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Inequality and Stability in Democratic and Decentralized Indonesia

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ABSTRACT

Inequality and Stability in Democratic and Decentralized Indonesia

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Economic inequality in Indonesia has been on the rise and recently reached a record high level of 0.41 measured by the Gini index of household consumption expenditure. Aside from economic implications, the issue of rising inequality is also socially and politically important as it may harm societal stability, especially in a large, diverse and young democracy plagued by widespread poverty and vulnerability amid rising expectations. This study finds empirical support for the violence-increasing effects of higher inequality across districts in provinces previously considered as 'high conflict' regions. The result is robust after controlling for province and time effects, ethnic and religious fractionalizations and series of usual determinants of violence, as well as across different measures of violence. This new evidence implies that it is important to include measures to tackle inequality as an explicit focus in the development agenda.

Keywords: inequality and stability, inequality and violence, district panel, crime in Indonesia

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GAM	*Gerakan Aceh Merdeka*	Free Aceh Movement
OPM	*Organisasi Papua Merdeka*	Free Papua Organization
PDP	*Presidium Dewan Papua*	Presidium of Papua Council
RGDP		regional gross domestic product
SIRA	*Sentra Informasi Referendum Aceh*	Information Center for Referendum in Aceh
SNPK	*Sistem Nasional Pemantauan Kekerasan*	Indonesian National Violence Monitoring System
UNDP		United Nations Development Programme
UNSFIR		United Nations Support Facility for Indonesian Recovery

I. INTRODUCTION

In recent years, rising income inequality has become increasingly a global concern. In the last two decades, income inequality has risen in the majority of advanced economies and some large developing countries. Domestic inequality of disposable income increased in 65 out of 130 countries for which data is available, and these countries are home to more than two thirds of the world's population (UN, 2013). The US economy, which was the epicentre of the two major global economic crises over the past century (the Great Depression, starting in 1929, and the Global Financial Crisis starting in 2007), experienced a sharp increase in income and wealth inequality leading up to these two events (Kumhof and Rancière, 2010; Rajan, 2010).

Rising inequality, more specifically between the richest 1%and the remaining 99%, and corporate greed are at the heart of the Occupy Wall Street movement which started in the United States and spread to other developed economies (Dube and Kaplan, 2012). More recently, Pope Francis stated that "inequality is the root of social evil" (Christian, 2014) and Barack Obama labeled income inequality as the "defining challenge of our times" (Newell, 2013). Piketty (2014) argued that rising inequality is embedded in the capitalist economic system because returns to capital have been increasingly higher than the overall economic growth rate since the middle of the last century.

Indonesia shares a similar concern, as income inequality has been on the rise, especially after the late 1990s economic crisis and subsequent reforms. Concerns with the overall (vertical) inequality in Indonesia, so far, is primarily driven by the evolution of Gini coefficient of per capita household expenditure derived from the National Socioeconomic Survey (Susenas). It has been said that during the period of the "East Asian miracle" before the 1997 Asian financial crisis (AFC), the Indonesian economy did not follow Kuznets' (1955) prediction of a trade-off between income and equality in the early stages of development. Three decades of sustained high growth was achieved while maintaining a relatively constant overall inequality level, as measured by the Gini coefficient of household expenditure (around 0.33) (World Bank, 1993).

However, the story is different in post-crisis Indonesia. While the economy recovered fairly quickly from the AFC and the growth has been assessed to be quite robust amid the recent global financial crisis (GFC), overall inequality has increased. The expenditure Gini ratio reached a record high at 0.41 in 2011 and 2012, surpassing the warning level of 0.4 for the first time.[1] Since 2011, Indonesia could be categorized as a country with low income and high inequality, moving away from the low income and low inequality situation of a decade earlier (Yusuf, 2014).

A cautionary approach should be adopted when using the Susenas-based expenditure Gini coefficient in gauging the magnitude of economic inequality in Indonesia both during the 'miracle' New Order economy as well as during the recent period of rising inequality. It has been argued that the Susenas expenditure Gini tends to seriously underestimate the true level of economic inequality. The reason for this are firstly conceptual, but also technical.

[1] A Gini coefficient of 0.4 is considered as the international warning level for dangerous levels of inequality. This is a widely cited reference when China published its Gini index in early 2013 for the first time in 12 years, see for example, 'China's 'Above Warning Level' Income Gap Shows Inequality' (http://www.globaltimes.cn/ content/756786. shtml) and 'Gini Coefficient Release Highlights China's Resolve to Bridge Wealth Gap' (http://news.xinhuanet.com/ english/china/ 2013-01/21/c_132116852.htm).

On a conceptual level, when using the Gini index of consumption expenditure, it should be remembered that consumption is clearly different from income, let alone wealth or assets. Consumption expenditure only represents part of income earned in a typical household; it has a smoothing effect through savings and withdrawal. In the longer term, income is accumulated in the form of wealth or assets that grow through capital gains or investment returns. Therefore, by definition, expenditure inequality is lower than income inequality, and income inequality should be less than wealth inequality.[2] Economic inequality could refer to any of these inequalities, whether consumption, income or wealth.

On technical grounds, the sampling nature of the Susenas tends to fail to capture the consumption of the very high and very low income groups; it can be difficult to make contact with these groups, and the data collected may not reflect actual consumption patterns (Yusuf, 2006). Therefore, if Indonesia is concerned with the recent rise in expenditure Gini beyond the warning level, one can only imagine the true magnitude of economic inequality based on income or wealth measures.

There are at least two potential effects of inequality that are well-reported in existing literature. First relates to the effect on economic performance or prosperity; and second is how it affects societal stability. Both effects are important and they also influence one another. On the one hand, an equitable and sustainable rise in prosperity is needed for societal stability; on the other hand, stability could be seen a prerequisite for that kind of prosperity. This paper is aimed at examining the possible effects of inequality on societal stability based on recent socioeconomic data in democratic and decentralized Indonesia, which refers to the period after the rather chaotic transition of late 1990s and early 2000s.

This study has three main findings. *First*, it finds a violence increasing effect of vertical inequality that helps in explaining the bell-shaped curve relationship between violence and income. This is done by treating vertical inequality endogenous to income following the Kuznets curve. These findings, in particular, bring together coherent three way relationships of the three variables: inequality, income, and violence. The effect of inequality on violence is much stronger and more consistent than the role of variables belonging to the opportunity hypothesis such as growth, poverty, education, and demography.

Second, at a macro level, it highlights a changing nature of collective violence in Indonesia from the dominance of large scale episodic violence during the transition to the dominance of small scale routine violence in post-2005 Indonesia. Closely related to the second finding, the *third* is about the characteristics of post-2005 ethnic violence that show a close resemblance with that of routine violence. This is in contrast to the episodic nature of ethnic violence during the democratic transition. This finding is supported by the fact that the three way relationships of vertical inequality, income, and violence are not only found in the cases of routine violence and violent crime, but also valid for the case of ethnic violence. The shift from episodic to routine

[2]The following bears testimony to the presence of a tiny, but very wealthy elite in Indonesia. In 1996 the top ten super-rich Indonesian families controlled 57.7 per cent of stock market capitalization in the country; this is the highest proportion in East Asia (Claessens, Djankov, and Lang, 1999). In 2011, although Indonesia's richest 43,000 citizens represented less than one hundredth of 1% of the population, their total wealth accounted for 25% of the country's GDP; the average wealth of the 40 richest Indonesians is the highest in the region and their combined wealth is equal to 10.2 per cent of the country's GDP (Winters, 2013). Furthermore, the fragility of the Indonesian economy in the wake of the Asian financial crisis and its subsequent democratic transition indicate that the level of economic inequality in Indonesia had not been low and stable as was commonly perceived (Thee, 2002; UNSFIR, 2003; Dhanani, Islam, and Chowdhury, 2009; Frankema and Mark, 2009). The long-term data (1971–2008) indicates that only a minority share of income (less than 30%) accrued to labor, while the majority belongs to capital; and the proportions have not changed much over the period (Tadjoeddin, 2013b).

violence and the changing nature of ethnic violence point to a process of normalization of collective violence as the effect of the transition shock has largely disappeared since 2005, when the country reached the new equilibrium of social contract in the form of democratic and decentralized Indonesia (Tadjoeddin, 2014).

The rest of the paper is organized as follows. Section II discusses the notion of societal stability as our main concern. Section III traces earlier literature to locate inequality in the process of development and probes its potential links with societal stability. Section IV offers a brief overview of inequality and conflict. Our empirical estimation strategy is detailed in section V, while results are presented in Section VI. A brief conclusion is offered in the last section.

II. WHY STABILITY AND WHAT DO WE MEAN BY IT

The importance of societal stability for ethnically diverse Indonesia, with a population of 250 million people cannot be overlooked. The country is a young democracy and the third largest in the world. After being upgraded by the World Bank to the status of a lower-middle income country, more recently Indonesia was upgraded to the 10th largest economy in the world by virtue of recent purchasing power parity (PPP) data (*Jakarta Post*, 2014). The country's transition to democracy took place amid a serious economic decline in the wake of the late 1990s AFC.

The transition is, however, regarded as by some as a risky exercise as some authors argue that there is a minimum threshold of income at which democracy can be successful (Przeworksi et al., 2000; Zakaria, 2003). Although democracy is seen as a nonviolent mechanism for conflict resolution, the practice of democracy in low and lower-middle income countries is often complicated by violence, even civil war. The risks of violent conflict during democratic transitions in lower income countries have been strongly attested to, and empirically supported (Hegre et al., 2001; Snyder, 2000). Based on anecdotal evidence, several influential commentators have also suggested that democratization in developing countries produces poor economic outcomes, political instability, and ethnic conflict (Kaplan, 2000; Chua, 2002; and Zakaria, 2003).

To a large extent, the Indonesian experience very much concurs with the above assessment as the country's move toward democracy was accompanied by a significant eruption of violent conflict. In fact, the surge in various kinds of violence during the initial phase of transition led some observers to portray Indonesia as a potential Balkan of Southeast Asia, in reference to the risk of disintegration that the country faced (Booth, 1999; Cribb, 1999).

Violent conflict, or group and collective violence in contemporary Indonesia could be broadly categorized into episodic and routine events (Tadjoeddin and Murshed, 2007; Tadjoeddin 2014). The former consists of separatist and ethnic violence, and the latter centers on group brawls and vigilante violence. While episodic violence is typically associated with a high number of deaths and a relatively low number of incidents, the routine variety is characterized by the converse. Between 1990–2003, ethno-communal violence accounted for 89% of total deaths (9,612 fatalities) in cases cases of nonseparatist collective violence, but it contributed only 17% of total incidents; routine violence accounted for 11% of deaths but 83% of total incidents (Varshney, Tadjoeddin, and Panggabean, 2008).

Separatist violence was confined to Aceh, Papua, and East Timor before its official independence from Indonesia. Episodic violence has had a major economic impact and displaced many people,[3] while routine violence tends to cause minor damage and is less likely to displace inhabitants. Interestingly, during the peak of the transition, while routine violence occured in almost all areas of Java, episodic violence was concentrated in a few regions in the outer islands.

A surge in separatist and ethnic violence marked the Indonesian transition to democracy. Soon after the fall of Suharto, the new generation of Free Aceh Movement (GAM) rebels, energized by new Libyan-trained recruits, launched a fresh challenge to the Indonesian grip on the Aceh Province. A similar story of a significantly renewed secessionist challenge launched by the Free Papua Organization (OPM) also occurred in Papua in the eastern end of the country. The renewed secessionist challenges were not only articulated militarily (GAM in Aceh and OPM in Papua); they were also complemented with political moves among civil society organizations, as represented by the Information Center for Referendum in Aceh (SIRA) and the Presidium of Papua Council (PDP) in Papua.

Secessionist political movements, complemented by organized rebel wings, were clearly present in Aceh and Papua, and they are categorized as having high and medium levels of separatist violence respectively. The secessionist civil war in Aceh was ended by the 2005 Helsinki Peace Agreement 2005 which offered self-governance for the region, while the separatist violence in Papua has declined significantly since the granting of special autonomy status to the region in 2001. The GAM rebel military organization in Aceh has been transformed into several local political parties that now participate in local democratic processes. In fact, the provincial government has been run by the former rebels since 2007. In Papua, elements of the separatist movement have also been largely absorbed into local political and economic processes under the cloak of decentralization and local democracy.

Inter-ethnic violence rampaged through Maluku, Poso, Sambas, Sampit, and several other locations with a clear pattern of regional concentration, and mainly occurred in the late 1990s and early 2000s during the peak of democratic and decentralization reforms. Ethnic violence occurs among communal groups clearly divided along ethnic lines. Following Horowitz (1985), “ethnic” is broadly defined as ascriptive (birth based) group identities: race, language, religion, tribe, or caste can become the basis of ethnic identities.

The construction of systematic data on collective violence in Indonesia was pioneered by the UNDP-sponsored UN Support Facility for Indonesian Recovery (UNSFIR) (Tadjoeddin, 2002; Varshney, Tadjoeddin, and Panggaben, 2008). Later, the World Bank expanded and deepened the UNSFIR collective violence database through the ViCIS project (Barron et al. 2009). The World Bank collective violence database has been adopted into the Indonesian National Violence Monitoring System[4] (SNPK). The SNPK is officially housed at the Coordinating Ministry for People’s Welfare and receives technical support from the Habibie Centre and the World Bank. The SNPK collects data on incidents of collective violence and violent conflict, as well as violent crime.

Looking at the data, there is a clear shift in the pattern of collective violence away from separatist and ethnic violence (as found during the peak of democratic transition in late 1990s and early 2000s) towards the dominance of routine violence in the post-transition period. Figures 1 and 2

[3]In 2001 during the peak of violent conflicts in Indonesia, it was reported that violent incidents had created 1.3 million internally displaced persons (IDPs) spread across 22 provinces throughout the country (*The Jakarta Post*, 20 November 2001).

[4]See www.snpk-indonesia.com for further information about the database and its content.

present the aggregate trends of collective violence during 2005–2012, the period after major episodes of separatist and ethnic violence during the peak of the transition had been largely resolved.[5] The data is for regions previously considered as "high conflict" during the peak of the transition, including Aceh, Lampung, Jakarta, and some districts (*kabupaten*) in West Java (Bogor, Depok, and Bekasi), Banten (Tangerang), West Nusa Tenggara (NTB), East Nusa Tenggara (NTT), West Kalimantan, Central Kalimantan, Central Sulawesi, Maluku (including North Maluku) and Papua (including West Papua). From both measures, fatalities, and total incidents, routine violence has been by far the most dominant form of collective violence since 2005.

Figure 1. Incidents of collective violence in previously "high conflict" regions, 2005–2012

Source: Calculated from SNPK data.

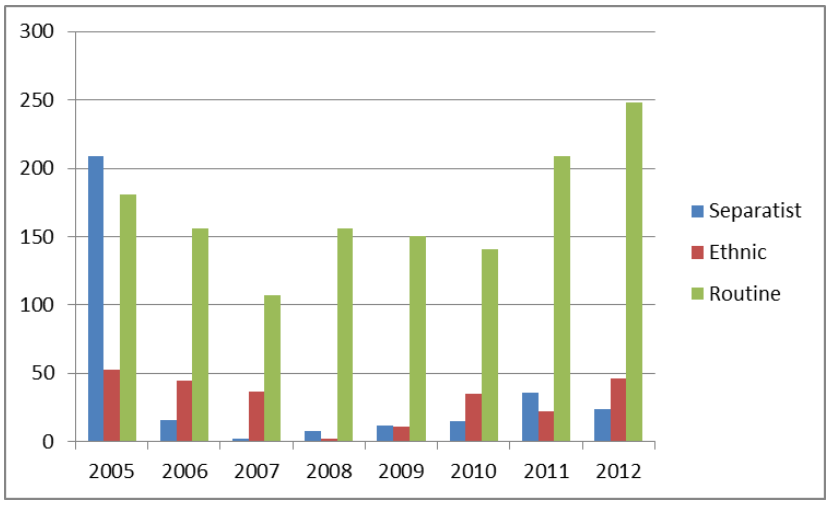

Figure 2. Death due to collective violence in previously "high conflict" regions, 2005–2012

Source: Calculated from the SNPK data.

[5]See Varshney, Tadjoeddin, and Panggabean (2008) for patterns of collective violence during democratic transition in Indonesia.

The nonepisodic nature of routine violence during 2005–2012 can be seen from tables 1 and 2. Incidents of routine violence and related fatalities are spread over the years without any clear pattern of regional concentration, which is in contrast to separatist and ethnic violence during the peak of the transition. Furthermore, a closer look at the aggregate time series data of incidents and damaged caused (deaths, injuries, and damaged buildings) shows increasing trends of routine and ethnic violence in recent years, particularly during 2009–2012, as depicted in figures 3 and 4. The increasing trend of ethnic violence is more pronouced, which is quite worrying. However, it has to be noted that the magnitude of ethnic violence is far lower than that of routine violence, a comparison depicted earlier in figures 1 and 2.

Table 1. Deaths in Routine Violence, 2005–2012

Region	2005	2006	2007	2008	2009	2010	2011	2012
Aceh	4	2	2	14	6	6	14	11
Lampung	22	19	17	25	27	28	26	25
Jabodetabek[a]	78	72	30	47	32	41	58	78
West Nusa Tenggara	17	12	17	14	23	12	15	20
East Nusa Tenggara	19	14	10	9	12	10	21	18
West Kalimantan	3	3	2	2	7	7	5	3
Central Kalimantan	2	7	3	8	5	2	7	5
Central Sulawesi	10	8	7	2	2	11	7	11
Maluku	11	3	7	22	4	7	12	36
Papua	15	16	12	13	32	17	44	41
Total	**181**	**156**	**107**	**156**	**150**	**141**	**209**	**248**

Source: Calculated from the SNPK data.
[a]Greater Jakarta (Jakarta, Bogor, Depok, Tangerang, and Bekasi).

Table 2. Incidence of Routine Violence, 2005–2012

Region	2005	2006	2007	2008	2009	2010	2011	2012
Aceh	30	87	148	227	278	212	216	392
Lampung	196	214	150	175	201	167	175	161
Jabodetabek[a]	939	763	627	492	568	487	631	716
West Nusa Tenggara	201	189	183	195	162	221	170	247
East Nusa Tenggara	140	109	100	132	111	116	127	134
West Kalimantan	239	227	193	166	201	135	91	95
Central Kalimantan	42	58	61	81	74	59	91	86
Central Sulawesi	83	96	98	90	69	98	113	146
Maluku	124	94	131	214	165	214	194	280
Papua	178	134	152	220	243	243	281	376
Total	**2172**	**1971**	**1843**	**1992**	**2072**	**1952**	**2089**	**2633**

Source: Calculated from the SNPK data.
[a]Greater Jakarta (Jakarta, Bogor, Depok, Tangerang, and Bekasi).

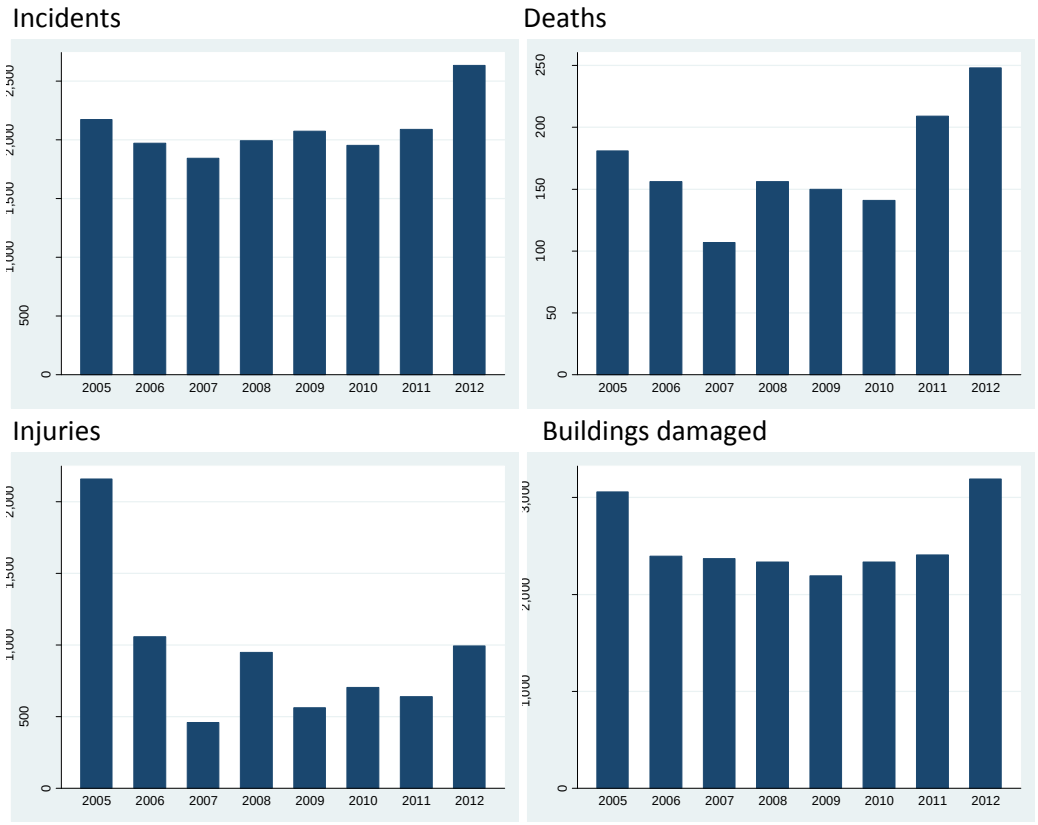

Figure 3. Routine violence: incidents and damage caused, 2005–2012

Source: Calculated from the SNPK data.

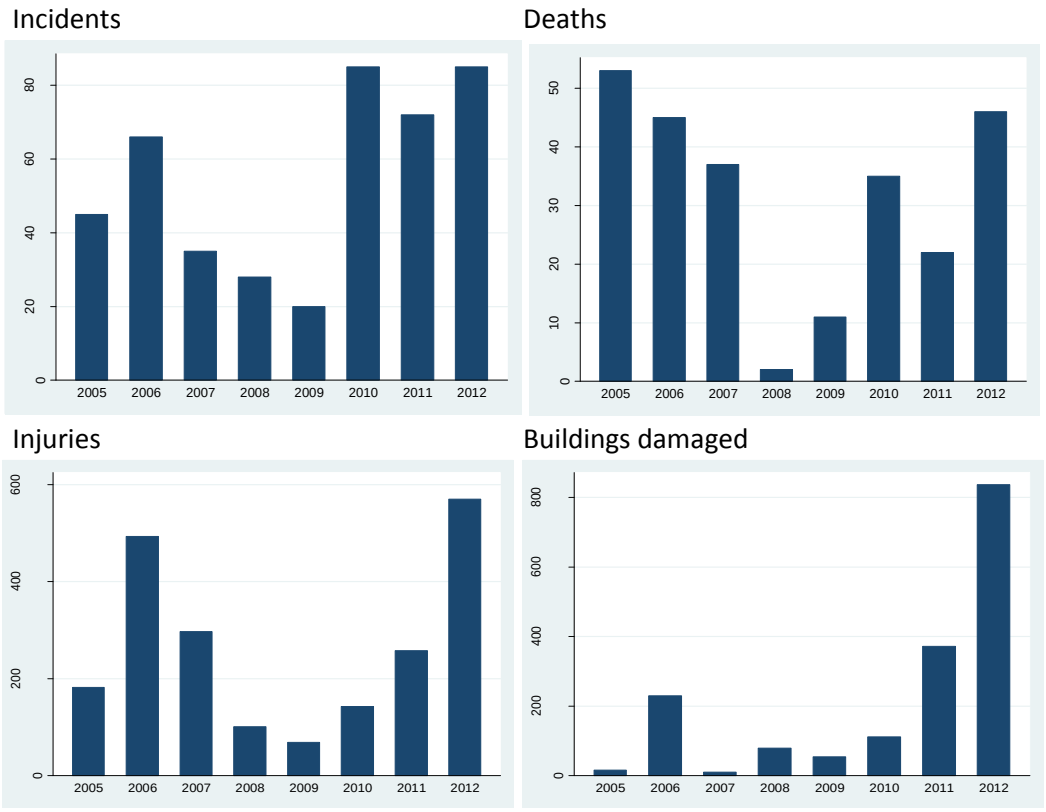

Figure 4. Ethnic violence, incidents, and damage caused, 2005–2012

Source: Calculated from the SNPK data.

Societal stability could be understood as harmony in societal relations. However, this is an abstract desirable outcome that cannot be easily represented by a single indicator, let alone directly measured. In the interest of practicality, it will be easier to focus on variables that may harm societal stability. In this regard, two variables are important: violent conflict and violent crime. For violent conflict, this study concentrates on routine violence during 2005–2012 in regions previously considered as "high conflict" provinces, due to the changing pattern of collective violence in Indonesia explained earlier.

III. INEQUALITY IN DEVELOPMENT

Economic inequality within a society is essentially a by-product of the development process. Therefore, the presence of inequality has long been regarded as a natural phenomenon. Suppressing the level of inequality to zero is a utopian ideal and has been proven to be a failed experiment, as evident in economically communist China and the former Soviet Union. The challenge lies in keeping an eye on the level of inequality and maintaining it at a tolerable level.

There is a long list of literature on inequality in development. However, Albert Hirschman, Arthur Lewis, and Simon Kuznets are among the pioneers (Hirschman, 1973; Lewis, 1976; Kuznets, 1955). Lewis (1976) stressed the inevitable presence of inequality during the development process, and famously contended that development must be inegalitarian because "it does not start in every part of the economy at the same time" (26).

Much earlier than that, Kuznets (1955) argued that a trade-off inevitably occurs between income and inequality in the early stage of development, before an economy eventually achieves higher levels of income and reduced inequality. Kuznets' analysis of the evolution of inequality—taking the shape of an inverted-U with regard to income level—is based on the sectoral transition of workers from (traditional) agriculture to (modern) industry. This process implies that: (i) the surge in inequality is temporary and will eventually decline as income progresses; (ii) the higher inequality in the middle part of the inverted-U curve, representing the transitional period from agriculture to industry is driven by income differences between the agricultural and industry sectors; (iii) the levels of inequality within both the agricultural and industrial sectors are lower than the overall inequality when the two sectors are combined.

The concept of tolerance for economic inequality, introduced by Hirschman (1973), expands the discussion on inequality in development to include societal stability. If this tolerance exceeded, hope will transform into grievance. Hirschman (1973) explained the notion of tolerance for economic inequality through the idea of a "tunnel effect". The tunnel illustration is originated from Hirschman's explanatory analogy with traffic in a two-lane tunnel traffic jam. The traffic jam is confined to one lane but is stirred into hope by movement in the second lane; eventually some drivers will illegally cross into that lane, if it seems that the traffic jam appears to be clearing there. In this illustration, the "tolerance limit" is the maximum duration of how long drivers in the first lane remain patient before they start to illegally cross lanes.

Hirschman identified a social mechanism that contains the sense of relative deprivation or envy that emerges due to a rise in inequality. As development proceeds, some people's fortunes improve and others are left behind, and thus inequality typically increases. But rather than being plagued by anger, this may instead lift the expectations of those left behind. Greater inequality communicates information about social and economic advancement that could be interpreted as

a source of hope even for those not immediately benefiting from development. However, hope will be replaced by grievance if the tolerance reaches its limit, and such grievances may endanger societal stability.

Inequality relates to other economic, political, and social issues. Rising inequalities have challenged the notion of the trickle-down effect of economic growth advanced by mainstream economics. High levels of inequality can be a serious obstacle to future economic growth and a potential cause of underdevelopment (Berg, Ostry, and Zettelmeyer, 2012; Easterly, 2007). Poverty reduction is undermined by rising inequality (Ravallion, 2011). Inequality is also found to positively correlate with current account deficits and household debts (Goda, 2013; Kumhof and Rancière, 2010; UNCTAD, 2012); both are sources of macroeconomic instability. Rising inequality undermines democracy (Stiglitz, 2012) and is a primary source of many social ills (Wilkinson and Pickett, 2009). More importantly, and related to the focus of this study, rising inequality has also been associated with violent conflict; this is the issue, in turn, discussed below.

IV. INEQUALITY AND CONFLICT

An important dimension in the analysis of violent conflict is the perceived and actual equitability of distribution of the fruits of economic progress among the population. In short, income inequality does matter. There are two types of inequality, vertical and horizontal. Vertical inequality refers to inequality in a general population and is commonly measured by the Gini coefficient.[6] Horizontal inequality refers to inequality between different ethno-social groups or regions. It can be measured simply by the ratio of mean or average incomes of two groups (or regions). It can also be measured by the relative size of different groups' (or regions') share of total income—Gross National Income (GNI), group Gini coefficients or by a metric akin to the coefficient of variation. Horizontal inequality thus shows the relative welfare of different socioeconomic or ethno-religious groups or regions. Horizontal inequality generates a sense of relative group deprivation, while vertical inequality causes a general sense of personal deprivation among the poor and lower-middle income groups.

The link between inequality and conflict is an age-old concern. Many theorists have suggested that the former breeds the latter, for example Gurr (1970), Huntington (1968), and Russett (1964).[7] Cramer (2005: 1) argues, "it is almost a universal assumption that an inequitable distribution of resources and wealth will provoke violent rebellion." Kanbur (2007:5) states that "it seems to be generally accepted that poverty and inequality breed conflict." In general, inequality creates a sense of injustice that is central to the grievance behind any kind of violent conflict. Nafziger, Wayne, and Auvinen (2002) find that large income inequality exacerbates the vulnerability of populations to humanitarian emergencies.

[6]Another widely used measure is the decile dispersion ratio, which presents the ratio of the average consumption or income of the richest 10% of the population divided by the average income of the bottom 10%. It indicates how the bottom decile of the population (in terms of income) fairs in comparison with the top decile.

[7]Since Aristotle, social philosophers have speculated that economic inequality is a fundamental cause of political violence and revolution. De Tocqueville ([1835] 1961:302) stated the classical hypothesis succinctly: "Almost all of the revolutions which have changed the aspect of nations have been made to consolidate or to destroy social inequality. Remove the secondary causes which have produced the great convulsions of the world, and you will almost always find the principle of inequality at the bottom".

Muller (1997: 137) argued that "a high level of income inequality radicalizes the working class, enhances class polarization, and reduces the tolerance of the bourgeoisie for political participation by the lower classes." In a cross-country study, he showed a positive correlation between income inequality and binary variable of stability and instability of democracy between 1960 and 1980. These studies support the work of Alesina and Perotti (1996) who found that income inequality was associated with social discontent and political instability, which in turn are correlated with lower investment.

However, the two most widely cited cross-country empirical studies on civil war by Fearon and Laitin (2003) and Collier and Hoeffler (2004) have largely dismissed the role of inequality in conflict. From a political science perspective, Fearon and Laitin imply that inequality does not matter because of state capacity, referring to the suppressive power of the state. The Collier and Hoeffler view is more akin to banditry or warlordism. For them, the root cause of conflict is not social pathology, such as inequality, but individual pathology like greed. They also ignore the issue of collective action, as discussed in Olson (1965), because political scientists are too often analytically blinded by the concept of power, while neo-classical economists are primarily concerned with selfish motivations.

Since these studies (Fearon and Laitin, 2003; Collier and Hoeffler, 2004) use the Gini index of *vertical* income inequality that measures inequality between individuals for the entire country, its differentiation between this and *horizontal* inequality, which focuses on inequality between groups, becomes critical. In this regard, Stewart (2000, 2008) argues that it is the latter (horizontal inequality) that matters for conflict. Groups' horizontal inequalities help in building in-group solidarity and, in turn, solve develop a basis for collective action. Stewart presents several case studies in support of her argument. Following Stewart's work, an emphasis on horizontal inequality has also received empirical support in a recent cross-country study of civil war (Cederman, Gleditsch, and Buhaug, 2013; Østby, 2008), as well as in ethnic conflict across districts in Indonesia (Mancini, Stewart, and Brown, 2008).

Horizontal inequality between different regional and ethnic groups played a significant role in separatist and ethnic conflicts in Indonesia (Tadjoeddin, 2011; 2013a). In contrast to Stewart (2000, 2008), Tadjoeddin argued that it is not the widening of horizontal inequalities that matters, but the convergence of socioeconomic progresses across regions and between ethnic groups achieved during Suharto's New Order authoritarian setting, which have led to a sense of relative deprivation among the previously richer and more influential groups.

Inter-ethnic conflict arising from a narrowing of horizontal inequality or converging gap between two competing ethnic groups is not unique to Indonesia. It is also the case in India, where Hindu populations are the traditionally privileged group and Muslims are a relatively disadvantaged group. Mitra and Ray (2013) find that an increase in Muslim well-being, proxied by Muslim per-capita expenditures, leads to a significant increase in future Hindu-Muslim violence, while an increase in Hindu well-being has no significant effect on future conflict. They interpret this as a product of Hindus acting as the aggressor against the marginalized group (Muslims) who are trying to catch up.

In the case of convergence, we may see that the traditionally privileged groups may act as the aggressor. On the other hand, in the case of divergence, the marginalized group becomes the aggressor, as in the case of the 1969 race riot in Malaysia when marginalized and poorer Malays attacked the wealthier Chinese. The marginalized may also become aggressors in the case of vertical inequality.

Another strand of research relates the role of vertical inequality in conflict related to democratization movements. For example, Acemoglu and Robinson (2006) believe that the demand for democracy is partly driven by aspirations for redistribution. In most cases, the democratization movements in thier early phases have involved violent actions against authoritarian regimes. The violence involves not only the citizens and the security apparatus, but also the beneficiaries of the system (the elites and their private armies) and the general public.

Therefore, it would be unwise to totally discount the role of vertical inequality in conflict and solely focus on horizontal inequality, as the latest research developments seem to suggest, see for example Stewart (2008) and Østby et al. (2011). Both types of inequality create a sense of frustration that is essential in fuelling grievances among the general population and socioeconomic and ethno-religious groups. It is argued that the opposing findings may be due to differences in the type of conflict considered. While the studies do not consider vertical inequality central to high profile violent conflicts such as civil war and ethnic conflict, a recent study by Tadjoeddin et al. (2012) finds that vertical inequality has a violence-increasing effect in the case of low-profile, routine violence in the densely populated and ethnically rather homogenous island of Java. In the case of routine violence, a general sense of deprivation among the population due to high inequality of income and assets may play a significant role. Routine violence in one sense is a manifestation of frustration, and can be seen as a competition among the lower strata of the socioeconomic class in the absence of a class war.

Therefore, recent studies on collective violence in contemporary Indonesia have helped to clarify the different roles of the two types of inequality (horizontal and vertical) within the two broad classifications of collective violence, episodic and routine. Based on the changing nature of collective violence in Indonesia discussed earlier, our empirical examination will focus on routine violence as the most dominant type of collective violence since 2005. In addition, we also examine ethnic violence as it shows an increasing trend, although its magnitude is much smaller than that of routine violence. It has to be noted that the characteristics of post-2005 ethnic violence show close resemblance to that of routine violence.

V. EMPIRICAL ESTIMATION STRATEGY

This study is an empirical examination of the link between inequality and societal stability. Stability is proxied by two variables: collective violence and violent crime. Collective violence data is taken from the SNPK dataset.[8] In addition to collective violence, the SNPK also collects violent crime statistics. As explained earlier, the SNPK has its origin in the World Bank's efforts in deepening and expanding of the previous UNSFIR collective violence database. In constructing the database, the SNPK gathers information from local newspapers, complemented by NGO reports and other reputable sources. Each entry provides information on the date, location, and impact of the event; classifications of type, form and trigger of violence; actor affiliation, and intervention. The SNPK is an ongoing effort. The SNPK data dates back to 1997, but the area coverage varies (see Table 3).

[8]See Barron, Jaffrey, and Varshney (2014) for a detail discussion about the SNPK dataset and how it was constructed.

Table 3. SNPK Area Coverage

Regions	Year		
	1997-2004	2005-11	2012-13
Aceh	v	v	v
Lampung	-	v	v
Jabodetabek[a]	-	v	v
West Nusa Tenggara	-	v	v
East Nusa Tenggara	v	v	v
West Kalimantan	v	v	v
Central Kalimantan	v	v	v
East Kalimantan	-	-	v
Central Sulawesi	v	v	v
Maluku	v	v	v
North Maluku	v	v	v
Papua	v	v	v
West Papua	v	v	v

Source: SNPK.

[a]Greater Jakarta (Jakarta, Bogor, Depok, Tangerang, and Bekasi).

Given the SNPK area coverage, for consistency, this study focuses on the period 2005–2012 for the following regions: (i) Aceh, (ii) Lampung, (iii) Jabodetabek, (iv) West Nusa Tenggara, (v) East Nusa Tenggara (vi) West Kalimantan, (vii) Central Kalimantan, (viii) Central Sulawesi, (ix) Maluku, (x) North Maluku, (xi) Papua, and (xii) West Papua. We use district level data to trace patterns back to 2000, before the start of the decentralization, meaning that we merge all new districts with their parent districts in 2000. Therefore we have panel data observations in the form of district-year.

The period 2005–2012 is chosen to achieve consistent coverage using SNPK data and represents a period when the episodic violence seen at the peak of democratic transition had been more or less settled. By 2005 the macro picture of Indonesian decentralization had reached a fairly stable shape. The decentralization laws initially introduced in 1999 (to take effect in 2001) were revised in 2004. The revision included the adoption of direct elections for heads of local government. Special autonomy arrangements in the previously restive regions of Aceh and Papua were confirmed.

Ethnic violence in several regions in the outer islands including Maluku, Sambas, Sampit, and Poso during the peak of decentralization reform has been labelled as communal war by Klinken (2007), while the more sporadic incidents of ethnic violence occuring after 2005 are rather different. The former reflects uncertainties during democratic and decentralization reforms, while the latter (post-2005 ethnic violence) is related more to problems stemming from the the residual illiberal characteristics of Indonesia's democracy due to incompleteness of the reform (Wilson, 2015).

Our main variables of interest are collective violence or violent crime as the inverse measures of societal stability, treated as dependent variables; and inequality as our main independent variable. The relationship is written as follows:

$$VIO_{it} = \alpha_0 + \alpha_1 INEQ_{it} + \alpha_n X_{nit} + \varepsilon_{it}$$

VIO represents an inverse measure of societal stability that includes routine violence, ethnic violence and violent crime. Routine and ethnic violence includes incidents and fatalities, while for violent crime we only consider the number of incidents. *INEQ* is the inequality variable. We consider both types of inequality, vertical and horizontal; the former is relevant for routine violence and violent crime, and the latter is more suitable to explain ethnic violence. The Gini index of consumption expenditure, based on Susenas data, is used as the vertical inequality measure, while group Gini (GGINI) and weighted group coefficient of variation (wGCOV) of years of schooling (education) across ethnic and religious groups, (based on the decadal population census), are used as the horizontal inequality measures.[9]

For the independent variables, in addition to the INEQ variable, we include *X* vector, representing a series of potential determinants of violence, as controls. They include economic growth, income (per capita regional gross domestic product—RGDP), poverty rate (percentage of population living below the poverty line), education (years of schooling), young (proportion of young population aged 15–24), urban (share of urban village in a district), ethnic/religious fractionalization and population size.

The inclusion of most of the independent variables is based on the opportunity/feasibility hypothesis on violence (Collier, Hoeffler and Rohner, 2009). Economic growth indicates recent and current economic situations that reflect hope for continuous increases in the income levels in the long run; therefore, growth should be negatively associated with violence (Tadjoeddin and Murshed, 2007). Level of income reflects the overall level of development. Both lower growth and income indicate lower opportunity costs to engage in violence for participants. There is a consensus that per capita GDP is the most robust predictor of civil war risk, and it is almost always included in any cross country conflict regression (Hegre and Sambanis, 2006; Ross, 2004). Fearon and Laitin (2003) use per capita GDP as a proxy for state strength, arguing that state weakness, such as limited policing capacity and poor infrastructure, provides the opportunity for rebels to sustain insurgency.

The logic of poverty as a determinant of violence is also closely linked to the opportunity hypothesis. However, different to lower average incomes, poverty measures are concerned with the relative size of the population living below a certain income threshold. Poverty was found be positively correlated with routine violence across districts in Java during 1993–2003 (Tadjoeddin and Murshed, 2007) and local electoral violence across districts in Indonesia during 2005–2007 (Tadjoedin, 2011). Education is another variable to gauge level of development, where a lower level of education is associated with lower opportunity cost to engage in violence (Østby and Urdal, 2010).

We also consider several demographic variables. The proportion of young people aged between 15 and 24, popularly referred to as youth bulge, is another control variable since the majority of participants in violent events are youths (Urdal, 2006, 2008). Then, we include an urban variable referring to the share of villages in a district classified as urban. A higher proportion of urban villages implies a higher population density; this indicates population pressure, making violence more likely (Ostby et al., 2011; Urdal, 2012). Next, ethnic and religious fractionalizations are control variables that account for grievances based on identity frames (Esteban, Mayoral and Ray, 2012). The last variable is population size, which serves purely as a control variable. We do not convert the dependent variables, either incident or fatality measures, into incident or death per

[9]See Mancini, Stewart, and Brown (2008) for a detailed formula for GGINI and wGCOV.

population in order to retain the original nature of our dependent variable as count data. This enables us to consistently use count data regression, negative binomial, to estimate the model.[10]

Data on vertical inequality (Gini index of consumption expenditure), years of schooling and proportion of young people are calculated from Susenas. Growth and per capita RGDP (Regional Gross Domestic Product) are derived from the 2010 Regional Income Account. Data on horizontal inequalities and fractionalization are calculated from the population census. All of this data is collected by Statistics Indonesia (BPS).

VI. RESULTS

This section details our results, presented in the order of our dependent variables (routine violence, ethnic violence, and violent crime). A robustness check is offered in the final part of this section.

6.1 Routine Violence

We begin with routine violence, the dominant type of collective violence since 2005. Vertical inequality is found to be positively correlated with incidents of routine violence (Table 4, Columns 3 and 4). The statistically significant and sizable magnitude of the Gini variable is obtained after treating inequality as endogenous to the level of income, following Kuznets' bell-shaped curve relationship between inequality and income (Kuznets, 1955). A Kuznets-type relationship between inequality and income in Indonesia has also been confirmed by a recent cross district panel study (Tadjoeddin, 2013c).

The positive and highly significant coefficients of income in Columns (1) and (2) are against our initial expectation, as studies show that that level of income is the most robust predictor of conflict (Hegre and Sambanis, 2006). We check a quadratic (bell-shaped curve) relationship between violence and income and found that the quadratic relationship is highly significant. This is to reconcile the contrasting views about the linear and nonlinear relationships between violence and income, as detailed in Tadjoeddin and Murshed (2007). An increase in prosperity may encourage predatory behavior in the form of private violence (akin to our concept of routine violence) stemming from grievances among the less fortunate or the greed of the more fortunate. Once growth progresses further, violence has to decline to sustain security of investment, and the state has to perform a regulatory function. If everyone's prosperity is lifted up to a certain level, they would be less envious and less prone to routine violence.

These two key findings, the violence-increasing effect of inequality and the bell-shape relationship between violence and income, are obtained after controlling for province and time-fixed effects, ethnic and religious fractionalization, and a series of usual suspected variables found to contribute to violence in the opportunity hypothesis. The three way relationship among the three variables—inequality (Gini), income, and routine violence—are summarized in Figure 5. These results

[10]The basic model for estimating count data is the Poisson regression model for rare events. However, the Poisson model usually suffers from the problem of over-dispersion. In this case, a popular alternative is the negative binomial regression. See Cameron and Trivedi (1998) for more details on count data regressions that are common in certain types of empirical research, such as criminology.

reaffirm the findings of previous studies by Tadjoeddin and Murshed (2007) and Tadjoeddin, Chowdhury, and Murshed (2012) on routine violence across districts in the Indonesian island of Java during 1993–2003.

Compared with the two previous studies that focused on districts in West, Central, and East Java and covering mainly the democratic transition period, the current study makes several improvements. First, its unit of analysis is across district in regions previously categorized as high conflict regions during the transition. However, the period of analysis is during 2005–2012, after uncertainties related to the democratic transition had been largely settled. This, in particular, relates to the changing nature of collective violence from the episodic one in pre-2005 to the routine one in post-2005. Second, it controls for time and province fixed effects simultaneously and a series of usual determinants of violence under the opportunity hypothesis.

Table 4. Vertical Inequality and Routine Violence (Negative Binomial Regressions)

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Gini	0.634	0.682				
Predicted_Gini			15.7***	15.4***		
Percapita RGDP	.021***	.021***			.048***	.047***
Percapita RGDP_squared					-2.3e-04***	-2.2e-04***
Fractionalization_ethnic	-.594*		-.569*		-.585*	
Fractionalization_religion		0.613		0.565		0.495
Growth of RGDP	-0.563	-0.681	-0.56	-0.674	-0.547	-0.667
Poverty	-.021**	-.019*	-.02**	-.019*	-.021**	-.019*
Years of schooling	.11*	0.101	.105*	0.097	0.091	0.085
Young population (15-24)	2.24	2.09	2.24	2.11	2.51	2.41
Urban dummy	.958*	0.778	0.861	0.694	.905*	0.737
Population (million)	.576***	.596***	.44***	.462***	.543***	.561***
Constant	0.56	0.484	-3.44*	-3.42*	0.665	0.569
Province_fixed effect	yes	yes	yes	yes	yes	yes
Year_fixed effect	yes	yes	yes	yes	yes	yes
Over-dispersions	-.699***	-.683***	-.66***	-.646***	-.714***	-.697***
Observations	664	664	664	664	664	664

Note: Significant at: *10, * *5, * * *1 percent levels; regressions are with robust standard errors clustered at district level; the variable of "predicted_Gini" is derived from the Kuznets-type relationship between inequality and income, controlled for province and time-fixed effects.

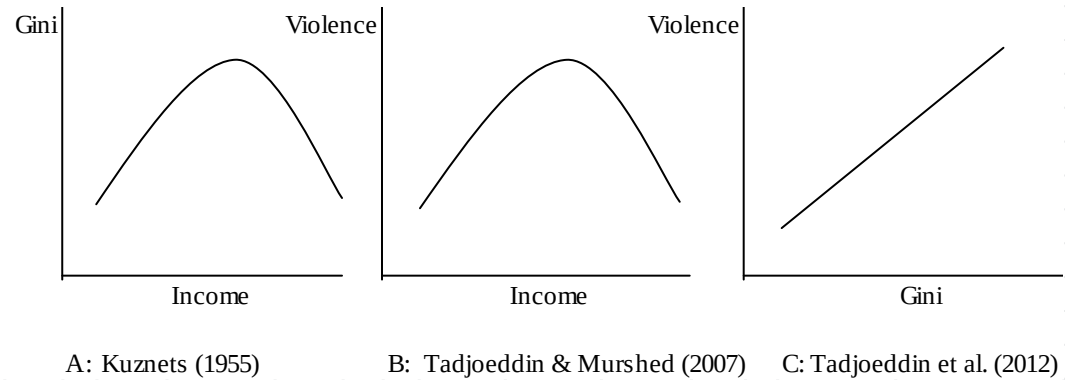

Figure 5. Vertical inequality (Gini), income, and violence

Several important results from the control variables should also be highlighted. The variable of economic growth consistently turns up negative, albeit insignificant, which is still in accordance with the opportunity-for-violence hypothesis. Slower growth indicates a lower opportunity cost to engage in violence for its participants. The series of demographic variables are also in line with the opportunity hypothesis. Levels of violence tend to be higher in districts with higher population density and a larger proportion of young people. However, the negative and significant coefficients of the poverty variable across the six models are against our expectation.

6.2 Violent Crime

Now, let us consider violent crime for which data is made available by the SNPK. Our hypothesis on the relationship between inequality and violent crime is similar to that on routine violence as the two have a close resemblance. Although routine violence must contain a criminal dimension, it cannot simply be labelled as crime since its collective nature points to a deeper social context. In essence, violent crime is more confined to rather individualistic criminal behaviors and its social context is weaker than that of routine violence. In relation to routine violence, we find a statistically significant crime-increasing effect of higher vertical inequality, and a bell-shape relationship between crime and income (Table 5). Our finding on the positive effect of inequality on crime is consistent with the findings of two recent studies in Colombia and Mexico (Poveda, 2011; Enamorado, et al. 2014).

The results of other control variables are also strongly supportive of the opportunity hypothesis. A higher incidence of violent crime is more likely to be experienced by districts with slower economic growth, a higher poverty rate, and a larger youth population. The significant and positive effect of education on violent crime should be interpreted with caution. We suspect the relationship is in the form of bell-shape curve as in the case of income. Therefore, as in the case of income, in the long-run, achieving a higher level of education should correlate with a lower frequency of violent crime.[11] However, as in the case of routine violence, the negative and significant coefficients of the poverty variable are against our expectation.

[11]This is an interesting avenue for further research, but beyond the scope of the current study.

Table 5. Vertical Inequality and Violent Crime (Negative Binomial Regressions)

Dep. Var: incidents of violent crime

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Gini	0.878	0.703				
Predicted_Gini			29.7***	27.4***		
Percapita RGDP	.025***	.022***			.074***	.069***
Percapita RGDP_squared					-4.5e-04***	-4.1e-04***
Fractionalization_ethnic	-0.177		-0.222		-0.207	
Fractionalization_religion		-1.62***		-1.58***		-1.53***
Growth of RGDP	-1.34***	-1.21***	-1.42***	-1.29***	-1.42***	-1.3***
Poverty	-.025**	-.018*	-.026**	-.019*	-.026**	-.02**
Years of schooling	.183***	.202***	.164***	.187***	.153***	.175***
Young population (15-24)	3.51**	3.97**	3.8**	4.18**	4.04**	4.4***
Urban	0.672	0.762	0.488	0.581	0.537	0.622
Population (million)	.698***	.646***	.549***	.517***	.625***	.586***
Constant	0.152	-0.328	-7.76***	-7.67***	0.277	-0.228
Province_fixed effect	yes	yes	yes	yes	yes	yes
Year_fixed effect	yes	yes	yes	yes	yes	yes
Over-dispersions	-.757***	-.812***	-.776***	-.827***	-.804***	-.854***
Observations	664	664	664	664	664	664

Note: Significant at: *10, * *5, * * *1 percent levels; regressions are with robust standard errors clustered at district level; the variable "predicted_Gini" is derived from the Kuznets-type relationship between inequality and income, controlled for province and time-fixed effects.

Our findings on the positive effect of vertical inequality on routine violence and violent crime are largely consistent. Furthermore, the coefficients of the vertical inequality variable appear to be more consistent and more significant compared with the series of control variables across several alternative regression models. This indicates the superiority of an inequality variable in explaining violence and crime. Therefore, a key policy message that can be drawn from this finding is that rising inequality is bad for societal stability. The next section examines the role of inequality in ethnic violence.

6.3 Ethnic Violence

Previous studies have linked ethnic violence with horizontal inequality, but not vertical inequality as the latter is more relevant to routine violence, as explained earlier (Otsby et al., 2011; Tadjoeddin, Chowdhury, and Murshed, 2012).[12] In this section we examine the effect of both vertical as well as horizontal inequality on ethnic violence. We start with vertical inequality. To the best of our knowledge, this is the first examination of the link between vertical inequality and ethnic violence in Indonesia.

[12]Fjelde and Østby (2012) examined horizontal inequality and communal conflict across regions (subnational units) in Africa and found that regions with strong horizontal economic inequalities have a significantly higher risk of experiencing intergroup conflict.

The previous two key findings on routine violence, namely (i) the violence-increasing effect of vertical inequality, and (ii) the bell-shape relationship between violence and income, are also found to be relevant in the case of ethnic violence (Table 5). These results are found after controlling for province and time-fixed effects, ethnic and religious fractionalization, and a series of potentials for violence as per the opportunity hypothesis. This finding is interesting as it points to the fact that post-2005 ethnic violence in Indonesia has characteristics similar to routine violence, while ethnic violence during the democratic transition of late 1990s was clearly episodic. In contrast to routine violence, the opportunity hypothesis also seems to be less relevant in the case of ethnic violence, where only the urban variable turns up significant.

The effects of horizontal inequality on ethnic violence presented in Table 7 appear to be stronger than that of vertical inequality presented in Table 6. This is because the effect of horizontal inequality on ethnic violence is a direct one, while the effect of vertical inequality (Gini) is through the predicted value of Gini derived from a Kuznets regression.

In summary, this exercise has established the relevance of both vertical as well as horizontal inequalities in the case of post-2005 ethnic violence in Indonesia. As expected, however, the predictive power of horizontal inequality is stronger than that of vertical inequality in explaining ethnic violence. The relevance of vertical inequality in explaining ethnic violence is something new and this reminds us of the changing characteristics of recent incidents of ethnic violence as they have come to more closely resemble those of routine violence, in terms of not demonstrating clear regional and timing concentrations.

Table 6. Vertical Inequality and Ethnic Violence (Negative Binomial Regressions)

Dep. Var: incidents of ethnic violence

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Gini	1.19	1.63				
Predicted_Gini			26.6**	29.7**		
Percapita RGDP	.029***	.032***			.073***	.081***
Percapita RGDP_squared					-3.7e-04*	-4.2e-04**
Fractionalization_ethnic	-1.71**		-1.64**		-1.55**	
Fractionalization_religion		2.94**		2.86*		2.73*
Growth of RGDP	-1.69	-2.18	-1.41	-1.84	-1.34	-1.75
Poverty	0.019	0.014	0.016	0.01	0.018	0.013
Years of schooling	0.041	0.017	-4.80E-03	-0.037	-2.20E-03	-0.031
Young population (15-24)	-2.67	-3.24	-2.46	-2.91	-2.29	-2.73
Urban	1.6**	0.942	1.46**	0.85	1.49**	0.898
Population (million)	.925***	1.11***	.687***	.835***	.869***	1.03***
Constant	-1.91	-1.84	-8.31**	-8.91**	-1.57	-1.38
Province_fixed effect	yes	yes	yes	yes	yes	yes
Year_fixed effect	yes	yes	yes	yes	yes	yes
Over-dispersions	.944***	.95***	.949***	.95***	.927***	.927***
Observations	664	664	664	664	664	664

Note: Significant at: *10, * *5, * * *1 percent levels; regressions are with robust standard errors clustered at district level; the variable of "predicted_Gini" is derived from the Kuznets type relationship between inequality and income, controlled for province and time fixed effects.

Table 7. Horizontal Inequality and Ethnic Violence (Negative Binomial Regressions)

Dep. Var: incidents of ethnic violence

Variable	(1)	(2)	(3)	(4)
HI (w_GCOV_ethnic)	3.87***			
HI (w_GCOV_religion)		6.81***		
HI (GGINI_ethnic)			5.53*	
HI (GGINI_religion)				17.5***
Fractionalization_ethnic	-1.92**		-2.08**	
Fractionalization_religion		2.43*		1.16
Percapita RGDP	.07***	0.038	.077***	0.033
Percapita RGDP_squared	-3.6e-04*	-1.30E-04	-4.0e-04**	-2.00E-04
Growth of RGDP	-1.32	-0.822	-1.36	
Poverty	7.60E-04	-6.40E-03	8.50E-03	
Years of schooling	0.103	0.193	0.046	
Young population (15-24)	-3.42	-1.57	-3.06	
Urban	0.992	-0.093	1.3*	
Population (million)	.823***	.958***	.848***	
Constant	-1.7	-3.06*	-1.44	-1.54***
Province_fixed effect	yes	yes	yes	yes
Year_fixed effect	yes	yes	yes	yes
Over-dispersions	.863***	.782***	.902***	.859***
Observations	664	664	664	664

Note: Significant at: *10, * *5, * * *1 percent levels; regressions are with robust standard errors clustered at district level.

6.4 Robustness Checks

As explained earlier, our findings on the violence-increasing effect of higher inequality hold after controlling for both province and year-fixed effects. The inclusion of province effects means that the regression has controlled for province-specific, time-invariant unobserved characteristics. Year effects control for time-variant unobserved characteristics not unique to any particular region, such as national election years and external shocks due to the global financial crisis (GFC). The model has also included several other variables usually suspected to have links with violence, based on the opportunity hypothesis.

While we rely on the incident measure of violence, we check the stability of our key findings by employing a fatality measure of routine and ethnic violence (see appendices 1, 2, and 3). Our key findings hold using the death measure after controlling for province and year-fixed effects, ethnic and religious fractionalization, and a series of other potential determinants of violence.

Another potential problem with our model is a possible reverse causality (endogeneity) between violence and inequality. While we consider the effect of inequality on violence, on the other direction, violence could have an impact on income distribution as only a small section of the society would usually be affected by physical destruction due to violence. This argument is likely to be true in the case of large scale incidents of episodic violence as experienced by Indonesia

during the democratic transition. However, we argue that this is an unlikely scenario in the case of small scale incidents of routine violence and the more routine kind of ethnic violence in post-2005 Indonesia, where small scale violent incidents would unlikely to have serious impacts on income distribution. To anticipate this concern, however, we run the key regressions with lag independent variables and our key finding hold (see appendices 4, 5, and 6).

VII. CONCLUSION

This study has located the problem of economic inequality in the development process and hypothesized that the violence-increasing effects of inequality may harm societal stability. Societal stability is something that cannot be overlooked in a large and diverse country like Indonesia with its young democracy. It has also been established that alternate types of inequality may differently affect each type of collective violence; therefore, unpacking inequality and violence into several categories is critical.

The empirical results have provided strong support for the hypothesis contending that rising inequality is harmful for societal stability based on data on routine violence, ethnic violence, and violent crime in several Indonesian provinces previously categorized as “high conflict” regions. The inequality variable appears to be more significant and consistent as a determinant of collective violence compared with a series of variables representing the opportunity for violence hypothesis. These findings are based on empirical analysis of data for the period 2005–2012. This period was comparatively much more stable in terms of democratization and decentralization, if one compares the situation with that of the late 1990s and early 2000s.

As Indonesia aspires to continuously grow, achieve a higher level of development, become a more significant regional player and, more importantly, to further consolidate its democracy, something must be done to tackle rising inequality. This new evidence implies that continuously increasing inequality is indeed something to be worried about. Therefore, as an initial measure we have to ensure that tackling inequality is included as an explicit focus in the development agenda.

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APPENDICES

APPENDIX 1

Table A1. Vertical Inequality and Routine Violence (Death Measure)

Dep. Var: deaths of routine violence

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Gini	-1.15	-0.926				
Predicted_Gini			10.1*	12*		
Percapita RGDP	.011**	.012**			.03**	.035**
Percapita RGDP_squared					-1.60E-04	-1.9e-04*
Fractionalization_ethnic	-.781*		-.718*		-.703*	
Fractionalization_religion		0.294		0.174		0.11
Growth of RGDP	-0.55	-0.738	-0.556	-0.725	-0.567	-0.736
Poverty	-2.60E-03	4.50E-05	-3.10E-03	-5.30E-04	-3.10E-03	-4.10E-04
Years of schooling	-0.04	-0.049	-0.048	-0.057	-0.054	-0.063
Young population (15-24)	-0.863	-0.835	-1.03	-0.899	-0.83	-0.667
Urban	0.172	-5.30E-03	0.039	-0.129	0.055	-0.106
Population (million)	.609***	.639***	.539***	.562***	.591***	.615***
Constant	0.556	0.273	-2.34	-3.09*	0.272	-7.40E-03
Province_fixed effect	yes	yes	yes	yes	yes	yes
Year_fixed effect	yes	yes	yes	yes	yes	yes
Over-dispersions	-.333*	-.31*	-.331*	-.312*	-.343*	-.325*
Observations	664	664	664	664	664	664

Note: Significant at: *10, * *5, * * *1 percent levels; regressions are with robust standard errors clustered at district level; the variable of "predicted_Gini" is derived from the Kuznets type relationship between inequality and income, controlled for province and time fixed effects.

APPENDIX 2

Table A2. Vertical Inequality and Ethnic Violence (Death Measure)

Dep. Var: deaths of ethnic violence

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Gini	3.16	3.49				
Predicted_Gini			14.6	33**		
Percapita RGDP	-0.01	0.012			0.047	.097**
Percapita RGDP_squared					-5.80E-04	-9.4e-04**
Fractionalization_ethnic	-3.34**		-2.83*		-2.91*	
Fractionalization_religion		-1.68		-1.86		-1.92
Growth of RGDP	-7.3***	-8.61***	-6.69***	-7.45***	-6.69***	-7.43***
Poverty	0.109	.099*	.112*	.105*	.11*	.105*
Years of schooling	0.12	0.236	0.032	0.092	0.024	0.083
Young population (15-24)	-4.4	-2.86	-2.92	-1.07	-3.21	-1.28
Urban	2.81	1.02	2.86	1.26	2.82	1.2
Population (million)	1.68**	2.15*	1.75**	1.94**	1.54*	1.75*
Constant	-6.69*	-8.62**	-9.92*	-16.3***	-5.83*	-7.46**
Province_fixed effect	yes	yes	yes	yes	yes	yes
Year_fixed effect	yes	yes	yes	yes	yes	yes
Over-dispersions	2.55***	2.57***	2.55***	2.56***	2.55***	2.55***
Observations	664	664	664	664	664	664

Note: Significant at: *10, * *5, * * *1 percent levels; regressions are with robust standard errors clustered at district level; the variable of "predicted_Gini" is derived from the Kuznets type relationship between inequality and income, controlled for province and time fixed effects.

APPENDIX 3

Table A3. Horizontal Inequality and Ethnic Violence (Death Measure)

Dep. Var: deaths of ethnic violence

Variable	(1)	(2)	(3)	(4)
HI (w_GCOV_ethnic)	9.95***			
HI (w_GCOV_religion)		17.7***		
HI (GGINI_ethnic)			20.3***	
HI (GGINI_religion)				49.2***
Fractionalization_ethnic	-4.14**		-4.89***	
Fractionalization_religion		-4.31		-7.47**
Percapita RGDP	0.05	0.029	0.077	-0.048
Percapita RGDP_squared	-5.80E-04	-4.80E-04	-7.7e-04*	6.80E-05
Growth of RGDP	-6.23***	-4.14**	-6.55***	-1.96
Poverty	0.053	0.064	0.06	0.088
Years of schooling	0.218	.705**	0.144	.467**
Young population (15-24)	-11.1	2.53	-11.2	-2.06
Urban	2.2	-1.47	2.61	0.561
Population (million)	1.88E+00	1.6	1.92*	1.59*
Constant	-3.6	-13.1***	-2.92	-9.39***
Province_fixed effect	yes	yes	yes	yes
Year_fixed effect	yes	yes	yes	yes
Over-dispersions	2.46***	2.35***	2.48***	2.36***
Observations	664	664	664	664

Note: Significant at: *10, * *5, * * *1 levels; regressions are with robust standard errors clustered at district level.

APPENDIX 4

Table A4. Vertical Inequality and Routine Violence (Lag Independent Variables)

Dep. Var: incidents of routine violence

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Gini						
Predicted_Gini			12.1**	10.9**		
Percapita RGDP					.039***	.036***
Percapita RGDP_squared					-1.8e-04**	-1.6e-04**
Fractionalization_ethnic			-0.16		-0.15	
Fractionalization_religion				1.38		1.28
Growth of RGDP			-1.02***	-1.1***	-1.04***	-1.12***
Poverty			-0.016	-0.017	-0.016	-0.017
Years of schooling			.09*	0.072	0.08	0.064
Young population (15-24)			2.29	2.01	2.65	2.37
Urban			0.549	0.452	0.545	0.454
Population (million)			3.4e-07***	3.6e-07***	4.1e-07***	4.3e-07***
Constant			-2.33	-1.81	1.14	1.27
Province_fixed effect			yes	yes	yes	yes
Year_fixed effect			yes	yes	yes	yes
Over-dispersions			-.479***	-.501***	-.513***	-.533***
Observations			663	663	663	663

APPENDIX 5

Table A5. Vertical Inequality and Ethnic Violence (Lag Independent Variables)

Dep. Var: incidents of ethnic violence

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Gini						
Predicted_Gini			32.7**	35.2**		
Percapita RGDP					.1***	.105***
Percapita RGDP_squared					-6.4e-04***	-6.8e-04***
Fractionalization_ethnic			-1.34*		-1.21*	
Fractionalization_religion				3.02**		2.9*
Growth of RGDP			-1.38***	-1.55***	-1.55***	-1.71***
Poverty			1.10E-04	-1.50E-03	1.30E-03	-2.50E-04
Years of schooling			-0.104	-0.125	-0.102	-0.119
Young population (15-24)			1.39	0.817	1.55	0.993
Urban			0.467	3.70E-03	0.403	-0.031
Population (million)			4.3e-07***	5.6e-07***	5.4e-07***	6.6e-07***
Constant			-11.2**	-12**	-1.71	-1.77
Province_fixed effect			yes	yes	yes	yes
Year_fixed effect			yes	yes	yes	yes
Over-dispersions			.993***	.952***	.964***	.924***
Observations			663	663	663	663

APPENDIX 6

Table A6. Vertical Inequality and Violent Crime (Lag Independent Variables)

Dep. Var: incidents of violent crime

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Gini						
Predicted_Gini			14.4***	12.6***		
Percapita RGDP					.049***	.045***
Percapita RGDP_squared					-2.8e-04***	-2.6e-04***
Fractionalization_ethnic			0.078		0.066	
Fractionalization_religion				1.92*		1.84*
Growth of RGDP			-1.29***	-1.32***	-1.31***	-1.34***
Poverty			-.022**	-.023**	-.022**	-.023**
Years of schooling			.128**	.114**	.115**	.103**
Young population (15-24)			3.46**	3.12**	3.81**	3.46**
Urban			0.359	0.239	0.339	0.22
Population (million)			4.4e-07***	4.5e-07***	4.8e-07***	4.9e-07***
Constant			-2.73*	-1.98	1.46**	1.64**
Province_fixed effect			yes	yes	yes	yes
Year_fixed effect			yes	yes	yes	yes
Over-dispersions			-.479***	-.517***	-.502***	-.538***
Observations			663	663	663	663

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