. The elite is more eager to go to war than the people. Namely, if trust is in the interval $[p^W, p_E^W]$, then the elite prefers war to peace while incumbent people prefer peace. Moreover, if trust is high enough, i.e., $p \geq p^R$, incumbent people prefer revolution to peace.*

The cut-off values of trust, p^W , p_E^W , and p^R , can be ranked from low to high given certain values of the cost parameters f^R and f_E^R . In the case where f^R and f_E^R are sufficiently large, we have $p^W < p_E^W < p^R$, and the elite never prefers revolution to peace. By sufficiently large costs, we mean $f^R > \underline{f^R}$ and $f_E^R > \underline{f_E^R}$, where the expressions for $\underline{f^R}$ and $\underline{f_E^R}$ are given in the appendix. Then, the equilibrium outcomes for all p can be characterized. We summarize this in the next proposition (proof in the appendix) and it is illustrated in Figure 2.

Proposition 2. *Given that $f^R > \underline{f^R}$ and $f_E^R > \underline{f_E^R}$, we have $p^W < p_E^W < p^R$, and the equilibrium outcomes for different levels of p (from low to high) are given by the following four cases.*

$p < p^W$: war. Both elite and incumbent people prefer war, since the expected trade surplus under peace is too low.

$p^W < p < p_E^W$: war. Though incumbent people prefer peace given the large trade surplus, the elite decides to stay at war. The elite has more to lose if there is a political turnover.

$p_E^W < p < p^R$: peace. There is enough trade surplus to gain and no threat of revolution. The elite prefers peace and so do incumbent people.

$p > p^R$: revolution. The expected trade surplus is so large that incumbent people decide to revolt. The elite is overthrown and democracy is established. The elite never prefers revolution.

If p is at the threshold level $p = p_E^W$, then the equilibrium outcome can be either war or peace, because the elite is indifferent between the two states and pure

strategies and mixed strategies between war and peace can all be equilibria. The analogous result holds for the case $p = p^R$.

The revolution occurs when trust is too high. This implies that the elite may have an incentive to prevent trust from getting too high. Starting a conflict and thus preventing the updating of beliefs during trade interactions gives the elite a way of limiting trust. The dynamic model in section 5 allows discussing how the elite can apply this divide-and-rule strategy.

5 The Dynamic Model

In this section, we consider a dynamic model that includes the evolution of trust. With this model, we study under which circumstances the elite wants to decrease the trust between the two ethnic groups, or equivalently, polarize the society. The elite seeks to influence trust because trust affects the decisions of people to revolt, which in turn influence the income of the elite.

5.1 Environment

We assume that the elite lives for infinite periods and is forward-looking. Each cohort of people lives for only one period and in the next period a new cohort of people are born. The assumption that people care only about the current period income simplifies the analysis substantially. Although people's decision on revolution or peace will be different from the current setting if we were to assume that people are forward-looking, we expect the key results of the model to still hold – as long as they still prefer revolution to peace when trust is sufficiently high. We show after the presentation of the dynamic model that this is plausible.

Each period of the dynamic model includes everything that happens in the static model. Moreover, the evolution of the political system and trust over the periods follows the rules below. If democratization occurs in one period, democracy is set up and consolidated for all the periods afterwards. The equilibrium in all these periods will be *laissez faire*, such that people of both groups simply gain their home production income and the trade surplus. If autocracy survives this period, the next period starts with autocracy.

The dynamics of trust follow the following rule. First, in the beginning of each period, trust is p , i.e., the common belief about the probability that the relation between the two groups is “beneficial”. Then, if trade occurs in this period, agents update their belief about the relation after observing the trade outcome, i.e. they update their belief of trust using Bayes’ rule. If there is no trade, agents learn nothing about the type of relation. Finally, at the end of each period, there is some probability that the type of the relation switches. The stochastic types are driven by cultural shifts, which can be related to social structure, population mixture, and so on (see Tabellini, 2008, and Rohner, Thoenig, and Zilibotti, 2013a). For example, consider a case where in the beginning both groups consist of mainly young people. Their skills are not complementary with each other and the interactions and trade between young people are full of frictions. Some time later, the population of one group becomes older due to different demographic trends, while the other group stays the same. Now their skills are complementary, since the old group brings in experience and knowledge while the young group contributes for example creativity and energy. The relation between the two groups thereby becomes beneficial and trade and cooperation are more likely to generate good outcomes. More specifically, we assume that the type of the relation follows a two-state first-order stochastic Markov process with the following transition matrix:

$$\begin{array}{c|cc}
 & t & B & H \\
 \hline
 t-1 & & & \\
 B & & 1-\psi & \psi \\
 H & & \phi & 1-\phi
 \end{array}$$

where B and H denote the types of the relation being “beneficial” and “harmful”, respectively, and ψ and ϕ are the probabilities that the type changes, conditional on the relation being “beneficial” or “harmful”, respectively. Agents are aware of the possibility that types can switch. This implies that agents change their belief even if there was no trade, because they anticipate that the nature of the relation may have switched.

How does trust change when there is a political turnover? We assume that turnover doesn’t affect trust. This is a fairly natural assumption in our setting.

Trust is the common belief about the probability of the relation being beneficial, based on the common observations of past trade outcomes. It should therefore be the same for both ethnic groups, either as incumbent or opponent.

We also assume that after the turnover, the elite of the old incumbent group loses its rents and exits the economy. If some periods later, this group becomes the incumbent group again, then a new cohort of elite is ruling. Therefore, the current elite's continuation value only comes from the consecutive periods that it stays in power without turnover.

5.2 Solution

In the beginning of each period, we still denote the variables of the incumbent group with subscript I , and the variables of the opponent group with subscript O . If at the end of this period the incumbent group becomes opponent, we still keep the subscript I to denote the (new) incumbent, but keep in mind that the values of the variables changes. For instance, in the period when group A is the incumbent group, y_I takes the value of the home-production income of people A , while in the next period when group B is the incumbent group, y'_I takes the value of the home-production income of people B , which can be different from y_I .

The incomes and the choices of people are exactly the same as in the static model as each cohort lives for only one period. Therefore, if $p > p^R$, I people choose revolution, otherwise the elite stays in power and sets government policies. Essentially, this is what we need to know about the people. This is why, if people were to live for infinite periods, we would expect the results of the model not to be too different – as long as people choose to revolt when trust is very high.

We now show how trust evolves. Lets say that initially trust is at some level p at the beginning of the period and that trade takes place. Then, all agents update their belief according to Bayes' rule based on the trade outcome, either in democracy or in autocracy with peace, i.e.

$$p^+ = \begin{cases} \frac{pq_H}{pq_H + (1-p)(1-q_L)} & \text{if } y_T = y_H, \\ \frac{p(1-q_H)}{p(1-q_H) + (1-p)q_L} & \text{if } y_T = y_L. \end{cases}$$

If there is no trade due to the war, then there is no new information about the type of the relation, so the belief stays the same at this moment, i.e. $p^+ = p$. But at the end of the period, the stochastic shock to the type of the relation realizes. After that, the belief that the type is “beneficial” becomes $p' = p^+ (1 - \psi) + (1 - p^+) \phi = p^+ (1 - \psi - \phi) + \phi$, and this is also the level of trust at the beginning of the next period. The evolution of trust across two periods is summarized below:

$$p' = \begin{cases} (1 - \psi - \phi) p + \phi & \text{if } s = W, \\ (1 - \psi - \phi) \frac{pq_H}{pq_H + (1-p)(1-q_L)} + \phi & \text{if } s = P, y_T = y_H, \\ (1 - \psi - \phi) \frac{p(1-q_H)}{p(1-q_H) + (1-p)q_L} + \phi & \text{if } s = P, y_T = y_L. \end{cases}$$

We can see that if war continues for infinitely many periods, trust converges to the “natural” level $\frac{\phi}{\phi + \psi}$ with the auto-correlation $(1 - \psi - \phi)$. We want the probability of the change of types not to be too high and the “natural” level of trust not to be too low nor too high, such that people prefer peace at this level. We therefore maintain the following assumption:

Assumption 2. $\psi \leq \frac{1}{2}$, $\phi \leq \frac{1}{2}$ and $\frac{\phi}{\phi + \psi} \in [p^W, p^R]$.

If revolution happens, then the equilibrium outcomes are just a repetition of the case of revolution in the static model. If there is no revolution, then in autocracy the elite’s choice sets are the same as in the static model: war or peace, tax and transfer. Tax and transfer are trivially determined by the maximal tax rate and the minimal transfer, as in the static model. However, when the elite decides on war or peace, it now maximizes the expected life-time income, given the current period’s level of trust:

$$V(p) = \begin{cases} \max_{s \in \{W, P\}} y_E^s(p) + \beta \pi^s E^s V(p'), & \text{if } p \leq p^R, \\ -f_E^R, & \text{if } p > p^R, \end{cases}$$

where y_E^s is the elite’s current period income, π^s is the probability that the current incumbent group stays in power (both depending on $s \in \{W, P\}$), p' is the level of trust in the next period, and β is the discount factor. From this follows the law of motion discussed above.

We can characterize important properties of the value function and of its solution, given certain conditions and a value of p . We can for example consider the cases when (1) both the cost of war and trust are low, or (2) when both the cost of revolution for the elite and trust are high. We discuss the elite's behavior and the equilibrium outcomes in each of these cases.

First, when trust and the cost of war are both low enough, then there is not much to gain from peace and trade, and the loss from going to war is small. Moreover, war implies a lower chance of political turnover compared to peace, which increases the elite's expected income both this period and in the future. This property can be summarized in the following proposition (proof in the appendix).

Proposition 3. *Suppose that $f^W < \frac{\pi^W - \pi^P}{\pi^W} (y_I + y_O)$, then when p is sufficiently low, the elite wages war. More precisely, for $p = 0$, the elite chooses war; and if $V(p)$ is continuous at $p = \phi$, then there exist a $p_E^W > 0$, such that for all $p < p_E^W$, war is chosen as well.*

Second, consider the following scenario: in a given period, trust is relatively high, peace is chosen by the elite, trade occurs between the two groups for many periods, and there are enough good trade outcomes such that trust keeps increasing. The increasing trust raises the trade surplus and income of people in peace, but is it good news for the elite? Not necessary. While the high level of trust implies gains from trade and thus large resources in the society that the elite can potentially extract, it is also a threat to the elite, since a too high level of trust may trigger a revolution. In particular, when $p > p^R$, I people find that cooperating with O people in democracy (where they are not taxed by an elite) is better than autocracy (in which they extract income from the O people but are also being expropriated by their own elite). If p is large enough and very close to p^R , choosing peace means that with some positive probability the trade outcome will be good. Then, p may increase to a level higher than p^R , which will trigger a revolution in the next period. Since revolution implies a high cost for the elite, it can be optimal for the elite to choose war instead of peace even when trust is already high, since during the war the trust is expected to regress back to the natural level p_0 where there is no risk of revolution. To avoid that trust can grow above this critical level after sufficiently many good trade outcomes, the elite can strategically start a war to prevent people

from seeing good trade outcomes. In the appendix, we derive the “sufficiently large” cost of revolution as $\underline{f}_E^R \doteq \frac{\pi^P(1-\theta)\tau(y_I+y_O+2p^R)-\pi^W(1-\theta)\tau(y_I+y_O-f^W)+\beta\pi^P(1-q^R)\bar{V}-\beta\pi^W\underline{V}}{\beta\pi^Pq^R}$. Then we have the following proposition (proof in the appendix):

Proposition 4. *Suppose that $f_E^R > \underline{f}_E^R$, then if p is sufficiently large, the elite chooses to wage war, while people would prefer peace. The war not just prevents trust from growing, but it leads to declining trust. The elite increases polarization and reduces the interaction between the two groups in order to increase its own probability of staying in power. More precisely, when $p = p^R$, then the elite prefers war over peace; and there exists a $p_E^R < p^R$, such that for all $p > p_E^R$, the elite chooses war.*

In this case, war occurs when trust is high and when there is a lot to gain from trading in peace. This is an interesting result, since high trust makes peace more attractive for the society overall. The reason for this result is that the elite’s interest is different from the interest of the society and of the people. It is true that the higher level of trust generates larger total income in the whole society, but it also changes the allocation of income by triggering a revolution, which reduces the income of the elite drastically. This is the second reason why the elite decides to go to war and to stop the trade interaction against the interest of people: the fear of an increase in trust and of the revolution that this may trigger.¹³

If war starts and trade is interrupted at a high level of trust, then there is no chance of a further increase in trust. Although the termination of trade between the two ethnic groups does not directly harm trust, it in fact prevents the potential growth of trust. Trust during war gradually converges back to its natural level which is lower than the threshold where a revolution can occur. This means that after the elite purposely stops trade, polarization can increase. This strengthens the power of the elite and prevents revolution. This is one of the key findings of this paper and it represents the divide-and-rule strategy that has frequently been described as a source of ethnic tensions.

Given the conditions in the propositions above, the dynamic model generates certain results that are similar to the ones in the static model in the following

¹³Recall from the discussion of the static model that the other reason why the elite is more likely to go to war than the people is that they have more to lose from a transition of power to the other group.

respects. First, if the cost of war is sufficiently small, the elite chooses to go to war when trust is low, because the benefit from peace, i.e., the trade surplus, is expected to be low. The incumbent group fights with the opponent group in order to stay in power with higher probability. Second, if trust is too high, I people prefer revolution and democracy together with O people, in which they benefit from the expected high trade surplus and are no longer expropriated by the elite. Such a revolution is very costly for the elite since they lose all their rents. While in the static model trust is exogenously given, the dynamic model allows us to analyze how trust evolves. More importantly, the dynamic model allows us to see how the elite strategically influences trust. The elite achieves this by going to war in order to stop further increase in trust, which otherwise would lead to revolution.

How does trust evolve over time? If trust is very low, then the elite (and also the incumbent people) prefer to be at war with the other group. In the absence of trade interactions during the war, trust regresses to the natural level due to the stochastic switch of types. After some periods, trust may reach a level that can lead to peace. Then, if there are sufficiently many good trade outcomes during peace, trust rises further. But if trust becomes so high that the elite sees the potential of a revolution in the near future, then it wages a war again to stop trade. During the war there are again no trade interaction. This war, in a situation when the level of trust is high, is at the cost of the people and the society. But it helps the elite to stay in power, since it keeps trust low (and thus polarization high), so that the incumbent people do not have sufficient common interest with the other group to revolt against the own elite. During the war, trust may regress down due to the stochastic relation type such that there is no threat of revolution anymore. Then, the elite may stop the war and allow trade again.

This model helps us to understand some of the most disturbing episodes of violence in recent history. As we have shown in Section 3, elites in Rwanda and Yugoslavia have purposely destroyed the common interest of people in order to maintain or increase their power. This destruction of the common interest often took the form of ethnic violence which hampered trust. The lack of trust then triggered further violence between groups who thought that they have little to gain from peaceful interaction. Our model provides an explanation for why rational people follow leaders into destructive violence. Some previous approaches to answering

this question have assumed that elites can directly manipulate people’s beliefs (for example Posner, Spier, and Vermeule, 2010). In contrast, agents in our model are perfectly aware of other agents strategies. The elite’s ability to initiate conflict to prevent economic interaction allows it to induce people to polarise by affecting trust between people of different groups.

6 Conclusion

We propose a theory of divide-and-rule where political elites strategically initiate conflicts between ethnic groups in order to polarize society and thus sustain their own power. We model polarization as a lack of trust that is shaped by trade interactions between agents of the different ethnic groups. The elite can prevent trust from emerging by starting a conflict that interrupts trade. The elite follows this strategy when there is a threat of revolution. The model also generates that an elite is more likely to seek war than the people. This is the case because the elite has the double fears of losing power to the other group and to be overthrown by the own group if the common interest between groups becomes too large.

We document that our model is consistent with a number of cases of large-scale ethnic violence, in particular with the incidents in Rwanda and Yugoslavia. These cases show that polarization was not simply exogenously given, but to some extent *constructed* by power-seeking elites. Violence often had the goal of destroying trust and creating instability. This allowed elites to exercise their power more freely. An implication of these observations is that treating conflicts as “inherently ethnic” may be misleading. Our model shows the elite’s role in creating ethnic polarization and it therefore enables us to discuss possible counter-measures. Generally speaking, attempts to prevent ethnic violence should pay considerable attention to the role of the elite. Promising ways to achieve this would be to reduce elites’ incentive or ability to reduce trust. This is especially important in cases where the elite may attempt to do so because they are threatened by a *high* level of trust. In such cases, the interests of the elite diverge from those of society overall, since the elite values being in power more than possible gains from trade.

7 References

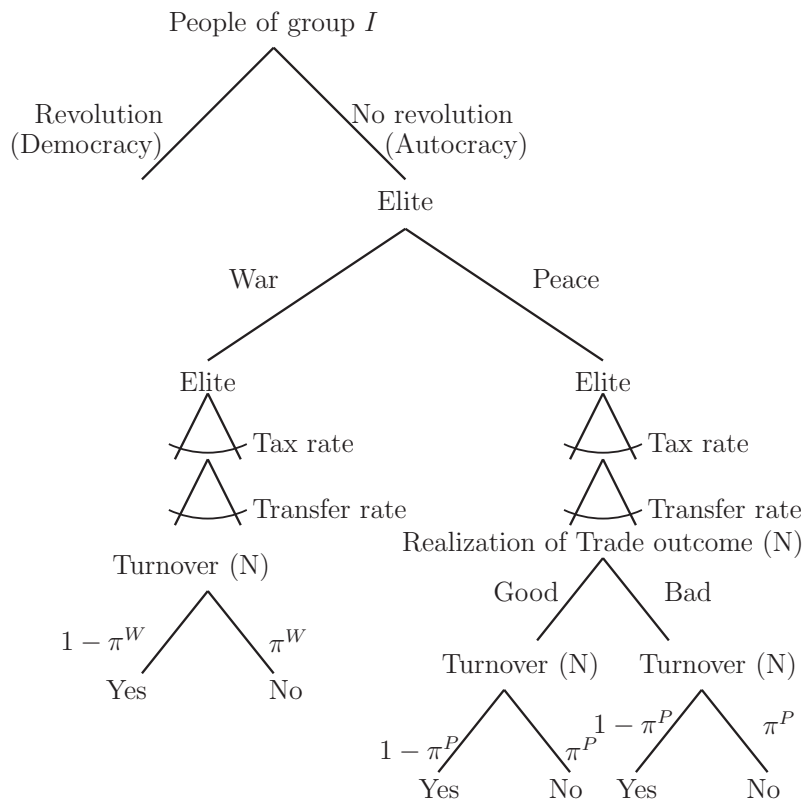
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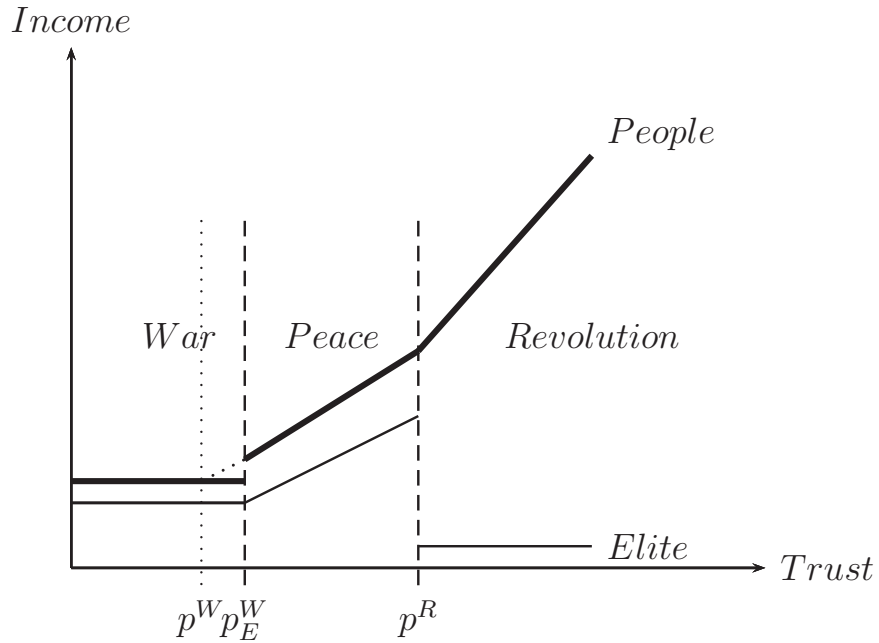
8 Figures

Figure 1: Game Tree



The figure shows the timing of the baseline model. (N) denotes nature.

Figure 2: Trust and Income



The figure shows the relationship between trust and income. The thin solid lines refers to the elite, while the thick solid line represents the people. The dashed lines separate the different states of the world. The dotted line marks the threshold level of trust where people would prefer peace over war. The jump in people's income at the switch from war to peace is due to the timing of the switch, since the people would have higher income from peace already at lower levels of trust, while the elite decides to stay at war.

A Appendix: Proofs of Propositions

In this appendix, we provide proofs for the propositions and some lemmata that are useful.

First, we prove the propositions in the static model. The results in proposition 1 are already established in the main text. Here we provide the proof for proposition 2, which states the equilibrium outcomes conditional on sufficiently large revolution cost.

Proof. If the cost of revolution for incumbent people is high, then they prefer revolution to peace only when trust is very high, potentially higher than the cut-off value of war and peace. This is to say,

$$\begin{aligned}
 p^R &> p^W \iff \\
 \frac{\pi^P \theta \tau y_O - (1 - \pi^P \theta) \tau y_I + f^R}{1 - \pi^P \theta} &> \frac{(\pi^W - \pi^P) \theta \tau (y_I + y_O) - \pi^W \theta \tau f^W}{1 - \tau + 2\pi^P \theta \tau} \iff \\
 f^R &> \frac{(1 - \pi^P \theta) ((\pi^W - \pi^P) \theta \tau (y_I + y_O) - \pi^W \theta \tau f^W)}{1 - \tau + 2\pi^P \theta \tau} \\
 &\quad - \pi^P \theta \tau y_O + (1 - \pi^P \theta) \tau y_I \\
 &\doteq \underline{f^R}.
 \end{aligned}$$

If the cost of revolution on the elite is high enough, then the elite doesn't want revolution at all, since it is always dominated by either war or peace. Let us consider the case that revolution is always dominated by war, as the following:

$$\begin{aligned}
 y_E^R &< y_E^W \iff \\
 -f_E^R &< \pi^W (1 - \theta) \tau (y_I + y_O - f^W) \iff \\
 f_E^R &> -\pi^W (1 - \theta) \tau (y_I + y_O - f^W) \\
 &\doteq \underline{f_E^R}.
 \end{aligned}$$

□

Lemma 1. *The value function of the elite's lifetime income $V(p)$ is bounded above and below by some \bar{V} and \underline{V} , respectively.*

Proof. To find the solution for the value function, we first characterize important properties of the value function. First, it is bounded. If the expected trade surplus is very close to its lower bound 0, then the elite can always at least start a war and gain from the tax extraction, so we get a lower bound of V :

$$\begin{aligned} V &\geq y_E^W + \beta\pi^W y_E^W + \beta^2\pi^W y_E^W + \dots \\ &= \frac{1}{1 - \beta\pi^W} y_E^W \\ &\doteq \underline{V}. \end{aligned}$$

Similarly, if in each period, the elite expects to get at most $\pi^W(1 - \theta)\tau(y_I + y_O + 2) \doteq \bar{y}_E$ when the expected trade surplus is as high as 1 for each group, and the probability of the elite staying in power is at most π^W , so we can get an upper bound of V as follows:

$$\begin{aligned} V &\leq \bar{y}_E + \beta\pi^W \bar{y}_E + \beta^2\pi^W \bar{y}_E + \dots \\ &= \frac{1}{1 - \beta\pi^W} \bar{y}_E \\ &\doteq \bar{V}. \end{aligned}$$

□

With this lemma, we can first prove and discuss proposition 3 which shows that war occurs when trust is low.

Proof. War dominates peace if and only if:

$$\begin{aligned} V^P(p) &< V^W(p) \iff \\ &\pi^P(1 - \theta)\tau(y_I + y_O + 2p) + \beta\pi^P E^P [V(p')] \\ &< \pi^W(1 - \theta)\tau(y_I + y_O - f^W) + \beta\pi^W E^W [V(p')] \iff \\ p &< \frac{(\pi^W - \pi^P)(1 - \theta)\tau(y_I + y_O) + \beta\pi^W E^W [V(p')] - \beta\pi^P E^P [V(p')] - \pi^W(1 - \theta)\tau f^W}{2\pi^P(1 - \theta)\tau} \\ &\doteq \underline{p}(p). \end{aligned}$$

This means that if p is sufficiently small, the gain from trade is smaller than the benefit of war $\underline{p}(p)$, which contains three parts: (1) higher probability of stay-

ing in power and getting the current period income: $(\pi^W - \pi^P)(1 - \theta)\tau(y_I + y_O)$; (2) difference in continuation value in the future between war and peace: $\beta\pi^W E^W [V(p')] - \beta\pi^P E^P [V(p')]$; and (3) the cost of war $\pi^W(1 - \theta)\tau f^W$. If the cost the war f^W is small, $\underline{p}(p)$ is large, and if meanwhile the trust is low, we have $p < \underline{p}(p)$, implying that the elite chooses war instead of peace. Consider the case that $f^W < \frac{(\pi^W - \pi^P)}{\pi^W}(y_I + y_O) \doteq f^{\bar{W}}$. If the trust is at the minimal level, i.e., $p = 0$, we have $\underline{p}(0) > p = 0$, and the elite prefers war. We can verify this in the following three steps. First, $E^W [V(p')] = E^P [V(p')] = V(\phi)$, as $p = 0$ implies $p^+ = 0$ in both war and peace, and then $p' = \phi$ due to the possibility of type change. Second, $V(\phi) > 0$. We know that $\phi \leq \frac{\phi}{\phi + \psi} \leq p^R$, and given $p = \phi$, one possible choice for the elite is to keep having war forever and there will be no threat of revolution, as p will converges to $\frac{\phi}{\phi + \psi} \leq p^R$. In his case, every period, the elite's expected income is $y_E^W = \pi^W(1 - \theta)\tau(y_I + y_O - f^W) > 0$. The optimal choice for the elite gives higher life-time income than permanent war, so $V(\phi) > 0$. This is in fact true for all $p \leq p^R$. Third,

$$\begin{aligned} p(0) &= \frac{(\pi^W - \pi^P)(1 - \theta)\tau(y_I + y_O) - \pi^W(1 - \theta)\tau f^W}{2\pi^P(1 - \theta)\tau} + \frac{\beta\pi^W [V(\phi)] - \beta\pi^P [V(\phi)]}{2\pi^P(1 - \theta)\tau} \\ &> 0 + 0 \\ &= 0. \end{aligned}$$

This shows that when the trust is as low as 0, the elite prefers war. Moreover, if $V(p)$ is continuous at $p = \phi$, $\underline{p}(p)$ is continuous at $p = 0$. Then given $0 < \underline{p}(0)$, there exists a neighborhood of 0, denoted as $[0, p_E^W)$, for any $p \in [0, p_E^W)$, we have $p < \underline{p}(p)$. In other words, in this low trust region, war is started because there is little to gain from trade. \square

Proposition 4 shows that “surprisingly”, war also occurs when trust is too high, because the elite is afraid of even higher trust leading to revolution. We provide the proof and the discussion below.

Proof. Consider the situation $p = p^R$. If peace is chosen, with probability $q^R = p^R q_H + (1 - p^R)(1 - q_L)$, the trade outcome is good and $p' > p^R$, which triggers a

revolution in the next period. Then

$$V^P(p^R) \leq \pi^P(1-\theta)\tau(y_I + y_O + 2p^R) + \beta\pi^P(-q^R f_E^R + (1-q^R)\bar{V}).$$

A sufficient condition for $V^P(p^R) < V^W(p^R)$ is:

$$\begin{aligned} & \pi^P(1-\theta)\tau(y_I + y_O + 2p^R) + \beta\pi^P(-q^R f_E^R + (1-q^R)\bar{V}) \\ < & \pi^W(1-\theta)\tau(y_I + y_O - f^W) + \beta\pi^W \underline{V} \iff \\ f_E^R > & \frac{\pi^P(1-\theta)\tau(y_I + y_O + 2p^R) - \pi^W(1-\theta)\tau(y_I + y_O - f^W) + \beta\pi^P(1-q^R)\bar{V} - \beta\pi^W \underline{V}}{\beta\pi^P q^R} \\ \doteq & \underline{f_E^R}. \end{aligned}$$

We can see that given f_E^R is sufficiently large, the elite chooses to go to war when the trust is as high as p^R . In fact, we can see that if p increases from below, before it reaches p^R , war is already preferred by the elite to peace. This is because if trust is slightly smaller than p^R , the threat of revolution in peace – the probability of having a high enough trust that leads to revolution – is only slightly smaller and the cost of peace for the elite is still large. In other words, there exists a neighborhood of p^R , denoted as $(p_E^R, p^R]$, for all p in this neighborhood, we have

$$\begin{aligned} f_E^R > & \frac{\pi^P(1-\theta)\tau(y_I + y_O + 2p) - \pi^W(1-\theta)\tau(y_I + y_O - f^W) + \beta\pi^P(1-q^R)\bar{V} - \beta\pi^W \underline{V}}{\beta\pi^P q^R} \\ \implies & V^P(p^R) < V^W(p^R). \end{aligned}$$

War is preferred by the elite when $p > p_E^R$. □