DECENTRALIZATION AND THE PREVALENCE OF

LOCAL ETHNIC FAVORITISM

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Abstract

Whereas indirect ethnoregional favoritism is widely studied, direct ethnic favoritism at lower levels of analysis is more easily observable by individuals and therefore a more salient source of ethnic resentment. We rely on individual-level panel data to establish the extent of direct favoritism among Indonesian village heads allocating welfare benefits to specific villagers and identify the role of decentralization therein. Results show that ethnic distance to their village's mayor negatively affects individuals' receipt of welfare and that converting to the mayor's ethnicity increases receipt of benefits. However, ethnic biases in the allocation of welfare benefits become insignificant when villages do not have administrative and fiscal autonomy or when they lose their autonomy. Further village-level time-series evidence shows that decentralization and observed local ethnic favoritism increase interethnic distrust and inequality. We conclude that absence of aggregate-level ethnic disparities may hide important disaggregate-level ethnic inequalities and sources of resentment and that political reform is not a panacea for alleviating ethnic tensions.

I. INTRODUCTION

Ethnic favoritism has been shown to increase ethnic inequalities that, in turn, spur intra-state violence and conflicts and hamper economic development (Alesina et al. 2016; Esteban et al. 2012; Montalvo and Reynal-Querol 2005). Moreover, a growing empirical literature finds that regional or location-based ethnic favoritism—i.e., national leaders targeting central government expenditures to favor some ethnographic regions over others—is widespread in countries around the world (De Luca et al. 2018; Dickens 2018; Hodler and Raschky 2014). In addition, there is evidence suggesting that better national political institutions can have a constraining effect on ethnoregional favoritism (Burgess et al. 2015).

However, not all ethnic favoritism is as indirect as the case of national leaders diverting government resources to particular ethnographic regions. Instead, there can also be direct favoritism, a government official treating specific individuals more or less favorably because of their ethnic identity. Moreover, direct favoritism appears highly salient and therefore a much bigger source of ethnic resentment than ethnoregional favoritism is (cf. Buhaug et al. 2014; Cederman et al. 2010; Fjelde and Østby 2014; Østby et al. 2011). Direct favoritism can occur at all levels of government, including in small communities in which there is little scope for location-based indirect favoritism. Hence, direct favoritism is probably more common than indirect favoritism. In addition, favoritism is more easily noticed at lower levels where people are in closer contact with each other, implying that people are regularly confronted with micro-level favoritism in their local communities even when they are not actively searching for evidence of ethnic disparities. Ethnoregional favoritism, on the other hand, would only become salient if individuals decide to compare their ethnic home region with the home regions of ethnic groups that are ethnically closer to the national leadership. More generally, the presence of direct favoritism at

lower levels of analysis means that ethnic tensions may be brewing in society, even in the absence of location-based favoritism by higher government or other forms of ethnoregional disparities. Communal ethnic unrest, in turn, can easily spill over to neighboring areas or society at large (Besley and Reynal-Querol 2014; Harari and La Ferrara 2018; O'Loughlin et al. 2010).

This paper extends prior research on indirect, location-based ethnic favoritism to assess the prevalence of direct favoritism at lower levels of analysis and identify potential constraining or exacerbating effects of local political governance. To develop this micro-level perspective, we consider local village administrators' ethnic biases in allocating benefits directly to specific individual villagers and villages' administrative and fiscal autonomy as a possible moderator of such direct favoritism. Our research context involves village heads in Indonesia and the central Indonesian government's "Big Bang" decentralization of fiscal and administrative powers in 2001 (Hofman and Kaiser 2002). Our specific concern is with Indonesian village heads allocating welfare benefits to selected individual villagers based on these villagers' ethnic distance to the village head. Indonesia is the fourth largest country in the world by population, making it an important subject of study. Large-scale decentralization, however, has occurred in many developing countries not just Indonesia, including in India (1993-1996), Brazil (1988), China (1994), Rwanda (2006) and Tanzania (1998) (Agrawal and Ostrom 2001; Dickovick and Wunch 2014; Souza 1996; Zhang and Zhou 1998).

The most important element in the identification of direct as opposed to indirect ethnic favoritism is ascertaining the ethnic distance between an individual benefactor (a local village head) and potential individual beneficiaries, i.e., potential recipients of welfare benefits from the local government (specific villagers). We use individual-level and village-level panel data from three waves (2000, 2007 & 2014) of the Indonesian Family Life Survey (IFLS) (Strauss et al. 2004;

Strauss et al. 2009; Strauss et al. 2016). For this survey, respondents report their village and (ancestral) ethnicity but also whether or not they receive certain government benefits, particularly subsidized rice from Indonesia's largest welfare program. We ascertain village heads' ethnicity using different criteria. One criterion used is village heads' name, which in the Indonesian context of language-based ethnic boundaries is a telltale sign of individuals' ethnicity (Bailey and Lie 2018; Mateos 2007; Wimmer 2013). We measure ethnic distance using a simple dichotomous indicator of villagers' coethnicity with their village's mayor but also consider a continuous indicator of villager-village head ethnic distance based on lexicostatistical data (cf. Dickens 2018).

The empirical analysis of local ethnic favoritism involves two main parts. In the first part, we document the extent of direct favoritism in Indonesian villages and the moderating role of village autonomy therein. However, because this part of the analysis is descriptive, in the second part we use different strategies to identify causal effects of villager-village head ethnic distance and village autonomy. The first strategy involves time-series evidence on effects of individual-level changes in villager-village head ethnic distance and of changes in villages' administrative and fiscal autonomy. Villagers' ethnic distance to their village head can change because of intra-individual changes in ethnic identity. Such changes are not uncommon in many societies (Davenport 2020), including in Indonesia (Rademakers and Van Hoorn 2020). Hence, we can identify direct ethnic favoritism by considering the effect of becoming more or less ethnically close to one's village head on individuals' receipt of welfare benefits. In similar fashion, a significant share of villages has experienced changes in the autonomy granted to them by higher government, which affects how much discretion village heads have in deciding on the allocation of subsidized rice to specific villagers. Hence, we can test whether decentralization/centralization increases/decreases the effect of individuals' ethnic distance to their village head on their receipt of subsidized rice. Still, village

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decentralization is perhaps not a random event—e.g., regions with less (more) direct ethnic favoritism may be more likely to gain (loose) autonomy (Hofman and Kaiser 2004). Hence, the second identification strategy is to use a historical instrument for the moderating effect of village autonomy. This analysis is cross-sectional and the specific instrument that we use involves villages' historic support for the United States of Indonesia or for the Dutch government during the Indonesian War of Independence (1945-1949).

The specific benefits that we consider concern villagers' receipt of subsidized rice, which is available under Indonesia's largest welfare scheme, the Raskin Beras untuk Rakyat Miskin or Raskin program (Hastuti et al. 2008; World Bank 2012). The sample involves about 10,000 villagers living in 232 villages for a total of about 15,000 individual observations and 354 village-level observations. We find striking patterns, particularly concerning the impact of village autonomy. Descriptive results indicate that individuals who are coethnics with their village head are significantly more likely to have received so-called Raskin rice in the last year than non-coethnics are. However, we only find this difference in autonomous villages. Longitudinal variation in villagers' ethnic identity supports the causal interpretation of the cross-sectional evidence. In particular, the probability of receiving Raskin rice increases among individuals who have switched to the ethnicity of their villages' mayor (and vice versa). Longitudinal variation in villages' autonomy similarly suggests that decentralization significantly widens—and (re)centralization significantly reduces—the coethnic/non-coethnic gap in receipt of welfare benefits from the local government. We find a similar exacerbating effect of village autonomy when we use the instrumental variable approach involving regions' historic efforts in the Indonesian War of Independence. Hence, there appears to be a causal effect of administrative and fiscal autonomy on the extent of local direct favoritism. Evidence obtained using a continuous

measure of villager-village head ethnic distance indicates that not just coethnics benefit from direct favoritism but also other ethnic groups that are relatively ethnically close to the village head. Finally, we obtain similar results when considering the amount of subsidized rice received instead of the likelihood of receiving Raskin rice.

Examining the implications of the above evidence, we consider potential village-level links between decentralization and observed direct favoritism or ethnic biases in welfare allocation in villages on the one hand and interethnic trust and ethnic inequalities in these villages on the other. Concerning the first potential link, longitudinal results indicate that an increase in direct favoritism in villages is associated with diminishing village-level interethnic trust. In contrast, over the same period, 2000-2014, the overall trend in interethnic trust in Indonesia was positive. Concerning the second potential link, longitudinal results indicate that various markers of socioeconomic inequalities between coethnics and non-coethnics in a village increase when the degree of direct favoritism in the village increases. In autonomous villages, in particular, the gap in average wealth between village head coethnics and village head non-coethnics widens when local ethnic biases in welfare allocation increase. This trend towards increased village-level ethnic inequality goes against the national-level trend in Indonesia over the same period, which was stable. Village heads in the sample comprise 22 different ethnicities. Correspondingly, each of these 22 ethnic groups may benefit from direct ethnic favoritism in at least one village. At the same time, the same ethnic group may suffer ethnic bias in other villages. At the aggregate-level, the effects of local direct favoritism on ethnic inequality can therefore cancel out. If so, indirect political favoritism does not show up in aggregate-level statistics on ethnic inequality or even in studies of disparities between ethnographic regions in Indonesia. However, such an apparent lack of higher-level, ethnoregional inequalities does not then mean that there are no ethnic disparities and tensions brewing within

Indonesian villages.

This paper's first key contribution is that it adds unique micro-level evidence to a small but growing literature on ethnic favoritism, particularly ethnoregional biases, in the aggregate-level allocation of public resources (e.g., Burgess et al. 2015; De Luca et al. 2018; Hodler and Raschky 2014). Except for experimental studies involving stylized games (e.g., Fershtman and Gneezy 2001), this important literature lacks evidence on direct favoritism (i.e., on individuals with different ethnicities as allocators and as direct recipients of welfare benefits). Addressing this gap is imperative because, as indicated, aggregate-level statistics will not capture the full extent of ethnic favoritism and inequalities in society. Ethnic tensions might be brewing at lower levels, in villages and neighborhoods, but we would not observe this in national or even regional statistics. Closest in spirit to our analysis are studies that consider the link between the ethnicity of the national leadership and individuals' socioeconomic status or ability to access public resources. Franck and Rainer (2012) and Kramon and Posner (2016), for instance, use cross-sectional data from Demographic and Health Surveys to consider potential effects of having a coethnic as national president or cabinet minister on individuals. They find a positive correlation between national leader coethnicity and individual outcomes in such areas as education and infant survival. Dickens (2018) considers individual-level effects of national leader ethnolinguistic similarity but takes into account individuals' region. Controlling for regional differences, Dickens (2018) finds no evidence that being ethnically closer to the national leadership impacts individuals' access to public resources or ownership of assets. Hence, the conclusion that ethnic favoritism by national governments is mostly a location-based phenomenon. More generally, these studies do not present micro-level evidence on the effect of specific local benefactors' ethnic favoritism towards selected individual beneficiaries.

By documenting the exacerbating effect of village autonomy and decentralization, a second important contribution of the paper is to the literature on the role of political institutions in alleviating ethnic unrest and in constraining public-sector corruption. Endorsed by scholars and supranational advisory bodies alike, many countries worldwide have used democratic reforms and devolution as a means to reduce ethnic disparities and violence and improve political stability (Manor 1999; UNDP 2009; World Bank 2005). Evidence from the paper, however, suggests that delegating administrative and fiscal authority to lower government may counter effects of state-level checks on discriminatory policies by village heads. Lower levels of government typically have less administrative capacity, which can create opportunities for local ethnic elites to expand their control over public resources and government expenditures (Litvack et al. 1998). Presenting novel evidence on the interaction between direct favoritism and decentralization, this paper therefore helps inform important debates on the curbing of ethnicity-based favoritism for reducing ethnic unrest and political instability and improving economic performance.

The remainder of this paper is organized as follows. Section II provides important background information on the research context and presents testable hypotheses. Section III discusses the data and key measures that we use while Section IV presents the empirical strategy. Section V presents the evidence on direct favoritism and its interaction with villages' administrative and fiscal autonomy. Section VI discusses the results and considers the implications of decentralization and observed local direct favoritism for village-level outcomes, specifically for interethnic trust and ethnic inequality within villages. Section VII concludes.

II. RESEARCH CONTEXT AND HYPOTHESES

II.A. Research Context

II.A.1. Ethnicity and Ethnic Inequalities in Indonesia

With over 600 recognized indigenous ethnic groups, Indonesia is one of the most ethnically diverse countries in the world. The Javanese are the largest ethnic group, some 95 million people, making up approximately 40% of the Indonesian population (as of 2010). Other ethnic groups are smaller. The second largest ethnic group is the Sundanese (15%), followed by the Balinese (3%) and the Madurese (2.8%), among others. Historically, ethnic groups in Indonesia have mostly lived in relative isolation on separate islands of the archipelago (the Balinese lived on Bali, the Bantanese lived on Bantan, et cetera). However, as is the case in many developing countries, internal migration is common in Indonesia (Deshingkar 2006; Sukamdi and Mujahid 2015). As a result, modern Indonesia is an ethnic mosaic of many different ethnicities grouped together in formerly ethnically homogenous regions. The Javanese are often seen as the ruling class. Nevertheless, in most regions, the Javanese are not the dominant ethnicity and subordinate to local majority ethnic groups. Similarly, the Balinese are the dominant ethnicity on Bali but not on, say, Banten (see Figures S1.1 and S1.2 for illustrations).

Ethnicity and ethnic group membership in Indonesia are delineated along linguistic lines (Ananta et al. 2015; Musgrave 2014), which is similar to the way ethnicity is delineated in most other countries in the world (Alesina et al. 2003; Wimmer 2013). Although Bahasa Indonesia was "invented" and imposed as the nation's official language, in everyday life most Indonesians use their ethnic language (Strauss et al. 2016; Suryadinata et al. 2003). Correspondingly, ethnic identities and ethnic boundaries are rather salient in Indonesia. Marital exogamy, for instance, is rare and endogamous marriages are the norm (Utomo and McDonald 2016). More importantly, Indonesia has a long history of ethnic violence and conflict (Bertrand 2004). An example is the conflict in Western New Guinea between Indonesia and the Free Papua Movement (the Papua

conflict). This conflict is ongoing and has an estimated death toll of about 100,000 people since 1962 (Viartasiwi 2018). Another example is the Indonesian Genocide of 1965-1966. This genocide occurred after a failed coup by the Thirtieth of September Movement (Gerakan 30 September) and involved systematic raping of women and killing of some 500,000-1,000,000 individuals including many ethnic Chinese and Abangan Javanese (Cribb and Coppel 2009). Further examples are the Sampit conflict in Sampit (Central Kalimantan) in 2001, which involved local Dayak people and Madurese migrants (Harsono 2019), and the Tarakan riot in Tarakan, North Kalimantan in 2010, which involved local Tidung people and Bugis migrants (Harsono 2019). Interestingly, for both the Sampit conflict and the Tarakan riot alleged triggers of the violence were seemingly innocuous events, a gambling dispute (De Jonge and Nooteboom 2006) and the killing of a Tidung elder in a scrimmage with a youth gang (Wilson 2018).

<Insert Figure 1 about here>

Widespread government attempts at ethnic homogenization and nation building notwithstanding, ethnic group membership remains a powerful predictor of individuals' socioeconomic status in Indonesia. We can illustrate this by considering census data on ethnicity and household living space, which is an indicator that is available in the census data and used by the Indonesian government to measure household wealth. These data reveal significant differences in average household wealth between ethnic groups in Indonesia (Figure 1). However, consistent with the idea that local ethnic disparities may cancel out and therefore remain hidden in national statistics, it appears that ethnic inequality in Indonesia is more pronounced at lower levels of analysis. On average, Javanese people, for example, tend to have more household wealth than the

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national average. However, going down to the village level, we find that when ethnically Javanese belong to the local ethnic minority in their village, their average household wealth is actually substantially below the national average. More generally, it seems that belonging to the ethnic majority in a village or not is associated with substantial differences in household wealth, irrespective of the ethnic group to which one belongs. At the same time, most ethnicities in Indonesia are the ethnic majority in a portion of all villages only and belong to the ethnic minority in most other villages. This finding that ethnic inequality in Indonesia is mostly a local rather than an aggregate-level phenomenon is robust to considering alternative measures of household wealth (see Table S1.1 in Supplement 1).

II.A.2. Welfare Benefits and their Allocation: The Raskin Program of Subsidized Rice

To help mitigate the fall out of the Asian financial crisis, in 1997/1998 the Indonesian government introduced an emergency relief package. This package provided in-kind benefits, specifically food, to the very poorest households in Indonesia (Hastuti et al. 2008; World Bank 2012). The program has continued ever since and has become known as the Raskin program. The Raskin program provides a monthly amount of rice at a discounted price to poor members of society. The Indonesia Logistics Bureau (Badan Urusan Logistik or BULOG) is responsible for distributing so-called Raskin rice to more than 50,000 local distribution points. Local governments are in charge of distributing the rice to households. Rice from the Raskin program is priced about 80% below the market price (Satriawan and Shrestha 2019) and in terms of money spent Raskin is the largest welfare program in Indonesia.

The Indonesian government uses a two-step approach in determining who is eligible for receiving subsidized rice. The first step includes the identification of poor households based on

national socioeconomic household data. These data mostly concern households' ownership of easily observable assets such as a car or whether households live in housing of acceptable quality. Using these data, various national institutions are or have been involved in establishing an initial nationwide list of beneficiaries. In the second step, local village heads are allowed to adjust the initial list of beneficiaries, removing or adding households. Officially, this step involves consultation of villagers in specific village meetings known as "mudes." Public awareness of the official procedure for determining who is eligible for Raskin rice is limited, however. In practice, village heads thus rarely summon these consultative village meetings. As a result, village heads have considerable discretionary power to adapt the list of Raskin beneficiaries according to their personal preferences (see Hastuti et al. 2008 and various references therein).

II.A.3. Village Autonomy

After Indonesia's independence in 1945, the Sukarno (1945-1967) and Suharto (1967-1998) administrations prioritized nation building and the uniting of Indonesia's ethnically diverse population. Practically, this meant that different measures were taken to homogenize the different ethnic groups (e.g., by imposing Bahasa Indonesia as the only language), decrease regional ethnic segregation (e.g., through transmigration programs), and centralize government decision making. Most significantly, Suharto appointed military officers to govern provinces and villages or urban neighborhoods directly, thus concentrating administrative, political and fiscal responsibilities as well as power over local laws and regulations in the hands of the central government in Jakarta (Jenkins 2010; Vatikiotis 1994).

As the two presidents expanded the power and influence of the national government, grand corruption and nepotism surged, widening interregional and interethnic socioeconomic disparities

(Robertson-Snape 1999). An example is that villages that provided electoral support for President Suharto received increased investments in local hospitals (Hsiao 2019). On the other hand, ethnic minorities such as the Chinese, which comprise about 2.8 million people according to the 2010 census, saw schools and businesses closed by the national government (Bertrand 2004; Oetomo 2006). In some cases, the central government's abuse of power and regions' loss of autonomy and economic backwardness spurred armed interethnic conflicts. Examples are the "Aceh disturbance" (1976-2005) and the Papua conflict mentioned above (1962-present). These civil unrests contributed to the resignation of President Suharto in 1998.

At the same time, the Asian Financial Crisis was unfolding, causing major financial problems for the Indonesian government. The World Bank and the IMF provided emergency loans. However, these loans were conditional on far-reaching administrative and political reforms in line with the constrained government ideals of the Washington Consensus. More generally, the newly instated Indonesian government led by president Habibi experienced increasing domestic and international pressure for devolution. This pressure was mostly targeted towards decentralizing administrative authority and responsibilities to the more than 80,000 village-level administrations in Indonesia known as "desa" in rural districts and "delurahan" in urban areas. In 2001, after the 1999 legislative election that ended Habibi's presidency, the national government implemented one of the largest decentralization programs in the world (Ahmad and Mansoor 2002; Hadiz 2004; Ostwald et al. 2016). The aim of this large-scale devolution was to constrain the discretionary power of national leaders and bring political decision making to those levels of government best suited to identify and respond to local communities' needs. As a result, village heads gained substantial autonomy in allocating public resources and identifying beneficiaries of welfare benefits. In addition, a large proportion of the national government's budget was diverted to

regencies that are administratively located between villages and provinces.

Although Indonesia's devolution program has been referred to as "big bang" decentralization (Hofman and Kaiser 2002), there has been substantial temporal land substantive variation in the decentralization of villages. First, various regions obtained administrative and fiscal autonomy well before the big bang decentralization program. These regions' autonomy is a result of, almost a reward for, these regions' historic support in the Indonesian War of Independence (1945-1949), which freed Indonesia from Dutch colonial government. Second, for many villages, the big bang decentralization mostly involved granting of administrative and fiscal autonomy to intermediate levels of government such as regencies and not directly to the villages themselves. Main motivations for decentralization at the regency level were to benefit from administrative economies of scale and to prevent escalation of local ethnic tensions (Fitrani et al. 2005; Ostwald et al. 2016). Third, in the period 2007-2014, the Indonesian government approved a legal framework that enables partial recentralization of administrative and fiscal responsibilities. This recentralization includes the option for higher-level governments such as provinces to revoke villages' autonomy and dismiss village heads (Hutchinson 2017; UNDP 2009). In this case, the motivation was to address teething problems caused by the enormity of and the rush behind the big bang decentralization. Although the legal grounds are not clearly defined, case studies identify suspected corruption and fiscal mismanagement as the most common reasons for recentralization of lower-level administrative and fiscal powers (Ostwald et al. 2016).

II.B. Testable Hypotheses

The importance of two individuals' social or ethnic identity as a factor affecting socioeconomic interactions between them is widely documented, particularly in stylized game experiments (Chen

and Li 2009; Fershtman and Gneezy 2001; Whitt and Wilson 2007). Following this literature, we deem it unlikely that ethnic favoritism in the allocation of government resources is limited to indirect favoritism by national leaders or other such senior government officials. Instead, we expect that ethnic favoritism is also common at lower levels of government such as village-level administrations. In Indonesia, village heads may bear substantial responsibility for the identification of recipients of government benefits, including selecting households entitled to buy subsidized rice. Hence, it seems there is quite a bit of room for direct favoritism. We propose the following hypothesis on the relationship between villager-village head ethnic distance and local Indonesian governments' allocation of welfare benefits to specific individuals directly:

Hypothesis 1. *The smaller the ethnic distance between a villager and the head of their village, the higher the likelihood that the villager receives welfare benefits.*

Regardless of levels of analysis, ethnic favoritism is partly a matter of opportunity or lacking constraints on benefactors. There is evidence suggesting that national-level democratic institutions and governance can mitigate ethnoregional favoritism (Burgess et al. 2015). Direct favoritism, however, occurs between two individuals and therefore typically involves smaller amounts. Such smaller transactions, in turn, may be easier to hide from external auditors (even though the cumulative amount of government resources involved can be much higher than in case of regional or location-based favoritism). Moreover, at lower levels of government, governance institutions may lack capacity and expertise to provide proper monitoring and control of local administrators (Bardhan 2002; Fisman and Gatti 2002; Manor 1999). A particularly pertinent issue is how decentralization or village autonomy may affect the extent of direct political favoritism. As

indicated, devolution is often considered a useful and important means for reducing ethnic disparities and resentment (see Brancati 2006 for a review of the literature). At the same time, decentralizing administrative and fiscal authority to villages may weaken state-level checks on village heads' behavior. Hence, because of decentralization, village heads may experience increased opportunities for expanding their control over public resources and government expenditures. Previous studies find that decentralization has a negative impact on electoral accountability, leading to increased rent seeking and public mismanagement in ethnically fractionalized communities (e.g., Alesina et al. 2016). In addition, many studies indicate that devolution increases public sector corruption at lower levels of government (see Sjarir et al. 2014 and Tajima et al. 2018 for evidence for Indonesia; see Ostwald et al. 2016 for a survey). We thus propose the following relationship between village autonomy and direct ethnic favoritism:

Hypothesis 2. *The negative relationship between villager-village head ethnic distance and villagers' receipt of welfare is stronger in villages with administrative and fiscal autonomy.*

III. DATA AND MEASURES

III.A. Data Source and Sample

Data for our analysis come from the last three waves of the Indonesian Family Life Survey or IFLS (Strauss et al. 2004, 2009, 2016). This panel spans the period 2000-2014, matching a period of major changes in the political governance of many village-level administrative units in Indonesia. Depending on model specification, the sample that we can consider comprises approximately 10,000 individual respondents and some 15,000 individual-level observations. Because of data availability, we cannot use the first two waves of the IFLS (1993 & 1997). In addition to collecting

individual-level data on ethnicity and socioeconomic status, the IFLS includes so-called community-facility modules as a means to track important developments in local communities. These village-level data are gathered by interviewing senior village administrators, usually the heads or mayors of the villages. Items included in the community-facility modules are mostly retrospective, asking about developments in the village since the previous interview seven years ago. The main sample that we can consider covers 232 villages and a total of 354 village-level observations. Throughout the paper we use the term village to refer both to officially recognized urban neighborhoods (delurahan) and to actual villages in rural districts (desa).

III.B. Measures of Ethnicity of Village Heads and Individual Villagers

The key empirical challenge in studying direct ethnic favoritism is to determine the ethnic distance between a specific benefactor, i.e., a local village head, on the one hand and an individual beneficiary, i.e., a specific villager on the other. This in turn requires that we can ascertain the ethnicity both of the head of a particular village and of one or more individuals living in this village. Social scientists agree that individuals' ethnic identity involves a subjective sense of belonging that is rooted in shared individual characteristics such as language, religion or phenotypical traits (Weber 1922; Wimmer 2013). To measure villagers' ethnicity, and in line with official statistics on ethnicity in Indonesia (Statistics Indonesia 2010), we thus use villagers' ethnic self-identification to measure their ethnicity. The specific item that we use is the IFLS item that asks respondents, "What is your ethnicity?"

The same direct measure of ethnicity is not available for village heads. However, using other information available from the IFLS, we are able to construct three valid measures of villager-village heads' ethnic distance. All three measures have face validity and appear reliable, as

evidenced by their intercorrelations (Cramer's V > 0.7) (see Table S2.1 in Supplement 2 for details). The first two measures rely on data on villages' ethnic composition to make inferences about village heads' ethnicity. The data on village ethnic composition come from the community-facility modules included in the IFLS. One of the questions asked in these modules concerns villages' ethnic composition, particularly the three largest ethnic groups in the village and their size. Data on villages' ethnic composition is available for Waves 4 and 5 but not for earlier waves of the IFLS. For the first measure (Measure 1), we assume that the village head has the same ethnicity as the largest ethnic group in a village, but only if the largest group is at least twice as large as the second largest ethnic group. The underlying logic is that it is likely that an ethnic group that is dominant in a village also occupies senior administrative positions in the village. Because the 2:1 ratio criterion is not always met, we exclude nine villages. This leaves a sample comprising 232 villages and a total of 354 village-level observations. For the second measure (Measure 2), we assume that the village head has the same ethnicity as the largest ethnic group in a village, but only if the largest group is the majority in the village, meaning that more than 50% of villagers belong to this ethnic group. Using this criterion, the number of villages in the sample equals 247 for a total of 367 village-level observations.

The last measure (Measure 3) involves using village heads' name, which is available through the IFLS but only in Wave 5. In Indonesia, names are strongly culturally embedded and their prevalence concentrated in specific ethnographic regions. Examples are that most people named "Warja" are Sundanese whereas "Jumadi" is a typical Javanese name (Perpustakaan Nasional 2012). For each village head in the sample, we have taken their names and checked the prevalence of this name in specific Indonesian regencies using the *FamilySearch* database accessed through the website *Forebears* (https://forebears.io/surnames/lastname). The *FamilySearch* database has

been created by the Church of Jesus Christ of Latter-day Saints based in Salt Lake City in the U.S. and comprises the largest genealogical library in the world (https://www.familysearch.org/en/home/about). The database is updated constantly, deriving input from more than 400,000 volunteers, organized in 5,100 Family History Centers (of which five are located in Indonesia) (Hansen et al. 2013). A sample result for the name searches is that the name "Warja" has the highest prevalence in regencies on Western Java. On Western Java, the majority of people are ethnic Sundanese (see Figure S1.2 in Supplement 1). Hence, we classify the ethnic identity of this particular village head as Sundanese. We exclude seven village heads for which the classification obtained using *FamilySearch* is too ambiguous. This occurs when a name is highly prevalent in multiple regencies that have different ethnic majorities (e.g., the top 10 regencies where a name is most common are not only located on Java but also on Bali). To ensure the validity of the name-based measure of village head ethnicity, we have crosschecked classifications obtained using the *FamilySearch* database with the ethnic classification of names provided by the Indonesian national library (Perpustakaan Nasional 2012). Because data on village heads' given names are only available in one wave, the name-based measure of village heads' ethnicity is not the measure used for the main analyses. However, we use this measure for one of the robustness checks and as a benchmark to assess the validity of the other two measures of village heads' ethnicity. Figure S2.1 in Supplement 2 presents details on the construction of the name-based measure of village heads' ethnicity. Measure 1 is our preferred measure because it correlates most strongly with the surname-based measure (Measure 3) but is available for more years/waves. However, because the strictness of the 2:1 ratio criterion excludes more villages, for a robustness check we also consider Measure 2.

III.C. Indicators of Ethnic Distance between Village Heads and Individual Villagers

The measures of villagers' and village heads' ethnicity are essential for the analysis. With data on the ethnic identity of village heads and individual villagers, we can calculate the ethnic distance or similarity between the two. This is the key independent variable in the analysis. The main indicator of benefactor-beneficiary ethnic distance that we consider is a simple dummy variable capturing whether an individual villager is a coethnic with the mayor of their village or not.

However, as robustness check, we also consider a continuous indicator of villager-village head ethnic distance based on the linguistic (dis)similarity of the ethnic groups to which they belong as in Dickens (2018). Because ethnic boundaries in Indonesia are language-based, we use the well-known Automated Similarity Judgement Program (ASJP) to measure the distance between Indonesia's ethnic languages. AJSP estimates the dissimilarity between two languages based on 40 commonly used words (e.g., "Star," "Table," and "Water") using the average amount of characters that are different between these words in both languages. For our sample, this renders 210 observations of dyadic linguistic distance between 15 distinct ethnic groups (15 x 15 – 15 = 210). Measured distance or dissimilarity scores range from a minimum of 1.47 average dissimilarities in characters per word to a maximum of 4.24.

Since we have three alternative measures of the ethnicity of the head of an individual's village, we calculate each ethnic distance indicator three times. As indicated, we prefer using the measure of village heads' ethnicity based on the criterion of the largest ethnic group that is also at least twice as large as the second largest ethnic group (Measure 1). For the main analyses, we therefore use the ethnic distance indicator based on this measure of village heads' ethnicity.

III.D. Measures of Individuals' Receipt of Benefits from their Local Governments

The main dependent variable is a dummy variable indicating whether a given individual receives benefits from the local government, specifically subsidized rice. We measure this variable using the IFLS item that asks respondents, "During the past year, has this household ever bought rice/received money from the Raskin program?"[1] As an alternative dependent variable, we consider how much Raskin rice individual households have been allowed to buy. The corresponding item in the IFLS asks, "What was the total quantity rice bought/money received by this household from the Raskin program in the last year?"

III.E. Measure of Villages' Administrative and Fiscal Autonomy

For testing Hypothesis 2, and following studies of the role of political institutions in curbing ethnoregional favoritism, we consider how village autonomy moderates the relationship between villager-village head ethnic distance and individual villagers' receipt of subsidized rice from their local government. We measure villages' administrative and fiscal autonomy as a dummy variable based on the IFLS item that asks village heads, "Does the village have the authority to reallocate budget between budget posts/categories without approval from Kabupaten/Kota government or other parties?" Kabupatan and Kota refer to regencies and cities in rural environments ("Kabupaten") and urban environments ("Kota") respectively that are administratively located between the provincial-level and the village-level. Whereas regencies/cities have become

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[1] In extraordinary circumstances, for instance, if it is not feasible to deliver rice to a certain village, the Raskin program offers eligible households the possibility to receive cash transfers instead of subsidized rice. Accordingly, the IFLS items on the Raskin program do not only mention rice but also receipt of money.

responsible for larger public investments and the monitoring of social welfare after the big bang decentralization in 2001, many villages obtained the authority to identify welfare beneficiaries. Village governments have discretionary power for adding or excluding households from a nationwide list of Raskin beneficiaries. The village autonomy item offers two possible answers, yes or no. If the answer is yes, we consider the village to have administrative and fiscal autonomy.

III.F. Control Variables

The empirical models that we estimate include a variety of control variables. Some of the most obvious control variables are variables that speak to individuals' (objective) eligibility for welfare benefits, specifically their socioeconomic status such as the value of their household assets (Hastuti et al. 2008). Of course, a downside of controlling for this type of variable is that they are partly outcome variables that are likely affected by the same ethnic biases that affect individuals' receipt of welfare benefits (cf. Table S1.1 in Supplement 1). In addition, we control for a variety of individual-level characteristics that may be less present among non-coethnics and at the same time affects individuals' access to welfare programs (e.g., having lower education). We further consider a measure of household size as a means to take into account that receipt of welfare benefits is measured at the household level. Another standard control variable is a set of dummies for individuals' ethnicity, which we include to rule out that any apparent effect of villager-village head ethnic distance is confounded with direct effects due to individuals' ethnic identity. An example is that ethnic distance might capture the effect of having Javanese ethnicity or not or ethnicity-specific food preferences that in turn affect demand for rice (cf. Atkin 2016). A further set of standard control variables concerns dummies capturing village fixed effects. This way, we control for all stable village characteristics including the ethnicity of the village head, villages' geographic

proximity to the capital region (Jakarta) and villages' history of ethnic conflict. In addition, we include an alternative moderating effect between villages' autonomy and individuals' belonging to the local religious minority to correct for the possibility that not ethnicity but religion is driving observed direct favoritism. Table S2.2 in Supplement 2 presents a description of and details on the main variables considered in the analysis. Table S2.3 presents summary statistics.

IV. EMPIRICAL APPROACH

IV.A. Descriptive Analysis

We assess the extent of direct ethnic favoritism and its interaction with village autonomy or (de)centralization in different ways. The basic model that we estimate reads:

$$R_{ivt} = \beta_0 + \beta_1 D_i + \beta_2 D_i A_{vt} + \beta_3 A_{vt} + \beta_4 Z_{ivt} + \beta_5 E_i + \beta_6 M_i A_{vt} +$$

$$\zeta_v + \gamma_t + u_{ivt} \qquad \text{(Eq. 1)}$$

In this equation, R_{ivt} refers to the receipt of subsidized rice (yes/no) by individual i living in village v at time t, D_i denotes the ethnic distance between the individual and the village head, A_{vt} indicates whether or not the village has administrative and fiscal autonomy, and Z_{ivt} denotes time-varying individual-level and/or village-level control variables.[2] The preferred version of this model further includes ethnic and religious group fixed effects (E_i) as well as village (ζ_v) and wave fixed effects

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[2] For this analysis, we exclude individuals who increase/decrease their ethnic distance to their village head over time. Later on, we do allow for temporal variation in villager-village head ethnic distance (see Eqs. 2-4).

(γ_t) that control for time trends (e.g., the increasing scope of the Raskin program). As a robustness check, we consider two extensions of this basic model. The first concerns adding variables that control for different household characteristics that are likely to affect households' eligibility for the Raskin program but are also affected by ethnic biases in the allocation of welfare benefits. These endogenous variables include the value of household assets and the value of household consumption (Hastuti et al. 2008). The second extension involves an additional interaction term between village autonomy (A_{vt}) and individuals' belonging to a local religious minority (M_i).

IV.B. Identifying Effects of Ethnic Distance and Village Autonomy

IV.B.1. Identifying the Effect of Villager-Village Head Ethnic Distance

Although most individuals do not change their ethnic identity over the course of their lives, some do (Davenport 2020), including people in Indonesia (Rademakers and Van Hoorn 2020). One's ethnic identity is fundamentally subjective (Jenkins 1997; Waters 1990; Weber 1922) and intra-individual ethnicity change occurs when an individual, for whatever reason, primarily identifies with one ethnic group first but with another ethnic group later. An example is an individual that marries a spouse with a different ethnicity and switches to the ethnicity of the spouse and their family. Exploiting intra-individual ethnicity change enables us to consider the effect of changes in villager-village head ethnic distance on a villager's receipt of welfare benefits. Intra-individual ethnicity change can either decrease or increase a villager's distance to the head of their village. In particular, villagers may switch to the ethnicity of the village head, thus becoming a coethnic of the village head or the other way around. For identifying the effect of ethnic distance on receipt of government benefits, we consider both cases of longitudinal variation in villager-village head ethnic distance. To do so, we make two comparisons. The first is between non-coethnic individuals

that have switched to the ethnicity of their village head and individuals that remain non-coethnic with the head of their village (indicated with C_{it} in Eq. 2 below). The second is between coethnic individuals that become non-coethnics and individuals that remain coethnic with the head of their village. Allowing ethnicity and thus ethnic distance to vary over time, we can estimate a model that includes individual fixed effects to control for stable unobserved differences between individuals:

$$R_{ivt} = \beta_0 + \beta_1 C_{it} + \beta_2 C_{it} A_v + \beta_3 A_t + \beta_4 Z_{ivt} + \beta_5 E_{it} + \beta_6 M_i A_v +$$

$$\delta_i + \zeta_v + \gamma_t + \eta_{vt} + u_{ivt} \qquad \text{(Eq. 2)}$$

In this model, we further include wave-village fixed effects as a means to control for time varying village characteristics, particularly whether the ethnicity of the village head might have changed. As a robustness check, instead of considering the effect of intra-individual changes in villagers' coethnicity with their village heads, we also consider how changes in the continuous measure of villager-village head ethnic distance affects villagers' receipt of benefits. In addition, to ensure that only time variation in individuals' ethnic belonging attributes to the outcome of the interaction between ethnic switching and village autonomy ($C_{it} A_v$), we only consider villages that remain either autonomous or non-autonomous over time.

IV.B.2. Identifying the Effect of Villages' Administrative and Fiscal Autonomy

IV.B.2.1. Longitudinal Variation in Village Autonomy

Eqs. 3 and 4 illustrate our strategy of exploiting longitudinal variation in villages' timing of decentralization or (re)centralization to identify the effect of village autonomy on the extent of

direct ethnic favoritism. The model in Eq. 3 examines whether ethnic favoritism increases in villages after they have obtained autonomy compared to villages that remain under the control of higher government. In this difference-in-difference approach, we consider how the coethnic/non-coethnic gap in receipt of welfare benefits changes after a change in village autonomy and comparing these changes to possible changes in this gap in villages that remained under the control of higher government vs. villages that gained autonomy. The treatment and main variable of interest is the triple interaction between the relevant factors, $\beta_4 D_i T_t G_{vt}$. This treatment effect measures whether the coethnic/non-coethnic gap (D_i) increases relatively more over time (T_t) in those villages that gained autonomy compared to villages that did not (G_{vt}). We include the main effects of these three factors and the simple interaction effects between them in order to construct a valid counterfactual: what would the gap between coethnics and non-coethnics have been if their villages had not become autonomous. Most importantly, we control for any pre-treatment differences between villages that obtain autonomy in 2014 relatively to 2007 and those villages that remain non-autonomous in 2014, particularly whether the gap between coethnics and non-coethnics in their likelihood to receive Raskin rice was different between these two groups of villages ($D_i G_{vt}$).

$$R_{ict} = \beta_0 + \beta_1 D_i + \beta_2 T_t + \beta_3 G_{vt} + \beta_4 D_i T_t + \beta_5 D_i G_{vt} + \beta_6 G_{vt} T_t + \beta_7 D_i T_t G_{vt} + \beta_8 Z_{ivt} + \beta_9 E_i + \beta_{10} V_{vt} + \beta_{11} M_i G_{vt} + u_{ivt}. \qquad \text{(Eq. 3)}$$

Below, we present the model for a similar difference-in-difference analysis considering villages that have remained under the control of higher government as control group and villages that have lost autonomy as the treatment group (L_{vt}):

$$R_{ict} = \beta_0 + \beta_1 D_i + \beta_2 T_t + \beta_3 L_{vt} + \beta_4 D_i T_t + \beta_5 D_i L_{vt} + \beta_6 L_{vt} T_t + \beta_7 D_i T_t L_{vt} + \beta_8 Z_{ivt} + \beta_9 E_i +$$

$$\beta_{10} V_{vt} + \beta_{11} M_i L_{vt} + u_{ivt}. \qquad \text{(Eq. 4)}$$

In an extension to the difference-in-difference analyses illustrated in Eqs. 3 and 4, we estimate an individual fixed effects model, which means that we control for stable individual-level unobservables. To do so, we simplify Estimation Eqs. 3 and 4 and divide the sample in four subsamples: (i) individuals in villages that remain under the control of higher government, (ii) individuals in villages that retain their administrative and fiscal autonomy, (iii) individuals in villages that have gained autonomy, and (iv) individuals in villages that have lost their autonomy. For all four subsamples, we check how the coethnic/non-coethnic gap in the likelihood of receiving subsidized rice changes between Waves 4 and 5.

IV.B.2.2. Cross-Sectional Variation and Instrumenting Village Autonomy

Limitation of the above analysis is that it does not enable ruling out reverse causality between decentralization and the extent of direct favoritism in a village. Specific concern is that the granting of autonomy is perhaps not a random event. Instead, it may be an attempt of a higher government to curb corruption and mitigate widespread direct favoritism in these villages. If so, any apparent moderating effect of village autonomy (A_{vt}) is endogenous to the extent of direct favoritism captured by the effect of villager-village head ethic distance (D_i) on individuals' receipt of welfare benefits. We address this problem of reverse causality with an instrumental variable approach. The specific instrument that we use involves villages' historic support for the United States of Indonesia, specifically regions' contribution to the Indonesian War of Independence (1945-1949).

Villages that joined this national revolution were rewarded for their efforts by the newly established national government. The specific reward was that these villages were granted quite a bit of autonomy. Other villages (i.e., villages that supported the Dutch colonial government) were all brought under the control of the central government (at least until the Big Bang decentralization in 2001). At the same time, this historic alliance with the Dutch vs. the Indonesian government does not affect contemporary ethnic interactions in these areas. Figure S1.3 in Supplement 1 depicts the geographical dispersion of areas that supported the Indonesian War of Independence (dark grey) or that actively assisted the Dutch colonial government (light grey). A notable example of a region that supported the national revolution and was rewarded afterwards is Yogyakarta, which was granted the status of Special Administrative Region in 1950. In the regions that supported the Dutch colonial government, in contrast, the newly established government led by Suharto often installed military officials as local leaders. The historic support for the United States of Indonesia vs. the Dutch colonial government does not affect the current degree of direct ethnic favoritism in Indonesian villages.

The specific model that we estimate reads:

$$R_{ivt} = \beta_0 + \beta_1 D_i + \beta_2 D_i \widehat{A}_{vt} + \beta_3 \widehat{A}_{vt} + \beta_4 Z_{ivt} + \beta_5 E_{it} + \zeta_v + \gamma_t + u_{ivt}, \qquad \text{(Eq. 5)}$$

$$\text{where } \widehat{A}_{vt} = \beta_0 + \beta_1 HS_v + \beta_2 V_{vt} + u_{vt}. \qquad \text{(Eq. 6)}$$

The model in Eq. 5 is similar to the model in Eq. 1 but uses regions' historic support in the war for independence as an instrument for village autonomy. To create a dichotomous measure of village autonomy (autonomous or not), we transform the estimated first-stage probabilities of villages'

having administrative and fiscal autonomy (Eq. 6) using a 50% cut-off point (see Angrist and Krueger 2001). Figure S1.3 in Supplement 1 provides a more detailed explanation of the instrument used, including references to the historic sources that we have drawn on to construct the measure of regions' historic support for the Indonesian national revolution. In addition, we examine the instrument's strength by running three models where we exclude regions for which some local governments supported the Indonesian side whereas regional governments supported the Dutch side (Ricklefs 1991). In all cases, there is a very strong first stage, which we do not report to save space (but see Table S1.2 in Supplement 1).

V. RESULTS

V.A. Direct Ethnic Favoritism Under Decentralized vs. Centralized Local Governance

Table 1 presents results of the descriptive analysis. Model 1 concerns the relationship between villager-village head ethnic distance and receipt of subsidized rice, conditional on the village having autonomy or not. Consistent with Hypothesis 1, the likelihood of receiving subsidized rice is substantially higher for villagers who are coethnic with the head of their village. However, the estimated coefficient for the interaction between villager-village head ethnic distance and village autonomy indicates that this coethnic/non-coethnic gap in welfare receipt varies significantly with villages' political governance. As illustrated by the estimated marginal probabilities presented in Figure 2, direct ethnic favoritism is substantial in autonomous villages. Coethnics in these villages are more than 40% or 15 percentage points more likely to receive subsidized rice than non-coethnics are, 53.0% (95%CI: 49.7,56.3%) vs. 38.0% (95%CI: 30.6,45.4%) (Panel a). In contrast, ethnic biases in welfare allocation by local governments are close to absent in villages that are not autonomous but under the control of higher government (Panel b). The strength of the relationship

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between coethnicity and receipt of welfare benefits in autonomous villages is comparable to the effect of having incomplete primary education vs. having higher secondary education or to the effect of belonging to the lowest class in the economy vs. belonging to the upper middle class (Model 1).

<Insert Table 1 and Figure 2 about here>

Naturally, the above results may suffer from various confounders. First, it is possible, in principle at least, that village heads' apparent favoring of coethnics over non-coethnics in the allocation of welfare benefits does not reflect ethnic favoritism but coethnics' backward economic circumstances compared to non-coethnics. However, including additional control variables capturing potentially omitted systematic differences in the economic status of individuals' households does not render substantially different coefficients for the relationship between villager-village head coethnicity and individuals' receipt of subsidized rice from their local governments (Model 2). Second, it is possible that the measure of ethnic distance between a villager and their village head is not capturing actual villager-village head ethnic distance but the fact that the villager belongs to a local religious minority. Again, however, controlling for a direct effect of belonging to a local religious minority and a moderated effect of religious minority status does not render substantially different results (Model 3).

We also obtain comparable results when using indicators of villager-village head ethnic distance based on different proxy measures of village head's ethnicity (Table S3.1 in Supplement 3). Results are further similar when using the continuous indicator of villager-village head ethnic distance instead of the dichotomous ethnic distance indicator. Interestingly, results obtained using

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the continuous ethnic distance indicator suggest that not just coethnics benefit from village heads' favoritism but also members of other ethnic groups that are relatively ethnolinguistically close to the village head. Finally, we obtain comparable results when considering amount of subsidized rice received (Table S3.2 in Supplement 3).

V.B. Identifying Effects of Ethnic Distance and Village Autonomy

V.B.1. Changes in Villager-Village Head Ethnic Distance and Receipt of Welfare Benefits

Table 2 digs deeper into the potential effect of ethnic distance on receipt of welfare benefits, presenting longitudinal evidence for autonomous villages. Results indicate that a reduction in ethnic distance to their village head, specifically becoming a coethnic of the village head, significantly increases a villager's probability of receiving subsidized rice (Model 4).[3] Vice versa, villagers that used to be coethnic with their local village head but have since switched to another ethnicity become less likely to receive subsidized rice (Model 5).

<Insert Table 2 about here>

V.B.2. Identifying Moderating Effects of Village Autonomy

Decentralization, Recentralization, and Ethnic Biases in Welfare Allocation. Figures 3 and 4

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[3] Strictly speaking, villager-village head ethnic distance can also vary over time because of changes in the ethnicity of a village head. However, we include village-wave fixed effects and, therefore, correct for all village-level time-variant and time-invariant characteristics, including possible changes in the ethnicity of the heads of villages.

dig deeper into the potential exacerbating effect of village autonomy. They do so by comparing the extent of direct favoritism in villages before and after these villages gained or lost administrative and fiscal autonomy (see also Table S3.3 in Supplement 3). Figure 3 presents the marginal probabilities for villages that gained autonomy. Consistent with the cross-sectional evidence, results indicate that, after villages gain autonomy, coethnics are significantly more likely to receive subsidized rice than non-coethnics are (Panel a). At the same time, there was no such coethnic/non-ethnic gap before these villages gained autonomy (Panel b). Figure 4 similarly presents the marginal probabilities of receiving Raskin rise in villages that have lost autonomy. Patterns are comparable. In this case, the coethnic/non-ethnic gap in receipt of subsidized rice was substantial and highly statistically significant when these villages still had autonomy (Panel a) but becomes insignificant after these villages have been (re)centralized (Panel b).

<Insert Figures 3 and 4 about here>

We obtain these results while taking into account possible trends in the extent of direct favoritism in villages that have not experienced any change in autonomy during the period studied (see Models S3.8 and S3.9 in Table S3.3 in Supplement 3). Hence, the observed differences in the extent of ethnic biases before and after changes in villages' autonomy are not due to a generic factor affecting direct ethnic favoritism in all villages at the same time. Results are essentially the same when we include individual fixed effects (Models S3.10-S3.13 in Table S3.3 in Supplement 3).[4] It may further seem that the marginal probabilities of receiving subsidized rice reported in

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[4] For the analyses with individual fixed effects, we distinguish and compare four groups of villages:

Panel a of Figure 3 are implausibly high. However, this can be explained by the heads of some villages granting the right to buy subsidized rice to almost all villagers (Hastuti et al. 2008).

Reverse causality and instrumenting village autonomy. To complete the evidence on village autonomy as a factor moderating the extent of ethnic favoritism, we use an instrumental variable approach to address the problem of possible reverse causality between village decentralization or recentralization and the extent of ethnic favoritism in a village. Models S3.14-16 in Table S3.4 in Supplement 3 present the results, while Table S1.2 and Figure S1.3 in the supplement presents details on the instrument that we use and its validity. Although estimates are less precise, results are comparable to the baseline results (Models 1-3 in Table 1).

V.C. Exploring Clientelism as a Possible Motive for Direct Favoritism

The rationale for considering how village autonomy affects the extent of direct favoritism involves the opportunities available to village heads for favoring selected villagers over others. Not yet considered are the motives that village heads may have for exploiting such opportunities, if at all. In addition to a comparative dislike of non-coethnics compared to coethnics, an important motive underlying political favoritism is that such favoritism is a means to an end, what is known as clientelism (e.g., vote buying). In case of clientelism, diversion of public resources and government expenditures to individuals that are ethnically close is a means for village heads to obtain or secure personal political support from these individuals. However, clientelism only works when beneficiaries are in fact able to affect a benefactor's political position. If beneficiaries,

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(i) villages that gain autonomy, (ii) villages that lose their autonomy, (iii) villages that retain their autonomy and (iv) villages that remain under the control of higher government.

specifically coethnics, have little power to affect a benefactor's political position there would be less rationale for diverting public resources to these individuals.

To explore the role of clientelism as a possible motive for direct favoritism, we apply the above logic to consider how the extent of ethnic biases in the receipt of government benefits varies depending on whether village heads are locally elected or appointed. Some of the villages in the sample have elections for public office, for instance, for the position of mayor or village head. Other villages do not have such mayoral elections and for these villages a higher government appoints the village head. We expect that ethnic biases are stronger in autonomous villages that also have mayoral elections compared to autonomous villages that do not have an elected mayor. Figure S3.1 in Supplement 3 presents the marginal probabilities of receiving subsidized rice for coethnics and non-coethnics in these two types of villages (see Table S3.5 in Supplement for details on the underlying models and estimates). Ethnic biases are indeed much stronger in villages with elected mayors (Panel a) than in villages with appointed mayors (Panel b). In fact, it seems that much of the direct favoritism that occurs in villages with administrative and fiscal autonomy is concentrated in villages that have elected mayors. Longitudinal results support a causal interpretation of the relationship between mayoral elections and the extent of direct favoritism. Specifically, it seems that the coethnic/non-coethnic gap in the receipt of subsidized rice increases after villages have introduced mayoral elections (and vice versa) (Model S3.18 in Table S3.5).

VI. DISCUSSION AND IMPLICATIONS

VI.A. Village Autonomy and Ethnic Biases in the Receipt of Welfare Benefits

This paper complements the existing literature on indirect, ethnoregional favoritism by considering ethnic favoritism at the micro level and examining how village autonomy affects the extent of such

direct favoritism. Empirical results suggest that individuals' ethnic distance to the head of their village has a strong negative effect on their receipt of welfare benefits from their local government, indicating significant direct favoritism. In particular, it seems that being or becoming a coethnic with one's village head increases both the likelihood of receiving subsidized rice and the amount of rice received. However, local political governance plays a critical role, as direct ethnic favoritism is close to absent in villages that do not have administrative and fiscal autonomy. Hence, evidence suggests that centralization or reversing prior decentralization can be an effective means for curbing micro-level ethnic favoritism, at least in the allocation of subsidized rice from Indonesia's Raskin program. Since we also present evidence using a historical measure of villages' autonomy from the central Indonesian government, it is highly implausible that the found relationship between decentralization/recentralization and ethnic favoritism reflects an effect of favoritism on village autonomy rather than the other way around.

The combination of democratization and decentralization is often promoted as improving political stability (Manor 1999; UNDP 2009; World Bank 2005). In addition, prior research finds that democratic institutions can mitigate ethnoregional favoritism of national leaders (Burgess et al. 2015; Hodler and Raschky 2014). When it comes to democracy and decentralization in Indonesia, however, it seems there can be too much of a good thing. Implementation of both types of reforms simultaneously, specifically decentralization and direct democracy, may actually exacerbate corruption and ethnic tensions rather than alleviate them. As a general policy recommendation, we therefore advise national governments to be careful not to implement too many reforms at once. Instead, it seems better to decentralize and closely monitor how devolution affects local ethnic disparities first before changing democratic institutions and introducing direct democracy as well. This way, mid-level government can build-up the administrative capacity and

experience that they need to constrain local leaders and make them more accountable (cf. Hofman and Kaiser 2004; Ostwald et al. 2016).

VI.B. Implications of Village Decentralization and of Direct Favoritism in Villages

The period studied in this paper, 2000-2014, was a period of significant sociopolitical change in Indonesia. This includes widespread decentralization of administrative and fiscal responsibilities (Hofman and Kaiser 2004; Ostwald et al. 2016) as well as noticeable national-level improvements in ethnic inequality (Yusuf et al. 2014; see also Table S4.1 in the supplement). In this section, we extend the evidence on direct favoritism and (de)centralization as a moderator to consider possible implications of local direct favoritism and village autonomy for various village-level outcomes, specifically interethnic trust and inequality. An important motive for studying ethnic favoritism is that such favoritism may lead to ethnic resentment that, in turn, can stir up ethnic violence and undercut economic development. Due to data availability, we cannot assess how local ethnic favoritism affects ethnic resentment in villages directly. However, via the IFLS we do have data on interethnic trust and inequality. Hence, we can assess the village-level impact of local ethnic biases in welfare allocation, which, in turn, gives some sense of the broader relevance of direct ethnic favoritism. Data on interethnic trust come from the IFLS module that interviews individuals about their perceived trust in other-ethnics (see Table S2.2 in Supplement 2). We aggregate individual responses to obtain a village-level measure of average interethnic trust. We measure the second outcome variable, village-level ethnic inequality, as the standardized gap in socioeconomic status between villagers that are coethnic with the village head and villagers that are non-coethnic with the village head. Finally, we measure the extent of ethnic favoritism in villages—what we refer to as village-level ethnic biases—as the standardized gap in the receipt of subsidized rice

between villagers that are coethnic with the village head and villagers that are non-coethnic with the village head (see Table S2.2 in Supplement 2).

<Insert Table 3 about here>

Time-series results indicate a strong negative association between observed direct ethnic favoritism (i.e., ethnic biases) in a village and average interethnic trust (Model 6 in Table 3). At the same time, the national trend in average interethnic trust for this period was positive, meaning that individuals from different ethnic groups trusted each other more in 2014 (Wave 5 of the IFLS) than in 2007 (Wave 4 of the IFLS). We further observe that the negative effect of ethnic favoritism on interethnic trust does not differ between villages that gained or lost autonomy.

Assessing potential effects on socioeconomic inequality between ethnic groups within a village, results similarly indicate that the coethnic/non-coethnic gap in socioeconomic status is much higher in autonomous villages and that this gap increases after a village gains administrative and fiscal autonomy (Model 7 in Table 3). However, in line with the idea that decentralization enables village heads to favor fellow ingroup members, we find that direct favoritism increases interethnic inequality only in autonomous villages. For further examining the direct effects of decentralization and recentralization, we consider the effect of a change in village autonomy, separately for interethnic trust (Models 8 and 10) and interethnic inequality (Models 9 and 11). Results indicate that average interethnic trust increased in those villages that lost their autonomy compared to villages that remained autonomous. Moreover, interethnic inequality decreased in those villages that remained non-autonomous but did not increase in villages that gained autonomy. Overall, it thus seems that revoking villages' autonomy is an effective tool for reducing interethnic inequality.

Because the inequality-increasing effect of decentralization occurs at the same time as national-level ethnic equality is exhibiting a stable trend, these results further highlight how significant micro-level ethnic disparities may go unnoticed when focusing on aggregate-level statistics on ethnic inequality only.

VI.C. Limitations and Future Research

Notwithstanding its contributions, we should note that this paper suffers from two main limitations. The first is the limited geographic scope of the analysis, considering only one country. The reason is mostly practical, namely the availability of unique individual-level panel data that enables us to ascertain both the ethnicity of many different allocators and of many (potential) individual recipients of government benefits. However, there are also two important substantive reasons warranting a detailed study of direct ethnic favoritism in Indonesia. The first is that Indonesia is the fourth most populous country in the world. The second is that Indonesia has a long history of ethnic conflict. Still, it is important that future research consider direct favoritism in other research contexts and countries, particularly other countries that seem to suffer ethnic tensions and violence.

The second limitation is that we have focused on ethnic biases in the allocation of one particular, relatively narrow public resource. Subsidized "Raskin" rice is the largest welfare program in Indonesia. Moreover, because stronger local ethnic biases in the allocation of Raskin rice are associated with lower interethnic trust (Table 3), it seems that these biases matter. Nevertheless, it is possible that our results do not extend to the allocation of other public resources and government expenditures. More generally, like many other studies, we have focused on government resources and spending and do not consider other ways in which political leaders' ethnic favoritism or discrimination can manifest itself, for instance, in the levying of (higher) taxes on specific ethnic

groups. Again, we welcome future research that addresses these limitations, even when it means using cross-sectional data rather than an individual panel.

A final issue that deserves attention, though it is not necessarily an important limitation, is that the analysis relies on self-reports of individuals' receipt of government benefits. This could constitute a weakness of the paper, as individuals may deliberately misstate their benefits, which, in turn, leads to biased results. However, considering the incentives for lying, we think that the bias is towards an understatement of the extent of local direct favoritism rather than the other way round. The reason is that individuals that benefit from ethnic favoritism have good reason to want to make sure that this favoritism goes unnoticed, particularly by higher governments that have the power to revoke village heads' administrative and fiscal responsibilities. Hence, individuals that are ethnically close to their village head have an incentive to understate their receipt of benefits from their local government, which would reduce any negative association between ethnic distance and allocation of welfare benefits found.

VII. CONCLUDING REMARKS

Ethnic favoritism is widely considered to lead to civil unrest, increase political instability, and undercut economic development. However, studies of the pervasiveness of ethnic favoritism have focused on indirect, ethnoregional or location-based favoritism by national leaders, neglecting ethnic favoritism that occurs at lower levels of government, within provinces, districts and villages. Hence, we do yet have a complete picture of the prevalence of ethnic favoritism in societies, as well as the resentment and tensions that can be sustained by ethnicity-based favoritism at the micro level. Relying on individual-level longitudinal data we have been able to address this gap in the literature and present evidence identifying ethnic favoritism of Indonesian village heads in the

allocation of welfare benefits directly to selected individual villagers. Political governance appears a critical determinant of the extent of such direct ethnic favoritism. Direct favoritism in the allocation of welfare can be close to absent in villages that are under the control of a higher-level government and therefore have little administrative and fiscal autonomy. In fact, difference-in-difference analysis indicates that (re)centralization of villages could go a long way in eradicating direct ethnic favoritism. Democratic reforms that are common to many developing countries often involve putting executive and political power in the hands of lower levels of government. Whereas such democratic reforms may help reduce ethnicity-based favoritism at aggregate levels, the micro-level evidence suggests that they are not a panacea. Local direct favoritism may thrive under decentralization, suggesting the need for striking a balance between on the one hand mitigating aggregate-level, ethnoregional favoritism and associated disparities and on the other hand suffering increased ethnic favoritism and unrest at lower levels.

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Table 1
Villager-village head ethnic distance and the receipt of subsidized rice in villages with and without administrative and fiscal autonomy

Dependent = Receives Raskin rice from local government (1=yes)	Model 1	Model 2: Additional controls for eligibility	Model 3: Additional moderating effect (religious minority)
Non-coethnic with village head (1=yes)	-0.150 (0.040) [p=0.000]	-0.145 (0.043) [p=0.001]	-0.135 (0.043) [p=0.002]
Non-coethnic * Non-autonomous village	0.159 (0.043) [p=0.000]	0.177 (0.049) [p=0.000]	0.162 (0.049) [p=0.001]
Village fixed effects	Yes	Yes	Yes
Non-autonomous village (1=yes)	Yes	Yes	Yes
Additional controls for eligibility			
Household assets (natural log)	-	-0.034 (0.005) [p=0.000]	-0.034 (0.005) [p=0.000]
Household consumption (natural log)	-	-0.032 (0.011) [p=0.004]	-0.032 (0.011) [p=0.004]
Additional moderating effect			
Religious minority * Non-autonomous village	No	No	Yes
Control variables			
Household size	0.021 (0.006) [p=0.000]	0.032 (0.007) [p=0.000]	0.032 (0.007) [p=0.000]
Education (ref = no education)			
Primary	-0.039 (0.015) [p=0.008]	-0.027 (0.016) [p=0.090]	-0.026 (0.016) [p=0.109]
Lower secondary	-0.093 (0.018) [p=0.000]	-0.062 (0.020) [p=0.002]	-0.060 (0.019) [p=0.002]
Higher secondary	-0.171 (0.019) [p=0.000]	-0.135 (0.019) [p=0.000]	-0.133 (0.020) [p=0.000]
Tertiary	-0.313 (0.025) [p=0.000]	-0.261 (0.025) [p=0.000]	-0.259 (0.025) [p=0.000]
Subjective economic well-being (ref = lowest)			
Low	-0.018 (0.017) [p=0.284]	0.006 (0.021) [p=0.757]	0.006 (0.021) [p=0.769]
Lower middle class	-0.103 (0.017) [p=0.000]	-0.061 (0.021) [p=0.004]	-0.061 (0.021) [p=0.004]
Upper middle class	-0.160 (0.018) [p=0.000]	-0.101 (0.022) [p=0.000]	-0.102 (0.022) [p=0.000]
High	-0.202 (0.028) [p=0.000]	-0.151 (0.033) [p=0.000]	-0.151 (0.034) [p=0.000]
Highest	-0.196 (0.049) [p=0.000]	-0.141 (0.055) [p=0.010]	-0.142 (0.055) [p=0.010]

Ethnic group fixed effects	Yes	Yes	Yes
No. of observations	14,499	12,096	12,096
No. of individuals	10,481	9,037	9,037
No. of villages	232	230	230
R squared (overall)	0.405	0.431	0.431
R squared (within)	0.013	0.009	0.010
R squared (between)	0.465	0.487	0.487

Notes: Coefficients refer to linear probabilities. Standard errors are in parentheses and p-values in square brackets. Standard errors and p-values are robust standard errors and p-values and are clustered at the village level. To facilitate interpretation of the estimated coefficients, we report the outcomes of a linear probability model only. However, logistic models render similar results (available on request). At the individual level, the additional control variables that we include are age and age squared, sex, household size, dummy for being able to speak national language, dummies for employment status and a dummy for belonging to a religious minority. At the village level, the additional control variables are natural disaster and perceived aggregated interethnic trust. Finally, all models control for wave fixed effects and religious group fixed effects.

Table 2
Effects of changes in villager-village head ethnic distance on individuals' receipt of subsidized rice from their local government

Dependent = Receipt of Raskin rice (1=yes)	Model 4: Changing from non-coethnic to coethnic with village head	Model 5: Changing from non-coethnic to coethnic with village head
Change in villager-village head ethnic distance (=Ethnic switch) (1=yes)	0.194 (0.083) [p=0.020]	-0.150 (0.078) [p=0.055]
Ethnic switch * Non-autonomous village	-0.222 (0.095) [p=0.021]	0.234 (0.083) [p=0.005]
Village-level control variables		
Village fixed effects	Yes	Yes
Village-wave fixed effects	Yes	Yes
Individual-level control variables		
Individual fixed effects	Yes	Yes
Ethnic group fixed effects	Yes	Yes
No. of observations	11,570	11,825
No. of individuals	8,911	9,084
No. of villages (clusters)	234	236
R squared (overall)	0.001	0.010
R squared (within)	0.229	0.226
R squared (between)	0.001	0.021

Notes: Coefficients refer to linear probabilities. Standard errors are in parentheses and p-values in square brackets. Standard errors and p-values are robust standard errors and p-values and are clustered at the village level. At the individual level, the additional control variables that we include are age and age squared, household size, dummy for being able to speak national language, dummies for employment status and a dummy for belonging to a religious minority. At the village level, the additional control variables are natural disaster and perceived interethnic trust. Finally, all models control for wave fixed effects and religious group fixed effects.

Table 3
Effect of changes in observed village-level ethnic favoritism and autonomy on village-level interethnic trust and inequality

	Complete sample		Villages that remain autonomous vs. villages that loose autonomy		Villages that remain non-autonomous vs. villages that gain autonomy	
	Model 6: Interethnic trust	Model 7: Ethnic inequality	Model 8: Interethnic trust	Model 9: Ethnic inequality	Model 10: Interethnic trust	Model 11: Ethnic inequality
Autonomous village (1=yes)	0.033 (0.027) [p=0.216]	0.433 (0.248) [p=0.082]	-	-	-	-
Ethnic favoritism	-0.137 (0.053) [p=0.011]	-0.092 (0.358) [p=0.796]	-0.007 (0.037) [p=0.847]	-0.221 (0.173) [p=0.207]	-0.158 (0.056) [p=0.005]	0.749 (0.423) [p=0.100]
Ethnic favoritism * Autonomous village	0.072 (0.118) [p=0.546]	1.64 (0.0.917) [p=0.075]	-	-	-	-
Wave/year	0.145 (0.298) [p=0.000]	0.107 (0.134) [p=0.426]	0.108 (0.027) [p=0.000]	-0.455 (0.214) [p=0.040]	0.161 (0.041) [p=0.000]	0.227 (0.170) [p=0.206]
Wave/year * autonomous village	-	-	-0.216 (0.039) [p=0.000]	0.208 (0.023) [p=0.000]	0.016 (0.048) [p=0.284]	0.001(0.529) [p=1.00]
Village fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No of observations	231	204	66	51	168	150
No. of villages	176	157	36	38	128	116
R squared (overall)	0.149	0.017	0.027	0.038	0.094	0.001
R squared (within)	0.354	0.152	0.562	0.143	0.386	0.124
R squared (between)	0.126	0.051	0.016	0.021	0.044	0.044

Notes: Coefficients are standardized. Standard errors are in parentheses and p-values in square brackets. Standard errors and p-values are robust standard errors and p-values and are clustered at the village level. Models 8 and 9 consider the effect of losing administrative and fiscal autonomy by comparing villages that retain their autonomy to villages that lose their autonomy between Wave 4 and Wave 5. Models 10 and 11 consider the effect of gaining autonomy by comparing villages that remain under control of higher government to villages that were not autonomous in Wave 4 but became autonomous in Wave 5. Models without village fixed effects (random effects models) render similar results (available on request).
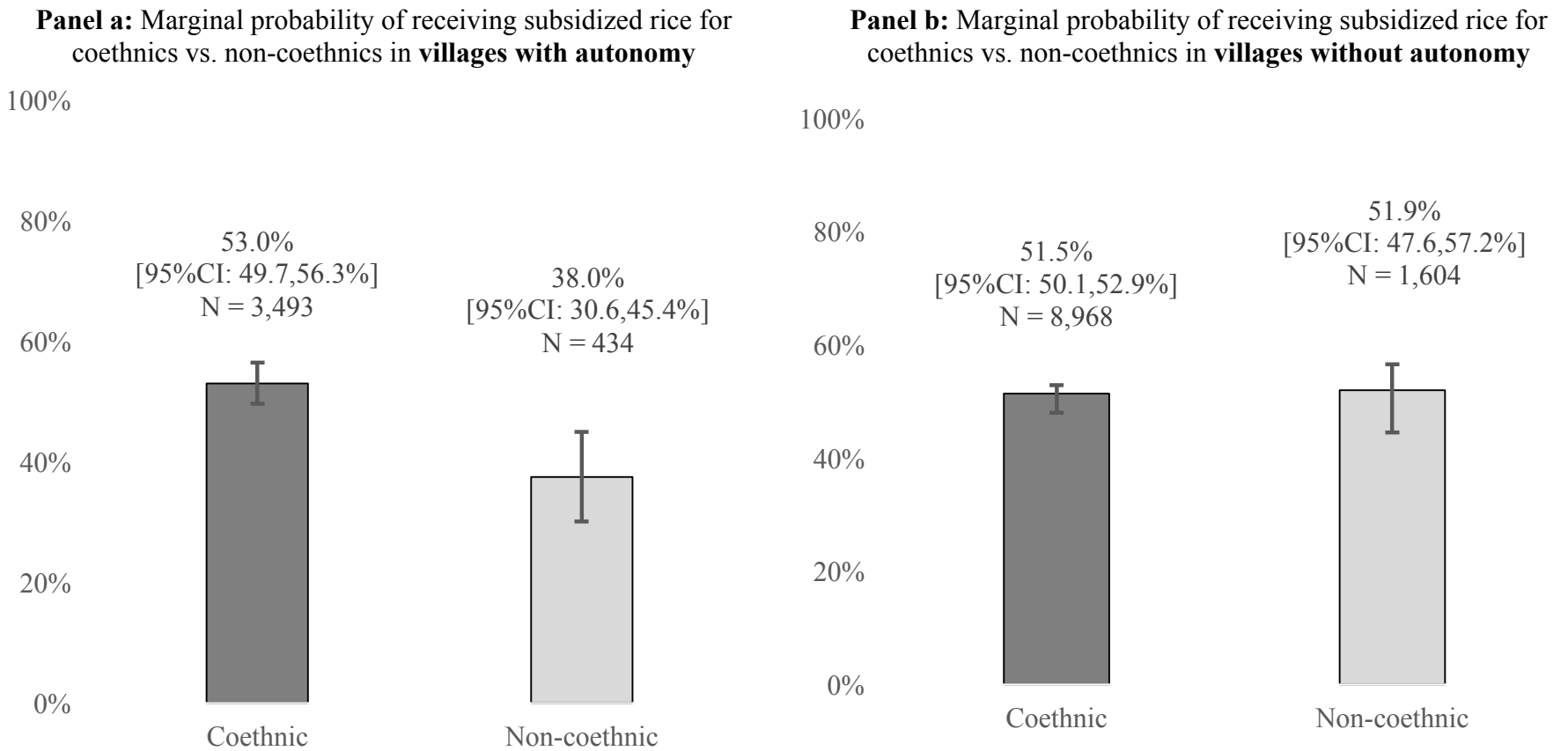
Figure 1
Percentage difference in average wealth of different ethnic groups compared to the national average as a function of belonging to the ethnic minority or the ethnic majority in their villages
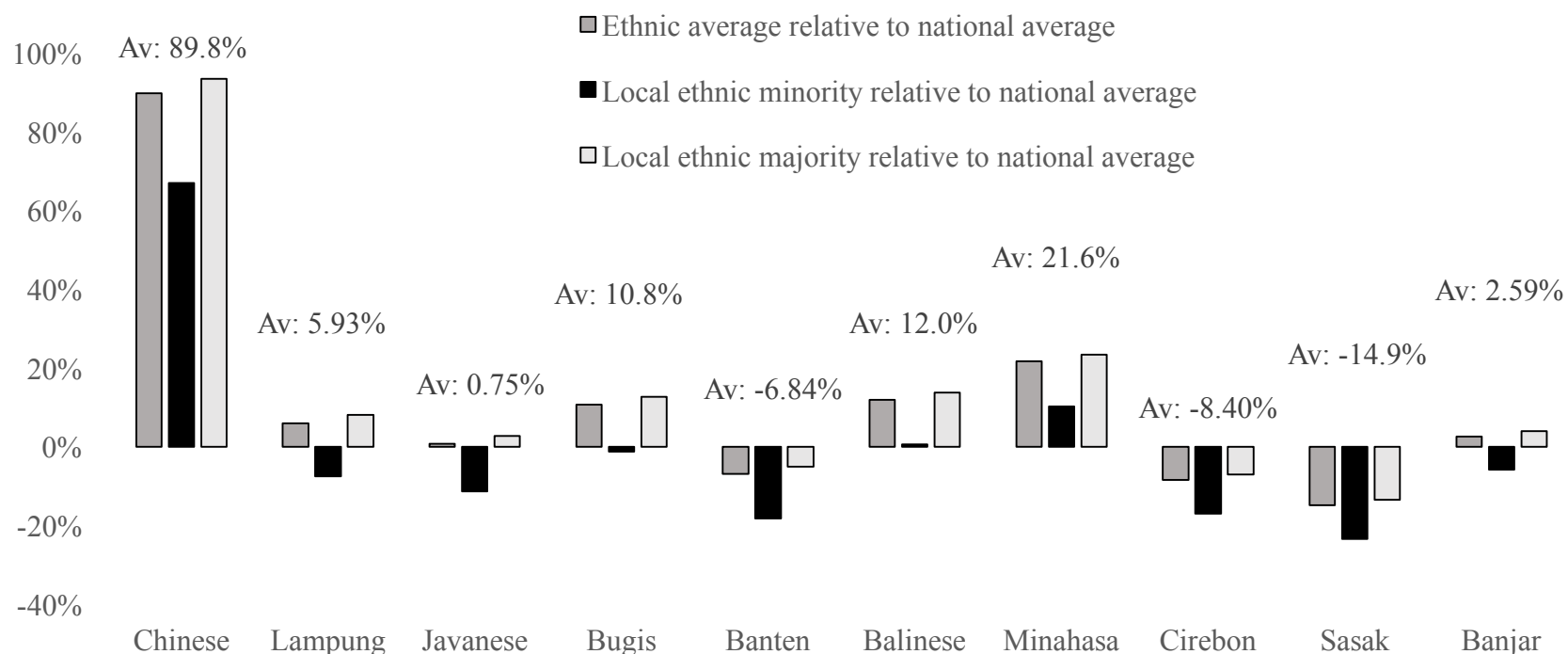
Notes: Figure present estimation results based on a sample of more than 20,000,000 individuals from the 2010 Population Survey (Statistics Indonesia 2010). Dark-grey bars on the left present the estimated percentage difference in average household wealth of the ethnic group compared to the national average. Black bars in the middle present the estimated percentage difference in average household wealth of the ethnic group compared to the national average when the ethnic group belongs to the ethnic majority in a village. Light-grey bars on the right present the estimated percentage difference in average household wealth of the ethnic group compared to the national average when the ethnic group belongs to the ethnic minority in a village. Estimates are obtained using a model that controls for regency fixed effects, village population size and the relative size of the largest ethnic group in individuals' village. Household wealth is measured as the living space of a household (in m^2). This variable is an official measure of wealth used by the Indonesian statistics office and based on the questionnaire item asking, "What is the floor area of this dwelling?"

Figure 2

Marginal probabilities for individuals of receiving subsidized rice (Raskin rice) for coethnics and non-coethnics in villages with (Panel a) and without administrative and fiscal autonomy (Panel b)

Panel a: Marginal probability of receiving subsidized rice for coethnics vs. non-coethnics in **villages with autonomy**

Panel b: Marginal probability of receiving subsidized rice for coethnics vs. non-coethnics in **villages without autonomy**
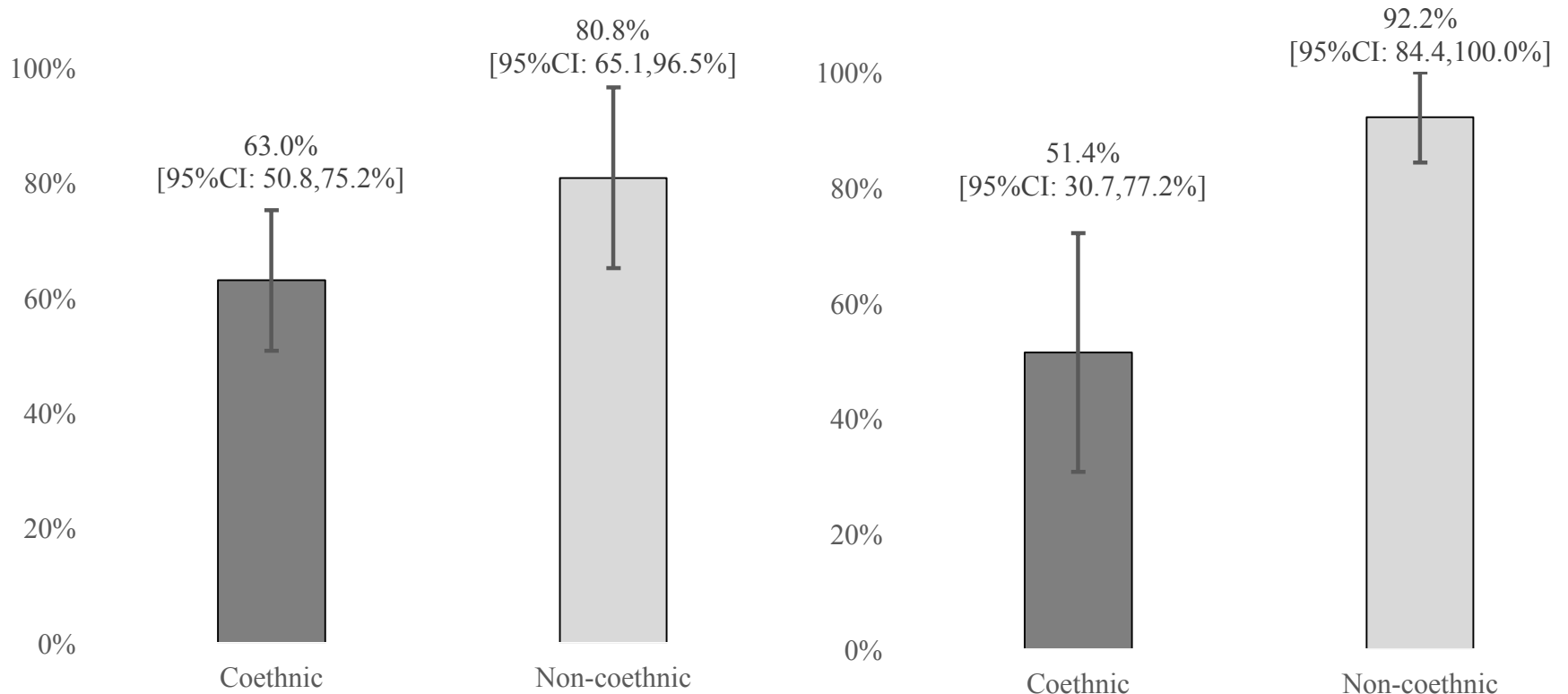

Notes: Figure presents differences in the marginal probability of receiving subsidized rice between coethnics and non-coethnics for individuals living in villages with administrative and fiscal autonomy (Panel a) and individuals living in villages without administrative and fiscal autonomy (Panel b). These marginal probabilities derive from the estimation of Model 1 in Table 1. 95% confidence intervals (CIs) are calculated with robust standard errors that are clustered at the village level.

Figure 3
Marginal probability of receiving subsidized rice for coethnics and non-coethnics before (Panel a) and after (Panel b) villages gain administrative and fiscal autonomy

Panel a: Marginal probability of receiving Raskin rice for coethnics and non-coethnics **before villages gain autonomy**

Panel b: Marginal probability of receiving Raskin rice for coethnics and non-coethnics **after villages gain autonomy**

Notes: Figure presents differences in the marginal probability of receiving subsidized rice between coethnics and non-coethnics before (Panel a) and after (Panel b) a village has gained administrative and fiscal autonomy. These marginal probabilities derive from the estimation of Model S3.8 in Table S3.3 in Supplement 3 and are estimated at means. 95% confidence intervals (CIs) are calculated with robust standard errors that are clustered at the village level.

Figure 4
Marginal probability of receiving subsidized rice for coethnics and non-coethnics before (Panel a) and after (Panel b) villages loose administrative and fiscal autonomy

Panel a: Marginal probability of receiving Raskin rice for coethnics and non-coethnics **before villages loose autonomy**

Panel b: Marginal probability of receiving Raskin rice for coethnics and non-coethnics **after villages loose autonomy**
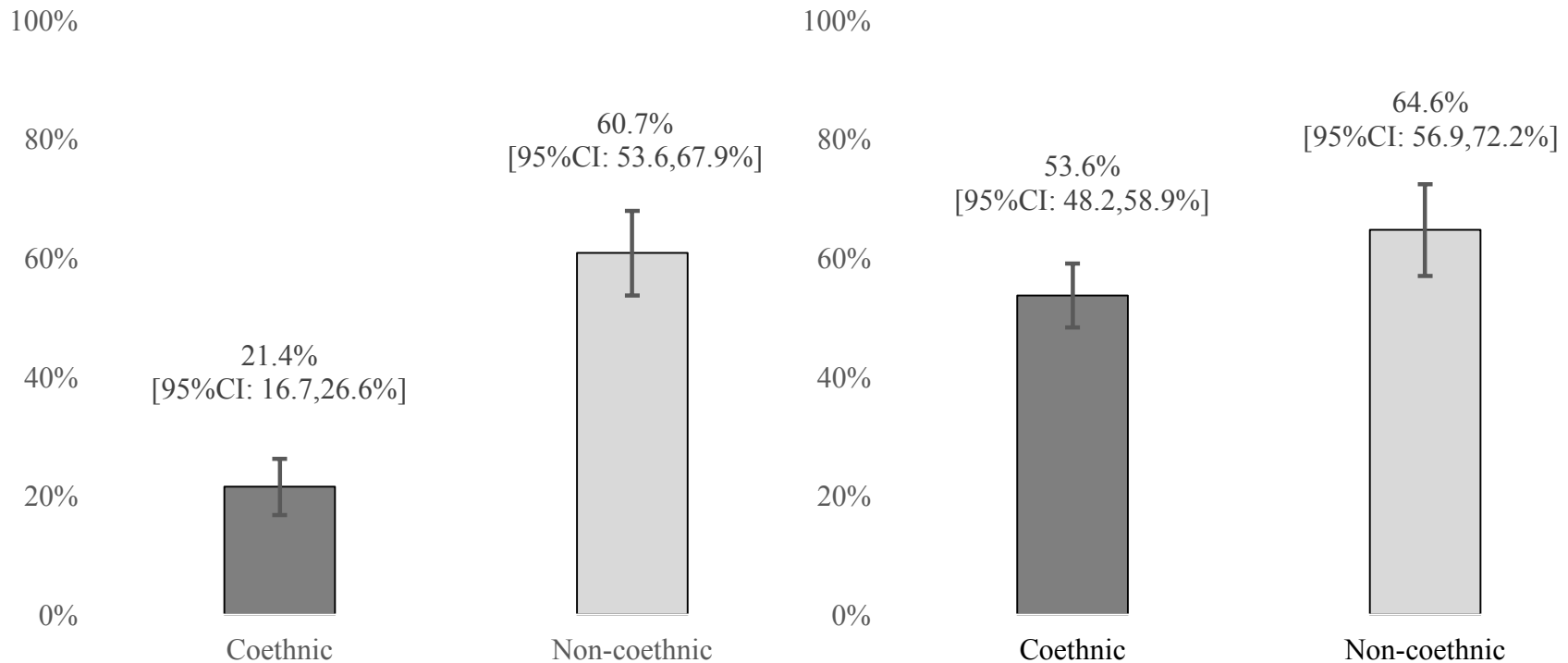

Notes: Figure presents differences in the marginal probability of receiving subsidized rice between coethnics and non-coethnics before (Panel a) and after (Panel b) a village has gained administrative and fiscal autonomy. These marginal probabilities derive from the estimation of Model S3.11 in Table S3.3 in Supplement 3 and are estimated at means. 95% confidence intervals (CIs) are calculated with robust standard errors that are clustered at the village level.

SUPPLEMENT 1: RESEARCH CONTEXT AND HYPOTHESES

Table S1.1
Socioeconomic differences between local ethnic majorities and local ethnic minorities.

	Member of local ethnic majority group	Member of local ethnic minority groups	Majority/minority gap
Living area (in sq. meters)#	70.7	63.2	7.58 [95%CI: 7.43-7.74]
Land ownership (1=yes)#	76.0%	68.8%	7.20% [95%CI: 7.09–7.30%]
Household assets (natural log)*	17.8	17.7	0.11 [95%CI: 0.19–0.05]

Notes: Table presents the estimated marginal effects of belonging to the local, village-level ethnic majority group or to local ethnic minority groups on various measures of socioeconomic status and wealth. For measures marked with #, we use data from the Indonesian census (2010). For measure marked with * we use data from the Indonesian Family Life Survey, Wave 4 (2007) and Wave 5 (2014). The underlying models control for regency fixed effects ethnicity fixed effects, size of village, and relative portion of villagers belonging to the ethnic majority group.

Table S1.2
Linear probability model estimating the likelihood that villages are non-autonomous (first stage regression to determine instrument's strength)

| Dependent = Village has administrative and fiscal autonomy (1=yes)	Complete sample	Excluding selected provinces		
	Model S1.1	Model S1.2: Bali	Model S1.3: Jakarta	Model S1.4: South-Sulawesi
Historic support for United States of Indonesia (1=yes)	-0.100 (0.027) [p=0.000] z = 3.68	-0.998 (0.027) [p=0.000]	-0.113 (0.031) [p=0.000]	-0.101 (0.027) [p=0.000]
Village-level control variables				
Dummies indicating largest ethnic group in village	Yes	Yes	Yes	Yes
Perceived trust between ethnic groups	Yes	Yes	Yes	Yes
Population ratio largest to other ethnic groups	Yes	Yes	Yes	Yes
Village's average subjective economic well-being	Yes	Yes	Yes	Yes
Natural disaster (1=yes)	Yes	Yes	Yes	Yes
Wave fixed effects	Yes	Yes	Yes	Yes
No. of observations	455	436	389	432
No. of villages	269	256	234	256
No. of provinces (clusters)	15	14	14	14
R-squared (overall)	0.137	0.141	0.160	0.133
R-squared (within)	0.058	0.056	0.068	0.060
R-squared (between)	0.170	0.175	0.189	0.163

Notes: Coefficients refer to linear probabilities. Standard errors are in parentheses and p-values in square brackets. Standard errors and p-values are robust standard errors and p-values and are clustered at the province level. The predicted values of lacking administrative and fiscal autonomy (see Table S2.2 in Supplement 2) are based on the estimates of Model S1.1. The first stage estimated probabilities of villages being non-autonomous are transformed into dichotomous variables (1 = non-autonomous / 0 = autonomous). In order to make the 2SLS estimated effects of autonomy comparable to the estimated OLS models, we apply the dummy transformation approach on the estimated probabilities of the first stage (Model S1.1), creating a dichotomous instrumental variable that measures whether these villages are non-autonomous (=1) or autonomous (=0). For instance, if the estimated probability of a village being non-autonomous is 70% in the first stage, we code this variable as 1 (=non-autonomous) (see Angrist and Krueger 2001 for an extensive explanation of the dummy transformation approach for 2SLS estimations). Empirical evidence shows that the interaction between historic support for the United States of Indonesia and being a non-coethnic of one's village head is not a significant predictor of receiving Raskin rice in combination with the interaction between village autonomy and being a non-coethnic in one's village. This evidence is not sensitive to the selection of specific regions (e.g., Bali, Java, Sulawesi) and available on request.

Figure S1.1
Dominant ethnic group per province in Indonesia between 2000 and 2014

Java
Sunda
Bali
Batak
Bugis
Sasak
Minang
Banjar
Betawi
South-Sumatra
No data
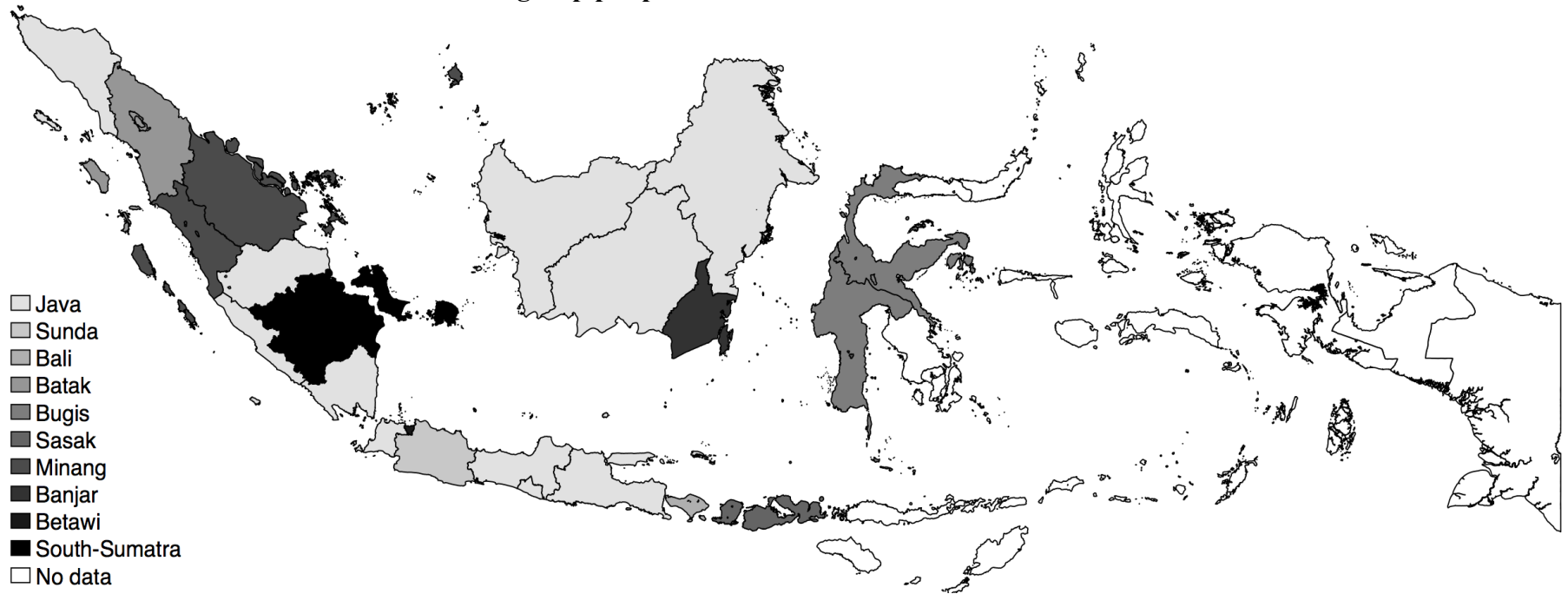
Notes: Figure shows the dominant ethnic group in all 34 available provinces based on our own calculations using the prevalence of individuals' self-reported ethnicity in Waves 3-5 of the IFLS (2000, 2007 & 2014) (Strauss et al., 2004, 2009, 2016). This figure further illustrates the impact of internal migration, particularly transmigration, on local areas' ethnic composition. The Javanese, for example, are nowadays the largest ethnic group on South and Central Kalimantan, outnumbering the native Dayaks and Banjarese in many villages (Hoey 2003).

Figure S1.2
Ethnic fractionalization per province in Indonesia between 2000 and 2014
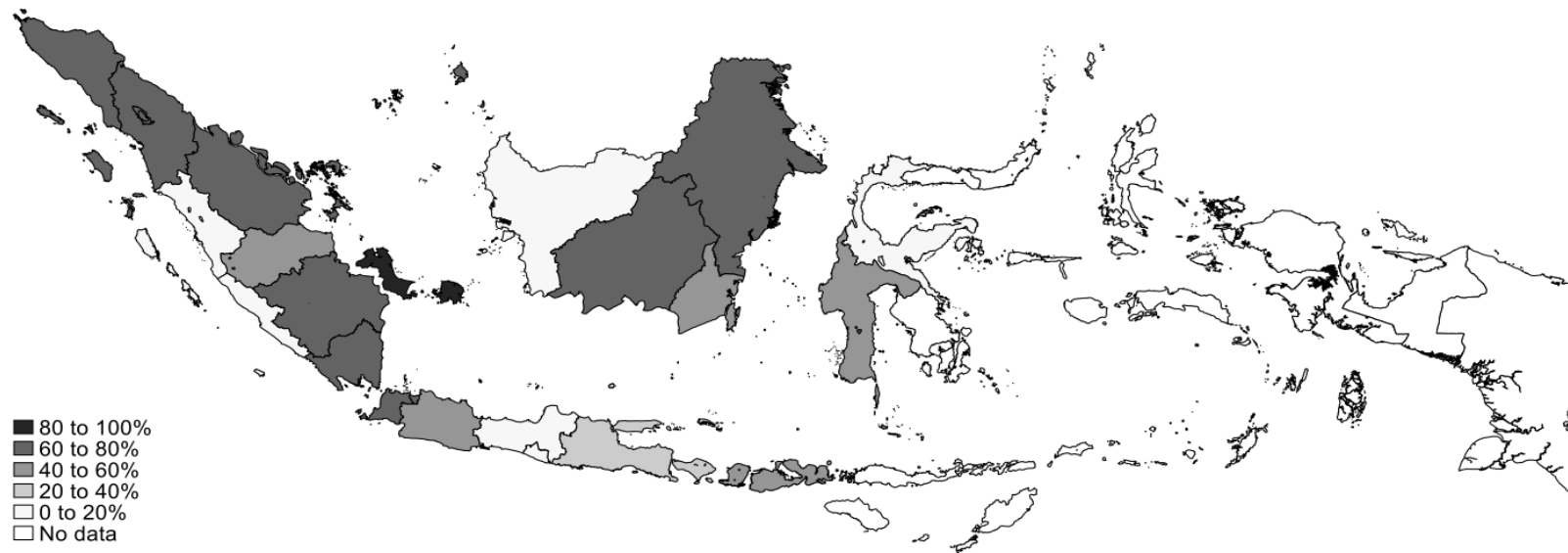
Notes: Figure illustrates the ethnic fractionalization per province in Indonesia based on our own calculations using Waves 3-5 of the IFLS (Strauss et al., 2004, 2009, 2016). Using the method of Alesina et al. (2003), our fractionalization measure shows whether the probability that two randomly selected individuals are from a different ethnic group is relatively high (black) or low (light grey). Figure S1.2 in Supplement 2 illustrates the impact of internal migration and transmigration programs on the degree of ethnic fractionalization in Indonesia's provinces, which is remarkably high outside Java.

Figure S1.3
Provinces' historic support for the Indonesian government (dark grey) or Dutch colonial government (light grey) during Indonesia's War of Independence (1945-1949)

☐ Dutch/Other
■ United States of Indonesia
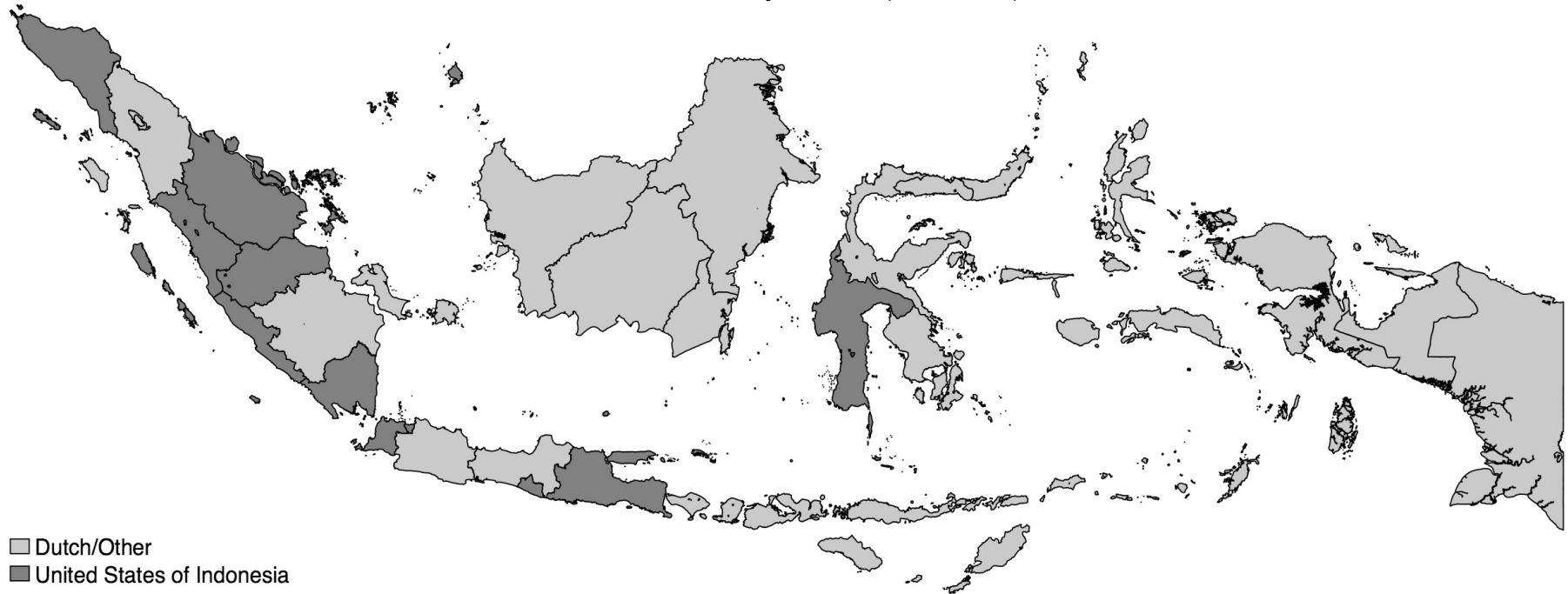
Notes: Figure shows whether regions actively supported the newly formed United States of Indonesia (dark grey) or whether they actively supported the Dutch (light grey) or were neutral during the Indonesian war of Independence (1945-1949). The categorization is based on the work of Ricklefs (1991) who reports on the historic support of local communities and their leaders (rajas). On the one hand, communities that supported the newly formed Indonesian government desired political, economic, and cultural independence from their former colonizer. On the other hand, communities' had diverse reasons to favor the Dutch colonizer including their fear for Javanese/Islamic cultural dominance (e.g., Toraja on Sulawesi), the pledge to be granted independence after the war (e.g., Irian Jaya), or some regions were already independent before the outbreak of the war (e.g., Banka Belitung islands). After the political victory of the Indonesian government in 1949, the new Indonesian government installed military officers to replace the traditional rajas, particularly in those regions that disfavored the formation of the Indonesian Republic (Ricklefs 1991). Table S1.2 shows the strength of using provinces' historic support for the United States of Indonesia as an instrument for villages' autonomy in 2007 and 2014.

SUPLLEMENT 2: DATA AND EMPIRICAL APPROACH

Table S2.1
Cramer's V measure to estimate the empirical association between various measures of villager-village head ethnic distance

	Measure 1: 2:1 ratio	Measure 2: > 50%
Measure 1: 2:1 ratio	**1**	
Measure 2: > 50%	1.0	**1**
Measure 3: Village head's ethnic name	0.774	0.708

Notes: Cramer's V indicates to what degree categorical variables coincide in meaning, for instance, that 77.5% of the Indonesians who are considered non-coethnic with their village heads when Measure 1 of village head ethnicity are also considered to be non-coethnic using Measure 3 of village head ethnicity. The main text describes the three measures of village head ethnicity. Table S2.2 in Supplement 2 presents details on the different measures of villager-village head ethnic distance.

Table S2.2
Overview and description of key variables

Variable	Definition/description	Level of measurement
Receives government-subsidized rice (Raskin rice) (0/1)	Dummy variable that indicates whether an individual receives subsidized rice (called Raskin rice) (1) or not (0). The variable is based on the questionnaire item asking, "During the past year, has this household ever bought rice/received money from the Raskin program?"	Individual
Quantity of subsidized rice (Raskin rice) received	Variable that measures the quantity of subsidized rice an individual receives in kg's per household member. The variable is based on the item asking, "What was the total quantity rice bought/money received by this household from the Raskin program in the last year?"	Individual
Value of household assets	Variable that measures the value of household assets. The variable combines answer on questionnaire items that ask individuals about the value of various assets including their housing, poultry, vehicles, household appliances, savings, jewelry, land, receivables and household furniture: "What is the total value at present?" We use the sum of the reported values to construct the measure of value of household assets.	Individual
Value of household consumption	Variable that measures the value of household consumption. The variable combines answer on items that ask individuals about their expenditure on 37 food-related consumption items: "During the past week, what was the total expenditure to purchase?" We use the sum of the reported expenditure on these 37 items to construct for the measure of household consumption.	Individual
Non-autonomous village (0/1)	Dummy variable that indicates whether a village is non-autonomous (1) or has administrative and fiscal autonomy (0). The variable is based on the questionnaire item asking village heads, "Does the village [have] the authority to reallocate budget between budget posts/categories without approval from Kabupaten/Kota government or other parties?" If the village head answered "No," we consider a village to be non-autonomous.	Village
Non-coethnic with village head (based on Measure 1 of village head ethnicity) (0/1)	Dummy variable that indicates whether an individual has the same ethnicity as their village head (i.e., is a coethnic) or not (i.e., is a non-coethnic). Individuals' ethnicity is measured using the item, "What is your ethnicity?" Possible answers for this item are: "Jawa," "Sunda," "Bali,", "Batak," 'Bugis," "Tionghoa," "Madura," "Sasak," "Minang," "Banjar," "Bima-Dompu," "Makassar," "Nias," "Palembang," "Sumbawa,"	Individual

Variable	Definition/description	Level of measurement
	"Toraja," "Betawi," "Dayak," "Melayu," "Komering," "Ambon," "Manado," "Aceh," "Other South Sumatera," "Banten," "Cirebon," "Gorontalo," "Kutai" or "Other." We measure the ethnicity of an individual's village head as the ethnicity of the largest ethnic group in the village. We identify this group using the item that asks village heads, "How is the ethnic composition in this village/township and what is the largest ethnic group in this village?" This measure only considers villages where the largest ethnic group is (at least) twice as large as the second largest group (Measure 2 in the main text).	
Non-coethnic (based on Measure 2 of village head ethnicity) (0/1)	Dummy variable that indicates whether an individual has the same ethnicity as their village head (i.e., is a coethnic) or not (i.e., is a non-coethnic). Individuals' ethnicity is measured using the item mentioned above that asks, "What is your ethnicity?" We measure the ethnicity of an individual's village head as the ethnicity of the largest ethnic group in the village. We identify this group using the item that asks village heads, "How is the ethnic composition in this village/township and what is the largest ethnic group in this village?" This measure only considers villages where the largest ethnic group comprises more than 50% of all villagers (Measure 2 in the main text).	Individual
Non-coethnic (based on Measure 3 of village head ethnicity) (0/1)	Dummy variable that indicates whether an individual has the same ethnicity as their village head (i.e., is a coethnic) or not (i.e., is a non-coethnic). Individuals' ethnicity is measured using the item mentioned above that asks, "What is your ethnicity?" We measure the ethnicity of an individual's village head using the ethnic background of the village head's name (Measure 3 in the main text). The underlying measure of this variable is the incidence of the village head's name in various regencies in Indonesia. We consider a village head to have a specific ethnicity if their name is dominant in regencies where this ethnic group is dominant. The resulting classifications have been validated by a panel of five Indonesian researchers.	Individual
Ethnic switch (From non-coethnic with village head to coethnic with village head) (0/1)	Dummy variable that indicates whether an individual that has another ethnicity than their village head at time t-1 has switched to the ethnicity of their village head at time t or whether an individual has another ethnicity than their village head and does not change their ethnicity between time t-1 and time t.	Individual
Ethnic switch (From coethnic with village head to non-coethnic	Dummy variable that indicates whether an individual that has the same ethnicity as their village head at time t-1 has switched to an ethnic group different than the ethnicity of their village head at time t or whether an individual does not change their ethnicity	Individual

Variable	Definition/description	Level of measurement
with village head) (0/1)	between time t-1 and time t.	
Religious minority (0/1)	Dummy variable that indicates whether an individual has the same (i.e., religious minority) (1) or another religious background (religious majority) (0) as the dominant religion in their village. Individuals' religion is measured using the item asking, "What is your religion?" Possible answers for this item are: "Islam," "Catholic," "Protestant,", "Hindu," "Budha," "Konghuccu" or "Other." We use the same survey item to construct a measure for the most dominant religion in respondents' villages, namely the religion that is most frequently mentioned by villagers.	Individual
Household size	Variable that measures the number of individuals that live together with the respondent in their household. The variable is based on the item asking, "What is the number of household members?"	Individual
Age	Variable that measures the current age of the individual. The variable is based on the item asking, "How old are you?"	Individual
Sex	Variable that measures the self-reported gender of an individual. The variable is based on the item asking, "What is your sex?"	Individual
Education	Set of dummies indicating the highest level of education attained by the individual. The dummies derive from the item asking, "What is the highest education level attended" with the following possible answers: 1 = None or primary (reference), 2= Lower-secondary, 3= Higher-secondary, 4= Tertiary, 5 = Adult education.	Individual
Perceived economic well-being	Set of dummies indicating individuals' subjective economic well-being, ranging from 0 (=poorest) to 6 (richest). The dummies derive from the item asking, "Please imagine a six-step ladder where on the bottom (the first step), stand the poorest people, and on the highest step (the sixth step), stand the richest people. On which step are you today?"	Individual
Religious denomination (religion fixed effects)	Set of dummies for individuals' religious denomination. The dummies derive from the item asking, "What is your religion?" with the following possible answers: 1 = Islam, 2 = Catholic, 3 = Protestant, 4 = Hindu, 5 = Buddha, 6 = Konghucu, 7 = Not applicable.	Individual
Ethnic group (ethnicity fixed effects)	Set of dummies indicating the ethnic group to which an individual belongs. The dummies derive from the item mentioned above that asks, "What is your ethnicity?"	Individual
Speaks Bahasa national language (0/1)	Dummy variable that indicates whether the individual is able to speak the national language Bahasa Indonesia (1) or not (0). The variable is based on the item asking,	Individual

| Variable	Definition/description	Level of measurement
	"What languages do you speak in your daily life at home?" If an individual answers "Bahasa Indonesia," we consider them able to speak this language.	
Interethnic trust	Variable that measures the level of interethnic trust within a village. The underlying measure is based on a reverse coding of the IFLS item that asks respondents, "Taking into account the diversity of ethnicities in this village, I trust people with the same ethnicity as mine more." Individuals can answer on a scale from 1 (I trust individuals from my own ethnicity more) to 4 (I trust individuals from my own ethnicity as much as individuals from another ethnicity). Individual responses are aggregated at the village-level to obtain the measure of the level of interethnic trust in villages.	Village
Mayoral elections (0/1)	Dummy variable that indicates whether a village head has been elected (1) or was appointed by a higher government (0). The underlying measure is based on the IFLS item asking village head, "How did the village/township head (you) come to assume the position?" If the village head answered "elected", we consider the village to have had mayoral elections. Other possible answers, for instance, "Appointed by camat" or "Appointed by Bupati/Walikota" are coded as villages without elected village heads.	Village
Interethnic inequality	Variable that indicates the standardized gap in socioeconomic status between villagers that are coethnic with the village head and villagers that are non-coethnic with the village head. The underlying measure for this variable is based on the items that asks individuals about the value of various assets including housing, poultry, vehicles, household appliances, savings, jewelry, land, receivables, and household furniture: "What is the total value at present?". We use the sum of these items to calculate the standardized difference between coethnics and non-coethnics in each village.	Village
Historic support of United States of Indonesia (1945-1949) (0/1)	Dummy variable that indicates whether a province supported the United States of Indonesia (1) or the Dutch colonial government during the Indonesian war of Independence (see Figure S1.3 in Supplement 1). This classification is based on the work of Ricklefs (1991) identified the historic support of regional leaders for the United States of Indonesia or the Dutch colonizer based on ethnographic evidence	Province

Notes: Details on the wording of the various questionnaire times used can be found in the codebooks of the IFLS (Strauss et al. 2004, 2009, 2016).

Table S2.3
Summary Statistics for Key Variables

Variables	Mean (standard deviation) [Minimum – Maximum]
Main dependent variable	
Receives subsidized rice (Raskin rice)	51.8% (50.0%)
Main independent variables	
Non-coethnic with village head (based on Measure 1 of village head ethnicity) (1=yes)	14.3% (35.0%)
Non-coethnic with village head (based on Measure 2 of village head ethnicity) (1=yes)	14.8% (35.6%)
Non-coethnic with village head (based on Measure 3 of village head ethnicity) (1=yes)	14.1% (34.6%)
Individual characteristics	
Age (in years)	45.8 (12.9) [19 – 101]
Education	
No education	7.47% (26.3%)
Primary education or less	39.8% (48.9%)
Secondary education	18.3% (38.6%
Tertiary education	24.9% (43.2%)
Perceived economic well-being (1 poorest - 6 richest)	2.95 (0.97) [1 – 6]
Ability to speak Bahasa national language (1=yes)	23.7% (42.5%)
Household size (number of members)	2.46 (1.13)
Member of religious minority (1=yes)	6.58% (24.8%)
Household assets (natural log)	17.7 (1.57) [9.90 – 22.2]
Village characteristics	
Non-autonomous village (1=yes)	26.1% (55.5%)
Non-autonomous village (instrumented) (1=yes)	6.02% (76.2%)
Mayoral elections (1=yes)	48.2% (50.0%)

Notes: This table presents descriptive statistics for key variables in the analysis. Standard deviations are in parentheses and the minimum and maximum brackets. Source of the data is the IFLS, Waves 3-5 (Strauss et al., 2004, 2009, 2016). See the main text and Table S2.2 for details on these variables.

Figure S2.1
Identifying ethnic background using village heads' names: Forebears search engine for searching geographical prevalence of names using FamilySearch Data
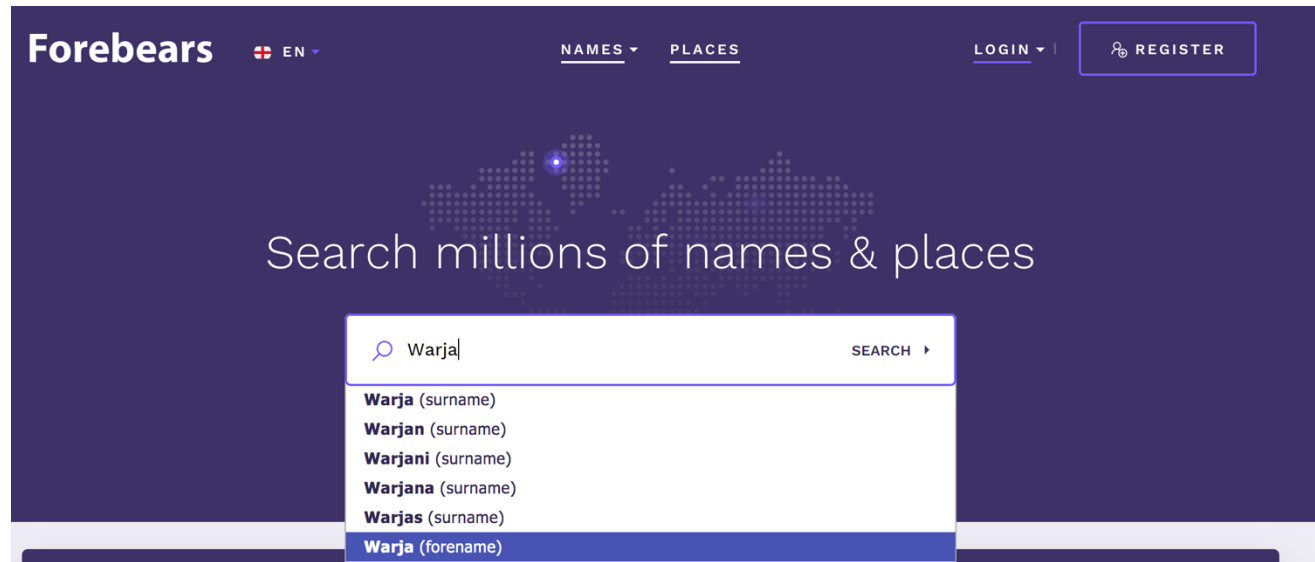
Notes: In our example we determine the geographical location of the given name "Warja". Since most Indonesians do not have a surname, searched for "Warja" as a given name / forename. However, there are some ethnic groups that do use last names / clan names (e.g., the Achenese, the Minangkabau and the Batak). In the FamilySearch database, it is possible to differentiate between forenames/given names and last names/surnames in the search query. Hence, the varied use of different types of names does not result in systematic measurement error. Meanwhile, various ethnic groups in Indonesia (e.g., the Javanese, Betawi and Melayu people) increasingly use Islamic names over traditional ethnic names (e.g., Muhammed). Because of difficulties identifying their ethnic background, we have excluded 26 village heads with typical Islamic names.

Figure S2.2
Identifying ethnic background on the basis of village heads' names: Geographical prevalence of name "Warja" in Indonesia
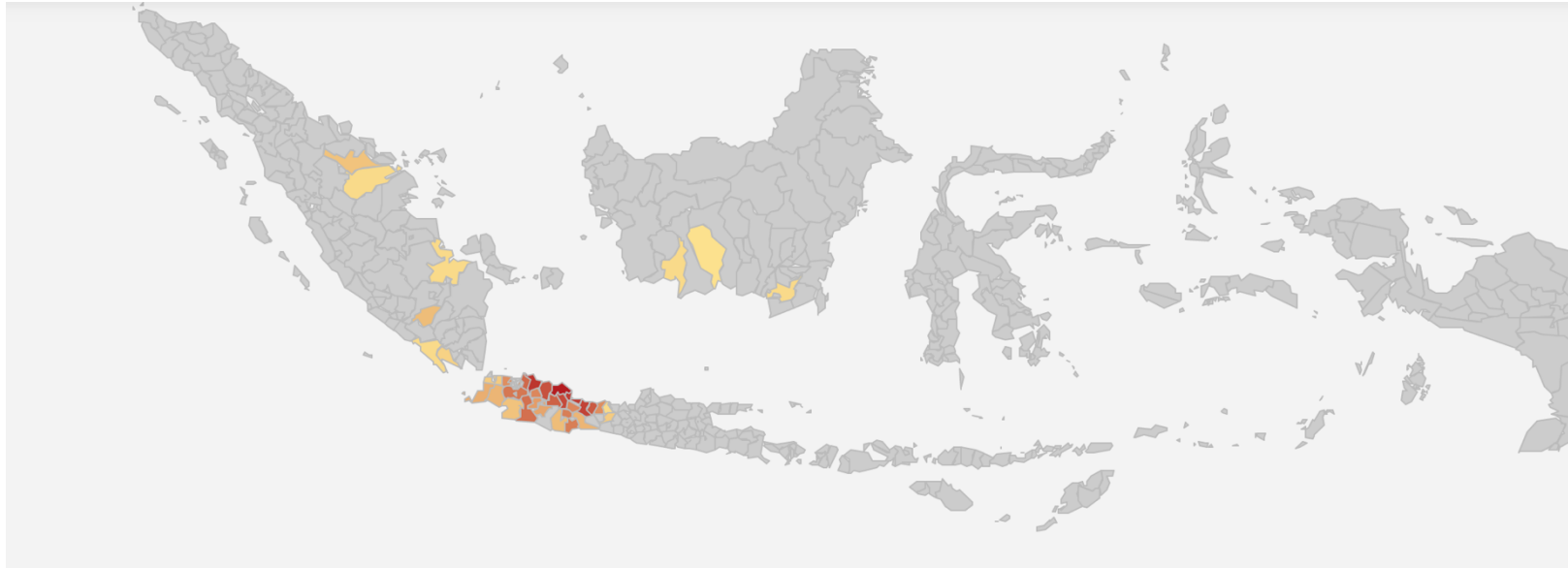
Notes: Geographical prevalence of the name "Warja" in Indonesia illustrated per regency. The color code indicates the incidence of a particular name in an Indonesian regency ranging from no incidence (grey), to a low incidence (yellow) and a high incidence (red). You can also select provinces instead of regencies to inspect the geographical prevalence of names. However, using provinces provides coarser means for identifying the ethnic origin of a certain name.

Figure S2.3
Identifying ethnic background using village heads' names: Incidence, frequency, and rank of name "Warja" in various geographical areas

2014

ⓘ Place	ⓘ Incidence	ⓘ Frequency	ⓘ Rank in Area
Indramayu Regency	483	1:3,439	539
Tegal	381	1:3,642	668
Karawang Regency	349	1:6,076	1,039
Cirebon Regency	271	1:7,579	1,268
Brebes Regency	190	1:9,101	1,722
Majalengka Regency	157	1:7,419	1,173
Subang Regency	139	1:10,521	1,747

Notes: Numerical incidence, frequency and rank of the name "Warja" in Indonesia per regency. Name's incidence reports the absolute amount of reported individuals having a specific given name, frequency reports the portion of the local population having this name, and rank is the rank order of this name in the region in comparison to other names.

SUPPLEMENT 3: RESULTS

Table S3.1
Effects of changes in villager-village head ethnic distance on individuals' receipt of benefits using various measures to operationalize ethnic distance or similarity between villagers and their village heads

Dependent = Receives Raskin rice from local government (1=yes)	Measure 1: 2:1 ratio		Measure 2: > 50%	Measure 3: Last name
	Model S3.1: Dichotomous ethnic distance	Model S3.2: Continuous/lexicostatistical ethnic distance (only considering non-coethnics)	Model S3.3: Dichotomous ethnic distance	Model S3.4: Dichotomous ethnic distance
Non-coethnic with village head (1=yes)	-0.135 (0.043) [p=0.002]	-	-0.080 (0.039) [p=0.038]	-0.142 (0.049) [p=0.004]
Non-coethnic * Non-autonomous village	0.162 (0.049) [p=0.001]	-	0.104 (0.043) [p=0.016]	0.122 (0.056) [p=0.030]
Ethnic distance (continuous)	-	-0.259 (0.121) [p=0.032]	-	-
Ethnic distance * Non-autonomous village	-	0.097 (0.097) [p=0.317]	-	-
Village fixed effects	Yes	Yes	Yes	Yes
Non-autonomous village (1=yes)	Yes	Yes	Yes	Yes
Additional eligibility criteria				
Household assets (natural log)	Yes	Yes	Yes	Yes
Household consumption (natural log)	Yes	Yes	Yes	Yes
Alternative moderating effect				
Religious minority * Non-autonomous village	Yes	Yes	Yes	Yes
No. of observations	12,096	1,696	13,705	9,424
No. of individuals	9,037	1,415	10,161	9,424
No. of villages	230	144	247	233

R squared (overall)	0.431	0.484	0.429	0.371
R squared (within)	0.010	0.111	0.010	-
R squared (between)	0.487	0.508	0.485	-

Notes: Coefficients refer to linear probabilities. Standard errors are in parentheses and p-values in square brackets. Standard errors and p-values are robust standard errors and p-values and are clustered at the village level. We report results for linear probability models only to facilitate interpretation of the coefficients. Logistic models render similar results (available on request). The additional control variables that we include are education, subjective economic well-being, age and age squared, sex, household size, able to speak national language, dummies for employment status, and dummy for religious minority at the individual level. Finally, all models control for wave fixed effects (with the exception of Model S3.4) and ethnic group and religious group fixed effects.

Table S3.2
Effects of changes in villager-village head ethnic distance on individuals' receipt of subsidized rice (in kg per household member)

Dependent = Amount of Raskin rice received (in kg's per household member)	Model S3.5: Baseline	Model S3.6: Eligibility	Model S3.7: Additional moderating effect (religious minority)
Non-coethnic with village head (1=yes)	-10.4 (3.01) [p=0.001]	-7.16 (2.50) [p=0.012]	-6.40 (2.97) [p=0.031]
Non-coethnic * Non-autonomous village	9.58 (2.50) [p=0.000]	9.53 (3.57) [p=0.000]	8.78 (2.50) [p=0.000]
Village fixed effects	Yes	Yes	Yes
Non-autonomous village (1=yes)	Yes	Yes	Yes
Additional eligibility criteria			
Household assets (in natural log)	Yes	Yes	Yes
Household consumption (in natural log)	Yes	Yes	Yes
Alternative moderating effects			
Religious minority * Non-autonomous village	Yes	Yes	Yes
No. of observations	14,783	12,320	12,049
No. of individuals	10,788	9,283	9,043
No. of village	238	237	230
Log likelihood	-40,179.6	-32,420.8	-31,764.3

Notes: Results obtained by Tobit model Standard errors are in parentheses and p-values in square brackets. Standard errors and p-values are robust standard errors and p-values and are clustered at the village level. The additional control variables that we include are education, subjective economic well-being, age and age squared, sex, household size, able to speak national language, dummies for employment status, and dummy for religious minority at the individual level. Finally, all models control for wave fixed effects and ethnic group and religious group fixed effects.

Table S3.3
Linear probability estimating the effect of villages obtaining or losing autonomy on the probability of receiving subsidized rice

Dependent = Receives Raskin rice from local government (1=yes)	Model S3.8: Obtains autonomy Diff-in-Diff	Model S3.9: Loses autonomy Diff-in-Diff	Model S3.10: Obtains autonomy Fixed-effects	Model S3.11: Loses autonomy Fixed-effects	Model S3.12: Non-autonomous villages Fixed-effects	Model S3.13: Autonomous villages Fixed-effects
Wave (1 = fifth wave)	0.074 (0.031) [p=0.016]	0.068 (0.039) [p=0.083]	-0.015 (0.222) [p=0.946]	0.139 (0.098) [p=0.162]	-0.025 (0.099) [p=0.799]	0.142 (0.120) [p=0.254]
Wave * non-coethnic	0.282 (0.042) [p=0.000]	0.010 (0.057) [p=0.857]	-0.290 (0.101) [p=0.008]	0.296 (0.048) [p=0.000]	0.056 (0.061) [p=0.358]	0.074 (0.053) [p=0.184]
Wave * non-coethnic * Obtains autonomy	-0.299 (0.095) [p=0.002]	-0.228 (0.117) [p=0.051]	-	-	-	-
Individual Fixed effects	No	No	Yes	Yes	Yes	Yes
Village fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Wave fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Alternative moderating effects						
Wave * Obtains autonomy	Yes	Yes	No	No	No	No
Non-coethnic * Obtains autonomy	Yes	Yes	No	No	No	No
No. of observations	3,407	8,000	2,082	2,460	5,979	894
No. of individuals	2,473	5,854	1,643	1,811	4,325	624
No. of villages (clusters)	60	164	29	46	135	15
R-squared (overall)	0.471	0.401	0.013	0.003	0.010	0.013
R-squared (within)	0.041	0.007	0.083	0.085	0.031	0.172
R-squared (between)	0.529	0.465	0.012	0.002	0.009	0.011

Notes: Standard errors are in parentheses and p-values in square brackets. Standard errors are clustered at the village-level. The marginal effects of the key explanatory variables of the difference in difference analyses can be found in Figure 3 for villages that gain autonomy (Model S3.8) and in Figure 4 for villages that lose autonomy (Model S3.9). The additional control variables that we include are education, subjective economic well-being, age and age squared, sex, household size, able to speak national language, dummies for employment status, and dummy for religious minority at the individual level. Finally, all models control for ethnic and religious group fixed effects.

Table S3.4
Villager-village head ethnic distance and the receipt of subsidized rice in villages with and without autonomy using regions' historic support for the United States of Indonesia as an instrument

Dependent = Receives Raskin rice from local government (1=yes)	Model S3.14	Model S3.15: Additional controls for eligibility	Model S3.16: Additional moderating effect (religious minority)
No- coethnic (1=yes)	-0.134 (0.066) [p=0.042]	-0.138 (0.070) [p=0.050]	-0.138 (0.070) [p=0.050]
Non-coethnic * Non-autonomous village	0.113 (0.062) [p=0.066]	0.136 (0.066) [p=0.039]	0.136 (0.066) [p=0.039]
Village fixed effects	Yes	Yes	Yes
Non-autonomous village (1=yes)	Yes	Yes	Yes
Additional controls for eligibility			
Household assets (natural log)	No	No	Yes
Household consumption (natural log)	No	No	Yes
Additional moderating effect			
Religious minority * Non-autonomous village	No	No	Yes
No. of observations	14,475	12,075	12,075
No. of individuals	10,750	9,016	9,016
No. of villages	230	235	228
R squared (overall)	0.404	0.429	0.429
R squared (within)	0.008	0.004	0.004
R squared (between)	0.406	0.486	0.489

Notes: Coefficients refer to linear probabilities. Standard errors are in parentheses and p-values in square brackets. Standard errors and p-values are robust standard errors and p-values and are clustered at the village level. We report results for linear probability models only to facilitate interpretation of the coefficients. Logistic models render similar results (available on request). The additional control variables that we include are education, subjective economic well-being, age and age squared, sex, household size, able to speak national language, dummies for employment status, and dummy for religious minority at the individual level. Finally, all models control for wave fixed effects and ethnic and religious group fixed effects. See Figure S1.3 for an extensive explanation of the instrumental variable. Table S1.2 in Supplement presents results of tests of the strength of the instrument.

Table S3.5
Linear probability estimating the effect of autonomous and non-autonomous villages introducing/retracting local elections on the probability of receiving subsidized rice

| Dependent = Receives Raskin rice from local government (1=yes)	Model S3.17: Diff-in-Diff	Model S3.18: Fixed effects
Non-coethnic with village head (1=yes)	-0.012 (0.054) [p=0.819]	-
Non-coethnic * Mayoral elections	-0.184 (0.081) [p=0.023]	-0.409 (0.120) [p=0.001]
Non-coethnic * Non-autonomous village * Mayoral elections	0.180 (0.082) [p=0.028]	0.338 (0.113) [p=0.003]
Individual fixed effects	No	Yes
Village fixed effects	Yes	Yes
Alternative moderating effects		
Wave * Non-autonomous village	Yes	Yes
Non-coethnic * Non-autonomous village	Yes	Yes
No. of observations	12,294	12,294
No. of individuals	9,255	9,255
No. of villages (clusters)	235	235
R-squared (overall)	0.431	0.001
R-squared (within)	0.016	0.039
R-squared (between)	0.487	0.000

Notes: Standard errors are in parentheses and p-values in square brackets. Standard errors and p-values are robust standard errors and p-values and are clustered at the village-level. The coefficients refer to linear probabilities. The marginal effects of the key explanatory variables of the difference in difference analyses can be found in Figure S3.1 in Supplement 3. The additional control variables that we include are education, subjective economic well-being, age and age squared, sex, household size, able to speak national language, dummies for employment status, and dummy for religious minority at the individual level. Finally, all models control for ethnic group and religious group fixed effects.

Figure S3.1
Marginal probability of receiving subsidized rice for coethnics and non-coethnics in autonomous villages where village heads are elected (Panel a) or appointed (Panel b)

Panel a: Marginal probability of receiving Raskin rice for coethnics and non-coethnics in autonomous **villages where village heads are elected**

Panel b: Marginal probability of receiving Raskin rice for coethnics and non-coethnics in autonomous **villages where village heads are appointed**
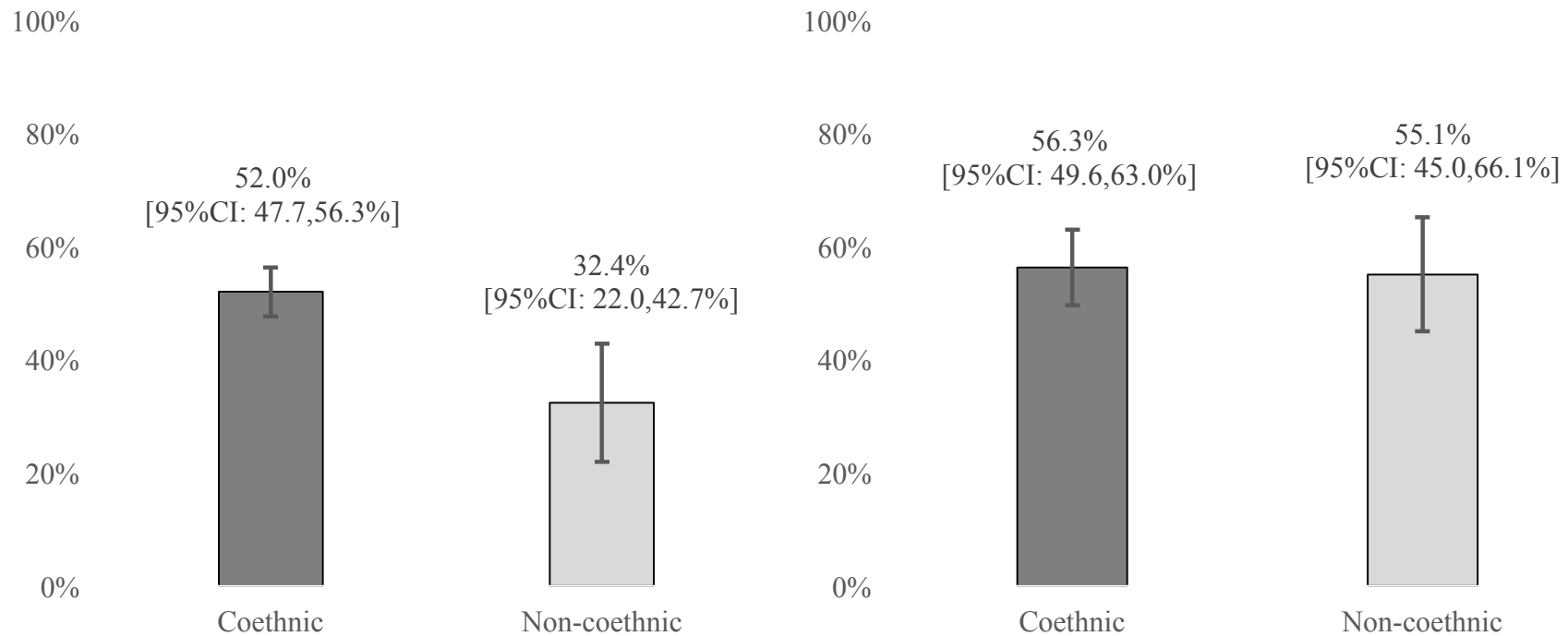
Notes: Figure presents differences in the marginal probability of receiving subsidized rice between coethnics and non-coethnics in autonomous villages where village heads are directly elected by the people (Panel a) or villages where village heads are appointed by a higher government (e.g., province, regency). These marginal probabilities derive from the estimation of Model S18 in Table S3.5 in Supplement 3 and are estimated at means. 95% confidence intervals (CIs) are calculated with robust standard errors that are clustered at the village level.

SUPPLEMENT 4: VILLAGE-LEVEL CHANGES IN ETHNIC INEQAULITY

Table S4.1
Development of localized interethnic inequality over time for villages with and without autonomy

Panel a: % of variance in household consumption (Column 1) and household assets (Column 2) that is explained between ethnic groups within villages disaggregated for villages with and without autonomy.

Year	**Column 1:** % variance between ethnic groups within villages		**Column 2:** % variance between ethnic groups within villages	
	2007	2014	2007	2014
Villages without autonomy	12.7% [95% CI: 9.51,16.7%]	9.66% [95%CI: 6.36,14.4%]	48.6% [95%CI: 44.1,53.2%]	39.9% [95% CI: 35.0,45.0%]
Villages with autonomy	14.6% [95% CI: 10.2,20.3%]	45.3% [95%CI: 34.5,56.5%]	42.0% [95%CI: 34.2,50.1%]	58.5% [95%CI: 50.3,66.2%]
Complete sample	27.9% [95%: 22.4, 34.2%]	11.6% [95%CI: 8.43,15.7%]	39.3% [95%CI: 36.8, 41.9%]	43.6% [95% CI: 49.5, 47.9%]

Notes: Table presents % of variance in household consumption (Column 1) and household assets (Column 2) that is explained between ethnic groups within villages for the years 2007 and 2014 (vs. the variance that is within ethnic groups within villages) for villages without autonomy, villages with autonomy, and all villages from our sample.