

Asymmetric Extremism*

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Abstract

Campaigning on highly divisive, ideological issues can serve as a cheaper alternative to provision of goods and services, so politicians have an economic incentive to cater to extremists. Policies that are more beneficial to extremists in absolute terms than the extent to which moderates dislike them shift the focus of re-election from incumbent performance to ideology, increasing the scope for shirking or rent-seeking. I formalize this hypothesis and test it using Indonesian data. About half of the district governments in Indonesia have been experimenting with divisive and often controversial Sharia-based religious policies since 2000. Using difference-in-differences identification I show that districts that introduce Sharia policies spend less and create less public services: the conservative estimate of the impact is a 10 percent decrease in spending and an 8 percent of a standard deviation decrease in an index of government services. The downstream social effects of cutting service provision and relying on extremists to win elections are that Sharia policies increase various measures of poverty and violence.

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I Introduction

There are core issues in politics that are rooted almost exclusively in ideology. Some voters have strong opinions on issues that in expectation have little effect on their material wellbeing. One could cite many examples from around the world: abortion is a core political issue in many countries with declining number of unwanted pregnancies; immigration is of deep concern in Eastern European countries with virtually no immigration; secular politicians in Indonesian local governments turn religious obligations into legislation, though much of the electorate already conforms to these voluntarily. All these examples refer to issues that are ideologically important to a minority in the electorate, but their impact on the rest of the population is low. In other words, these policies have asymmetric effects on the utility of extremists and moderates.

This paper argues that campaigning on asymmetrically divisive, ideology-driven issues can serve as a cheaper alternative to provision of goods and services. Consequently, politicians have an economic incentive to cater to the extremists in the electorate. I formalize this hypothesis and test it using Indonesian data. About half of the district governments in Indonesia have been experimenting with divisive and often controversial Sharia-based religious policies since 2000. These regulations are based on a narrow and restrictive interpretation of traditional Islamic jurisprudence and mostly focus on behavioral restrictions (on clothing, consumption of alcohol, social interactions, personal finances etc.). Using rich administrative data from both district and village level I show that district heads who cater to the extremist voters by introducing Sharia-based local government regulations create less public services and poverty worsens during their administration.¹

The first contribution of the paper is a simple voting model that explores the impact of asymmetric extremism on the electorate. Though asymmetric extremism is ubiquitous, I tailor the model to the Indonesian setting, as the second contribution of the paper is to test whether the impact of Sharia-based Indonesian local government regulations fits the model predictions empirically. Sharia-based regulations were implemented by secular district heads after the democratization and decentralization of the country following the downfall of the military rule in 1998. These regulations often sparked controversy locally, and have inspired an extensive literature in political science, which is, to the best of my knowledge, almost exclusively qualitative.²

¹Village (desa) is the smallest administrative level of territories, so the whole country is subdivided to villages, not just rural areas. The levels are 1) villages (desa or kelurahan) 2) subdistricts (kecamatan) 3) districts (alternative translation: regencies) or cities - where Sharia regulations are introduced (kabupaten or kota) 4) provinces (propinsi). As of 2019 there were 34 provinces, 512 districts, over 7000 subdistricts, and over 80.0000 villages. The average population of a village was almost 3500 in 2011, the latest year in my data.

²The earliest paper I encountered is Bush (2008); Buehler (2016) is the most extensive source; Other papers usually focus on a specific case study or a specific characteristics of Sharia-politics in Indonesia (Buehler, 2008; Buehler and Muhtada, 2016; Crouch, 2009; Nastiti and Ratri, 2018; Pisani and Buehler, 2016; Van Dijk and Kaptein, 2018).

I measure the impact of asymmetric extremism on a range of government and societal outcomes in Indonesia. In order to measure the trade-off between ideology and public service provision, I look at a village level index of public services. To measure downstream social effects I look at both village level outcomes (such as the incidence of slums) and district level outcomes (such as the poverty rate). These downstream social effects capture the effect of worse access to public services, and any direct effect a Sharia-based restrictive regulation might have had.³ I compare adopting and non-adopting districts in event studies and regressions that use a difference-in-differences identification strategy. The results show a decrease in public good provision and public expenditure, while poverty increases and empowerment of radicals makes violent incidents more frequent.⁴

Although I document that Sharia regulations have a negative impact on a range of measures that contribute to material wellbeing, the results do not directly imply that Sharia regulations are decreasing total welfare. The third contribution of the paper is that it measures welfare consequences indirectly. I take the model to the data and estimate bounds on underlying voter utility given the decisions of the incumbent and district characteristics.

In Section 2 I describe the simple, static model in which an incumbent politician who seeks reelection makes two choices: 1) he sets public spending levels across the villages in his district, 2) he decides whether or not to implement a Sharia-based policy which is divisive. This means that it provides positive utility to the religious extremists of the electorate, and negative to moderate voters, independently of the utility they gain from access to public services. My core assumption is that the policy is asymmetric, so its effect on extremists is bigger in absolute value as its effect on moderates. One can interpret this assumption in more than one way. A moderate voter might also happen to be a religious conservative, and thus conform to the religious rule voluntarily, so her disutility comes from the government interfering in her life unnecessarily. A moderate voter might attribute a small probability to the actual enforcement of the regulation (or that herself is going to get prosecuted upon a violation), and thus her disutility in expectation is smaller. Finally, a voter who is severely affected by the Sharia-based policy might be a member of a small group that cannot organize itself into an effective voting bloc (ethnic, religious or sexual minorities); in that case the assumption that Moderates suffer a lower utility impact on average means that a few Moderates suffer disproportionately, while the rest stays largely indifferent. I do not choose a preferred interpretation from these. In this setting the implementation

³This connects the paper to the literature on the impact of religious institutions. Within the context of Islam, the impact of the religious foundations (Kuran, 2004; Bazzi et al., 2018), the pilgrimage to Mecca (Clingsmith et al. 2009), inheritance rules (Alfano, 2017), and fasting during the month of Ramadan (Oosterbeek and van der Klaauw, 2013; Majid, 2015; Campante and Yanagizawa-Drott, 2015) were studied recently.

⁴I use the INDODAPOER district-level data set of World Bank, and village level PODES data set of the Indonesian Statistical Center (BPS), and the National Violence Monitoring System data of the Indonesian Ministry for Human Development and Culture, and the Indonesian Family Life Survey of the Rand Corporation for auxiliary evidence.

of the Sharia-based policy affects the election outcome through two channels. First, it gives a boost to the popularity of the incumbent among extremists, providing an upward level shift in his reelection probability; Second, it decreases the marginal effect of government spending on the election outcome. This is a joint result of the fact that the extremists are already convinced to vote for the incumbent, so their turnout is less likely to be affected by additional spending, while the moderates are harder to convince given their dislike of the Sharia policies. These two channels ensure that an incumbent who introduces Sharia-based policies spends less in optimum, and enjoys higher rents (or equivalently, exerts less effort, as the model makes no distinction between these). First I show that public service provision under Sharia is lower; then I show the condition for introducing the regulations. Finally, I provide an empirically tractable way of using the model to estimate the utility impact from Sharia itself relative to the utility from public services.

In Section 3 I describe the institutional context, the data sources, and discuss selection, as implementation of Sharia-regulations is non-random. I show that, consistently with the model assumptions, differences in the timing of the implementation of the policies is largely driven by differential trends in the increase of the extremist share of the electorate. Building on the political science literature (Buehler 2016) I proxy this locally with the number of one specific type of religious school (the *pesantren*). It has been documented that these trend differentials have exogenous sources in early policies of the independent Indonesian republic, and are independent of later economic performance (Bazzi et al. 2020).

In Section 4 I estimate the causal impact of Sharia-based regulations on spending, public services and measures of downstream social effects, such as poverty and Islamist violence. I use a simple difference-in-differences (DID) analysis where I exploit district and time variation in the implementation of Sharia-based policies. I compare over time outcomes of districts that implement Sharia regulations to districts that do not in a setting with geographical and time fixed effects and a variety of control variables including lagged economic indicators and district government income, which is mostly determined by exogenous factors.⁵ I present the results both in fixed effect regression and in event study forms. I find that in election cycles where the incumbent introduces Sharia-based regulations, spending on public employees is lower by about ten percent, while total spending does not differ significantly. A village-level standardized index of government services drops by 8 percent of a standard deviation following the introduction of the first Sharia regulation in the district, and villages are 1.5 percent more likely to have a slum area over the years that follow. District

⁵According to the INDODAPOER data set, the median share of locally generated revenue in the districts is 5% over the study period. Most district government revenue is allocated through government block grants and natural resource revenue redistribution mechanisms. These are formula-based allocation schemes and generate large variation in local government revenue. In 2010, for example, the district at the 99th percentile of the revenue distribution had 17 times more revenue per capita as the district at the 1st percentile.

poverty rate goes up by 1.5 percentage points on average over the study period in these districts after the policy is introduced, and violent incidents become more frequent by 28 percent.

The DID analysis relies on the assumption of parallel trends, meaning that if the Sharia-based regulations had not been introduced, the outcome variables of adopting and non-adopting districts would have evolved similarly over time. The event study analyses are visually consistent with this assumption, but I rule out potential omitted variable explanations to check the robustness of the results.

In the final section of the paper I take the model to the data. My goal is to estimate the taste parameter for Sharia regulations for both extremists and moderates, given observed district characteristics, policy decisions of incumbents, and their eventual electoral performance. I find that based on the model extremist voters have to like Sharia regulations at least about six times more than moderates dislike them in order to explain the observed degree of reduction in public services.

The paper is closely related to the literature on the broader topic of populism (Grossman and Helpman, 2018); the recent literature argues that the wave of populism in the past decade was a consequence of economic globalization and rising inequality (Guiso et al., 2017; Rodrik, 2017; Pastor and Veronesi, 2018). This literature is mostly concerned what one could call the "demand side" of populism. This paper concentrates on the "supply side": which politicians do and which decide not to cater to more extremist demands of the electorate and why? The supply and demand side can be contiguous, as populist voters can become populist politicians (Dal Bó et al., 2018). But this is not always the case, and politicians without a populist disposition can strategically re-position themselves to cater to extremist demand.

The idea that politicians strategically go to the extremes is, of course, not new. Glaeser (2005) argues that politicians supply hate-creating stories against groups that were beneficiaries of the policies of their political opponents (i.e. egalitarians incite hatred against rich minorities, while opponents of redistribution incite hatred against poor minorities). Politicians can shift away from the political center just to convince voters that they are not exclusively opportunistic and office-minded (Callander, 2008; Kartik and McAfee, 2007). Perhaps the closest to this paper's analysis is Glaeser et al. (2005), who present a model in which there is an information asymmetry between groups of voters in that they are more familiar with the platforms of their own preferred parties. As candidates have to play for their base to get resources for the election, candidates go to the extreme when communicating with their own, and are more moderate when communicating with the general public.

II Asymmetric extremism: a simple model with empirical applications

II.A The setup

An incumbent district head is running for reelection, during which he faces a tradeoff between maximizing reelection probability, and minimizing spending.⁶ The district consists of V villages. Voters in these villages draw utility from the incumbent and his policies. The incumbent makes two policy decisions: he sets the level of public services in each village, and decides whether or not to introduce a district level Sharia-based policy. The sequence of events is the following: 1) the incumbent and the voters learn the parameters of the model, 2) the incumbent makes policy choices, 3) popularity shocks are drawn, 4) voters decide the election outcome. Following the logic of backward induction, I first set up the decision problem of voters given the set of policies implemented; then I derive the probability of reelection given those policies; finally I derive the optimal policy decisions of the incumbent given the parameters of the model.

II.A.1 Voter choice

There are two types of voters, Extremists (E) and Moderates (M), and μ_v represents the share of Extremists in village v . In absence of a Sharia-regulation, the utility of both Extremists and Moderates are identical, so the utility of any voter i in village v is described by the function

$$u_{i,v} = \alpha g_v - \eta_i + \nu.$$

The term αg_v represents material utility: g_v is a measure of public services in the village, α is its constant marginal valuation. Voters also derive a random utility from liking or disliking the incumbent, represented by an idiosyncratic (η_i) and a district level (ν) random component of popularity. The random variable ν represents the general popularity of the incumbent; its realization is the same for all voters across all villagers. The incumbent does not know the realizations of the random variables, but knows their distributions and all other parameters of the model.

For the sake of tractability I assume η is independent and identically distributed according to the exponential distribution with parameter λ . In plain terms this means that close to neutral opinions about the

⁶The model is loosely based on Strömberg (2004).

incumbent are the most frequent, worse opinions are rare, and being very unpopular is the least likely.⁷ A voter votes for the incumbent if his or her utility $u_{i,v}$ exceeds an exogenously given threshold \bar{u}_v . This term summarizes everything that might affect how hard a village is convinced by the incumbent politician.

$$\alpha g_v - \eta_i + \nu > \bar{u}_v$$

If there is a Sharia-policy in the district, it enters voter utility as an additive term σ :

$$u_{i,v}^S = \alpha g_v - \eta_i + \nu + \sigma.$$

The value of σ is different for Extremists and Moderates. An Extremist (E) voter gets a utility boost σ_E from having Sharia, while a moderate voter suffers a utility loss of σ_M , with $\sigma_E > 0$, $\sigma_M < 0$ and $|\sigma_E| > |\sigma_M|$. As the utilities of Extremists and Moderates are otherwise identical, I represent their utility jointly by $\sigma_{E,M}$. Under Sharia a voter votes for the incumbent if

$$\alpha g_v - \eta_i + \nu > \bar{u}_v - \sigma_{E,M}.$$

We can capture the probability that any individual i in village v votes for the incumbent (in the absence or in the presence of Sharia) as

$$\pi_{i,v} = \pi_v = Pr(\alpha g_v - \eta_i + \nu > \bar{u}_v) = F_\eta(\alpha g_v + \nu - \bar{u}_v)$$

$$\pi_{i,v}^S = Pr(\alpha g_v - \eta_i + \nu > \bar{u}_v - \sigma_{E,M}) = F_\eta(\alpha g_v + \nu - \bar{u}_v + \sigma_{E,M}) \quad (1)$$

Given the assumption of exponential distribution function for η_i , the probability of voting for the incumbent under Sharia is

$$\pi_v^S = \mu_v F_\eta(\alpha g_v + \nu - \bar{u}_v + \sigma_E) + (1 - \mu_v) F_\eta(\alpha g_v + \nu - \bar{u}_v + \sigma_M).$$

We can rearrange this as

$$\pi_v^S = 1 - S_v \exp(-\lambda(\alpha g_v + \nu - \bar{u}_v)) = 1 - \exp(-\lambda(\alpha g_v - \log(S_v)/\lambda + \nu - \bar{u}_v)),$$

⁷This is popularity distribution for Indonesian district administrators seems plausible also because they are mostly career bureaucrats, who are not strongly ideological.

with $S_v = \mu_v \exp(-\lambda \sigma_E) + (1 - \mu_v) \exp(-\lambda \sigma_M)$, the average impact of Sharia on voting probability. If $S_v < 1$, then introducing Sharia increases the probability of voting for the incumbent. From the second formulation we immediately see that introducing Sharia shifts the cumulative distribution function of voting for the incumbent to the left by $-\log(S_v)/\lambda$. The consequence of this is that Sharia is more likely to benefit the incumbent when λ is small (potentially smaller than 1). Given that $E[\eta_i] = 1/\lambda$ and $Var[\eta_i] = 1/\lambda^2$, this is equivalent to saying that Sharia is more likely when political preferences are more volatile and when the incumbent faces a tougher reelection. When λ is small, a smaller coalition extreme voters is enough to sustain an equilibrium with Sharia. Figure 1 plots possible combination of $\sigma_E, \sigma_M, \lambda$ parameters and the share of extremist voters that guarantee that Sharia is optimal policy.

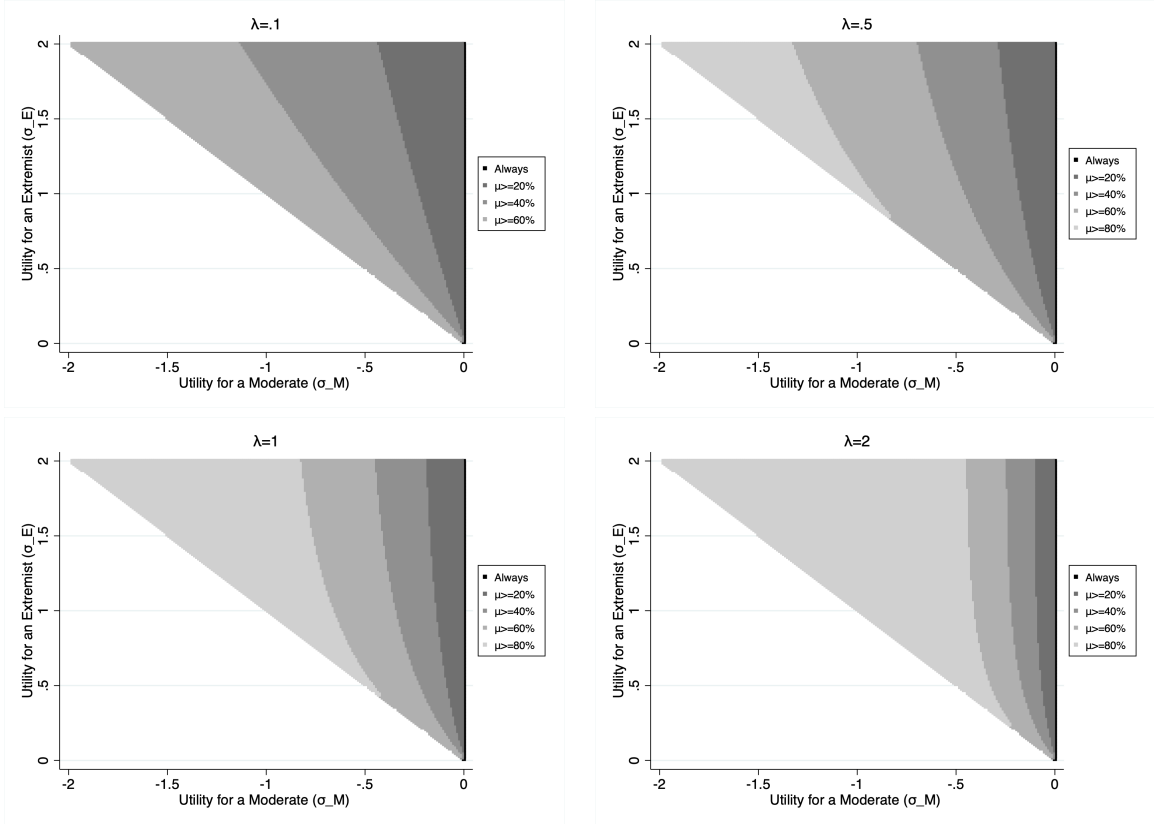


Figure 1: How is the minimum share of extremists for Sharia optimality depend on the local popularity distribution of the incumbent ($\eta_i \sim \text{exponential}(\lambda)$), and the taste parameters for Sharia of extremists (σ_E) and moderates (σ_M)?

The parameter S_v can also be interpreted as the ratio of **not voting** for the incumbent under Sharia relative to voting for him without it:

$$S_v = \frac{(1 - \pi_v)^S}{(1 - \pi_v)}.$$

Election outcome The incumbent wins reelection if

$$\sum n_v \left(1 - \pi_v^{(S)}\right) < \frac{1}{2} \sum n_v.$$

We can substitute in the respective probabilities and express the district-wide popularity shock ν to get

$$2 \sum \frac{n_v}{N} S_v^I \exp(-\lambda(\alpha g_v - \bar{u}_v)) < \exp(\lambda \nu).$$

Where I is an indicator of the presence of Sharia, so $S_v^0 = 1$, and $S_v^1 = S_v$. Without loss of generality we can introduce the notation ξ for the transformed random variable $\exp(\lambda \nu)$ to express the probability of reelection as

$$P^{(S)} = 1 - F_\xi \left(2 \sum \frac{n_v}{N} S_v^I \exp(-\lambda(\alpha g_v - \bar{u}_v)) \right). \quad (2)$$

We can interpret the term $V^{(S)} = \sum \frac{n_v}{N} S_v^I \exp(-\lambda(\alpha g_v - \bar{u}_v))$ in the bracket as the expected number of votes the incumbent gets because of his policies rather than his personal popularity. The random variable ξ captures eventual turnout. Consequently, we can interpret F_ξ as the probability of losing the election (ie. that the votes for the incumbent are less than half of the turnout).

To keep things simple, I assume that ξ follows exponential distribution with parameter λ_2 . This is equivalent to assuming that $-\nu \sim \text{Gumbel}(\frac{1}{\lambda} \log(\lambda_2), \frac{1}{\lambda})$, which is a standard assumption in models of choice.

Without Sharia, public service provision in village v decreases this probability proportionally to $-\lambda\alpha$; this gets factored in into eventual reelection probability weighted by population share n_v/N . This means that public service provision in more populous villages decreases the probability of an election loss more. When introducing Sharia the incumbent introduces a new factor, S_v . In a village where Sharia is popular ($S_v < 1$), the probability of losing the election decreases ceteris paribus, but so does the marginal impact of public services on the election outcome. I interpret this as shifting the focus of the electorate away from public service provision.

II.A.2 Allocation problem of the incumbent

The incumbent solves the following problem:

$$\max_{S, g_1 \dots g_V} U^{(S)} = P^{(S)} - \omega \sum p_v g_v. \quad (3)$$

where P is his probability of reelection, ω describes his selfishness (the extent to which he values rents or leisure over reelection),⁸ p_v is the price of providing a unit of public service in village v . The incumbent solves this by setting public spending in the villages (g_v for all $v \in 1..V$), and the binary decision whether to adopt Sharia regulations or not. As this is a binary decision, the incumbent solves the problem in Equation 3 with and without Sharia and then implements Sharia if it provides him with more utility ($U^S(g_v^{*,S}) > U(g_v^*)$).

His spending decision is subject to a budget constraint (ie. $\sum p_v g_v < M$, where M is the exogenously given district income), but I only look for internal solutions to this problem. The theoretical consideration for this is that I assume that all incumbents have some space for rent-seeking or shirking, and corner solutions would refer to situations where the incumbent is perfectly corrupt/selfish, or perfectly honest/efficient. The empirical consideration is that most of Indonesian districts' revenues are from government block grants that allow for quite some slack in the district head's spending decisions.

As we look for internal solutions only, the first order condition characterizes the optimal spending decision, so we look for $\partial P / \partial g_v = \omega p_v$. We can write this up with g_v rearranged to the left hand side as:

$$\exp(\lambda \alpha g_v) = \frac{2\lambda \alpha}{\omega} f_\xi \frac{S_v^I e^{\lambda \bar{u}_v \frac{n_v}{N}}}{p_v} \quad (4)$$

We can take the logarithm and rearrange:

$$g_v = \log \left(\frac{2\lambda \alpha}{\omega} \right)^{\frac{1}{\lambda \alpha}} + \frac{1}{\lambda \alpha} \log(f_\xi) + \frac{1}{\lambda \alpha} \log(S_v^I) + \frac{\bar{u}_v}{\alpha} + \frac{1}{\lambda \alpha} \log \left(\frac{n_v}{N} \right) - \frac{1}{\lambda \alpha} \log(p_v) \quad (5)$$

II.B Results

II.B.1 The counterfactual impact of Sharia on public service provision.

The first term in Equation 5 is identical across villages, as it is simply a function of the model parameters. The second term (the optimized value of the probability density function of ξ) is also identical with and without Sharia, as it is pinned down by the parameter ω prices p_v (see the Appendix for details). Consequently we can express the counterfactual impact of Sharia $\Delta g_v^S = g_v^S - g_v$ as

⁸My data does not allow me to differentiate with certainty between corruption and bureaucratic slack, so in the model I do not make this differentiation either.

$$\Delta g_v^S = \frac{1}{\lambda\alpha} \log(S_v) \quad (6)$$

In any village where Sharia increases the probability of winning ($0 < S_v < 1$), the incumbent decreases public service provision proportionally to the extremist support (as $\log S_v < 0$), because he can get the locals to vote for him without spending any money there. Adding up the conditions given by Equation 6 and dividing by the number of villages in the district (V) we can calculate the average impact of Sharia on the district:

$$T_{Sharia} = \bar{g}^S - \bar{g} = \frac{1}{\lambda\alpha V} \sum \log(S_v) \quad (7)$$

In the Appendix I show that

$$\log(S_v) \simeq (-\lambda\sigma_M) + \mu_v (\exp(\lambda\sigma_M - \lambda\sigma_E) - 1).$$

We can use the notation $\alpha_0 = -\lambda\sigma_M$ and $\alpha_1 = \exp(\lambda\sigma_M - \lambda\sigma_E) - 1$ to represent $\log(S_v)$ as a linear function of the share of Hardliners in the village:

$$\log(S_v) \simeq \alpha_0 + \alpha_1 \mu_v. \quad (8)$$

From this we see that the impact of Sharia is proportional to the unweighted average of Extremists in the district:

$$T_{Sharia} = \frac{1}{\lambda\alpha} (\alpha_0 + \alpha_1 \bar{\mu}).$$

II.B.2 The decision to introduce Sharia.

The incumbent introduces Sharia if his utility is higher in the optimal allocation under Sharia as in the optimal allocation without Sharia. This happens if:

$$1 - F_\xi \left(2 \sum \frac{n_v}{N} S_v \exp(-\lambda(\alpha g_v^S - \bar{u}_v)) \right) - \omega \sum p_v g_v^S > \\ 1 - F_\xi \left(2 \sum \frac{n_v}{N} \exp(-\lambda(\alpha g_v - \bar{u}_v)) \right) - \omega \sum p_v g_v$$

Which simplifies to:

$$\sum p_v \Delta g_v^S = \sum p_v \log(S_v) < 0 \quad (9)$$

The incumbent introduces Sharia if the net non-material utility from Sharia weighted by the village level price of public good provision is positive. Note that this depends not on the population of the village, nor the absolute number of Hardliners, only their respective share in the village and the price of public service provision.

As the price of public provision is positive in each village, the condition in Inequality 9 means that if we compare two incumbents who face the same optimization problem except for parameters μ_v , σ_E and σ_M and Sharia is optimal only for one of them, then the introducing incumbent provides less public services. This is the main argument of this paper.

III Background, data and stylized facts

III.A Institutional context and local politics

The fall of Suharto in 1998 following the economic crisis of the same year instigated a wave of reforms in Indonesia. The next year saw the first free elections in decades, and the passing of crucial legislation on the decentralization of the government.⁹ The administrative level of regencies and cities (which I jointly refer to as “districts” throughout the paper) gained considerable autonomy in a wide range of policies; so wide that it is easier to note the exceptions where the central government maintained authority, such as foreign affairs, national defense, justice, monetary policy and religion.¹⁰

District executives (“regents” or “mayors”) have traditionally been the most important authorities over the choice of district policies. In the Suharto era these executives had been centrally appointed, and after the transition period these office holders were permitted to complete their five year tenures. However, as their appointment had not followed any particular election calendar, the end of their term did not follow one either. As a consequence the newly and democratically elected district legislatures were only able to pick a new district executive for themselves at some random date between 1999 and 2004.¹¹ Later, recognizing their de facto authority over policy, the central government introduced direct elections for district heads from 2005

⁹Laws 22/1999 and 25/1999

¹⁰Regencies (kabupaten) consist of mostly rural areas; cities (kota) are urban centers. The literature uses the “district” and “region” terms interchangeably.

¹¹This variation in the timing of local government democratization is used in previous literature [Martinez-Bravo et al., 2017, Martinez-Bravo, 2014].

onward.¹² Additional fiscal decentralization came about in 2005 which furthermore increased the capacities of district governments.

One heritage of the Suharto regime is that parties are only weakly institutionalized locally. Rather than being the recruitmental base for new politicians, anecdotal evidence suggests that parties offer their support as a commodity for political entrepreneurs who run in district politics [Buehler and Tan, 2007]. At any rate, a single-party endorsement for a candidate is the exception rather than the rule. Under this institutional configuration, it is not very surprising that ideological differences between most candidates are not very salient, and factors such as material transfers to voters (in cash or in kind), personal charisma and group loyalty are among the most important ones.

There is a widespread agreement that the political and fiscal empowerment of the districts *de facto* meant the empowerment of the district heads, who enjoy discretion over policy and spending. As a result, the office is a rather attractive one. As early as 2005, mounting a serious campaign for district head required spending between \$180,000 to \$1.6 million in USD [Rinakit, 2005]. Candidates, on the other hand, receive relatively low amount of monetary support from the state, so most sources are round up from private donations. These are subject to donation caps, but sanctions are mostly unenforceable; essentially, the system is designed to be non-transparent [Mietzner et al., 2011]. Vote buying is pervasive [Aspinall et al., 2017]. Businessmen write checks expecting government contracts should their candidate assume office; candidates themselves accrue significant debts during the election process [Buehler and Tan, 2007]. Burhanuddin et al. [2018] reports that as many as one in three voters can be exposed to vote buying in national elections, and posits that in local elections, where electorates are smaller and ties are stronger, it might be even more pervasive.

Cyclicity in government spending suggests that incumbents regularly use government funds to sustain their majorities [Sjahrir et al., 2013, 2014], and certainly there has been significant incumbent advantage present in local elections since the beginning until recently [Martinez-Bravo et al., 2016, Fossati et al., 2017]. Particularly important is the maintaining of patronage networks: bureaucratic jobs are used to maintain patron-client relationships and deliver the votes necessary for reelection of members of the elite [Van Klinken, 2009, Simandjuntak, 2012].¹³

¹²Again, indirectly elected district heads were allowed to complete their tenure, so districts could have their first direct district head election any time between 2005 and 2009. Only very recently have been a centralized effort made to synchronize local elections across the country. District heads are elected via a simple majority; runoffs are only needed if no candidate gets 25% of the vote (see Law 32 of 2004 on regional administration).

¹³This can be true to the lowest levels of the administration: anecdotal evidence suggests even the jobs of primary school teachers can be part of patronage networks. [Pisani, 2014]

III.B Sharia regulations

According to the 2010 census, 87% of the population of Indonesia identifies as Muslim, and they are predominantly of the Sunni denomination. Though the first of the “five principles” (pancasila) guiding Indonesian nationalism has been the belief in a one and only God, the Indonesian state is a secular one. Though the national government maintained an exclusive authority in religious issues, local politicians found their way around this and starting from 1999 began to introduce regulations which they perceived as being in line with, or aiming to uphold or restore Sharia, traditional Islamic law. Originally meaning the divine law governing the world, and the way through which this law can be uncovered through deliberation, Sharia over the centuries became a powerful political symbol which condenses a claim to preserve or to create a vaguely defined “Islamic way of life”.¹⁴ While five of the ten most populous countries on Earth make reference to Sharia in their legal systems, and a majority of Muslims supported Sharia in the 29 out of 39 countries surveyed by the Pew Research Center in 2013, these figures are not very enlightening as to *what* these people actually support, as the term has no direct mapping into a set of policies.¹⁵ Nevertheless, Sharia as a political symbol has become popular with Islamophobes and Islamists alike, and became popularly (and wrongly) identified with a set of regulations ranging from charitable giving and financial transactions to public morals and elements of family law, such as marriage and inheritance, and also penal punishment.¹⁶

The regulations adopted by district governments in Indonesia has been focusing on these policy areas. The political science and sociology literature has been studying these regulations for a decade, from the early work of Bush [2008] to the recent comprehensive account of Buehler [2016]. I use the list of regulations compiled by these scholars as primary data source along with own data collection and a deeper analysis of the regulations’ actual content.¹⁷ It is important to note that these regulations are passed by politicians of a secular background [Pisani and Buehler, 2016] to gain support from religious voters and pressure groups from outside existing patronage networks [Buehler and Muhtada, 2016]; also, religious policies cannot be traced back to nation-wide Islamist parties.¹⁸ Figure 2 shows the map of the prevalence of Sharia-based regulations

¹⁴The Encyclopedia of Islam reports “pathway to water” as the original meaning suggested by the etymology of the word “Sharia” (Calder and Berry 2007 in Campo 2009). For the evolution of the concept see Hallaq [2009].

¹⁵India, Indonesia, Pakistan, Nigeria and Bangladesh are the most populous countries that refer to Sharia in their constitutions. The ambiguity of the term (and its usage) is similar to terms such as “Christian values” or “European values”. Being of a vague enough terminology, most people in the West would subscribe to these, without giving a second thought of any policy implications or how some politicians abuse the very same words.

¹⁶Hallaq [2009] gives an account of how this transformation had its roots in colonialism. Colonial powers kept curbing the legal authority of Islamic scholars to the point where only family law remained under local jurisdiction, effectively turning family law into a core identity issue for the colonized. In the meantime colonialists made an effort to have what they perceived as “Islamic Law” codified in a Western fashion, which was completely alien to previous flexible and deliberative legal practice. Muslim countries that had not been colonized did pretty much the same driven by a pressure to “modernize” and keep up with colonial powers.

¹⁷I would like to thank Giannisa Novi Budiutami for the excellent research assistance she provided with this task.

¹⁸Buehler (2016) lists six national Islam-based parties in Indonesia, of which four were active in the study period, and none

until 2013.

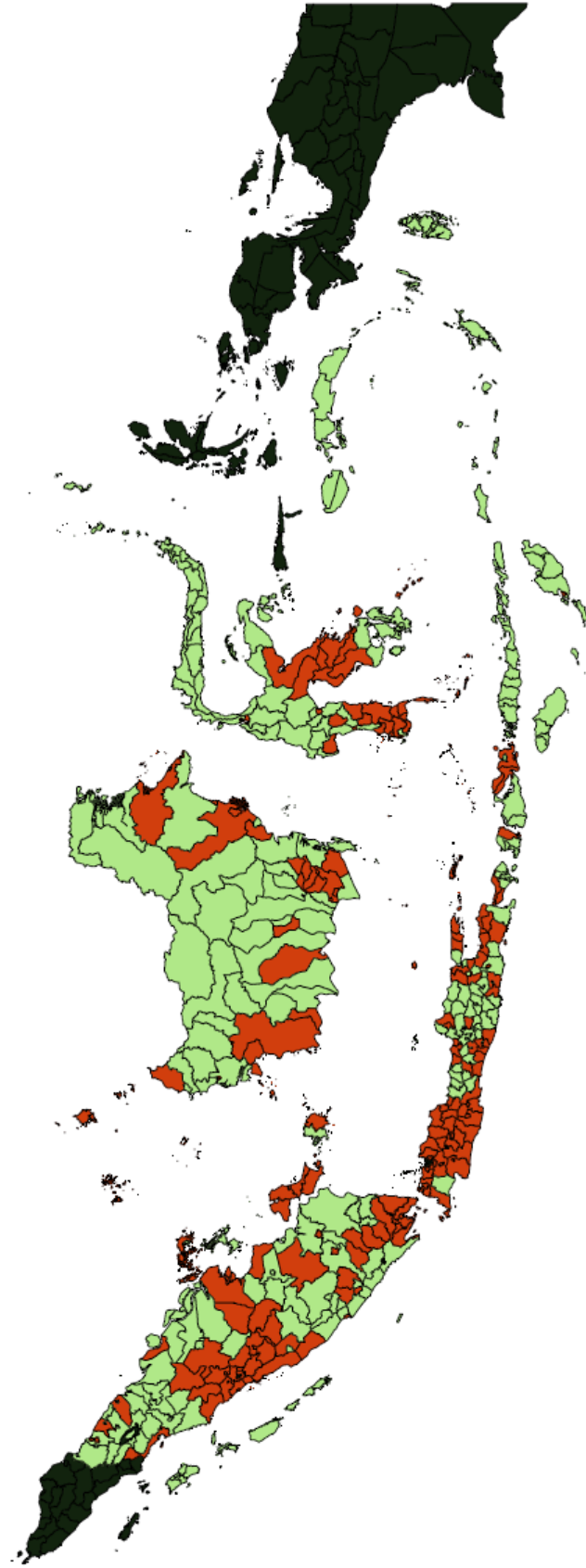
According to Nur Rif'ah [2014], no district level Sharia regulation was ever revoked, and lists several reasons: the regulations were carefully worded so their constitutionality would be hard to challenge. Furthermore, introducing religious policies was a controversial and hard-fought process wherever happened, so their opponents, when took power, decided not enforcing rather than revoking them, to avoid rallying local Islamists against themselves. Finally, though major Muslim organizations of Indonesia (such as NU and Muhammadiyah) take stand against Sharia-introduction on a national level, local chapters do endorse specific regulations. None of the other works that I am aware of mentions revoking any of the Sharia regulations, including Buehler [2016].

I categorize these pieces of legislation into two broad groups, which I call prohibitive and normative. Prohibitive regulations are the ones which severely constrain or ban altogether the selling, distributing and consuming alcohol; increase the crackdown on drugs and prostitution; enforce the retail restrictions imposed by Islamic festivities. Normative regulations, on the other hand, try to actively change behavior: they regulate religious almsgiving, attire, the interaction of sexes in public, required levels of religious knowledge.

The reason why I do not provide a more fine-grained categorization in the analysis is that Buehler [2016] argues that in many cases it is not the exact content of the regulations which matters the most but the fact whether any such regulation takes effect. It might happen, that the regency legislates the banning of alcohol, and vigilante groups start policing places they deem “immoral” and enforce attire rules which were not at all mentioned in the text. Thus, one channel through which the policies might have an effect is an increased general level of intolerance and public concern about religious values which is independent of the actual content of the legislation [Nastiti and Ratri, 2018].

of them was a major one. Within the subsample where I am able to identify party endorsement of incumbents, in 56% of the cases were Sharia regulations adopted by an incumbent which had the support of at least one Islamic party. The party which supported most such incumbents (33%) is the National Mandate Party (Partai Amanat Nasional, PAN). Buehler (2016) does not list this party among those which had the implementation of Sharia in their platform. He concludes that support from Sharia comes from outside the formal political domain.

Figure 2: Map of regions with religious policies (RPs) (red)



The map shows districts in red which had at least one Sharia-policy by 2013. The districts in black are omitted from the analysis (Aceh, Jakarta and Papua). The shapefiles show borders in 2009.

Typical examples of these regulations include the following:

- Regulation 2002/6 of the city of Batam sets to build a society based on Islamic morals; this regulation includes a provision that people of the opposite sex who are not married are prohibited from living under the same roof.¹⁹
- Regulation 2003/5 of the regency of Bulukumba sets the appropriate dress code for man and women; for women this includes wearing a hijab and garments that cover their hips and ankles.²⁰
- Regulation 2001/5 of the city of Cilegon makes it illegal to gamble; to run brothels; to manufacture, store or sale alcoholic beverages or narcotics; all on the grounds that these acts are contrary to religious teachings and local customs.²¹
- Regulation 2008/1 of the same district sets up compulsory extracurricular Islamic educational schemes for pupils learning in secular elementary schools.²²

Another reason why I am not using more fine-grained categorizations is that these regulations are usually coming in bundles, so disentangling the effects of a specific policy would be econometrically too challenging. Next I traced the regulations in local news outlets, to see if there is evidence for public support, debate, resistance or any hint to what extent the regulations were enforced. I ended up using all Islamic regulations in the analysis which had a reference and the text of which I was able to access.

To the best of my knowledge, systematic statistical analysis of the impact of these regulations has not yet been carried out. This is not to say that there is no scholarly interest (moreover, concern) of the effects these regulations might have had. The most often cited negative impacts are on vulnerable groups, such as women, children, the poor, and members of religious communities such as the Ahmadiyah sect [Crouch, 2009, Van Dijk and Kaptein, 2018, Nastiti and Ratri, 2018].

III.C Data sources

The original dataset on Sharia-based district regulations is based on the list of regulations in Buehler [2016]. This book contains the district names, years and regulation numbers of individual regulations. We cross-checked the items in the list with the database of local regulations on the homepage of the Ministry of the Interior of Indonesia to get access to their actual texts, and once the titles and content were at hand, to check

¹⁹<http://www.jdih.setjen.kemendagri.go.id/download.php?KPUU=13882>

²⁰<http://www.jdih.setjen.kemendagri.go.id/download.php?KPUU=16542>

²¹<http://www.jdih.setjen.kemendagri.go.id/download.php?KPUU=6686>

²²<http://www.jdih.setjen.kemendagri.go.id/download.php?KPUU=7057>

if similar other regulations exist which the original list did not cover; we also cross-checked the regulations with local news outlets and only included in the analysis those regulations which appeared in the news in any way.

Most district level variables are coming from the Indonesia Database for Policy and Economic Research (INDO-DAPOER, World Bank Group, 2015). This dataset compiles different Indonesian official data sources into a single, comprehensive yearly data set until the year 2013.²³ Starting years and periodicity of the variables are determined by the original data sets.

I obtain village level data from the Village Potential Statistics, a survey of the universe of Indonesian villages. This data is collected simultaneously with the population census, or other universal data collection efforts, such as the agricultural and economic censuses. The data that I use includes one survey wave prior to decentralization (1996), and five afterwards (2000, 2003, 2005, 2008, 2011). Village identifiers are rather inconsistent across waves, so I can only partially match data across survey waves, relying partly on statistical identifiers and names of localities. The linked sample includes 73% of all villages, about 50.000 villages every year.²⁴ The data that I use from the village potential survey include village population, basic geographical data, information on local institutions (Islamic schools, police, and whether the village head was elected or appointed), and a standardized index that I construct from the hundreds of variables on local service availability and infrastructure quality.²⁵

We hand-collected data on district heads, candidates and election outcomes from online news sources and regional statistical offices.²⁶ I also use two other data sources to present auxiliary evidence and to check the robustness of the results. One of them is the National Violence Monitoring System (Sistem Nasional Pemantauan Kekerasan, SNPK), an Indonesian database compiled by the Ministry for Human Development and Culture, with support from the Habibie Center and the World Bank, which records all violent incidents with geographical location, incident type, information on victims and perpetrators. Started in 1998 as a pilot program in the island of Maluku, it has been gradually expanded over the following years. It already covered about half of the country in 2005, when the first direct district head elections took place. About 40% of the sampled districts had at least one religious policy in 2013.

The other auxiliary data source is the Indonesian Family Life Survey of the RAND corporation, an ongoing longitudinal survey in Indonesia, representative of about 83% of the population and contains over

²³Such as district government financial reports, district level gross regional product from the Central Statistical Office, the National Labour Force Survey (SAKERNAS), the National Socioeconomic Survey (SUSENAS), the Village Potential Survey (PODES)

²⁴The size of the successfully linked sample is similar to that in Martinez-Bravo [2014]

²⁵See section §Appendix A on more information of the government services index.

²⁶For helping in the collection of this data I owe gratitude to Giannisa Novi Budiutami and Zsolt Hegyesi.

30.000 individuals [Strauss et al., 2009, 2016]. About 50% of the sampled individuals lived in a district that had a religious policy by the 5th wave of the survey.

The study period differs somewhat across empirical specifications due to data availability. Village-level exercises look at the 1996-2011 time frame, district level estimations use data from 2002 to 2013, except those which use election data, as the first direct elections for district heads took place in 2005. The geographical scope is the whole country, except Aceh, Papua and Jakarta. The first two of these enjoy higher degree of autonomy and have a history of strained relationship with the central government. The capital of Indonesia is not self-administered on the level of districts.

III.D Selection and stylized facts

Table 1 presents descriptive statistics on districts. The first column presents the average across all districts in the first year when the variable was available in INDODAPOER.²⁷ The second column shows the average of the group which did not end up with a Sharia-regulation until the end of the study period (the “control group”), while the third shows the average that implemented at least one until 2013 (“treated group”).

1. Development indicators. Districts that eventually introduced Sharia policies had higher GDP, higher GDP per capita, higher urbanization and lower poverty rates at the beginning of the study period. The differences are all statistically significant. This means that Sharia-introducing regions are more developed on average. This is consistent with the theoretical result that Sharia regulations are more likely where providing additional public services is more expensive.

2. Public finances. Table 1 shows that total revenue and expenditure are not statistically significantly different across the two groups, while districts that eventually introduce religious policies have somewhat lower lower per capita figures in 2001.

²⁷ This mostly means the year 2000, when only 3% of districts had a religious policy.

Table 1: Descriptive statistics

	All districts	No RP until 2013	RP until 2013	Difference
Number of obs.	286	172	114	
Population (thousands)	698.6	627.20	814.27	187.06
	(616.62)	(528.83)	(725.07)	(77.7)
Log (real GDP/cap) -2002	1.29	1.17	1.46	.29
	(.64)	(.67)	(.55)	(.05)
Poverty rate - 2002	18.4	20.3	15.77	-4.54
	(9.09)	(9.09)	(8.45)	(1)
Poverty Gap (index) - 2002	3.1	3.46	2.61	-.86
	(1.85)	(1.95)	(1.58)	(.2)
% of pop. urban	39.28	33.98	47.34	13.36
	(32.55)	(30.23)	(34.4)	(3.86)
Islamic schools / 100.000 people	11.35	9.19	14.85	5.65
	(16.38)	(15.55)	(17.14)	(2.06)
Log(minimum wage) - 2002	12.24	12.23	12.25	.02
	(.12)	(.13)	(.1)	(.01)
Log(total revenue) - 2001	25.94	25.9	25.99	.09
	(.52)	(.47)	(.60)	(.06)
Log(total revenue pc) - 2001	12.94	13	12.86	-.14
	(.60)	(.57)	(.63)	(.07)
Log(total expenditure) - 2001	25.85	25.81	25.9	.09
	(.52)	(.46)	(.60)	(.01)
Log(total expenditure pc) - 2001	12.85	12.91	12.78	-.13
	(.56)	(.51)	(.61)	(.06)

This table shows summary statistics that describe pre-religious policy differences between districts in Indonesia. Where not indicated, the year is 2000. All data is from the INDODAPOER dataset, except for the Islamic school variable, which is from the 2000 wave of the PODES survey, and it shows the sum of pesantren and madrasah diniyah schools per 100.000 inhabitants of the district. The first column shows the mean of all districts, the second the group of districts that did not have a religious policy (RP) until 2013, the third columns show the districts that had until one at least in 2013. The fourth Column shows the difference between the two groups in the first year the variable is observed. Standard deviations of the variables are found in parenthesis in Columns 1 - 3. In Column 4, the standard error of the difference is in the parenthesis.

5. Districts which have more Islamic schools are more likely to introduce Sharia regulations

Districts which ended up introducing religious policies had on average 11.4 Islamic schools per 100.000 inhabitants in 2000, while those that would not, had 9.2. The difference is statistically significant.

I use the umbrella term “Islamic school” for the Indonesian institutions called *pesantren* and *madrasah diniyah*. The pesantren are traditional boarding schools where students learn along a mixed religious-secular curriculum and receive vocational training as well. These schools are important centers of authority, and their leaders (the *kiyai*) are often courted by politicians during campaigns. Buehler [2016] calls these schools the nodes of the grassroots Islamist movement that rallies people for the cause of Sharia. Madrasah diniyah are religious schools that offer extracurricular religious education for students who otherwise participate in secular education. Other forms of religious education exist within (or closely associated with) the formal

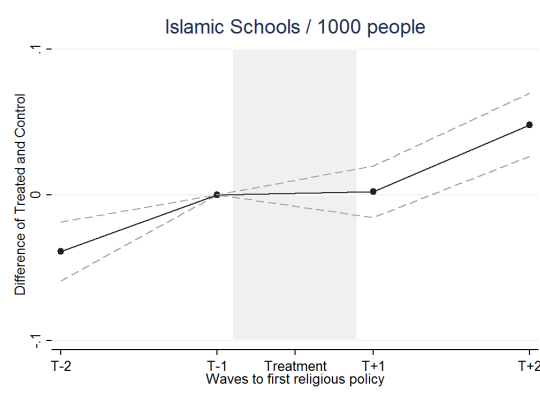
education system, so one can religious education without entering the grassroots Islamist movement.²⁸

In this paper I use the local number of *pesantren* and *madrasah diniyah* as a proxy for the local strength of Islamists. Bazzi et al. [2020] argue that the regional differences in Islamist support are largely explained by land reform policies in the Sukarno era which generated exogenous differences in the sizes of religious endowments given to Islamic foundations; these reforms were later largely repealed and they are not correlated with current economic outcomes. Despite the later repeal of the land reform the endowments that were already made to religious communities could not be alienated, so the Islamist movement was able to grow at a faster pace in regions where it was better endowed. The *pesantren* and the *madrasah diniyah* are exclusively private ventures, so they proxy the regional variation in the size of the grassroots Islamist movement investigated in Bazzi et al. [2020].

Figure 3 shows a village level event study where the vertical axis shows the number of *pesantren* and *madrasah diniyah* per 1000 inhabitants of the village, and the horizontal axis is the adoption of the first Sharia policy in the district. The data points are coefficients estimated from Equation 14 (the detailed description of the estimation is given in Section IV.B.5). Unlike the event studies that I present there on the outcome variables of interest, the number of Islamic schools has a clear and positive pre-trend. Villages that are in districts that introduce Sharia regulations see a significantly large increase in the number of Islamic schools per 1000 inhabitants in the previous years. This is consistent with the literature [Buehler, 2016, Bazzi et al., 2020] and the model from Section 2 as well. Different regions have different trends in extremist support (μ_v), and in those where this reaches the tipping point, the incumbent decides to resort to asymmetric extremism by introducing the Sharia regulation.

²⁸In particular, Nahdlatul Ulama and Muhammadiyah (the main Indonesian religious movements, which also happen to be the largest independent Islamic organizations of the entire world) have an extensive educational network covering the whole country, and state institutions that follow a partly religious curricula also exist.

Figure 3: Trends in school Islamic presence relative to religious policy introduction



The figure shows an event study where the outcome variable is the number of Islamic schools per 1000 inhabitants in a village. Data comes from the PODES survey. The figure uses village - survey wave observations. An event is defined as the village being in a district that introduced the first religious policy between the two survey waves. The survey takes place together with every national census, in every three years on average. The control variables are village fixed effects, calendar year dummies and log of population. The confidence interval is based on standard errors clustered at the district level. The figures show that villages that would introduce religious policies experienced an increasing trend in the number of religious policies in the village.

To show that extremist support, as captured by *pesantren* and *madrasah diniyah* schools per 1000 inhabitants is the most important factor driving the introduction of Sharia regulations, in Table 2 I show a “horse race”. Here I regress a dummy indicating if the district had a Sharia regulation in place first on the Islamic school variable (Column 1), then I present bivariate specifications with Islamic schools and a selected other potential predictor (Columns 2 to 7), and finally, all these variables combined (Column 8). In Panel A the contemporaneous levels of alternative predictors are included. Column 1 shows raw correlation between Islamic schools and the incidence of religious policies in every district and year where direct elections were already in place. All further columns are estimated with district and year fixed effects included. Standard errors are clustered on the level of districts.

In Columns 2 to 7 I show various other potential variables that might be driving the introduction of religious policies, while Column 8 uses all predictors simultaneously. These variables are GDP per capita, local government revenue per capita from block grants (the largest revenue component for all districts, and the one which is the least variable across years), unemployment rate, inequality and poverty rate. All variables are from INDODAPOER (except for the number of Islamic schools which is aggregated to the district level from PODES). Observation counts differ because of missing data.²⁹ The inequality measure is defined as the log difference in monthly expenditure of the average household and the household in the lowest income quintile (also from INDODAPOER). Panel B replicates Columns 3 to 8 from Panel A including the change

²⁹INDODAPOER compiles data from several government agencies, so the original data coverage varies a lot across variables.

of the variable in question over the past year.

Including additional variables always increase the magnitude of the coefficient on Islamic schools compared to the baseline, suggesting that several factors might be at place which can demand religious policies either from the demand or the supply side, but Islamic schools have an autonomous role. Signs of other predictors are largely in line with either the predictions of the model in Section V (such as the positive coefficient on GDP and block grants), or existing literature and common sense (higher inequality is associated with extremism becoming more frequent). The negative coefficients on poverty are somewhat counterintuitive at first glance (as they mean that Sharia regulations are less likely in high poverty areas), but they actually are consistent with the predictions of the model (poor people are probably easier to target when the incumbent is building a clientele).

While the number of schools is certainly strongly correlated with the incidence of religious policies, it is not clear whether this link has anything to do with the electoral process. Figure 4 provides an illustration for this question. This figure is a binned scatterplot based on district-election cycle observations of data. The horizontal axis represents the log of the number of Islamic schools in the district, while the vertical axis shows the number of votes the incumbent official received during the election. The solid line plots the linear correspondence between these two variables for districts and cycles where the incumbent did not implemented a religious policy. The point estimate of the linear coefficient is precisely estimated at zero. Importantly, these district-election cycle observations constitute the majority of data points.

Table 2: Predictors of religious policies

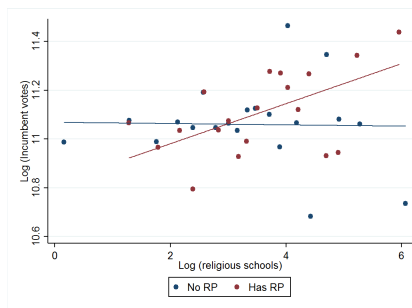
Panel A: $P(\text{religious policy}_{rt}) = \beta_1 \text{Log}(\text{schools} + 1) + \beta_2 X_{rt} + \alpha_r + \lambda_t$								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log(schools+1)	0.00992*** (0.00214)	0.0148** (0.00685)	0.0142* (0.00740)	0.0174** (0.00680)	0.0150** (0.00736)	0.0173** (0.00781)	0.0148** (0.00681)	0.0203** (0.00854)
Log(GDP/pc)			0.000205 (0.0418)					0.0305 (0.0497)
Log(Block grants pc.)				-0.00844 (0.0128)				-0.0116 (0.0146)
Unemployment rate					0.00125 (0.00254)			0.00255 (0.00313)
Inequality						0.0492** (0.0196)		0.0371* (0.0194)
Poverty rate							-0.00420* (0.00231)	-0.00184 (0.00295)
Observations	3184	3184	2754	3084	2995	2786	3179	2143
Model	OLS	FE	FE	FE	FE	FE	FE	FE

Panel B: $P(\text{religious policy}_{rt}) = \beta_1 \text{Log}(\text{schools} + 1) + \beta_2 X_{rt} + \beta_3 \Delta X_{rt} + \alpha_r + \lambda_t$						
	(1)	(2)	(3)	(4)	(5)	(6)
Log(schools+1)	0.0143* (0.00742)	0.0189*** (0.00701)	0.0143 (0.00916)	0.0214*** (0.00769)	0.0162** (0.00691)	0.0216** (0.0106)
Log(GDP/pc)	0.0362 (0.0446)					0.0787 (0.0965)
Δ Log(GDP/pc)	-0.143 (0.0892)					-0.132 (0.131)
Log(Block grants pc.)		0.00287 (0.0153)				0.00106 (0.0119)
Δ Log(Block grants pc.)		-0.0117** (0.00576)				-0.00545 (0.00559)
Unemployment rate			0.00367 (0.00365)			0.00695 (0.00560)
Δ Unemployment rate			-0.00308 (0.00325)			-0.00410 (0.00417)
Inequality				0.0622** (0.0313)		0.0793** (0.0390)
Δ Inequality				-0.0228 (0.0205)		-0.0528* (0.0294)
Poverty rate					-0.00502** (0.00252)	-0.00598 (0.00365)
Δ poverty rate					0.00468 (0.00302)	0.0125 (0.00774)
Observations	2754	2935	2685	2305	3082	1481
Model	FE	FE	FE	FE	FE	FE

This table shows a Fixed Effects regression of the dummy for having a religious policy on the log of Islamic schools in the district, against different sets of controls. District and year fixed effects are included and standard errors are clustered on the level of districts. Standard errors are clustered at the district level. *: significant at 10%; **: significant at 5%; ***: significant at 1%. All control variables are from INDODAPOER. Observation numbers vary because missing data in INDODAPOER, as it collects data from various sources. Panel A shows levels of the alternative control variables, while in Panel B the yearly differences are included as well.

The dashed line plots the same correspondence for elections following district head terms where a religious policy was introduced. Under such circumstances the incumbent district head votes are positively correlated with the number of schools, and the slope of the estimated linear correspondence is positive and significant. Incumbent votes are only proportional to the number of Islamic schools in those cases where the incumbent engaged in religious policy making, suggesting that these institutions are a good proxy for the size of the electorate who can be mobilized using Sharia regulations.

Figure 4: Incumbent votes and Islamic schools



The figure shows a binned scatter plot shows the log number of incumbent votes (Y axis) against the log number of total pesantren and madrasah diniyah Islamic schools in the district. The linear regression is estimated for districts which had a religious policy already and for those that do not. The bins are created from district-election cycle variables. The incumbent votes are only positively correlated with the number of schools in districts and years where religious policies were introduced. The figure illustrates the number of Islamic schools only matter in terms of the election outcome when Sharia regulations are introduced. Controls: logs of population, GDP/cap; year dummies.

5. There is no “trivial” economic explanation of the introduction of religious policies. The fact that distress causes an increase in religious participation and an increased salience of religion in politics has been documented many times using data ranging from medieval Italy to late 1990s Indonesia (Belloc et al. 2016; Chen, 2010). It is important to note, however, that post-decentralization Indonesia since 2001 was not such an environment, where systematic economic shocks could have been the most important determinant of religious policymaking. To illustrate this, in Panel A of Figure D.3 of the Appendix I plot the average change in per capita GDP of districts over the years of the study period, and the average yearly incidence of religious policies. Average growth rates of the districts remains positive over the whole study period, even in the Great Recession years. There is no visible systematic aggregate relationship between religious policies and GDP growth. Panel B checks if such relationship exists on the disaggregate level. In this binned scatterplot the horizontal axis shows the yearly change in the logarithm of real GDP per capita, while the vertical shows the incidence of religious policy for each bin in the same year, the next year, and the year after that. The

estimated slopes of the regression lines are close to zero and are not statistically significant. This suggests that aggregate economic fluctuations are not responsible for the wave of Sharia policies.

IV Estimating the impact of Sharia regulations

IV.A Outcome variables of interest

I am measuring the impact of Sharia regulations on three set of variables. The first set contains expenditure variables of the local government, as the main effect of asymmetric extremism is that local government spending decreases. I look at the logarithm of the district-level public sector (real) wage bill first, as this variable is reported with the least missing values in INDODAPOER. Then I define two proxies based on this which better capture the scope of public service provision. The first I call implicit public employment. This measures the number of people that could have been in public employment in the case if every one of them were employed at the minimum wage.³⁰ The third outcome measures the ratio of implicit public employment to the population of the district.³¹

The second set of outcomes contains the village level government services index that I create from the PODES village survey.

The third set contains downstream social effects both the district and the village level. The set includes poverty indicators and different measures of violence. A change in this can be attributed to either the indirect impact of less public services (which can increase poverty, see Keefer and Khemani, 2004), or to the direct impact of certain Sharia-based regulations (empowering radicals might increase violence). Qualitative studies also suggest that Sharia regulations sometimes instigate vigilante violence [Pisani, 2014, Buehler, 2016, Nastiti and Ratri, 2018]. Buehler writes about the connection between Sharia, corruption and violence in West Java:

“In West Java, beyond the Islamist movement’s core of activists and religious teachers and students, there is an outer layer that is less ideologically inclined. Many of the foot soldiers of Islamist groups here are petty criminals and hoodlums who sought new income streams [...]. This Lumpenproletariat is usually in the forefront of anti-vice demonstrations, sweeps on nightclubs

³⁰The minimum wage is obviously not an exogenous variable, but it is set on the provincial level, which is one level above the unit of the current analysis. That is, for every year there are at most 30 different minimum wages corresponding to each province of Indonesia. Indonesia currently has 34 provinces, but Aceh, Jakarta, Papua and Western Papua provinces are excluded from the analysis.

³¹It is typically bigger than 1 (median: 1.46, mean: 1.68), showing that public servant compensation is considerably more generous than the minimum wage. Nevertheless, this scaling facilitates the comparison of public employment across districts of different size.

and liquor stores, the extraction of bribes and levies and violence against religious minorities.”
(Buehler 2016, Chapter 2)

Buehler also tells us that radicals are actively involved in the rent-seeking efforts of politicians. He recounts an example from the city of Bukittinggi, where “the enforcement of anti-vice regulations against certain places was conducted by a group of thugs who were supporters of the mayor” (Buehler 2016, Chapter 7). The anecdotal evidence provided by these sources suggests that violence by religious groups (documented in the SNPK dataset) can be interpreted at least partly as a coverup for corruption. Unfortunately, there is no comprehensive dataset on explicit corruption cases that I am aware of, so directly documenting the impact of Sharia policies on corruption is beyond the scope of the current paper.

IV.B Difference-in-differences estimates

IV.B.1 Identification assumption

The key identification assumption is that the unobserved variation in the outcome variables (the terms ε_{rt} and ε_{vw} in the regression specifications below) is not correlated with the introduction in the Sharia policies. I control for a range of potential confounding factors across the specification, such as measures of government revenues and GDP, so results are controlling for differences in spending capacities and differences in economic performance. In the robustness section I explicitly investigate alternative causal channels.

The event study formulation of the identification assumption is that the outcome variables would have followed parallel trends had the Sharia-based policies not been introduced. The event studies show no visible pre-trends in the outcome variables. However, there must be something that triggered the introduction of Sharia policies; I argue at the end of the event study section that Sharia regulations are triggered by an increasing trend in Islamist support as reported by Bazzi et al., 2020, which are exogenous to the outcome variables in this analysis.

IV.B.2 Spending regressions on the district level

In this section I discuss whether the presence of a religious policy changes the way the local government spends its resources. The outcome that I am looking at is public employment. To capture this effect, I consider the following empirical model in the case of the spending data:

$$y_{rt} = \beta S_{rc} + \gamma X_{rt} + \alpha_r + \lambda_t + \varepsilon_{rt} \tag{10}$$

where y_{rt} denotes the outcome of interest in district r in time t . S_{rc} is a dummy indicating if a Sharia-policy has been implemented in district r and election cycle c . Alternatively, I could use the calendar year of the introduction of the policy, which I do for the other outcome variables. I use this definition for the case of spending because while the model is statically representing the whole election cycle, we have no reason to believe that introduction of Sharia policies and spending cuts have to happen at the same time within the cycle. We know that politicians who introduce austerity measures have a tendency to front-load these over the electoral cycle [König and Wenzelburger, 2017], so one can argue that politicians who know they would introduce Sharia regulations might start cutting back expenditure even before the policies themselves are introduced. This justifies the election cycle based definition of the policy variable S_{rc} for this particular set of outcomes.

The rest of the variables in Equation 10 are α_r and λ_t district and time fixed effects respectively, and the vector of control variables X_{rt} . This set in the baseline specification includes the natural logs of population, real GDP per capita and government revenues per capita. Also included are the ratio of the nominal level of government revenues to the nominal level of GDP, and dummies controlling for administrative border changes in the province.³² As Sharia policies might affect some of the control variables, I use the lagged values of the latter. The error term ε_{rt} represents idiosyncratic heterogeneity in the outcome caused by factors not accounted for by the policy variable, the controls and the fixed effects.

IV.B.3 Government services and poverty regressions on the village level

The specification takes the following form in the case of village level data (government services index and slum incidence dummy):

$$y_{vw} = \beta S_{rw} + \gamma X_{vw} + \alpha_v + \lambda_w + \varepsilon_{vw} \quad (11)$$

A single data point refers to a wave-village observation: v indexes village, w indexes survey wave ($w \in \{1..6\}$), r indexes districts. Village- and survey wave fixed effects are used instead of district- and calendar-year dummies, respectively. The first outcome variable is the village level Government Services Index, which I compile from the Village Potential Survey. It condenses all information on local infrastructure and locally supplied services that are consistently available for the waves of the survey into a single, standardized measure

³²These have an impact on how revenue redistribution across districts are calculated by the central government.

(see Appendix A for details on the content and construction of the survey). The second is a dummy variable indicating if the village had a slum, which is reported directly in the Village Pontential Survey, and is the only consistently available poverty indicator.

The policy variable is in this case defined as taking the value of 1 if a Sharia regulation has been introduced in the district no later than the year preceding data collection from the survey. The set of control variables in the baseline is limited to the number of Islamic schools (in logs) and log of population due to data limitations. The terms α_v and λ_w are village and time fixed effects

IV.B.4 Downstream social effects on the district level

In the case of district outcome variables, such a the number of violent incidents, the estimating equation is a slightly different version of Equation 10:

$$y_{rt} = \beta S_{rt-1} + \gamma X_{rt} + \alpha_r + \lambda_t + \varepsilon_{rt} \quad (12)$$

The index of the main explanatory variable S is now changed to $rt - 1$. This version of the dummy takes the value of 1 if a Sharia policy was in place in district r at year $t - 1$. Control variables are lagged twice in this case.

IV.B.5 Event studies

I also present the same results in an event study form. I define the event year as the year in which the district introduced its first Sharia regulation, and the event window to be ± 4 years to that event. The sample covers every district where the timing of the first Sharia policy is such that the whole time window is observed. For every district that had such an event I use as a comparison group every other district that had not introduced a Sharia regulation during the same event window. On this sample I estimate the following specification:

$$y_{rt} = \sum_{s=1..4} \beta_{-s} e_{-s} S_r + \sum_{s=1..4} \beta_{+s} e_{+s} RP_r + \gamma X_{rt} + \alpha_r + e_s + \lambda_t + \varepsilon_{rt} \quad (13)$$

where $e_{s,-s}$ are dummies indicating time relative to the event (so $e_{-3} = 1$ means that the observation represents a data point from 3 years before an event takes place); α_r , λ_t are district and calendar year fixed effects, respectively; RP_r is a dummy indicating if the district experienced the event of introducing

the religious policy; while X_{rt} is the same set of controls as before. Coefficients $\beta_{-4..-1,1..4}$ represent the observed difference in the level of the outcome variable between introducing and non-introducing districts at years preceding (-4 to -1) and following (1 to 4) the event, when difference in the event year is normalized to zero. These coefficients are the data points of the event study.

In the village data case the estimating equation becomes:

$$y_{vw} = \beta S_{rw} + \sum_{s=1..2} \beta_{-s} e_s S_{r,w-s} + \sum_{s=1..2} \beta_{+s} e_s S_{r,w+s} + \gamma X_{vw} + \alpha_v + e_s + \lambda_w + \varepsilon_{vw} \quad (14)$$

In this case, as survey waves are happening on average in every 3 years, the event is defined as receiving the first Sharia policy between two survey waves and the event window is only ± 2 waves to that event.³³ The set of control variables is the same as in the corresponding regressions.

IV.C Results

IV.C.1 Spending

The results from the spending regressions are presented in Table 3. Panel A shows the results for the three outcomes for the whole study period. We observe a negative and significant impact on the log wagebill and implicit employment figures, and an insignificant impact of implicit employment to population ratios. Zooming in on years when the district heads were directly elected and had more discretion over policy (Panel B), the estimated effects are an order of magnitude larger and they are much less noisily estimated. Indeed, districts which introduce religious policies seem to employ less people.

Figure 5 shows the results in event study forms, which are in line with those from the regressions, showing a negative impact on the overall wagebill and the different proxies of public employment figures as well. However, though it is not significant, there is a pre-trend in the data, and the difference between introducing and non-introducing districts becomes insignificant by the fourth year after the event. One explanation for the insignificant pre-trend in the figures can be an upward trend in the price of public service provision, which, according to the model in Section 2 can contribute to the decision to introduce Sharia, though the main component in the decision is Islamist support for Sharia. That the effect on spending disappears after the 4th year is consistent with the idea political budget cycles.³⁴

³³To be precise, receiving the first religious policy before the year of the second survey wave. So for the surveys 2005 and 2008 an event is defined to happen in districts that adopted the first religious policy in 2005, 2006 or 2007.

³⁴Front-loading of austerity measures is a phenomenon well known in the literature König and Wenzelburger [2017]; Sjahrir et al. [2013] document political budget cycles in the Indonesian example.

Table 3: Spending regressions

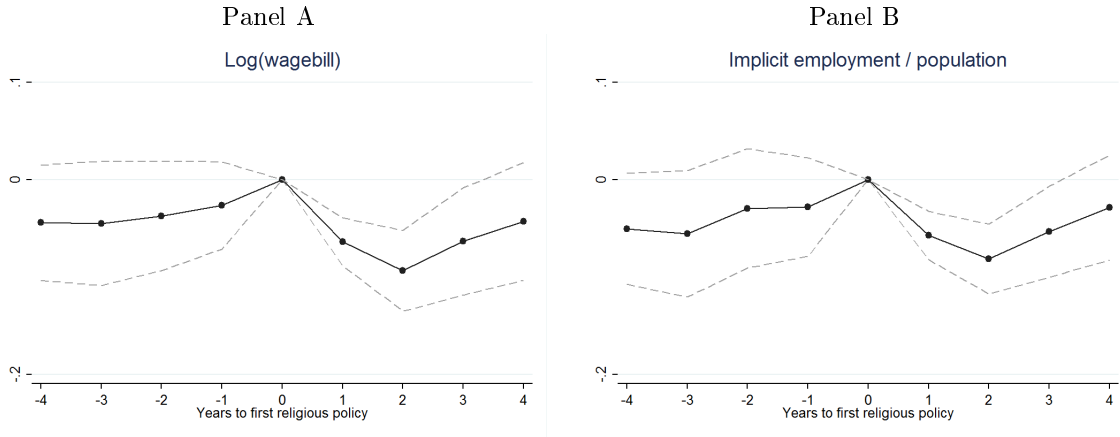
Panel A			
	(1)	(2)	(3)
	Log(wbill)	Log(imp. emp.)	Imp. emp. / pop.
Religious policy in cycle	-0.0350*	-0.0377**	-0.0418
	(0.0181)	(0.0173)	(0.0306)
Observations	3662	3683	3683
MeanY	25.53	12.82	1.689

Panel B			
	(1)	(2)	(3)
	Log(wbill)	Log(imp. emp.)	Imp. emp. / pop.
Religious policy in cycle	-0.116***	-0.117***	-0.181***
	(0.0301)	(0.0296)	(0.0452)
Observations	2503	2524	2524
MeanY	25.53	12.82	1.689

This table shows a Fixed Effect regressions of different expenditure measures of the district government on a dummy indicating if the district had ha religious policy in the given election cycle. District and calendar year fixed effects, income, GDP (lagged values of GDP/capita and its growth rate), election dummies, population (in logs) are included as controls. Standard errors are clustered at the district level. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Panel A shows the whole study period, Panel B only the election cycles where the district head was directly elected. Election cycles are 5 year long. The first direct election could have occurred any time between 2005 and 2009 as it was scheduled when the incumbent district head completed his or her term.

Figure 5: Spending event studies



The figures shows event studies comparing different expenditure measures in districts which introduced a religious policy and districts that did not. The figure uses district-year observations. The events are defined as the start of the election cycle that saw the introduction of the religious policy. The term of the district head is five years. The control group is defined as all districts that had no religious policy or not yet within the event window. Panel A shows the log of the total wagebill. Panel B shows the implicit employment measure divided by the population of the district. The minimum wage is set at the provincial level. District fixed effects, income, GDP/capita (logs and lagged growth rates), calendar year dummies, election dummies, population (in logs) are included as controls. The 95% Confidence intervals are based on standard errors clustered at the district level

IV.C.2 Services

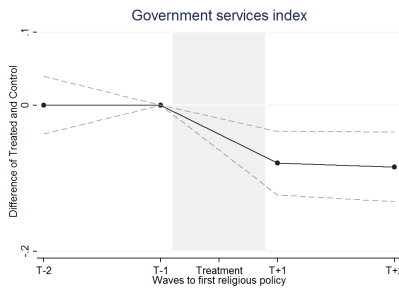
For the government service village regressions I present the estimated coefficients for Equation 11 in Table 4. Villages of districts that have introduced Sharia-based policies have on average 8.5% of a standard deviation lower level of the Government Service Index. The event study in Figure 6 confirms the magnitude of the estimate and ascertains that there are no significant differences in pre-trends.

Table 4: Government services regression

	(1)
	Gov. services
Religious policy	-0.0854** (0.0416)
Observations	273450

This table shows a Fixed Effect regression of the Government services index. The observations are village-year observations from the linked PODES data. Time- and village fixed effects and log of population are included as controls. Standard errors are clustered at the district level. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Figure 6: Government services event study



The figure shows an event study where the outcome variable is the standardized Government services index created from all variables consistently measured throughout the PODES survey (see section §Appendix A for details). The figure uses village - survey wave observations. An event is defined as the village being in a district that introduced the first religious policy between the two survey waves. The survey takes place together with every national census, in every three years on average. The control variables are village fixed effects, calendar year dummies and log of population. The 95% confidence interval is based on standard errors clustered at the district level.

IV.C.3 Downstream social effects

Table 5 shows the main results for poverty. In Columns 1 and 2 we see the estimated β coefficients from Equation 10. Poverty rates were on average 1.1 percentage points higher in districts that had religious policies in place, while the poverty gap was higher by 0.22 points. These are sizeable effects as they represent 7.3% and 8.5% of the average values, respectively. Both results are strongly statistically significant. In Columns 3 and 4 I estimate the effect on poverty with a trend break at the introduction of the first religious policy.

The trend breaks in both measures are positive and statistically significant, while the level shifts are negative though very noisily estimated.³⁵ In Column 5 I present the estimated β from the village panel, which shows that a village in a district with a religious policy is on average 1.6 percentage points more likely to have a slum area, which is a good 23% percentage of the average probability. This result is more noisily estimated, than the district regressions, but the effect is nevertheless significant at the 5% level. The poverty event studies show a very similar pattern for both district and village level data (see Panel A and B of Figure 7).

Table 5: Social effects regressions

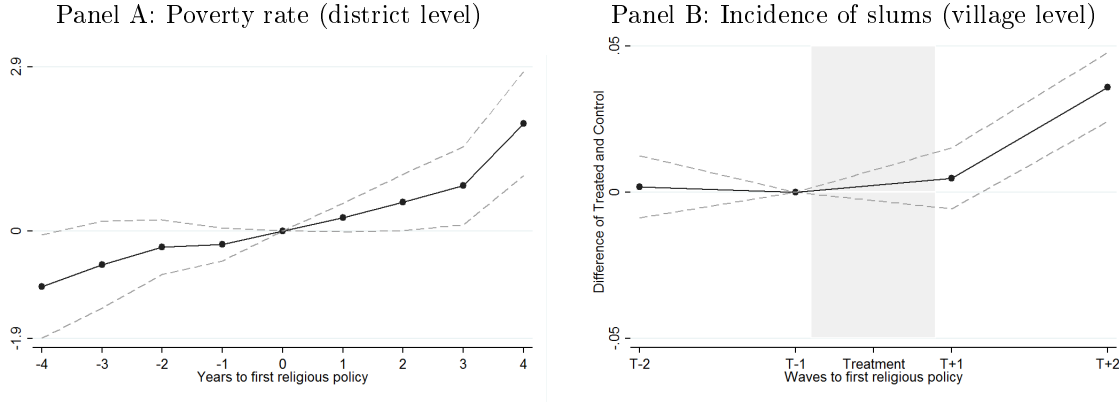
	(1)	(2)	(3)	(4)
	Poverty rate	Poverty gap	Poverty rate	Poverty gap
Religious policy	1.110*** (0.295)	0.224*** (0.0706)	-0.967 (0.707)	-0.272* (0.156)
Years after RP			0.179** (0.0849)	0.0414** (0.0187)
Observations	4049	4049	4049	4049
MeanY	15.07	2.618	15.07	2.618
hastrend	No	No	Yes	Yes

This table shows Fixed Effect regressions of different social outcomes on a dummy indicating if the district had a religious policy the year before the outcome was observed. Columns 1 to 4 include data from INDODAPOER, Column 5 shows village data from PODES. Accordingly, columns 1-4 use district-year observations, and the specifications include district fixed effects, income, GDP (lagged values of GDP/capita and its growth rate), calendar year dummies, election dummies, population (in logs) are included as controls. Standard errors are clustered at the district level in all models. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

The poverty rate is the % of people living under the poverty line, the poverty gap is an index measure showing how far is the average poor person living from the poverty line. Columns 3-4 have the same measures interacted with a time trend starting at the year of the first policy. The outcome in Column 5 is a dummy indicating if the village had a slum when the survey was conducted.

³⁵This peculiarity can be a consequence of the slope being very steep at the trend break when the policy is introduced.

Figure 7: Poverty event studies



Panel A shows the difference between poverty rates of Sharia-regulation introducing and non-introducing districts. The figure uses district-year observations. The event is defined as the year of the first policy. District fixed effects, income, GDP/capita (logs and lagged growth rates), calendar year dummies, election dummies, population (in logs) are included as controls. The 95% confidence intervals are based on standard errors clustered at the district level.

Panel B shows an event study where the outcome variable is a dummy indicating the presence of a slum region in the village from the PODES survey. The figure uses village - survey wave observations. An event is defined as the village being in a district that introduced the first religious policy between the two survey waves. The survey takes place together with every national census, in every three years on average. The control variables are village fixed effects, calendar year dummies and log of population. The 95% confidence interval is based on standard errors clustered at the district level.

Finally, I check whether violent incidents increase in frequency after Sharia regulations are being passed. Table 6 shows the regression results. It is important to note that the smaller sample size is due to the fact that the National Violence Monitoring Data only covered about 50% of the country for most of the study period (see Table A.1 for details).

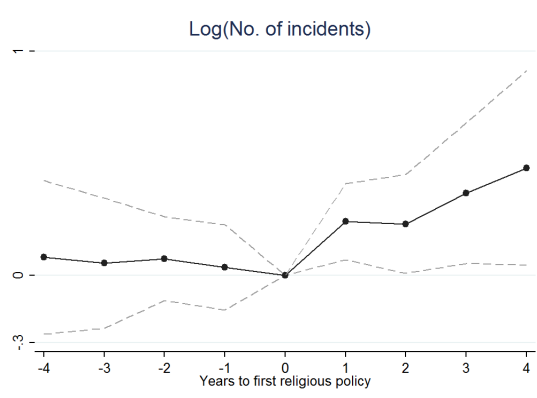
The results show that there are 23.33 more violent incidents on average, which translates to about a 28% increase. About 8 more people in every 100.000 falls victim to a violent crime. Figure 8 shows the same result in an event study and highlights that there were no significant differences in trends between adopters and non-adopters of religious policies previously.

Table 6: Violence regressions

	(1)	(2)	(3)
	No. of incidents	No. of incidents/100000 people	Log(No. of incidents)
Had RP (T-1)	23.33** (11.36)	7.946** (3.462)	0.279** (0.134)
Observations	921	921	921

The table shows Fixed Effects regressions where the outcome variables are different violence measures. The independent variable is a dummy indicating if the district had a religious policy in the previous year. The source of the data is the SNPK dataset, and the sample includes all districts that were covered by the SNPK. (See Figure A.1 for details). The specifications include district and time fixed effects. Standard errors clustered at district borders. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Figure 8: Violence event study



The figure shows the difference between the log number of violent incidents Sharia-regulation introducing and non-introducing districts. The outcome variable comes from the SNPK dataset. The figure uses district-year observations. The event is defined as the year of the first religious policy. District fixed effects, income, GDP/capita (logs and lagged growth rates), calendar year dummies, election dummies, population (in logs) are included as controls. 95% confidence intervals are based on standard errors clustered at the district level

It is worthwhile to also look at violence statistics in a more disaggregate manner. Table E.9 does that by checking violence by which kind of perpetrators are more likely in districts that have Sharia-policies. Panel A shows a set of regressions where the dependent variables are dummies indicating whether the district in that year saw any violence by either a religious group, the government, or other political players (such as political parties, youth organizations). Panel B puts the number of incidents by the same groups on the left hand side, while Panel C uses the number of victims by each type of organized group. After a religious policy is introduced, the probability that the perpetrator of any given violent incident is a religious group is higher; there are overall more incidents by religious groups and these incidents have a higher number of victims. There is no such significant and systematic pattern with other types of perpetrators. This finding is in line with the anecdotal evidence that Sharia regulations empower local Islamists [Buehler, 2016, Pisani, 2014]. Table E.10 disaggregates incidents that involved human victims by types. Panel A puts the raw number of the left hand side, while Panel B uses the rates over 100.000 people. All types of crimes become more frequent after Sharia policies are introduced. In 6 out of 8 cases, the increase is statistically significant. It is worthwhile to note that there are on average 0.631 more people killed in districts that had religious policies. Though not directly comparable, this is put into some context by the fact that the murder rate (murders per 100.000 inhabitants) in Indonesia was 0.5 in 2016.³⁶

Also, these figures are remarkably larger than the ones in the previous table, suggesting that more violence

³⁶Source: UNSDC/INTP/CTS statistics. The murder rate only considers intentional homicide, not killings during civil unrest.

is done by unorganized perpetrators than organized ones. An additional channel through which this could take place is a partial atrophying of the state because of the spending cuts suggested both by theory and evidence. Though we should be cautious about causal interpretation, these figures are showing that there seems to be a direct effect of Sharia regulations through increased violence.³⁷

IV.D Threats to identification and robustness checks

IV.D.1 Local economic shocks.

The first threat which can undermine the identification is that aggregate economic fluctuations might conceal more localized significant economic shocks which in turn can affect both voter behavior and government policy. Large-scale industrial investment will, for example, increase total GDP, while in the meantime might crowd out local small scale enterprises, or have devastating impact on local agriculture or the environment in general. If this is the case, the government can respond by realigning its spending to mitigate these particular impacts. In the meantime voter discontent can manifest as a demand to restore justice in a more general understanding. While such events cannot explicitly be controlled for, what I can do is to check whether including more disaggregate economic shocks as controls changes the results in any way.

First, I re-estimate Equation 10 with the lagged value of a rudimentary inequality measure included as a control. This measure is the ratio between the average household expenditure and the average household expenditure of the lowest 20% (Table E.13). Second, I re-estimate the equation with lagged unemployment levels (Table E.14). Third, I re-estimate the specification with lagged values of sectoral changes of GDP, in particular the change in the percentage contribution of manufacturing and finances (Table E.15). I also include the poverty indicators as outcomes in all these robustness checks. None of the alternative specifications exhibit a major qualitative or quantitative difference compared to the baseline.³⁸ I conclude that there is no evidence that unobserved local economic shocks are driving the introduction of the religious policies.

³⁷The organizations that collect crime data use local media sources, and data collectors might give an extra attention to districts that introduce Sharia-based policies. If this was the case, any event in these districts would have a higher probability of getting noticed, and so the estimate of the difference between violence levels in introducing and non-introducing districts would be biased upwards.

³⁸The reason why these control variables are not included there in the first place is that these variables are of inferior quality in INDODAPOER; in particular, they exhibit missing data points which are not accounted for by the data description. As a consequence, including these variables would have severely reduced the size of the sample. As part of an unreported robustness check I looked at whether the occurrence of missing data points is correlated with the introduction of the religious policies. It is not.

IV.D.2 Expected future economic shocks.

The second potential threat to identification is that expecting a future economic shock (such as a budget cut) can simultaneously shift spending patterns and electoral strategies as well. Though I cannot directly control for expectations of politicians, what I can do is to see whether those expectations were justified. In Panels A and B of Figure D.2 in Appendix D I replicate the expenditure event studies with per capita total revenue of the local government and with per capita revenue from block grants (which is the single biggest revenue source and the one exhibiting the less variation over years). Although both event studies exhibit lower per capita incomes for districts that introduced religious policies, the estimated confidence intervals are very wide, so this effect is not significant. However, these lower levels are relative to non-introducing districts each event year, and does not necessarily mean a decrease in revenues in absolute terms. This is shown in Panel C of the same figure, where I plot average yearly growth rates of these revenue terms in all districts that ever had a religious policy, along with the average yearly incidence of the religious policies. On average the districts exhibit increasing revenue over the whole study period, except for the year 2005, when revenues stagnated before a huge increase in 2006; and the year 2009, when they fell dramatically. Fiscal decentralization was legislated in 2005, when the central government delegated huge revenue streams to the district public administrations. The 2009 drop in revenues is attributable to the global financial crises, which caused prices of raw materials to plummet, drying up revenue streams on every level. Note that the average occurrence of religious policies is actually declining over this period.

Though there is no evidence for expected future economic shocks to be driving the results, it is worth mentioning that these would not necessarily undermine the results. Such changes in expectations would simply provide variation in the incentives that incumbents face when considering the introduction of Sharia policies. A district head who, expecting economic hardship, introduces Sharia policies to cut costs in campaigning, would behave exactly according to the hypothesis outlined in this paper. As a consequence, I do not believe that this issue poses a serious threat to identification.

IV.D.3 Voter demand.

The third main threat to identification is the presence of voter demand for policies that are correlated with but unrelated to their preference for Sharia-based policies. Three different avenues for this argument come up. First, perceived corruption and crime can be correlated with diversion of public revenue, and these might translate into a religion-based argument for restoring justice and lawfulness [Henderson and Kuncoro, 2011]. Second, religious voters might have preferences for different public goods, or less “secular redistribution” in

general, and prefer a smaller government that does not interfere with how they are running their lives. If this is the case, a reduction in government spending can be considered simply a voter demand that is being met independently of religious policies.

Two things should be considered here. First, if demand for Sharia-regulations is due to corruption and crime which is also correlated with diversion of public spending, that should happen *before* the policy, and not after it. Similarly, government services should be *ex ante* getting worse, which they are not. A similar argument about timing can be made with the other preference-driven explanation as well.

For a more thorough investigation of these arguments I use two auxiliary data sources, the National Violence Monitoring System (SNPK) and the Indonesian Family Life Survey (IFLS) . Though neither of the two data sources covers the whole country, there is enough variation to carry out a meaningful comparison.

The former allows me to explore whether violent crime can predict the introduction of Sharia regulations. Appendix Table E.16 shows regressions of the religious policy dummy on 1) violent crime event counts 2) number of victims in a 100000 people (who was either injured, kidnapped, sexually assaulted or killed) 3) logarithms of event counts of districts in the SNPK. For each case I estimated a version with lagged values of the variable, and the lagged yearly difference in the variable. I added region and time fixed effects, logarithm of population and GDP per capita, poverty rate and inequality as controls. There is no specification in which violent crime would be a significant predictor of Sharia regulations.

Petty crimes and crimes against property in general can also be a concern which is not addressed by using SNPK data. Though there is no detailed crime statistics data, the Indonesian Family Life Survey's community survey chapter asked about the perceptions of village notables about crime and corruption in 2007. Unfortunately this sample is extremely limited, and resorts to two respondents per district. Table C.4 in the Appendix shows that crime perception in 2007 in districts that had no religious policy by then does not significantly correlate with introducing a religious policy between 2007 and 2013. Similarly, Table C.6 looks at villages in 2007 without a religious policy and checks whether their perceived levels and trends of corruption are correlated with later Sharia implementation. Interestingly, it seems that Sharia regulations between 2007 and 2013 were *less* likely to happen in districts where the village leaders reported higher corruption levels in the district. This goes against the argument that demand for Sharia regulations would be a consequence of perceived corruption.

IFLS also gives an opportunity to test indirectly whether religious voters have different preferences for policy. In Table C.5 of the Appendix I check whether different forms of religious cooperation become more frequent in districts that implement Sharia-based policies. If government-provided public services are sub-

stituted for services provided by religious communities, these forms should become more frequent. This is not the case for any form of religious cooperation that is queried in the IFLS. People living in districts that introduce Sharia regulations do not receive more donations from religious organizations, do not participate more frequently in religious community work or microfinance, nor do they in more general types of religious community events. To sum up, there is no evidence from the additional data sources that these alternative channels undermine my core empirical strategy.

The result that government services shrink after Sharia regulations are introduced might represent a shift from government provision of services to private provision by religious organizations. In other words, it might be an issue of mismeasurement, not overall decline on services (though this does not explain the increase in poverty). To assess this concern, I re-calculate the index in question excluding all raw variables that plausibly have a private counterpart, such as education. The remaining variables are purely concerning physical infrastructure, such as roads, sanitation and phone availability. In Table E.12 I show all regression results using the Infrastructure Index instead of the Government Services Index. The estimated coefficient is similar in magnitude in the baseline specification, though not significant. I replicate this exercise in the later specifications as well, with more robust results.

IV.D.4 Underperforming incumbents.

Finally, ability of politicians can drive the results, if incumbents who underperform (who create less public services) turn to religion for a quick win as they are running for reelection. We can test this hypothesis by looking at the timing of introducing Sharia policies over the electoral cycle. District heads are elected for five year terms, and can be re-elected once. If low incumbent performance is the mechanism behind Sharia regulations, we should see Sharia introduction peaking at around the 4th year of the 1st term of an incumbent. Why late in the cycle? If a Sharia regulation is adopted early, it is more likely done to fulfil an electoral promise. If it is adopted later in the cycle in an election campaign, it is more likely that it serves as a campaign tool and hints at the possibility of this confounding mechanism at work. Why in the 1st term? District heads can only be reelected once, so an incumbent in his second term does not need to campaign for reelection.

Panel A of Appendix Figure D.1 shows the probability of adopting a religious regulation in years defined by the electoral cycle. The solid line corresponds to Sharia regulation likelihood under first term district heads, the dashed to reelected incumbents. 10% confident bands show that there is no statistically significant difference between first- and second-term incumbents, though 2nd term incumbents are on average more

likely to introduce Sharia regulations. The fact that Sharia introduction probability is flat for first-term incumbents, and higher for second term incumbents (especially during the two years after election) suggests that regulations are not made to get a “quick win” after an unsuccessful term, as districts heads who are not eligible for reelection are the ones who are most likely to implement them. This is consistent with this paper’s model’s depiction of local politics: incumbents are the one who can most credibly commit to Sharia, and introduce it upon reelection, as the next term is none of their concern.

Why do they introduce Sharia regulations then? Pisani and Buehler [2016] argued that there are three main reasons why district heads implement Sharia policies. Supply-driven regulations (such as regulation of almsgiving), they argue, benefit the government. Demand driven regulations are either created to please the general populace (e.g. attire regulations), or religious interest groups (e.g. prohibitive regulations). The former are not generating material benefits to anyone, and are more likely around election time. The second group gives an opportunity to extend the politician’s patronage network, and as such creates electoral benefits for him, and material benefits for those who are tasked with enforcing, say, an alcohol ban (or collect protection money to avoid enforcing). As Panel B and C of Figure D.1 show, all the extra probability of incumbents to introduce Sharia come from prohibitive regulations. This is consistent with this paper’s theory, which models Sharia-introduction as an agreement between a rent seeking incumbent and a small, organized minority.

Another argument against Sharia policies being driven by underperforming incumbents can be drawn from Table E.11 in the Appendix. This shows the share of Sharia-introducing and non-introducing incumbents who hold specific types of titles. We see that three in four politicians in the sample who introduce Sharia policies has the title “haji”, meaning that he or she has completed the pilgrimage to Mecca; among non-introducing politicians 60% uses such a title. We do not know whether those who use of the title have actually completed the pilgrimage, or whether not using it means not having completed the journey or just having decided not to use the title. But it certainly means that a bigger share of incumbents who eventually introduce Sharia decide to signal their piety at the time of running for office. This goes against the argument that incumbents “find religion” only when reelection is looming close. It is also important that a bigger share of the introducing incumbents in the sample has any kind of title. This shows that Sharia-introducing incumbents are not of an ex-ante “worse type”, which is again evidence against this confounding mechanism.

IV.D.5 Effect heterogeneity

In unreported robustness checks I looked at whether different types of Sharia-based regulations have different impacts on the outcome variables of interest. No systematic difference could be found between prohibitive and normative regulations, suggesting that the main channel driving the results is the substitution between public services and ideology. On the village level I interacted the treatment variable with distance from the district center to see whether there is geographical heterogeneity in the impact of Sharia regulations. I found that the impact decreases in absolute value from the district center outwards.

V Estimating the voter utility from extremism

In this section I turn to estimating the direct impact of Sharia regulations on voter utility (σ_E and σ_M). We can re-write Equation 5 the following way :

$$\alpha g_v = (\alpha_0 + \alpha_1 \mu_v) \times Sharia_d + \frac{1}{\lambda} \log \left(\frac{n_v}{N} \right) + \frac{1}{\lambda} \log(p_v) + \gamma_v \quad (15)$$

where $Sharia_d$ is a dummy indicating if the incumbent district head in district d introduced Sharia regulations over the election cycle, and γ_v is a village fixed effect, capturing the joint effect of $\log \left(\frac{2\lambda\alpha}{\omega} \right)^{\frac{1}{\lambda\alpha}} + \frac{1}{\lambda\alpha} \log(f_\xi) + \frac{\bar{u}_v}{\alpha}$. We know that $\alpha_0 = -\lambda\sigma_M$, $\alpha_1 = (\exp(\lambda\sigma_M - \lambda\sigma_E) - 1)$. The exact values of the parameters σ_M and σ_E are not identified without an assumption on λ , but their ratio is, which is the degree of asymmetry between the impact of Sharia on Extremist and Moderates:

$$\frac{\sigma_E}{\sigma_M} = \frac{\alpha_0 + \log(\alpha_1 + 1)}{\alpha_0} \quad (16)$$

Consequently, we can take Equation 15 to the data and estimate the degree of asymmetry, if we define adequate measures for the variables g_v , p_v and μ_v .

I capture αg_v using the government services index from Section 4. I proxy the village share of Extremist voters (μ_v) by creating percentiles of the per capita number of *pesantren* and *madrasah* type of Islamic schools, which is known from the PODES surveys. That is, I assume that villages without any pesantren have $\mu = 0.01$ extremist voters, and villages with the highest number have $\mu = 1$. I also have no direct measure of the village level price of public good provision. To proxy for this, I flexibly control for several factors from PODES that might increase the prices of public good provision.

I create standardizes indices from the following variables: 1) physical distances from the subdistrict,

district and the neighboring district capital, 2) difficulty of the terrain, 3) average slope of the village area. The price index is the arithmetic average of the z-scores. I create three different indices, with using means and standard deviations calculated on country, province and district levels, respectively.

I also include the lagged value of the left hand side variable (g_{vt-1}) in the price control function to capture that price for extending public service provision might be different at different pre-existing levels of public service provision. Finally, I interact the set of control variables with a set of time fixed effects to capture country-level changes in the price of public service provision.

Table 7: Estimating the parameters of the model	
	(1)
	Government services index
Sharia regulation in t-1	0.0221 (0.0359)
μ	0.0423** (0.0185)
$\mu \times$ Sharia regulation in t-1	-0.139*** (0.0440)
Observations	227875

The table shows Fixed Effects regressions where the outcome variable is the government service index. The independent variables are a dummy indicating if the district had a religious policy in the previous year, the percentile rank of the per capita number of Islamic Schools, and the interaction of these two. Additional controls include time fixed effects interacted with a set of village level price indices, and the logarithm of the population of the village. Data source is the PODES survey. Standard errors clustered at district borders. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

In Table 7 I present the regression results. All coefficient are of the expected sign. The coefficient on the Sharia regulation dummy ($\alpha_0 = -\lambda\sigma_M$) is small and positive (though insignificant), implying a small and negative impact on the Moderate voters. This also means that the compensation received by a village where $\mu_v = 0$ in a district that introduces Sharia regulations is negligible.

The coefficient on μ_v is small and positive (significant at 5% level), indicating that villages with more Islamic schools are on average better endowed with public services in absence of Sharia regulations (so $p_v \times \Delta g_v$ is potentially larger in absolute value). Crucially, the interaction term is large compared to the other coefficient, negative, and strongly significant, indicating that the impact of Sharia is in fact a function of the share of extremist voters in the village. The results do not qualitative change if I use the natural logarithm of $p_{\text{esantren}} + 1$ instead of the percentile rank, or do not include g_{v-1} in the price vector.

The coefficients themselves are not directly comparable, but substituting them into Equation 16 yields $\sigma_E/\sigma_M = -5.76$, meaning that the utility impact of introducing Sharia on Extremist voters is 5.76 times

bigger as the disutility Sharia regulations cause the Moderate voters.

VI Conclusion

In this paper I proposed a mechanism which provided a possible explanation why politicians supply divisive, ideological policies. An ideological policy that is asymmetric (it is more important to extremist voters as it is to moderates) can increase net support for the incumbent cheaply; at least in a cheaper way than through supplying public goods and services. This provides an economic incentive for non-extremist politicians to cater to extremist voters.

I investigated in detail whether politicians who introduce divisive, ideological regulations based on a restrictive interpretation of Sharia (traditional Islamic law) provided less for their constituents in Indonesia. The results show that districts that implement Sharia-based regulations have about 8-10% less public services and expenditure on public employment in a difference-in-differences setting. I also found evidence that the policies have lasting impact on poverty, and on the number of violent incidents.

An important feature of asymmetrical extremism is that it is more likely to occur in districts which are relatively more developed. It would be interesting to see if this result could be generalized to the country level, and ideological and divisive policies become more likely as a country is moving along its development path, or whether this effect is mitigated by the strengthening of institutions along the way. However, this question is out of the scope of this paper.

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Appendix A : Data description

Coverage of violence data

Table A.1: Coverage of National Violence Monitoring System by provinces and years

	<i>Province/year</i>	<i>1997</i>	<i>1998-2004</i>	<i>2005-2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
1	Aceh		✓	✓	✓	✓	✓	✓
2	Maluku		✓	✓	✓	✓	✓	✓
3	North Maluku		✓	✓	✓	✓	✓	✓
4	Papua		✓	✓	✓	✓	✓	✓
5	West Papua		✓	✓	✓	✓	✓	✓
6	West Kalimantan	✓	✓	✓	✓	✓	✓	✓
7	Central Kalimantan		✓	✓	✓	✓	✓	✓
8	East Nusa Tenggara		✓	✓	✓	✓	✓	✓
9	Central Sulawesi		✓	✓	✓	✓	✓	✓
10	Jakarta/Bogor/Depok/Tangerang/Bekasi			✓	✓	✓	✓	✓
11	Lampung			✓	✓	✓	✓	✓
12	West Nusa Tenggara			✓	✓	✓	✓	✓
13	East Kalimantan					✓	✓	✓
14	North Kalimantan					✓	✓	✓
15	North Sumatra			✓	✓	✓	✓	✓
16	East Java			✓	✓	✓	✓	✓
17	South Sulawesi			✓	✓	✓	✓	✓
18	North Sulawesi			✓	✓	✓	✓	✓
19	West Sumatra							✓
20	Riau Islands							✓
21	Riau							✓
22	Bengkulu							✓
23	Jambi							✓
24	Bangka Belitung Islands							✓
25	South Sumatra							✓
26	West Java							✓
27	Banten							✓
28	Yogyakarta							✓
29	Central Java							✓
30	Bali							✓
31	South Kalimantan							✓
32	West Sulawesi							✓
33	Gorontalo							✓
34	Southeast Sulawesi							✓

Source: <http://snpk.kemenkopmk.go.id/>

Government services index

The PODES (Pendataan Potensi Desa - Village Potential Database) is a government survey conducted in each census year since 1983. It covers the universe of villages in Indonesia, and gives detailed information on village characteristics in every wave. It is important to note that the term “village” is an administrative concept; rural and urban communities are both surveyed.

Using PODES poses two major empirical challenges. First, the village identifier variables are not consistent over time, so I had to match the villages across the waves based on the geographical names of the districts, subdistricts and villages. With this method I was able to match 73% of all the villages, which is in the same ballpark as the efficiency of Martinez-Bravo [2014], who implemented the same strategy for matching the data across waves.

Second, the the data coverage over years is inconsistent. Data collection for PODES is linked to data collection for the census, so in years when a plain population census is implemented, the data content is somewhat different than in years of the agricultural census, or the economic census. I identified all variables that are consistently reported over the waves. Since I have a single explanatory variable, looking at the correlation of each survey variable and the single right hand side variable would raise the prospect of multiple inference. In order to avoid that, I took all variables that reflect government services such as education and infrastructure (the detailed list is provided below), and used them to create an additive index using the method described in Anderson [2008].³⁹ The procedure takes the following steps:

1. Adjust signs of all variables so that a higher value corresponds to the better outcome
2. Demean outcomes and divide them by the standard deviation of the “control group” (all villages that did not introduce religious policies until the end of the study period)
3. Create weights for each variable -the weights is the sum of the row entries of the inverted covariance matrix of the variables
4. Create the index, which is the weighted sum of the variables.

The variables which are included in the index are:

- Number of schools for each main Indonesian education tiers (SD, SMTP, SLTP, SMU)

³⁹I omit the variables related to healthcare, as over the study period Indonesia started experimenting with central government-financed healthcare schemes which grew steadily in coverage and funding, thus the data on healthcare infrastructure mostly reflects central, and not local government policies.

- Number of vocational education institutions
- Number of households that have access to electricity
- Number of households with landline phone subscriptions⁴⁰
- Type of road lights
- Type of cooking fuel
- Type of waste disposal
- Type of sewage disposal

The four infrastructure variables are measured on ordinal scale; the best value typically corresponds to state provision of a centralized public service.

⁴⁰Though steadily increasing, mobile phone penetration rates were still comparatively low by the end of the study period (the exact rates were 0.1%, 0.8%, 4%, 9%, 25% and 42%), so landlines were still a relevant factor in wellbeing. Data source: World Bank (<https://data.worldbank.org/indicator/IT.CEL.SETS.P2?locations=ID>); accessed: 08/29/2018

Appendix B : Evidence on political behavior

Table B.2: Total incumbent votes and incumbent decisions

	Incumbent votes					
	(1)	(2)	(3)	(4)	(5)	(6)
RP before election	19429.5 (13746.7)	11729.0 (13591.1)	22129.6 (14460.3)	14621.1 (14287.7)	9838.9 (14263.7)	-4099.4 (13841.6)
Electorate size	0.175*** (0.0243)	0.164*** (0.0231)	0.174*** (0.0234)	0.164*** (0.0223)	0.159*** (0.0249)	0.154*** (0.0242)
Implicit employment	0.157*** (0.0545)	0.171*** (0.0528)	0.158*** (0.0514)	0.170*** (0.0494)	0.158*** (0.0529)	0.171*** (0.0520)
Implicit employment \times RP	-0.286** (0.135)	-0.284** (0.125)	-0.288** (0.130)	-0.285** (0.120)	-0.311** (0.139)	-0.314** (0.130)
Electorate \times RP	0.123** (0.0556)	0.131** (0.0514)	0.104* (0.0532)	0.109** (0.0490)	0.131** (0.0597)	0.130** (0.0559)
Number of schools			1.749 (15.78)	0.0741 (15.97)		
Number of schools \times RP			29.98 (35.56)	33.78 (34.79)		
Log schools					4417.9** (1767.4)	2766.2 (1932.8)
Log(schools+1) \times RP					2312.7 (6172.5)	5361.9 (5986.8)
Inc. has degree		14931.3** (6582.0)		16040.5** (6488.3)		15830.2** (6472.8)
Inc. is doctor		1905.7 (6732.3)		2408.5 (6678.3)		3685.7 (6849.2)
Inc. is haji		22667.5*** (6490.3)		21928.3*** (6533.5)		20577.8*** (6924.8)
Observations	530	530	530	530	530	530

The table shows OLS regressions of incumbent votes the size of the electorate (calculated from the population), the implicit employment variable (wagebill / minimum wage), different measures of penetration by Islamic schools, and their interactions with a dummy indicating if the incumbent introduced a religious policy in his or her cycle. Additional controls are characteristics of the incumbent that are identified from his or her full name: whether had any degree that is not a doctorate, whether had a doctorate, and whether he or she has completed the pilgrimage to Mecca (those who did can use the honorific title of Haji or Hajjah). Election data is hand-collected. Religious policy information is based on Buehler (2016). Demographics come from INDODAPOER, the number of Islamic schools are from PODES. Robust standard errors in parenthesis. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Table B.3: Individual voting behavior

	(1)	(2)	(3)
	Pr(voted, district head)	Pr(voted, village head)	Pr(voted, legislature)
Public employee	0.0816*** (0.0228)	-0.00818 (0.0305)	0.0166 (0.0233)
Devout	0.00819 (0.0137)	-0.00679 (0.0151)	-0.00517 (0.0126)
Religious policy	-0.00988 (0.0182)	0.0130 (0.0237)	-0.00285 (0.0162)
Public employee \times RP	-0.0635* (0.0366)	-0.000896 (0.0569)	-0.0536 (0.0361)
Devout \times RP	0.0705*** (0.0269)	-0.0677 (0.0417)	-0.000617 (0.0225)
Observations	8958	7087	9141

The table shows OLS regressions of electoral participation on different characteristics of the voter. The data comes from Wave 5 of the Indonesian Family Life Survey (2014). 50% of the respondents lived in a district which had a religious policy. The sample includes all Muslim respondents who lived in a district that did not have a religious policy in 2007. The outcome variable is a dummy indicating if the respondent says he or she voted during the last election for district head (Column 1), village head (Column 2), national legislature (Column 3). Additional controls include demographics (age, marital status, sex, years of schooling), province dummies, Islamic tradition dummies (Muhammadiyah and "Other", Nahdlatul Ulama is baseline), dummies indicating if the person moved between survey waves, whether voted in 2007, whether person lived in an urban area in 2013 and in 2007, and whether the person was a government worker in 2007. Standard errors are clustered at the district level. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Appendix C : Survey evidence on voter preferences

In Table C.4 I regress the dummy for Sharia regulations on crime indicators. In Columns 1-2 the unit of observation is a Muslim respondent in the IFLS in 2007 who lived in a district that did not have a religious policy.⁴¹ The dependent variable is a dummy indicating if the district had a religious policy in 2013. In Columns 3-4 the same regression is run on district averages. No significant coefficients are found, except for a negative one for property crimes in Column 2, indicating that if a person indicated that he or she suffered a property crime, such as theft or damaged property, it is less likely the same district would have a Sharia regulation by 2013. There is no evidence that districts that had higher crime in 2007 would end up having Sharia policies.

In Table C.5 I regress different measures of religious participation on a dummy indicating whether the person lived in a district that had a religious policy. In this case the sample is all Muslim respondents who lived in a district that had its first religious policy between 2007 and 2013. The controls include demographics, such as age, sex, marital status, a dummy for living in an urban area, years of schooling, province dummy, and Islamic tradition dummies. The outcome variables are sets of dummies, indicating whether 1) the respondent received a donation from a religious organization 2) if the respondent took part in a religious microfinancing group 3) if any general religious event occurred in the village 4) if the respondent participated in that event. If districts which introduce Sharia policies substitute government production of public services with religious production, we would observe an increase in religious participation. If anything, there is weak evidence that religious participation is weaker in these districts.

In Table C.6 I regress a dummy indicating that the district had a Sharia regulation in 2013 on different levels of perceived corruption in 2007, for districts that had no religious policy that year. The units of observation are “informants” for the IFLS community survey (local authority figures who are not politicians or public administrators, so do not have a vested interest in a good result). There is one village in the community survey for every district, and (mostly) two informants for every village. The respondent asks whether corruption is present (Panel A) or corruption got worse since 2000 (Panel B) in different layers of public administration (columns). The only significant coefficients are for district heads and district parliaments (Columns 3 and 4) and the coefficients indicate that districts which report corruption in 2007 are less likely to have a religious policy in 2013. There is no evidence that people demand Sharia regulations because of corruption waves. This is in contrast with the results in Henderson and Kuncoro [2011] who find that this

⁴¹Only the 2007 IFLS wave had information on crime.

link existed in national elections in the 2000s.

Table C.4: Crime perception in 2007 and probability of Sharia regulations in 2013

	(1)	(2)	(3)	(4)
Any crime	-0.0441 (0.0289)		0.174 (0.172)	
Violent crime		-0.0358 (0.0432)		0.224 (0.199)
Property crime		-0.108** (0.0495)		0.162 (0.497)
Constant	0.345*** (0.0682)	0.343*** (0.0683)	0.239*** (0.0553)	0.247*** (0.0458)
Observations	12712	12712	159	159
Unit	Person	Person	Region	Region

Table shows OLS regressions of the incidence of religious policies in 2013 in a district on different crime perception measures. Columns 1-2 use individual level data of respondents in the IFLS. The sample is all Muslim respondents who lived in 2007 in a district without a Sharia policy. The standard errors clustered at district borders in parenthesis for personal data; robust standard errors for district data. The question was whether the respondent or his or her family was a victim of crime. Columns 3-4 show responses from “informants” in the community facility survey. The sample is all districts that had no religious policy in 2007. Robust standard errors in parenthesis. The question is whether the respondent's village experienced incidence of the given crime. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Table C.5: Religious participation and Sharia regulations

	(1)	(2)	(3)	(4)
	Pr(Donation)	Pr(Arisan)	Pr(Event occurrence)	Pr(Participation)
Religious policy	-0.00580* (0.00348)	-0.0179* (0.0102)	-0.0141 (0.0192)	-0.00662 (0.0306)
Observations	13631	13667	13598	13598

The table contains OLS regressions of individual religious participation measures of respondents in the IFLS on a dummy indicating if they lived in a district with a religious policy in 2013. Sample: all Muslim respondents who lived in districts which had their first religious policy between 2007 and 2013. Standard errors clustered at district borders in parenthesis. The outcomes are dummies indicating if the person received any donation from a religious organization (Column 1), participated in a religious microfinance group (Column 2), if religious events happened in the village (Column 3) and if the respondent participated (Column 4). *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Table C.6: Corruption perception in 2007 and probability of Sharia regulations in 2013
Panel A

Table C.7: Corruption incidence in 2007 and religious policies by 2013							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CorruptionPresent	0.100 (0.0798)	-0.0625 (0.0743)	-0.0934* (0.0508)	-0.113** (0.0492)	0.00226 (0.0550)	-0.164** (0.0659)	-0.0584 (0.0688)
Observations	331	331	331	331	331	331	331
definition	Village gov.	Subdist gov.	Dist. gov.	Dist. parl.	Dist. police	Healthcare	State schools
Robust standard errors in parenthesis.							

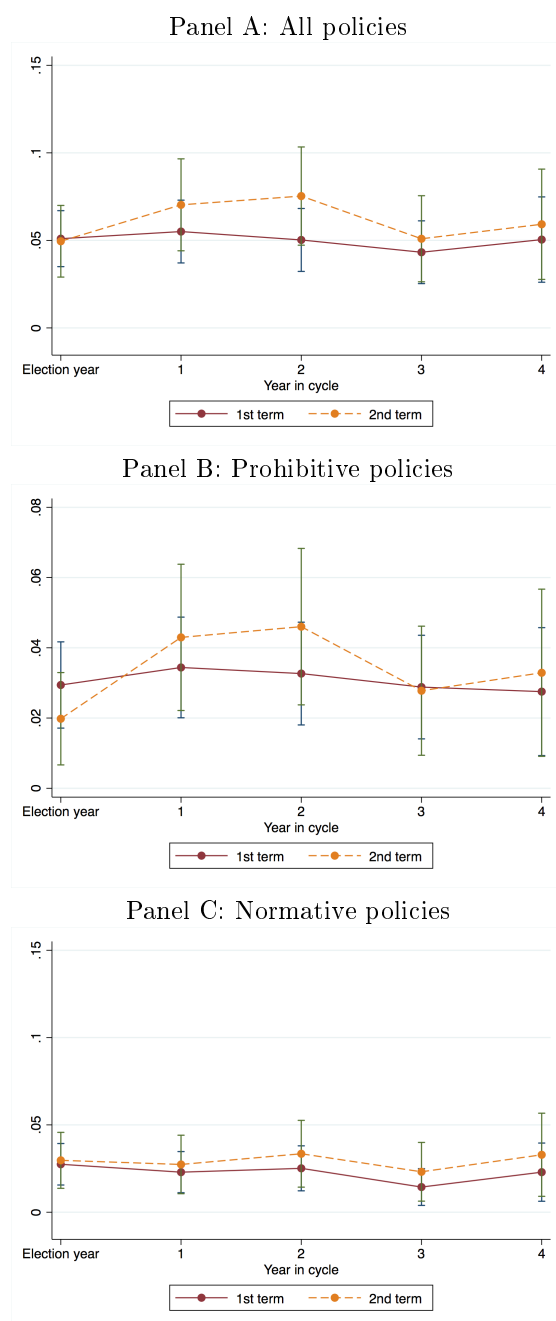
Panel B

Table C.8: Corruption trends in 2007 and religious policies by 2013							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GotWorse	0.0569 (0.160)	-0.0286 (0.156)	-0.111* (0.0642)	-0.186*** (0.0560)	-0.0219 (0.0830)	-0.00540 (0.137)	0.0310 (0.131)
Observations	331	331	331	331	331	331	331
definition	Village gov.	Subdist gov.	Dist. gov.	Dist. parl.	Dist. police	Healthcare	State schools
Robust standard errors in parenthesis.							

The tables show OLS regression of the religious policy dummy in 2013 on Informant respondents in the IFLS community survey in 2007. The sample is all districts that had no religious policies in place in 2007. The explanatory variable in Panel A is a dummy indicating if the respondent said that corruption was present in a specific layer of government (each column corresponds to a different layer). The explanatory variable in Panel B is a dummy indicating if the respondent said that the situation in terms of corruption got worse since 2007. Robust standard errors in parenthesis. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

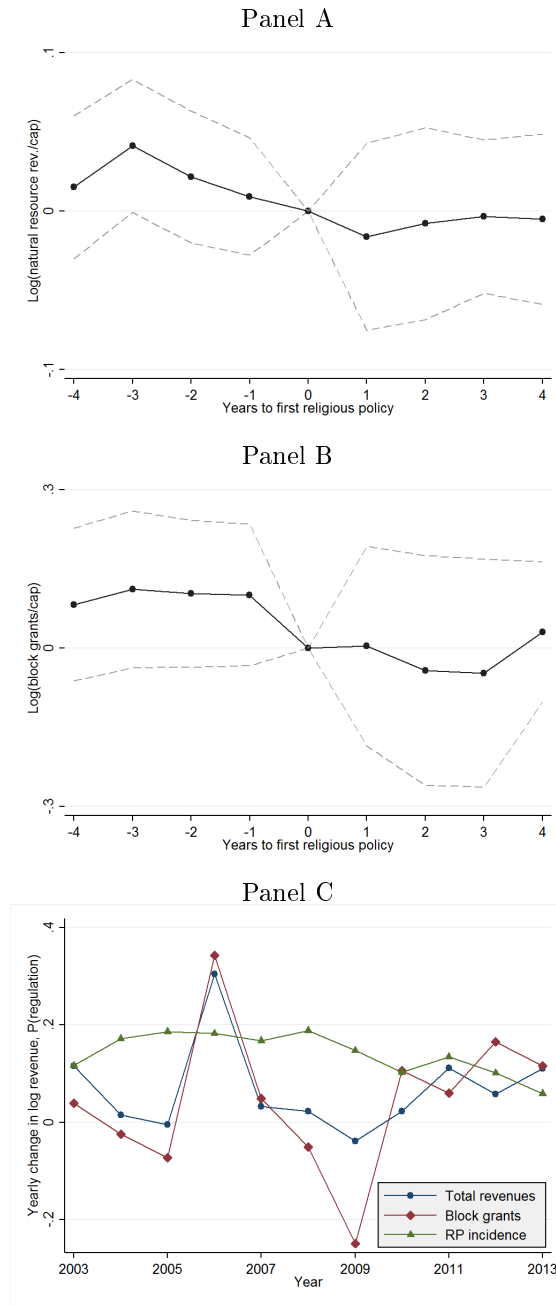
Appendix D : Additional figures

Figure D.1: When are religious policies passed?



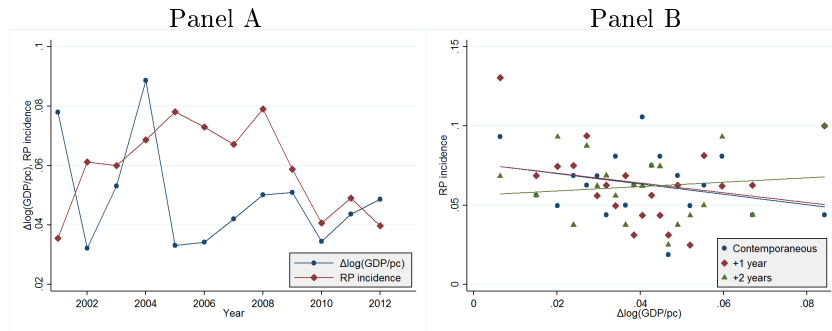
The map shows districts in red which had at least one Sharia-policy by 2013. The regions in black are omitted from the analysis (Aceh, Jakarta and Papua). The shapefiles show borders in 2009.

Figure D.2: Revenue event studies



Panel A and B replicate Figure 5 but the outcome variable is now revenue, not expenditure (revenue from natural resources and from bloc grants, respectively). 95% confidence intervals based on clustered standard errors (at district level) shown. Panel C plots the yearly change in different revenue sources and the yearly incidence of religious policies against time.

Figure D.3: Economic shocks and religious policy incidence



The first panel shows the average growth rate of the economy and the share of districts which introduced a religious policy each year. The vertical axis of the second panel shows yearly changes in per capita GDP, while the horizontal axis shows the probability of introducing Sharia policies in the same year, one year after, and two years after. The figures show that there is no obvious correlation between economic performance and the religious turn.

Appendix E : Additional tables

Violence and religious policies

Table E.9: Perpetrator types

Panel A: P(perpetrator)			
	(1)	(2)	(3)
	Religious group	Government	Other political
Had RP (T-1)	0.194** (0.0888)	0.0369 (0.0686)	-0.0346 (0.0775)
Panel B: Number of incidents by perpetrator			
	(1)	(2)	(3)
	Religious group	Government	Other political
Had RP (T-1)	0.451*** (0.159)	1.351 (1.167)	4.330 (2.817)
Panel C: Number of victims / 100000 people by perpetrator			
	(1)	(2)	(3)
	Religious group	Government	Other political
Had RP (T-1)	0.0874* (0.0477)	1.688 (1.422)	2.315 (2.110)
Observations	921	921	921

The table shows a similar specification to Table 6, but instead of the incidence of violence, the outcome variables are grouped by perpetrators. In Panel A the outcomes of dummies indicating if the district had a violent act by the given perpetrator. Panel B shows the number of incidents by the specific perpetrator. Panel C shows the number of victims by 100.000 inhabitants by perpetrator. Note: not all perpetrators belong to these groups or any group, so the numbers do not have to add up to the coefficients from the previous table. District and time fixed effects included. Standard errors clustered at district borders. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Table E.10: Incident types
Total number of victims by incident type

	(1)	(2)	(3)	(4)
	Killed	Injured	Kidnapped	Sexually assaulted
Had RP (T-1)	3.317*** (0.835)	20.57* (10.56)	0.423** (0.211)	4.759 (3.000)
Victims / 100000 people by incident type				
	(1)	(2)	(3)	(4)
	Killed	Injured	Kidnapped	Sexually assaulted
Had RP (T-1)	0.631*** (0.192)	6.752* (3.944)	0.109 (0.0838)	1.743*** (0.654)
Observations	921	921	921	921

The table shows a similar specification to Table 6, but instead of the incidence of violence, the outcome variable is the number of victims by incident types in Panel A, and number of victims per 100.000 inhabitants in Panel B. District and time fixed effects included. Standard errors clustered at district borders. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Candidate quality

Table E.11: Titles of incumbents			
	Introducing	Non-introducing	Difference
N	129	693	
Pilgrim share	.76	.60	.16
s.e.			(.0462)
Doctor share	.43	.35	.08
s.e.			(.0168)
Other honorific title	.56	.46	.10
s.e.			(.0478)

This table compares titles of incumbents who introduce Sharia policies to titles of incumbents who do not. The data is limited to incumbents for whom I was able to collect election data. The first row corresponds to the share of incumbents who completed the pilgrimage to Mecca and thus earned the title “Haji” or “Hajjah”. The second row corresponds to share of incumbents with a doctoral title. The third row shows the share of incumbents who had any other title (Bachelor’s or Master’s Degree, clerical titles etc.).

Assessing the potential for public-private substitution

Table E.12: Effect of religious policies on the Infrastructure Index				
	(1)	(2)	(3)	(4)
Religious policy	-0.0622 (0.0520)	-0.155*** (0.0591)		
Any RP X Dist(100km)		0.309*** (0.118)		
General RP			-0.180*** (0.0692)	-0.214*** (0.0814)
General RP X Dist(100km)				0.0963 (0.170)
Prohibitive RP			0.0511 (0.0548)	-0.0356 (0.0637)
Prohibitive RP X Dist(100km)				0.295** (0.128)
Observations	273450	273432	273450	273432
distance		0.502		
distanceSE		0.195		
distance1				2.227
distanceSE1				3.551
distance2				0.121
distanceSE2				0.194

Standard errors clustered at 1996 regional borders in parantheses.

Controls: Village+Time FE, Log(Islamic schools), Log(Pop)

This is a version of Tables 4 to ?? where I use a version of the Government services which only has the source variables on infrastructure. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Assessing the importance of economic shocks

Table E.13: Inequality control

Panel A: spending, all years

	(1)	(2)	(3)
	Log(wbill)	Log(imp. emp.)	Imp. emp. / pop.
Religious policy in cycle	-0.0348* (0.0189)	-0.0384** (0.0182)	-0.0365 (0.0319)
Observations	3165	3185	3185
MeanY	25.53	12.82	1.689

Panel B: spending, direct elections

	(1)	(2)	(3)
	Log(wbill)	Log(imp. emp.)	Imp. emp. / pop.
Religious policy in cycle	-0.105*** (0.0293)	-0.110*** (0.0289)	-0.162*** (0.0440)
Observations	2061	2081	2081
MeanY	25.53	12.82	1.689

Panel C: poverty indicators

	(1)	(2)	(3)	(4)
	Poverty rate	Poverty gap	Poverty rate	Poverty gap
Religious policy	0.948*** (0.295)	0.177*** (0.0676)	-1.833*** (0.699)	-0.472*** (0.144)
Years after RP			0.338*** (0.0819)	0.0795*** (0.0178)
Observations	3186	3186	3145	3145
MeanY	15.07	2.618	15.07	2.618

This is a version of Table 3 where I also control for lagged measures of inequality. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Table E.14: Unemployment rate control

Panel A: spending, all years

	(1)	(2)	(3)
	Log(wbill)	Log(imp. emp.)	Imp. emp. / pop.
Religious policy in cycle	-0.0415** (0.0177)	-0.0448*** (0.0170)	-0.0568* (0.0293)
Observations	3050	3067	3067
MeanY	25.53	12.82	1.689

Panel B: spending, direct elections

	(1)	(2)	(3)
	Log(wbill)	Log(imp. emp.)	Imp. emp. / pop.
Religious policy in cycle	-0.118*** (0.0303)	-0.122*** (0.0299)	-0.193*** (0.0454)
Observations	2242	2259	2259
MeanY	25.53	12.82	1.689

Panel C: poverty indicators

	(1)	(2)	(3)	(4)
	Poverty rate	Poverty gap	Poverty rate	Poverty gap
Religious policy	0.916*** (0.339)	0.188** (0.0792)	-2.197*** (0.817)	-0.517*** (0.189)
Years after RP			0.360*** (0.0867)	0.0826*** (0.0207)
Observations	3063	3063	3023	3023
MeanY	15.07	2.618	15.07	2.618

This is a version of Table 3 where I also control for lagged measures of the unemployment rate. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Table E.15: Sectoral change control

Panel A: spending, all years

	(1)	(2)	(3)
	Log(wbill)	Log(imp. emp.)	Imp. emp. / pop.
Religious policy in cycle	-0.0356** (0.0180)	-0.0379** (0.0173)	-0.0417 (0.0307)
Observations	3661	3682	3682
MeanY	25.53	12.82	1.689

Panel B: spending, direct elections

	(1)	(2)	(3)
	Log(wbill)	Log(imp. emp.)	Imp. emp. / pop.
Religious policy in cycle	-0.119*** (0.0300)	-0.117*** (0.0297)	-0.180*** (0.0449)
Observations	2502	2523	2523
MeanY	25.53	12.82	1.689

Panel C: poverty indicators

	(1)	(2)	(3)	(4)
	Poverty rate	Poverty gap	Poverty rate	Poverty gap
Religious policy	1.052*** (0.299)	0.192*** (0.0684)	-1.746** (0.756)	-0.443*** (0.159)
Years after RP			0.334*** (0.0856)	0.0762*** (0.0188)
Observations	3702	3702	3652	3652
MeanY	15.07	2.618	15.07	2.618

This is a version of Table 3 where I also control for lagged measures of change in the sectoral composition of the GDP. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Assessing the potential for reverse causality with crime and Sharia regulations

Table E.16: Does violence predict religious policies?

	(1)	(2)	(3)	(4)	(5)	(6)
No. of incidents (T-1)	-0.000117 (0.000106)					
Δ No. of incidents (T-1)		0.000104 (0.000156)				
No. of incidents/100000 people (T-1)			-0.000331 (0.000346)			
Δ No. of incidents/100000 people (T-1)				-0.000122 (0.000276)		
Log(No. of incidents) (T-1)					-0.0202 (0.0127)	
Δ Log(No. of incidents) (T-1)						-0.00411 (0.00733)
Observations	921	799	919	796	921	799

The table shows fixed effect regressions of a dummy indicating if the district had a Sharia policy in the year, regressed on different lagged measures of violence: the number of all incidents in the previous year, the incident number / 1000 people, the natural log of the number of incidents, and changes in these variables. The source of the data is the SNPK dataset, and the sample includes all districts that were covered by the SNPK. (See Figure A.1 for details). The specifications include district and time fixed effects. Standard errors are clustered at district borders. *: significant at 10%; **: significant at 5%; ***: significant at 1%.