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*Village level institutional change and
ethnic majorities:
Evidence from decentralising Indonesia*

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Village level institutional change and ethnic majorities: evidence from decentralising Indonesia

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Abstract

This paper studies the variation in village head selection rules across Indonesia using panel data over 1997–2007. The selection of village heads is often thought of as being determined by national level legislation, with elections in villages located in *kabupaten* and directly appointed village heads for villages within *kota*. However, existing legislation allows a degree of autonomy by villages to determine their own village's institutional structure. I find that a larger majority of an ethnic group within Indonesian villages is associated with having elected village heads. Further, evidence is found that the changing composition of governments at the district level, as well as changes in village level ethnic majority size is associated with village level institutional change. I argue that the results provide valuable empirical evidence into constitutional change and further evidence on the role of ethnicity in political economy.

Keywords: Constitutional political economy, Indonesia, ethnicity, new institutional economics

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1 Introduction

'Although formal rules may change overnight as the result of political or judicial decisions, informal constraints embodied in customs, traditions, and codes of conduct are much more impervious to deliberate policies.' (North 1990, p. 6).

The structure of sub-national governments is shaped by two competing forces. Rules can be imposed from 'above' by governments at higher levels and these rules can quickly change at the stroke of a pen. These rules will constrain both the type of institutions sub-national governments have as well as the ability of sub-national governments to change form. On the other hand, potential new sub-national institutional forms will also be motivated by 'customs, traditions and codes of conduct', which move much more slowly. I refer to these constraints as constraints from 'below'. In this paper, I investigate the importance of these two sides for both realised institutional form and institutional change. I take Indonesian villages over the period 1997-2007 as the units of analysis and the rules for which they select their village head as the institutional form. National laws form the constraints from above and village-level ethnic composition is used to capture constraints from below.

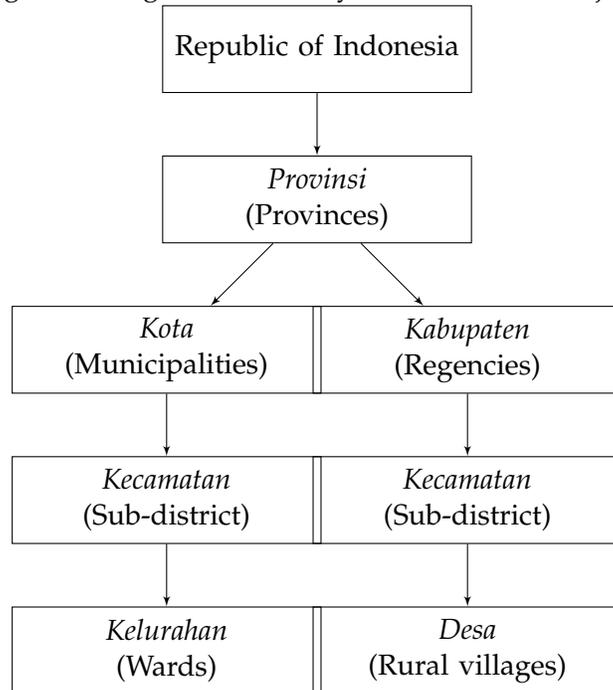
Indonesian village types are demarcated by the type of district in which they are a part (see Figure 1). There are two types of district in Indonesia: *kabupaten* and *kota*.¹ Kabupaten are predominately (although not always²) rural, and kota are predominately urban. Villages that are within kabupaten are called *desa*, and are presumed to have elections. Villages within kota are called *kelurahan* and presumed to have village heads that are appointed at the kota or *kecamatan* (sub-district) level. Kelurahan and desa have the same rank in the Indonesian government system. I refer to these collectively as villages.

¹In English, *kabupaten* is occasionally translated as a regency, and kota as a municipality. Throughout this paper I will use the Indonesian names, and 'districts' when talking about both kabupaten and kota.

²Indeed, the urban/rural classification is based upon census data as administered by Statistics Indonesia (hereafter BPS, *Badan Pusat Statistik*), which has led to a distinction between institutions and geography since 1961 (Evans 1984).

Villages are the lowest level of government in Indonesia, but they have increasing importance in the delivery of public goods and services. Currently the village government can generate local legislation, and plays the major role in conflict resolution within the country (McLaughlin and Perdana 2010). There are also a number of higher level government programmes that deliver resources directly to villages or to village designed projects through a local government (district or kecamatan) level. These include the Kecamatan Development Program (Olken 2010) and the national program of community self-empowerment (PNPM-Mandiri 2012). Villages are now also connected to global initiatives like the REDD+³ initiative (FORDA 2012).

Figure 1: Administrative divisions of Indonesia. This paper focuses on the bottom layer of wards and rural villages. Throughout this analysis, I refer to these jointly as ‘villages’.



With exceptions (Antlöv 2003), it is commonly presumed that the demarcation of elections in desa and appointments in kelurahan still exists (Bandiera and Levy 2011). I find evidence that challenges this presumption. Table 1 shows that both kabupaten and kota have villages with and without elections, rejecting the

³Reducing Emissions from Deforestation and forest Degradation

presumption of a clear split along jurisdictional lines.

Table 1: The form of village head selection mechanism across types of district amongst our sample of Indonesian villages in 1997–2007. *Data:* RAND Corporation 2012

	Kota	Kabupaten	Total
Non elections	202	117	319
Elections	12	259	271
Total	214	259	590

Additionally, there is evidence in this sample that some villages have changed from having an elections village head to not having elections, and vice-versa, over 1997-2007. Table 2 shows the change in villages who had elected village heads in both 1997 (columns) and 2007 (in rows). Out of 127 villages that selected their village heads with elections in 1997, 41 had changed by 2007. In this paper, I investigate the variation in Tables 1 and 2.

Table 2: The change of village head selection mechanism across Indonesian villages between 1997 and 2007. *Data:* RAND Corporation 2012

		1997		Total
		Not Elected	Elected	
2007	Not Elected	87	41	128
	Elected	90	86	176
Total		177	127	304

I find that villages with larger ethnic majorities are more likely to directly elect their village leaders. This is after controlling for variables that were previously believed to explain elections from above. Further, I investigate whether a village changes their institutional structure over the 1997–2007 period as per Table 2. The results differ depending on the institutional form in the base year. Diminished majorities are negatively correlated with moving from elected to non

elected village heads, although the size of the effect is small. Factors that change from above, like changing form of district government, have much larger effects. This work has implications wider than increasing our understanding of Indonesia's ongoing decentralisation. The research feeds into a large literature on the political economy of ethnicity (see for example, Alesina and La Ferrara (2005) and Michalopoulos (2012)). Much work has highlighted the costs of ethnic composition, which arise because of divergent preferences, beliefs and norms across ethnic groups. Ethnic diversity, as measured by ethno-linguistic fragmentation, has been shown to increase the costs of maintaining agreements in rural villages (Miguel and Gugerty 2005) in Kenya and lower trust (Okten and Okonkwo-Osili 2004) in Indonesia. Bandiera and Levy (2011) find that with higher ethnic diversity, the public goods outcomes match those of the elites. This is explained by coalition formation between elites and minorities against the poor majority. I argue that ethnic composition can go one further, and actually explain institutional form: the rules of the rules of the game, rather than the rules of the game.

If higher coordination costs with divergent preferences are a more general phenomenon, we might expect that institutions evolve to minimise them (North 1990). Indeed, institutional design of collective action can alleviate the costs of ethnic diversity (Khwaja 2009, Easterly 2001). Trebbi et al. (2008) investigate the role of US Voting Rights Act of 1965, which enfranchised minorities in the southern US, lead to majorities (legally) changing voting rules to protect their interests. Aghion et al. (2004) find that ethnic fragmentation is associated with more 'insular' constitutional form. That is, an ethnically (and linguistically) fragmented country is more likely to have autocratic leaders and if democratic, a fragmented country is more likely to have a presidential rather than a parliamentary system. Similar results are found in this research.

Secondly, this analysis provides valuable empirical research on constitutional

change. Constitutions are commonly presumed to move slowly (North 1990), but there is evidence that constitutions are rewritten enough for empirical investigation (Hayo and Voigt 2010, Aghion et al. 2004, Trebbi et al. 2008). Overall, there is a paucity of empirical evidence on constitutional change (Voigt 2011). This analysis into constitutional outcomes and constitutional change complements this nascent branch of investigation with empirical investigation at the sub-national level.

It may possibly be argued that ‘constitutions’ only exist at the national level. I argue that this is mistaken, and this view unnecessarily limits the evidence that can be accumulated. Constitutions are the rules that frame the rules of the game, with policies and laws being the rules of the game. Clearly, the rules over the selection of a village head is of a qualitatively similar role than the selection of a national leader, even if the consequences does not affect as many people. Village heads have responsibilities to deliver public goods and services, and the rules for selection heads will shape the types and actions of village heads.

It is true that national governments have *de jure* sovereignty, which lower level governments do not have. However, there are likely to be *de facto* constraints on the feasible national constitutional choice set, arising from the international community. Finally, recent lab work has experimentally investigated the role of constitutions (Sutter et al. 2010), which has been used as evidence for constitutional change (Voigt 2011). Given this, it seems entirely reasonable to use local governments as a unit of analysis with which to empirically investigate constitutional forms and change. When we consider the paucity of evidence on constitutional change we currently have, then interpretation appears necessary.

The outline of the paper is follows. In the next section I will provide an overview of village level constitutions as legislated throughout the many types of central governments that controlled Indonesia over the twentieth century. I then discuss the theoretical framework, followed by the data, model and results.

2 Village governance in Indonesia

Modern Indonesia has had a history of the national government imposing institutional structures on villages (Kato 1989, Antlöv 2000). Throughout the last century, villages and wards have been subject to top down regulation applied at the national level from a variety of masters. These constraints from above are typically legislated. The Dutch attempted to establish decentralisation laws in 1903 and in the 1920s, which failed largely because their intention was (colonialist) political expediency. The post Dutch 1945 constitution explicitly recognised the role local institutional diversity plays in Indonesia. The Indonesian Constitution recognises the diversity of villages and their right to self organise. This was overruled by Law 5/1979. This law sought for village level governance to be 'made uniform', *penyeragaman bentuk*, (Antlöv 2000). Villages could switch from *desa* to *kelurahan*, subject to the approval of the Central Government. *Desa* were elected, but subject to screening by the head of the sub-district and local institutions became accountable to the hierarchy and much like at the national level, elections in many villages were only in name (Antlöv 2000, Ranis and Stewart 1994). This may not necessarily be a bad thing for some villages in terms of public goods and services delivery, as the endemic rent seeking in the New Order (Cassing 2000) could lead to favoured village heads obtaining greater resources.

More recently, the fall of Suharto following the Asian Financial Crisis led to rapid decentralisation, a period known as *reformasi*.⁴ This has led to a large devolution of power over many areas of government to the district level of government. Despite this, there are still national laws over villages and presently, the most important regulation for villages is the Government Regulation on Villages, Government Regulation 72/2005 on the village. PP 72/2005 outlines the rights, roles and responsibilities of a village government. The legislation pre-

⁴As legislated by Laws 22/1999 on Local Governance; Law 25/1999 on the Fiscal Balance between Central and Local Government; and lessons learned being updated in Law 32/2004 on Local Governance.

cisely states villagers should elect⁵ the *kepala desa* (village head), and amongst others, the terms of office is for six years with the head only allowed to re-run for office once.⁶ There are similar provisions in Law 22/1999⁷ and Law 32/2004.⁸ Villages can still change from a *desa* to a *kelurahan* where social or economic needs dictate⁹, but as in previous legislation there is no provision for the alternative. To switch, *desa* require consent from two thirds of the local population, and agreement with the district head. Villages may be 'required' to change to a *kelurahan* because they are now in a *kota*, but it has been suggested that villages are hesitant to change (Antlöv 2003). Overall, these top down pressures appear to constrain the set of feasible institutional forms.

However, there are conflicting statements within all the acts since the fall of Suharto. There is emphasis on the authority to regulate and manage based on local customs of *desa* (or village by any other name).¹⁰ There is a tension between traditional and slow moving economic forces that create local incentives for institutional change and top down restrictions. This is a similar tension to that proposed by Ranis and Stewart (1994), who note that the diversity of Indonesia requires decentralisation of governance, and the existence of Indonesia requires a strong central state. Some villages may wish to change their institutions due to constraints from below, but may find it legally difficult given constraints from above; other villages may wish to keep their village institutions, but pressure from above may force a change. This tension leads to an imperfect mapping from rural location to *kabupaten* to *desa* to village level institutional form.

⁵Article 46(1)

⁶Article 52

⁷Article 95(2)

⁸Article 203(1)

⁹Article 22, PP 72 2005

¹⁰Article 54 of Government Regulation 72/2005.

3 A theoretical underpinning

A useful way of framing constitutions is that of a delegation game (Persson and Tabellini 2003). In our case, the village head is delegated responsibilities from one of two delegators. Elections allocate power of delegation over the selection of village heads to villagers, whereas a system of unelected village heads allocates delegation power to a higher government level. Once the game has been played, the next stage is the repeated day-to-day functioning of the village, including legislation and public goods and services allocation. The payoffs to the delegation game depend on this next stage of repeated interactions. It has been shown that preferences over public goods and services allocation diverge over ethnic lines (Alesina et al. 1999) and consequently, there are grounds to hypothesise that village level ethnic composition can influence the delegation game and institutional form.

The evidence noted in Section 2 revealed that various central governments have long felt the need to control village level institutions. The benefits to the national government come in the form of a single national model, such that citizens identify with national objectives, rather than local objectives. A common goal across village governments would lower the costs of national governments in pursuing their own objectives. Similar benefits may accrue to local (district) governments with decentralisation, with district heads able to pursue their interests. Indeed, rent-seeking structures have been shown to be persistent over dramatic national-level transitions (Hillman and Ursprung 2000). This does not come for free, as there are costs of enforcing institutional structures upon a population as well as potentially higher costs of targeting public goods and services by higher levels of government.

Villagers are recipients of public goods and services and have a different relationship with their village head than higher level governments. Elections allow villagers to retain residual control rights over their village head and would result

in lower agency costs. This could improve public goods and service outcomes within the village. However, it is plausible that appointed village heads have better relationships with higher levels of government. As public goods and services are decided by fiat, having a village head better connected with higher levels of government could be advantageous. However, the more villages that employ this strategy, the more quickly the common pool of connected village heads becomes dry. Villages could also conceivably desire appointed village heads, which may be the case where the costs of coordinating divergent preferences are higher, and appointed village heads could be a lower cost institution (Aghion et al. 2004). For instance, some villages may have strong communal ties and have common preferences, whereas others may be more fragmented.

Although we have reason to consider both directions, I expect a positive relationship between majority size and elections. A larger majority is more able to exert control over the selection of the village head under voting. Additionally, agency costs are larger under an appointed head, where there is no *de jure* capacity for selecting preferred candidates. These costs are expected to be higher than the opportunity cost, of which major contributor in this framework is having greater public goods and service from a village head connected to higher levels of government.

A negative relationship between the *change* in majority size and a change in village head selection is expected, whereby a dwindling majority is attempting to pre-empt change (Trebbi et al. 2008) or having change imposed upon them. Here, elections would soon favour the emerging majority and the old majority could delay this from occurring with a switch to non-elected village heads. Pre-existing levels of majority size are not expected to have an effect. Although a larger majority can overcome the coordination problem to exert change, it is likely that villages with larger majorities would also have already established their preferred institutions, or become satisfied with current institutions.

I expect that kabupaten would also have a positive relationship with village head elections, because of legislation. It is uncertain how urban would influence whether or not a village had elections once we control for kabupaten. Newly arrived migrants could reasonably be expected to desire elections, however, villagers may be reluctant to offer newly arrived migrants rights and hence, I have no a priori expectations over this variable when estimating village institution type, although I expect a positive relationship in where estimating whether the village institution changes. Location within a district that has undergone changes to its boundaries and structure is expected to not influence the type of village institution but rather open a window for villages to run their own affairs (Acemoglu and Robinson 2006).

In summary, we have reason to suspect constraints from above influence, but do not determine institutional form. Higher level governments can gain by restricting the village level institutional choice set to suit their own ends. Here, we use the legislated demarcation of elections in kabupaten and non-elections in kota as the higher level governments' revealed preferences. This manipulation is potentially costly in terms of enforcement costs and public service delivery. From below, larger ethnic majorities have lower coordination costs in terms of deciding on the types of public goods and services desired. Whether incentives from below can determine village level institutional form in the presence of constraints from above is what I wish to test.

4 Data

The data used in this analysis comes from the second and forth waves of the Indonesian Family Life Survey (RAND Corporation 2012). The IFLS is a panel of over 7,000 households, in 313 villages within Indonesia. The IFLS is stratified on 13 provinces and then on urban/rural boundaries, as defined by BPS in 1993. Community level data in the 1997 and 2007 waves are used to construct

the panel.

The key variable to capture local political economy costs and benefits is the size of the ethnic majority. The measure is obtained from the adat survey where a village elder was asked for an estimate of the proportions of the three largest ethnic groups. The 1997 adat survey was not conducted in 10 villages that were deemed by the surveyors to be too ethnically diverse (Frankenberg and Thomas 2000), although the survey was conducted in these villages in 2007. This non-random selection could bias the results, but as discussed below, this does not seem to be a problem.

Majority size is a proxy for the the costs involved in collective decision making. There are limitations with this proxy, for instance, it is not possible to identify whether it is ethnic majorities, ethnic fragmentation or ethnic polarisation that best explains these results, since all three variables are highly correlated. I proceed by focusing on majorities, since these provide the most ‘intuitive’ results, however I stress that this is an untested assumption. For completeness, I replicate regressions [5] and [7] of Table 4 in Table A7 where we see that the results are much the same, except we have a different interpretation.

Additionally, preferences diverge along other dimensions or preferences may diverge differently within ethnic groups. Other variables correlated with preferences, for instance income, could not be used because of missing data at the community level. Additionally, our measure is noisy in that it is only estimated by one individual. This could be a simple problem of merely guessing incorrectly, or more fundamental in that ethnic groupings as estimated by one individual may diverge from how individuals and groups perceive themselves. This problem of noisy-ness will only bias our results towards zero.

The institutional variable used in this paper is the mechanism for selecting the village head. In particular, a village leader answers the following: *What type of decision making process is used by local residents to select the head of the village?* There

is little reason to suspect that the response to this question would be subject to any bias and I create a dummy variable equal to one if villages had elections. Outside of elections, other potential responses include village heads appointed by higher levels of government, consensus and elite decisions. The latter two are left out because in the 2007 survey, these were subsumed into the category 'other'. Almost half of the village-year observations had elections, as presented in Table 3.

Additional control variables reflect factors that affect the costs and benefits of a village in whether or not to elect their village head. Of these, migration is the most likely to be correlated with ethnic majorities. Migration is a dummy variable equal to one if the village had a 'migration induced population change' over the period 1992–1997, although we do not observe whether this is an increase or decrease. Urban areas, being typically larger and sources of migration are also likely to have higher degrees of ethnic fragmentation. More highly populated villages are also more likely to be more heterogenous. Since urban areas are predominately kota, these variables are also likely to be correlated with the village head selection mechanism.

An additional variable is created to investigate the effect of pemekaran. Using data from a government list on autonomous regional government expansion,¹¹ district names were mapped to the list to determine whether the village was inside a 'parent' district, where a new district was formed out of the village's district. A 'child' district is a district that split off from an old district. Both of these variables are dummies equal to one if the village's district was either a 'parent' or 'child' and the establishment of the law occurred between 1999 and 2006. A third variable 'pemekaran' is a dummy equalling one if parent or child equals one.¹² Roughly eight percent of villages were part of a pemekaran

¹¹*Daftar 205 daerah otonom hasil pemekaran (DOHP) semenjak berlakunya undang-undang nomor 22 tahun 1999 tentang pemerintahan daerah* [List of the 205 autonomous division (DOHP) since the enactment of Law No 22 of 1999 on regional governance]

¹²One village in the IFLS sample managed to firstly be part of a child district then part of a parent district. It is not included in the regression because – coincidentally – we are missing data on village head selection.

district, and most of these were on the outer islands of Sumatera, Kalimantan, and the Sulawesi archipelago.

5 Model

Following Wooldridge (2002), to investigate whether or not local majorities are correlated with elections I estimate the following model:

$$P(E_{vt} = 1 | \mathbf{X}_{vt}, \alpha_v, \alpha_j, d_{07}) = \beta \mathbf{X}_{vt} + \delta d_{07} + \alpha_v + \alpha_j + \varepsilon_{vdt} \quad (1)$$

where the unit of observation is a village v , jurisdiction j (with $j = d, p$, where d is district and p is province) at time t . \mathbf{X} is a vector of covariates and $E \in \{0, 1\}$ is a discrete measure of the whether or not the village head was elected. Village, district and time fixed effects are included. The district and provincial fixed effects, α_d, α_p , for the pooled estimation are at the 1993 boundary, because of the changing boundaries over the following fourteen years. The pooled estimation is conducted with a linear probability model, since the probit fixed effects model removes observations that do not change over time.

Consistent estimation requires that $\mathbb{E}[\varepsilon_{vdt} | \mathbf{X}_{vt}, \alpha_v, \alpha_j, d_{07}] = 0$. That is, controlling for time constant village and jurisdictional effects, there are no other factors correlated with a village's head selection mechanism outside of the covariates. The major time-invariant variable affecting Indonesia's political economy over the 1997–2007 period is reformasi. Reformasi affected all villages, so at the national level there is no variation to exploit. Reformasi has involved a large transfer of power to local level governments, which may differ in their capacity or desire to intervene in village affairs. These factors are controlled for through jurisdictional dummy variables. Secular temporal effects, for example a push for elections, are controlled for with a 2007 dummy. Most fundamentally, however, reformasi is unlikely to be associated with the population share of the majority

ethnic group and is unlikely to bias our results after controlling for jurisdictional and temporal effects.

Migration is one variable that could possibly explain both majority size and elections. For instance, when choosing a new village, a migrating family may take into account the village level ethnic composition as well as whether or not the village has elections. One cannot rule out this generalisation of Tiebout sorting (Tiebout 1956), and unfortunately do not have village level data on migration in the 1997–2007 period. As a robustness test, the enumerator ID code is used as instruments.¹³ Estimating the majority size is prone to error, and a skilled enumerator could elicit more truthful responses. Given the village head selection mechanism is binary, it seems reasonable to assume that enumerator ID would not be correlated with our dependent variable. Using this variable as an instrument does not change the qualitative results.

Another source of bias alluded to above is the removal of the most ethnically diverse villages from the sample. Here, 10 villages that are likely to have smaller majorities are excluded from the sample. Alternative measures of ethnic composition like fragmentation and polarization, are significant (Table A7). These variables would be biased towards zero with these missing villages, yet, they remain significant. Thus, non random selection bias does not appear to invalidate the results. This points to a broader problem, in that unfortunately I cannot distinguish whether the paper's overall results are driven by majorities, fragmentation or polarisation since the estimates of these variables are practically collinear (Table A6) and we cannot decide between them. I focus on majority size, however, the precise nature of coordination costs is not relevant for my argument, which is about the variation in coordination costs across villages.

To estimate whether or not a village changed its village head selection mechanism, I employ the following cross sectional model:

¹³I thank Robert Sparrow for this suggestion.

$$P(\Delta S_{vt} = 1 | \mathbf{X}_{vt}, E_{v,97}) = \beta_0 \Delta \mathbf{X}_v + \beta_1 \mathbf{X}_{v97} + \varepsilon_{vt} \quad (2)$$

Where $\Delta S \in \{0, 1\}$ indicates whether or not the village head a different mechanism for selecting their village head in 1997 and 2007. I estimate two separate regressions to condition on switching from elections as well as switching to elections, hence the probability being conditional on $E_{v,97}$. These involve different delegations of power and thus, combining them would lead to erroneous conclusions. Explanatory variables are changes from 1997–2007, as indicated by Δ , and the 1997 levels, which are identified by the 97 subscript. For changes in dummies, we have three possible values: $\{-1, 0, 1\}$, depending on whether the village's obtained the characteristic, remained unchanged or lost the characteristic between 1997 and 2007.¹⁴

We cannot include district fixed effects in cross sectional regressions because for much of the sample, there is only one village in a district. Enumerator ID is only valid for the levels of majority size, and not changes. I therefore exclude the changed majority side where the instrument is employed. For comparison, equivalent regressions are run.

In all regressions, the covariates of interest \mathbf{X} include the size of the majority ethnic group in the village, whether the village had migration induced population change over 1993–1997, whether the village is in a kabupaten, whether the village is urban, and whether the village's district had a new district form out of it (parent), or became a new district (child), and pemekaran is indicates either that the village is in either a parent or a child district. Majority size ranges between 0 and 100, and all the other covariates are dummy variables. Summary statistics are found in Table 3.

¹⁴For instance, $\Delta \text{Urban} = -1$ if $\text{Urban}_{97}=1$ and $\text{Urban}_{07}=0$; $\Delta \text{Urban} = 0$ if $\text{Urban}_{97} = \text{Urban}_{07}$; $\Delta \text{Urban} = 1$ if $\text{Urban}_{97}=0$ and $\text{Urban}_{07}=1$.

Table 3: Summary statistics.

	Mean	Standard Deviation	Observations
Majority size	82.820	19.950	616
Elected village head	0.459	0.021	590
Migration	0.135	0.014	608
Pemekaran	0.0759	0.011	619
Parent	0.0485	0.009	619
Child	0.0291	0.007	619
Kabupaten	0.638	0.019	619
Population	11262.1	18615.3	610

Outside of population and majority size, all variables are dummy variables or lie within the interval $[0, 1]$. Migration is a dummy that equals one if the village had ‘migration induced population change’ over the period 1992–1997. Parent is a dummy that equals one if the village is part of a district that had a new district split from it over 1997–2006. Child is a dummy that equals one if the village is part of a district that split from another district over 1997–2006. Pemekaran equals one if either Parent or Child equals one. Kabupaten equals one if the village is inside a *kabupaten* and equals zero if the village is within a *kota*. Population is in natural logarithms

6 Results

The results in Table 4 show that the size of the ethnic majority is positively associated with elected village heads, a result consistent with expectations. Majority size is effectively identical across various single equation specifications of jurisdictional fixed effects. IV estimates of the effect of majority size are still positive and significant, however they are larger and significantly different from than the single equation estimates. There is possibly some third variable having opposite effects on both majority size and elections. A plausible explanation is that migration is associated with elections, and migration also reduces the majority size. Estimates from the full IV model (regression [7]) indicate that a one standard deviation increase in majority size is associated with a 66 percent increase in the probability of having an elected village head.

A district that changes status from with kabupaten – which are required by one particular article of legislation to have elections, is to increase the probability of having elections by 43.9 percent, however this effect is not significantly dif-

Table 4: Linear probability model (LPM) to predict probability of a village head being directly elected by villagers. The units of analysis are village-years. The dependent variable is a dummy equal to one if a village head was directly elected. All regressions contain village and 1993 district boundary fixed effects. Regressions [6] and [7] using enumerator ID as an instrument for majority size.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Majority size	0.0129*** [0.00248]	0.0129*** [0.00251]	0.0129*** [0.00300]	0.00744*** [0.00221]	0.00722*** [0.00219]	IV estimates 0.0403*** [0.0109]	IV estimates 0.0331*** [0.0108]
2007 dummy				0.0592 [0.0575]	0.0611 [0.0574]		-0.0184 [0.0459]
Population				-0.0458 [0.0483]	-0.0440 [0.0493]		-0.0224 [0.0331]
Urban dummy				-0.0897 [0.106]	-0.0931 [0.106]		-0.0295 [0.0614]
Parent				0.456** [0.178]			
Child				0.168 [0.298]			
Kabupaten				0.418*** [0.160]	0.439*** [0.160]		0.154 [0.136]
Pemekaran					0.360** [0.164]		0.204* [0.106]
Village fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District fixed effects		Yes		Yes	Yes	Yes	Yes
Province fixed effects			Yes				
N	589	588	588	582	582	587	580
R ²	0.674	0.673	0.673	0.757	0.755	0.401	0.546

Standard errors clustered at district level in brackets. Districts and provinces are defined by 1993 boundaries.

Population in logs * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

ferent from zero under IV estimates. Pemekaran is positively associated with villages having elections, a result driven by parent districts. The results indicate a larger effect of parent districts than kabupaten. Interestingly, there was no significant secular change towards village level elections after the fall of Suharto's autocracy. That is, there is no secular temporal effect on institutional form, which the national change would be a part of, but instead there are effects from changes at the district level.

That the coefficient on local majorities is still highly significant and has an effect of such a magnitude after including controlling for key variables regarding higher levels of government provides confidence in the general result that despite the constraints imposed from above, local political economy considerations from below matter.

Table 5 presents the results on whether a village changed its institutions for selecting the village head over the ten year period. A change in selection – whether from not have elections to having elections or vice versa – is regressed on changes in variables and on 1997 levels, as well as changes associated with pemekaran at the district level. The IV regression is without changes in majority size because the instrument, enumerator ID is only correlated in levels.

Three main determinants of a village changing from elections to non elections are found. Firstly, a reduction in the size of the majority over 1997–2007 is associated with an increased propensity to no longer have elections. Although one must be careful of making too strong a claim, since we do not have precise dates on institutional and demographic changes, this coefficient is consistent with recent finding that dwindling majorities will work within existing rules to prevent the emerging majority from obtaining control (Trebbi et al. 2008).

Conversely, a village with a migration-induced population change between 1992 and 1997 is less likely to switch from elections. In fact, the migration variable predicts failure perfectly, so no villages with migration induced population

Table 5: Linear probability models for whether the village changed their selection mechanism over 1997–2007. The units of analysis are villages.

The dependent variable is a dummy equal to one if a village head changed from being elected or not.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Yes	No	Yes	No	IV estimation Yes	IV estimation No	
Elections in 1997							
Δ First	-0.00543** [0.00269]	0.00213 [0.00230]					
Δ Urban	0.0890 [0.0650]	-0.0456 [0.0606]	0.104 [0.0644]	-0.0538 [0.0607]	0.105 [0.0740]	-0.0565 [0.0688]	
Δ Kabupaten	-0.449*** [0.0971]	0.119 [0.0729]	-0.495*** [0.0945]	0.133* [0.0727]	-0.502*** [0.139]	0.154** [0.0780]	
First ₉₇	0.0000194 [0.00496]	0.000284 [0.00238]	0.00418 [0.00427]	-0.000984 [0.00165]	0.00142 [0.0431]	0.0144** [0.00632]	
Migration	-0.251*** [0.0944]	0.0484 [0.0819]	-0.241** [0.0933]	0.0382 [0.0852]	-0.257 [0.257]	0.165 [0.121]	
$\log(\text{Population}_{97})$	0.0446 [0.0525]	-0.0242 [0.0452]	0.0399 [0.0509]	-0.0348 [0.0404]	0.0391 [0.0478]	0.0735 [0.0740]	
Traditional Elections	0.0224 [0.0752]	-0.157 [0.136]	-0.00487 [0.0718]	-0.159 [0.133]	-0.00114 [0.0957]	-0.402** [0.170]	
Parent	0.0619 [0.174]	0.250*** [0.0797]	0.129 [0.172]	0.247*** [0.0822]	0.119 [0.228]	0.293*** [0.103]	
Child	0.115 [0.108]	0.109 [0.190]	0.109 [0.114]	0.116 [0.188]	0.0681 [0.646]	0.123 [0.170]	
N	126	172	126	172	126	172	
R ²	0.376	0.095	0.357	0.090			

Standard errors clustered at 1997 district boundary level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The Δ Urban variable can take on three values: $\{-1, 0, 1\}$. Δ Urban = -1 if Urban₉₇=1 and Urban₀₇=0; Δ Urban = 0 if Urban₉₇=0 and Urban₀₇=1; Δ Urban = 1 if Urban₉₇=1 and Urban₀₇=1. An analogous ranking applies for the Δ Kabupaten variable.

change in our sample changed their institutions from elections to non elections. This tempers evidence against the above interpretation of dwindling majorities protecting themselves, however, there are two caveats to this conclusion. Firstly, the timing of the variables differs, as the migration variable occurs before the change in majority size. It is possible that new migrants have been able to establish themselves in the community by the time that a dwindling majority has decided to change institutions. Secondly, we cannot observe whether the migration-induced population change resulted in a larger or smaller population. Finally, being in a district that becomes a kabupaten is associated with a decreased propensity to change from elections – or alternatively – being a village in a district that becomes a kota is associated with no longer having elections. This is consistent with the standard legislative story of village level institutions. I move to villages that did not have elections in 1997 and estimate the determinants of whether or not the village head selection mechanism changed by 2007. Although the single equation estimates are insignificant, the IV regression reveals a positive and significant coefficient estimate of 1997 ethnic majority size. That is, an increase in a village's majority ethnic size by one standard deviation leads to an increase in likelihood that a village with no elections in 1997 would have an elected village head in 2007 increased by 30.2 percent.

Institutional change is also driven by factors from above. Villages in districts that become a kabupaten are associated with a higher propensity change institutions and have elections in 2007. This is weakly significant and is consistent with the standard legislative story. Pemekaran is associated with an increased likelihood of village institutions to change their village leader selection mechanism to elections. This is driven by location within a parent district, that is, districts which have had a portion secede. Although the coefficient on Child is positive, it is not statistically significant. It is an open question as to why changes in selection occurred in Parent districts, and not Child districts.

7 Conclusion

This paper presents the results of an investigation into institutional form and institutional change using a sample of Indonesian villages over 1997–2007. The analysis is motivated by considering the two sides of institutions: those imposed from ‘above’ and those from ‘below’. Above in this case refers to legislation at higher levels of government, for instance the national government and local government, which are largely exogenous to the village. Institutional change from ‘below’ refers to the composition of the village. Villagers may desire an institutional form that reflects the costs and benefits of village level coordination, but their feasible institutional choice set is constrained by higher levels of government.

The results provide evidence that variation in village level ethnic majority size does help explain whether or not a village has an elected head. Ethnic majority size is associated with an increased propensity of a village to hold elections to select their village head. There is also some evidence that changes in a village’s ethnic majority size is also a determinant of changing from elections to non elections. Finally, larger majorities at the onset of reformasi were more likely to change from non-elections to elections by 2007. Overall, we can conclude that village institutions are endogenous to the composition of a village’s population.

We also see that factors exogenous to the village are associated with institutional change. Location within a district that changes from a kabupaten to a kota – or vice versa, as well as the role of districts splitting and earlier migration induced population change are significant determinants. The results are consistent with the idea of a ‘window’ of change, where an exogenous shock provides opportunity for those with the capacity to change institutions to do so. There is an overlap here with the ‘critical junctures’ theory of income and democracy¹⁵ (?). The shock provided by the Asian Financial Crisis, which allowed the toppling

¹⁵See Gundlach and Paldam (2009) for a discussion on critical junctures and the alternative ‘democratic transition’ theory.

of Suharto led to rapid decentralisation in the country. Much of the analysis has been limited to the district level, since this is where much of the national government's functions were reallocated. However, I find evidence that this has had ramifications even at the village level, with shocks exogenous to the village having a robust correlation with village level institutions.

There is no doubt in the author's mind that other factors, for instance the village level income distribution, are also important. A fuller collection of variables that could separate local from higher level determinants of institutional form and change would be valuable. This is particularly so given the currently small stock of empirical evidence on constitutional change.

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Majorities, fragmentation or polarisation?

As noted above, there is a collinear relationship between majority size, ethnic fragmentation and an ethnic polarisation variable (defined below). These all have different interpretations and typically differ from one another (Alesina and La Ferrara 2005). Ultimately, there is an unfortunate statistical correlation. This means that one could interpret the results as arising from fragmentation, polarisation or majority size. This need not concern the analysis, which only requires a measure of the variation in coordination costs across villages, which is compared with variation in determinants of institutional change from above the village. I use majority size, as the this variable maps the data to this concept with less measurement error than is the case for fragmentation or polarisation.

Table 6: Correlation between majority size, ethnic fragmentation (Herfindahl) and polarisation.

	Majority	Herfindahl	Polarisation
Majority	1		
Herfindahl	-.9375	1	
Polarisation	-0.9186	0.9768	1

A fractionalisation index is employed to measure ethnic diversity. The measure of ethnicity for a village v at time t is $ETHNIC_{vt} = 1 - \sum_j (Ethnicity_{jvt})^2$, where $Ethnicity_{jvt}$ is the proportion of the j^{th} ethnic group in village v at time t . This variable measures the probability that any two randomly selected individuals in the village have different ethnic backgrounds. Ethnic variation is 0 where the village is ethnically homogenous and 1 in the hypothetical case where everyone in the village has a different ethnic background. The maximum potential domain of the measure of ethnic variation with four groupings is $[0, 0.75]$, although the maximum found in the sample is 0.7. The mean value found over the two time periods is 0.226. This is lower than the national average found at the kecamatan level of 0.45 (Fitriani et al. 2005), which is to be expected given that villages are smaller than kecamatan and the possibility of sorting into homogenous groups is easier in smaller areas.

The polarisation index comes from Montalvo and Reynal-Querol (2002). The measure is calculated as $RQ_{vt} = 1 - \sum_{j=1}^N (\frac{1/2 - Ethnicity_{jvt}}{1/2})^2 \cdot Ethnicity_{jvt}$, where $Ethnicity_{jvt}$ is the proportion of the j^{th} ethnic group in village v at time t . This variable yields higher results where two equal sized groups are present in the population.

Table A7 presents the results of regressions using polarisation and fragmentation as the key independent variables. We see that we could easily have alternative explanations for village level constitutional change. However, the aim of the paper was to highlight the tension societies have in establishing their constitutions – or the rules of the rules of their game. The tension is between constraints ‘from above’, for instance higher levels of government and constraints ‘from below’, here, the coordination between villagers themselves. The existence of coordination costs, rather than their form, was of importance for this paper.

Table 7: Replicating columns [5] and [7] of Table 4 with two alternative measures of ethnic composition: a Herfindahl index as per Alesina et al. (1999); and a polarisation index as per Montalvo and Reynal-Querol (2002).

	[1]	[2]	[3]	[4]
	LPM	LPM	IV estimation	IV estimation
Ethnic fragmentation	-0.00625*** [0.00182]		-0.0250*** [0.00787]	
Ethnic polarisation		-0.00350*** [0.00108]		-0.0178*** [0.00635]
2007 dummy	0.0645 [0.0568]	0.0634 [0.0576]	0.00840 [0.0379]	-0.0178 [0.0492]
Population	-0.0344 [0.0483]	-0.0344 [0.0485]	0.0120 [0.0357]	0.0294 [0.0440]
Urban dummy	-0.0884 [0.106]	-0.0887 [0.107]	-0.0207 [0.0586]	0.00265 [0.0707]
Pemekaran	0.351** [0.160]	0.363** [0.163]	0.194* [0.103]	0.198* [0.115]
Kabupaten	0.427*** [0.160]	0.424*** [0.162]	0.151 [0.131]	0.0358 [0.185]
N	582	582	582	582
R ²	0.756	0.755	0.601	0.490

Standard errors clustered district boundary level. Population in logs.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$