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Emmanuelle Auriol and Jean-Philippe Platteau

The Explosive Combination of Religious Decentralisation and Autocracy: the Case of Islam*

Emmanuelle Auriol[†]
Jean-Philippe Platteau[‡]

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Abstract

The relationship between religion and politics is explored from a theoretical standpoint. Religious clerics can be seduced by an autocrat and political stability is at stake. The autocrat's decisions consist of two measures susceptible of antagonising religious clerics: adopting secular reforms and unduly appropriating part of national wealth, which generally are complement. Compared to centralized religions, decentralized religions, such as Islam, tend to discourage secular reforms and corruption but those effects are not guaranteed if the autocrat accepts political instability. The main hypotheses and the central results of the theory are illustrated with regime case studies that refer to contemporary times.

JEL Classification: D02, D72, N40, O57, P48, Z12

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[†]Toulouse School of Economics, emmanuelle.auriol@tse-fr.eu

[‡]Université de Namur, jean-philippe.platteau@unamur.be

1 Introduction

The increasingly visible presence of religion, in developing countries especially, has aroused the interest of economists during the last decades. What is generally overlooked, however, is the relationship between religion and politics (Aldashev and Platteau, 2013; Iyer, 2016). In particular, the possibility that the former is being instrumentalized by the latter has not been studied so far. We address this issue in the specific context of autocracy, a political regime commonly found in developing countries: the autocrat seeks the cooperation of religious clerics with a view to increasing the political stability of his regime.

Exploration of the methods and tactics used by autocrats to maintain themselves in power typically comprise repression, co-optation, and the production of public goods. While many political economy models of autocracy consider only two actors (the ruler and the opposition), a growing number of researchers distinguish between elites and citizens as two potential opposition actors. To remain in power, autocratic rulers need not only stem the threat arising from the citizenry, which can spark popular revolutions, but also the threat coming from the elites, who can stage military coups or provide the moral and financial support for revolutionary movements (see Bove, Platteau, and Sekeris, 2016 for a short survey of the literature). Yet, empirical evidence shows that spontaneous revolutions often fail if they are not actively or passively supported by key members of the ruling elites. Since autocrats are generally overthrown by members of their inner circle rather than as a result of popular uprisings, they typically try to buy off the support of elites, be they defined broadly (North, Wallis, and Weingast, 2009; Egorov and Sonin, 2011), or more narrowly as economic or military elites (see Acemoglu, Ticchi, and Vindigni, 2010 for the latter and Montagnes and Wolton, 2016 for the former). Because the elites must be compensated in exchange for their political support, they entail costs for the autocrat, and it is not a priori clear that he should maintain a large body of inner supporters. Therefore, a trade-off exists between co-optation and repression.

What has been ignored so far is the possibility that autocrats extend

their co-option efforts to religious clerics. This is a serious gap to the extent that, in societies where levels of literacy and education are low, the prestige and influence of these clerics are generally important. If they so wish, they may therefore become effective opponents to the regime, able to articulate people's grievances and to mobilize their energies for the purpose of confronting iniquitous rulers. For this reason, the autocrats have an incentive to enlist potential religious rebels in their support. The question then arises as to whether and how the organizational mode of the dominant religion prevailing in a country affects the autocrat's ability to contain the religious threat. In particular, there is a need to distinguish between centralized and decentralized religions.

This paper proposes a setup that explicitly takes the organization of religions into account. It complements an earlier contribution (Auriol and Platteau, 2016) in two ways. On the theoretical plane, it is based on an alternative model that allows us to derive new analytical results. In this new model, the autocrat chooses not only the extent of reforms to implement but also the level of wealth appropriation for the benefit of himself and his inner circle. Moreover, instead of a continuum of clerics, we assume that two well-differentiated types exist: moderates and radicals. The general idea is that clerics dislike political corruption as well as progressive (institutional) reforms, especially those touching on educational and judiciary matters. We define as moderate those clerics who are rather soft on matters of principles and hence more easily amenable to compromises with political power. They tend to adhere to the tenet that clerics should accept the authority of strong political rulers on the grounds that preservation of order and stability is a paramount objective justifying concessions to ideological purity (see Platteau, 2017, for an elaboration). They can thus be considered as politically and spiritually accommodating. Radical clerics, by contrast, are more inflexible when issues of religious ethics are concerned and, hence, they are more expensive to buy off.

On the empirical plane, we offer new material that deals with recent regime cases rather than with historical country examples. Because Islam is dominant in many developing countries and because it combines organiza-

tional decentralization and political autocracy in an unambiguous manner, it provides us with a privileged illustration of autocratic co-option of clerics in the absence of a hierarchical church structure in modern times.

Under a decentralized religion, the central question is how the autocrat decides whether he will co-opt the whole set of clerics or only a fraction of them, a decision that directly hinges on the amount of material privileges granted. Since the autocrat simultaneously chooses the extent of progressive reforms and the level of corruption, two decisions that will generate more or less hostility from the clerics, an important result concerns the relationship between these decision variables: are reforms and embezzlement substitutes or complements? It turns out that under a very large set of conditions they are complements. This result helps to explain why in many contemporaneous autocratic countries "modernization" is associated with "corruption". This association was very clear during the Arab spring, when revolt erupted against autocratic leaders such as Ben Ali and Bashar al-Assad, who were simultaneously reformist and corrupt. Unfortunately, the fight against corruption comes in many cases with the rejection of technical and institutional innovations, as popular grievances are channelled by radical religious leaders.

Another question that the model can highlight is the effect of a parametric change in the clerics' sensitivity to progressive reforms and corruption. We show that this effect actually varies depending upon the exact form of radicalization of the clerics. If the radicalization is uniform among the clerics (for instance, because the gross disutility of the reforms increases), or if there is a shift in the distribution of the clerics so that a larger fraction of them is radical (i.e. the new distribution first-order stochastically dominates the initial one), then the autocrat simultaneously decreases reforms and reduces embezzlement in order to enhance stability in reaction to these changes. By contrast, if the radical clerics become even more radical while the rest of the distribution is unchanged, the autocrat might choose to abandon the idea of enlisting them, as it becomes too expensive to do so. If he foregoes their support, he can then push more reforms and increase embezzlement. Instability increases as the price to pay for achieving higher

rents.¹

Next, the effects of a centralized religion, where the autocrat bargains directly with the head of the church, is compared with the effects of a decentralized religion when interacting with autocratic power. First, centralized religions tend to lead to more political stability than decentralized ones. Second, under conditions of full co-optation of the clerics, more progressive (secular) reforms and more corruption are chosen by the autocrat when the religion is centralized. In other words, during periods of political stability decentralized religions lead to more inertia, and less corruption, than centralized ones. This result is upset if the autocrat in the decentralized case decides to extract more rents by pushing more reforms at the cost of antagonizing the radical clerics. Instability increases while reforms and corruption can be higher than in the centralized case.

The structure of the paper is as follows. Section 2 presents the model used to describe the game played between an autocrat and the religious clerics. The cases of centralized and decentralized religions are explored in successive subsections, and the main results are summarized in the form of five propositions: the first three belong to the decentralized case, the fourth to the centralized case, and the last is the outcome of our comparative exercise. In Section 3, we discuss empirical material with the purpose of illustrating the main messages of the theory. We limit our attention to autocratic Muslim countries, that is, to the case of a decentralized religion. Emphasis is put on the contrast between rulers who succeeded in stabilising their autocratic regime through co-optation of most clerics and those who accepted a measure of political instability by buying the allegiance of only moderate clerics. Section 4 concludes the paper and shows how the division of the clerical body into supporters of the regime and dissidents, when it occurs, has led to an obscurantist deadlock that plagues a large part of the Muslim world.

¹These results are new compared to Auriol and Platteau (2016), which focuses on reforms only, and studies only one form of radicalization (i.e., an uniform increase of the disutility of reforms for the clerics).

2 The model

We consider an economy with an autocrat and a clerical body. This body is composed of individuals with different levels of conviction and commitment to the faith. We assume that each member of the clerical class is characterized by a parameter $\theta \in \{\underline{\theta}, \bar{\theta}\}$. Clerics can thus be of two types.² The first type is comprised of those with a rather superficial attachment to the tenets of their religion and who have a comparatively low aversion to secular reforms or iniquitous practices. They are therefore the most easily seducible clerics for autocrats who carry out modernizing reforms or indulge in corruption. Clerics of the second type have the opposite characteristics: they take the basic principles of their faith seriously. As a consequence, they are frustrated and angered by reforms, policies, and practices that violate these principles as they understand them. Clerics are in proportion $\mu = Prob(\theta = \underline{\theta})$ and $1 - \mu = Prob(\theta = \bar{\theta})$ respectively. The mean value of θ is $E\theta = \mu\underline{\theta} + (1 - \mu)\bar{\theta}$. We compare two types of religions: centralized and decentralized.

In the centralized religion, there is a church leader negotiating with the autocrat on behalf of all the clerics, under the constraint that they are not left worse off by supporting the autocrat. We focus on the Nash Bargaining solution between the autocrat and the head of the church. The constraint is that the autocrat needs to transfer enough resources so that each cleric can be compensated by the church for his disutility of supporting the reforms and the regime's corruption. This implies that the centralized church has the ability to overcome the coordination problem of the individual clerics. This is in sharp contrast with the decentralized case, in which each cleric decides on an individual basis whether to support the autocrat. They make their decision independently after the autocrat has announced the policies he wants to implement and the monetary transfer he will give to his supporters. Depending on the autocrat's offer, the clerics generally face a coordination problem, which leads to a multiplicity of equilibria: it is

²In contrast Auriol and Platteau (2016) considers a continuum of clerics. The discrete setting adopted here implies that it is technically easy to explore different forms of clerics radicalization.

possible that no cleric, or only the fraction μ of the moderate clerics, or all of them choose to support the autocrat. To resolve the issue of equilibrium selection we focus on the risk-dominant Nash equilibrium, as explained in the section below.

2.1 Decentralized religion

In the decentralized religion, each cleric has to individually choose whether to support the autocrat, and hence compromise himself with the current political power, or to distance himself from it (and implicitly express their opposition). In the latter instance, the change of utility of the cleric is posited to be nil. If he chooses to support the autocrat, the utility of the cleric depends on his type $\theta \in \{\theta, \bar{\theta}\}$, on the probability that the autocrat stays in power, $p \geq 0$, on the monetary transfer or compensation which he obtains from the autocrat, $w \geq 0$, on the amount of the (secular) reforms implemented by the same, $\alpha \geq 0$, and of the corruption of his regime, $\beta \geq 0$. That is,

$$U(\theta, p, w, \alpha, \beta) = pw - \theta V(\alpha, \beta) \quad (1)$$

with $V(0, 0) = 0$ and $V_\alpha(\alpha, \beta) > 0$, $V_\beta(\alpha, \beta) > 0$ and $V_{\alpha, \alpha}(\alpha, \beta) > 0$, $V_{\beta, \beta}(\alpha, \beta) > 0$, where the subscripts denote the partial derivative with respect to α and β .

The situation we have in mind is that of a self-interested autocrat who tries to seduce a cleric to support his policies. Term α represents the amount of (legal/economic/social) reforms implemented by the ruler, such as, for example, the creation of a secular school system, the introduction of modern law codes dealing with administrative, criminal, commercial, or personal status matters, the establishment of a modern judiciary system with wide-ranging competencies, including on subjects traditionally covered by religious courts. Religious leaders tend to be opposed to legal, economic, and social reforms that undermine their power, prestige, and influence. An increase in α means that the autocrat undertakes more of these reforms whereas a fall in α means that measures adopted by the autocrat shape institutions in a way that makes them more in accordance with the clerics' preferences. Term β represents the degree of appropri-

ation of national wealth by the ruler and his clique, that is, the extent of regime corruption (e.g., the percentage of the national wealth that the autocrat embezzles). Religious clerics find it more difficult to support the autocrat when he is more greedy, especially so if they are highly sensitive to social injustice or strongly averse to inequality and corruption (that is, if they have a high θ). If the cleric is of the more radical type, he severely suffers (i.e., in term of reputation, prestige, authority, ideology) by supporting the autocrat's reforms and/or corruption, while if he is moderate and rather soft on values and principles, such support comes with a small cost. The utility of the clerics decreases with α and β , but the disutility of reforms/corruption is larger when θ , which measures the ideological bias, increases.

2.1.1 Stability of the autocracy with a decentralized religion

The clerics' benefit of supporting the current political regime depends on the autocrat staying in power, which occurs with probability $p \geq 0$, while the cost of supporting him is sunk (see equation 1). Since the probability that the autocrat stays in power, $p \geq 0$, depends on the proportion of clerics that supports him, the benefit which a cleric obtains from supporting the autocrat depends on the behavior of other clerics. This is a coordination game. Since individuals of type $\theta \in \{\underline{\theta}, \bar{\theta}\}$ are identical, we focus on symmetrical equilibria where all individuals of type $\underline{\theta}$ (respectively of type $\bar{\theta}$) play in the same way. By contrast, since $\underline{\theta} < \bar{\theta}$, there are potentially many cases where type $\underline{\theta}$ and type $\bar{\theta}$ might choose different strategies. In order to get interesting solutions, in the sequel we make the following assumption.

$$\mu > \frac{\underline{\theta}}{\bar{\theta}}. \quad (2)$$

Under assumption (2), the clerics of type $\underline{\theta}$ are the easiest ones to rally to the autocrat's cause. To understand the coordination problem, assume that initially the clerics of the moderate type are the only ones who are "seducible". They still face a coordination problem. A cleric can either decide to support the autocrat or not to support him. If he does not support him, the cleric's payoff is zero. If he is alone to support the autocrat, his

payoff is $-\underline{\theta}V(\alpha, \beta)$, whereas if he supports the autocrat and all the other clerics of his type support him as well, his payoff is $\mu w - \underline{\theta}V(\alpha, \beta)$. Let us start by examining the case where $\mu w \leq \underline{\theta}V(\alpha, \beta)$. It is then evident that $p = 0$ since no cleric will ever agree to support the autocrat: whatever the behavior of the other clerics, the individual payoff of the cleric is always negative when he supports the autocrat.³ As a consequence, a necessary condition for the autocrat to get support from the moderate clerics is $\mu w > \underline{\theta}V(\alpha, \beta)$.

Under this assumption, there are two pure Nash equilibria and a mixed one: there are the pure Nash equilibrium where nobody supports the autocrat, the pure equilibrium where all moderate clerics support him and, finally, there is a mixed equilibrium where the moderate cleric supports him with probability $\frac{\underline{\theta}V(\alpha, \beta)}{\mu w}$. This multiplicity of equilibria implies a selection issue. Which one is going to be played in the end? Evolutionary game theory suggests that the *risk dominant equilibrium*, and not necessarily the payoff dominant one, will be the one to be played (see Kandori et al. 1993, Young 1993, Fudenberg and Levine 1997).⁴ In what follows, we therefore assume that the equilibrium that ends up to be selected is the risk-dominant Nash equilibrium. To understand this result intuitively, assume that the autocrat chooses to offer $w = \frac{\underline{\theta}V(\alpha, \beta)}{\mu}$. If a religious cleric of type $\underline{\theta}$ considers supporting the autocrat regime, he will obtain an utility equal to $U(\underline{\theta}, p, w, \alpha, \beta) = p \frac{\underline{\theta}V(\alpha, \beta)}{\mu} - \underline{\theta}V(\alpha, \beta)$. The highest possible value of this utility is zero, meaning that it is 0 if all other clerics of his type also play "support the autocrat" ($p = \mu$), and it is strictly negative otherwise. We can infer that, if a religious cleric has doubts about the behavior of

³Assumption (2) implies: $\mu w - \underline{\theta}V(\alpha, \beta) > \mu (w - \bar{\theta}V(\alpha, \beta))$. Therefore, if the utility of a moderate cleric is negative under the assumption that all moderate clerics support the autocrat, it is not possible that a radical cleric supports him. As a matter of fact, the above inequality means that the RHS is negative, whichever the value of μ . As a result, a radical cleric will never find it profitable to support the autocrat even assuming that all other clerics do it.

⁴This result is obtained in two different models. The first model, based on replicator dynamics, predicts that a population is more likely to adopt the risk dominant equilibrium than the payoff dominant equilibrium. The second model, based on best response strategy revision and mutation, predicts that the risk dominant state is the only stochastically stable equilibrium. The risk dominant equilibrium is the less risky one in the sense that it has the largest basin of attraction.

his fellow clerics, he will prefer not to support the autocrat. To overcome the problem created by the uncertainty of the behavior of the other clerics, the payoff of supporting the autocrat must be large enough. Evolutionary game theory helps us to pin down what "large enough" means. Let

$$\underline{w} = \frac{2\underline{\theta}V(\alpha, \beta)}{\mu} \quad (3)$$

If the autocrat wants to get the support of the clerics of type $\underline{\theta}$ he must offer a wage larger than \underline{w} . Indeed the risk-dominant Nash equilibrium is the payoff-dominant Nash equilibrium with full support from type $\underline{\theta}$ to the autocrat if and only if $\mu w > 2\underline{\theta}V(\alpha, \beta)$. Symmetrically if $\mu w \leq 2\underline{\theta}V(\alpha, \beta)$ the risk-dominant equilibrium is the pure Nash equilibrium with zero support for the autocrat.⁵

In a similar manner, if the autocrat wants to gain the support of the more radical clerics, he must offer a wage such that the risk-dominant equilibrium is the payoff-dominant one when all types of clerics (i.e., both type $\underline{\theta}$ and $\bar{\theta}$) are enrolled. Let

$$\bar{w} = 2\bar{\theta}V(\alpha, \beta). \quad (4)$$

Under Assumption (2), it is easy to check that $\bar{w} > \underline{w}$.

Thus, if the autocrat wants to remain in power, he needs to choose either \underline{w} , in which case the probability of his regime survival is $p = \mu$, or \bar{w} , in which case this probability is $p = 1$.

2.1.2 The autocrat's optimal policy with a decentralized religion

The autocrat needs to set $\alpha \geq 0$, $\beta \geq 0$ and to choose $w \in \{\underline{w}, \bar{w}\}$. He maximizes his expected payoff. If he gains and keeps power, which occurs with probability $p \in \{\mu, 1\}$, he gets the gross benefit $G(\alpha, \beta)$, which is a strictly increasing and concave function of α and of β : $G(0, 0) = 0$, $G_\alpha(\alpha, \beta) > 0$, $G_\beta(\alpha, \beta) > 0$, $G_{\alpha, \alpha}(\alpha, \beta) \leq 0$ and $G_{\beta, \beta}(\alpha, \beta) \leq 0$. He must

⁵If a cleric plays support "s" and the others clerics play also "s" then the payoff of the cleric is $\mu w - \underline{\theta}V(\alpha, \beta)$, while his payoff is $-\underline{\theta}V(\alpha, \beta)$ if the other play abstain "a". If he plays "a" then the utility is 0, no matter what the other play. Playing "s" is the risk dominant equilibrium if and only if $(-\underline{\theta}V(\alpha, \beta))^2 \leq (\mu w - \underline{\theta}V(\alpha, \beta))^2$ (see Harsanyi and Selten 1988).

also pay $w \in \{\underline{w}, \bar{w}\}$ to the fraction $p \in \{\mu, 1\}$ of clerics that supports him. The timing of the co-option game with a decentralized clerical body is the following.

1. The autocrat announces α , β and w .
2. A fraction $p \in \{0, \mu, 1\}$ of the clerics chooses to support the autocrat.
3. The autocrat implements α and β .
4. The autocrat is overthrown with probability $1 - p$, in which case he does not get $G(\alpha, \beta)$ and the supportive clerics do not get w . If the autocrat stays in power, he gets $G(\alpha, \beta)$ and the supportive clerics get w .

In the model $\alpha \geq 0$ is the level of reforms, $\beta \geq 0$ is the corruption level of the autocrat, and $w \geq 0$ the monetary transfer that he gives to the religious clerics. For instance, let us assume that the country GDP is $G(\alpha)$. This amount increases with the level of reforms α chosen by the autocrat. Being greedy, he captures a fraction $\beta \in [0, 1)$ of the national GDP, so that his revenue is $\beta G(\alpha)$. In other words, β is not an amount of money: as this example shows, it may correspond to the percentage of national wealth accruing to the autocrat. The latter then needs to decide how much of his revenue should be transferred to the clerics, that is, the level of w . If he stays in power, his net revenue is therefore $\beta G(\alpha) - w$. In the more general case where the interaction of the corruption level, β , and the level of reform, α , is left unspecified, the autocrat's net revenue is $G(\alpha, \beta) - w$. If he is not able to climb to power, the autocrat gets his reservation utility normalized to zero. If he is overthrown, he also gets zero as he loses everything that he acquired while in power. Being self-interested, he focuses exclusively on his own payoff which is related to his ability to stay in power. In other words, he does not care about what happens to the rest of the economy if he is removed. The objective function of the autocrat is therefore:

$$U^a(p, w, \alpha, \beta) = p(G(\alpha, \beta) - w), \quad (5)$$

There are three possibilities.

- If the autocrat chooses the corner solution $p = 0$, his utility is 0.
- If he chooses the interior solution μ , he solves: $\max_{\mu} \mu (G(\alpha, \beta) - w)$ so that $w \geq \underline{w}$. He maximizes over (α, β) the function $U^{a\mu}(\alpha, \beta) = \mu G(\alpha, \beta) - 2\underline{\theta}V(\alpha, \beta)$.
- If he chooses the corner solution 1, the autocrat solves: $\max G(\alpha, \beta) - w$ so that $w \geq \bar{w}$. He maximizes over (α, β) the function $U^{a1}(\alpha, \beta) = G(\alpha, \beta) - 2\bar{\theta}V(\alpha, \beta)$.

We can now deduce the result stated in Proposition 1.

Proposition 1 *At the optimum the autocrat chooses a combination of reforms and rent extraction, (α, β) , so that*

$$\frac{G_{\alpha}(\alpha, \beta)}{G_{\beta}(\alpha, \beta)} = \frac{V_{\alpha}(\alpha, \beta)}{V_{\beta}(\alpha, \beta)} \quad (6)$$

Proof. See Appendix 5.1. ■

Proposition 1 holds whether the autocrat chooses the corner solution ($p = 1$) or the interior one ($p = \mu$), that is, whether he decides to enlist the entire clerical class or only a fraction of it. The interpretation of condition (6) is the following. In order to maximize his utility, the autocrat chooses a bundle of reforms and a measure of rent extraction so that the marginal rate of substitution between α and β in his payoff function $G(\alpha, \beta)$ equals the marginal rate of substitution between α and β in the clerics' disutility function, $V(\alpha, \beta)$. Any other allocation is inefficient since by changing α and β , the autocrat is able to increase the value of his gross payoff G without increasing the gross disutility of the clerics V . Alternatively, he can decrease the gross disutility of the clerics V without diminishing his gross payoff G .

At this stage, it is useful to conduct some comparative-static analysis. In particular we would like to know whether β and α are complements or substitutes once the principal optimizes his utility function. For instance, if for some exogenous reason (e.g., technological progress) the return on reforms increases, will the autocrat increase simultaneously both α and β , or will he instead match an increase in α with a decrease in β ? The next proposition answer this question.

Proposition 2 *Let assume the function $\frac{G_\beta(\alpha, \beta)}{V_\beta(\alpha, \beta)}$ is non decreasing in α then*

$$\frac{d\beta}{d\alpha} > 0 \quad (7)$$

Proof. See Appendix 5.2. ■

The condition in Proposition 2 is a sufficient condition, but it is not necessary. In fact the result $\frac{d\beta}{d\alpha} > 0$ still hold in many cases when it is violated. In order to better understand the robustness of the α and β complementarity result it is useful to illustrate it with the help of an example. Let assume that $\beta \in [0, 1)$ is the share of the national wealth, $\mathcal{G}(\alpha)$, that the autocrat diverts and keeps for himself with $\mathcal{G}'(\alpha) > 0$ and $\mathcal{G}''(\alpha) \leq 0$. His gross utility function is $G(\alpha, \beta) = \beta\mathcal{G}(\alpha)$. Moreover, let us assume that the gross disutility of the clerical class is $V(\alpha, \beta) = \frac{\mathcal{V}(\alpha)}{1-\beta}$ with $\mathcal{V}'(\alpha) > 0$ and $\mathcal{V}''(\alpha) > 0$. When the autocrat extracts a very large fraction of the national wealth, it is thus very costly for the clerics to endorse his policies. With such an example we are able to find necessary and sufficient condition for β and α to vary in the same way. We show in the appendix 5.2 that

$$\frac{d\beta}{d\alpha} > 0 \quad \Leftrightarrow \quad \frac{\mathcal{G}'(\alpha)}{\mathcal{G}(\alpha)} - \frac{\mathcal{G}''(\alpha)}{\mathcal{G}'(\alpha)} > \frac{\mathcal{V}'(\alpha)}{\mathcal{V}(\alpha)} - \frac{\mathcal{V}''(\alpha)}{\mathcal{V}'(\alpha)} \quad (8)$$

Since $\mathcal{G}(\alpha)$ is concave, the LHS in equation (8) is always positive. By contrast, the sign of the RHS in (8) is negative if $\mathcal{V}(\alpha)$ is log-convex. We can deduce that, when $\mathcal{V}(\alpha)$ is log-convex, it is the case that $\frac{d\beta}{d\alpha} > 0$. More generally, this is always true as long as $\frac{G_\beta(\alpha, \beta)}{V_\beta(\alpha, \beta)} = \frac{\mathcal{G}(\alpha)(1-\beta)^2}{\mathcal{V}(\alpha)}$ is increasing in α , which is equivalent to $\frac{\mathcal{G}'(\alpha)}{\mathcal{G}(\alpha)} \geq \frac{\mathcal{V}'(\alpha)}{\mathcal{V}(\alpha)}$.

When $\mathcal{V}(\alpha)$ is log-concave and the condition $\frac{\mathcal{G}'(\alpha)}{\mathcal{G}(\alpha)} \geq \frac{\mathcal{V}'(\alpha)}{\mathcal{V}(\alpha)}$ is violated, there are instances in which β is non-increasing with α . We illustrate this result with the help of power functions, which are log-concave. Let $\mathcal{V}(\alpha) = W\frac{\alpha^v}{v}$, and $\mathcal{G}(\alpha) = K\frac{\alpha^g}{g}$ with $W > 0$, $K > 0$ and $v > 1 > g > 0$. It is easy to check that (8) holds with equality, so that $\frac{d\beta}{d\alpha} = 0$. The autocrat's optimal extraction rate is (see Appendix 5.3):

$$\beta^* = \frac{v}{v+g}. \quad (9)$$

It is therefore independent of the level of reform (i.e., β^* is independent of

α). This example shows that at the optimum of the autocrat's objective function, α and β are not always strict complements.

Proposition 2 nonetheless implies that under a large range of parameters, we have that $\frac{d\beta}{d\alpha} > 0$. When the autocrat chooses to carry out more reforms, he generally also chooses to extract more rents. If for some exogenous reason it is suddenly more profitable to implement reforms, the autocrat simultaneously increases the level of reforms and his extraction rate of the ensuing benefits. When there are more resources because of the reforms, he seizes this opportunity to extract more rents as well. Symmetrically, if for some exogenous reasons it becomes harder to push reforms and extract rents (for instance because all the θ s are translated upward), he optimally decreases the level of reforms and the rate of his embezzlement.

This result is probably less innocuous than it may appear at first sight. It actually provides an analytical elucidation of the main motivations behind political opposition in many Muslim countries. As a matter of fact, the grievances put forward by the rebels typically mix up corruption and betrayal of the Islamic institutional legacy that legal and economic reforms allegedly represent. This is amply attested, for example, by the dominant themes of the anti-regime propaganda of the Muslim Brothers in Egypt and other countries. The unfortunate outcome is that the association between corruption and "modernization" contributes to discredit reforms conducive to economic growth in the autocracies of the Muslim world.

We can now address more explicitly the problem of equilibrium selection. Since the analysis conducted in this section is quite general, it is indeed not clear which solution, corner or interior, will dominate in practice. We prove below that both solutions can be optimal depending on the cost and benefit of the decisions made by the autocrat, and on the distribution of the clerical body between the two types. To make this point, it is sufficient to consider an example.

Proposition 3 *Assume that $G(\alpha, \beta) = \beta K \frac{\alpha^g}{g}$, and $V(\alpha, \beta) = \frac{W}{1-\beta} \frac{\alpha^v}{v}$, with $K, W > 0$ and $v > 1 > g > 0$. The autocrat chooses the interior equilibrium*

$p^d = \mu$ over the corner solution $p^d = 1$ if and only if

$$\mu^{\frac{v}{g}} > \frac{\theta}{\bar{\theta}}. \quad (10)$$

Proof. See Appendix 5.3. ■

By virtue of Assumption 2, we know that $\mu > \frac{\theta}{\bar{\theta}}$. We deduce that if v is sufficiently close to g , then condition (10) holds. By contrast, since $\mu < 1$, $\mu^{\frac{v}{g}}$ becomes very small when either v becomes very large or g very low so that condition (10) does not hold anymore. On the one hand, when v is much larger than g , the autocrat prefers stability to progressive reforms and to larger bribes (he picks the corner equilibrium). On the other hand, when the difference between v and g is small, he prefers to opt for reforms, which allow him to grab more bribes, over stability (he picks the interior equilibrium). This implies that an increase in the return on reforms, caused, say, by an increase in g resulting from technological progress, will tend to lead to more political instability. Symmetrically, a very low return on reforms will lead to political inertia. In particular if there is a source of rent, such as natural resources, which is independent of the level of reforms (i.e., if $\mathcal{G}(\alpha)$ is not very sensitive to change in α), α can be very low and the level of corruption quite high. For instance, in the example of Proposition 3, if g is sufficiently small, condition (10) does not hold and the autocrat picks the corner solution. When the reforms do not increase his rents, reforming is not useful for the autocrat since it involves costs (the clerics must be compensated for the disutility of reforms for them) and no benefit. He then prefers to adopt very conservative policies and enroll the whole clerical body rather than pushing for modernization. While choosing a level of reforms close to 0, the autocrat can still embezzle a fair share of the national rent.

There is a last and important issue that needs to be dealt with in the context of our discussion of the case of decentralized religion: how does a radicalization of the clerical body affect the regime's stability. As it turns out, the answer depends on the form taken by religious radicalization. Radicalization of the clerics in the form of an increase in v (i.e., an increase in the marginal cost of the reforms for them) or of a decrease in μ , (i.e., a

decrease in the proportion of moderate clerics), will tend to lead to more political stability and cause a sharp decrease in reforms: the autocrat adopts conservative policies in order to preserve stability. This result means that the autocrat never chooses to make up for a higher cost or a smaller benefit of reforms by raising the material privileges of the clerics to such an extent that more reforms are adopted. In fact, he may even choose to reduce these privileges at the new equilibrium. Radicalization of the clerics may take on a third form, however: the radical clerics may become even more radical, implying that their degree of aversion to what they consider bad practices or policies increases and the gap between the preferences of the two types of clerics is enlarged. When this happens, the ruler reacts by adopting more rather than less reforms and by increasing rather than decreasing corruption. As a result, political stability is reduced. The underlying mechanism is as follows: if the radical clerics become more radical, it is more costly to purchase their support. The autocrat will then choose to concentrate his efforts on the enlisting of the more moderate clerics, which enables him to carry on with more reforms.

It is worth noticing that the transition between the stable and the unstable equilibria is never smooth: at the threshold, a marginal increase in g or in $\bar{\theta}$ causes a jump from the full support equilibrium to the interior equilibrium, and symmetrically for a marginal variation in v or μ (i.e., a jump from an unstable to a stable equilibrium).

We now turn to the study of a centralized religion.

2.2 Centralized religion

In the centralized religion, a vertical chain of command prevails. The clerics belong to a "church" and have to be obedient to its hierarchy. We denote the cleric who is at the head of the church by $\theta^c \in \{\underline{\theta}, \bar{\theta}\}$. He is the one to decide whether the church supports the autocrat or not. If the head of the church chooses to support the autocrat, he will have to compensate its clerical members who dislike the reforms and the corruption of the ruling elite. He has to ensure that in equilibrium they all get a positive utility. Individualized compensations are possible because the authority structure

is well-informed about the preferences of each and every church member. In a vertical religious organization, which stresses the importance of obedience and rely on confession, members cannot easily conceal their aspirations and frustrations. A transfer scheme ensuring that the church's members behave in a consistent way and fully support the autocrat, if this is the decision made by the hierarchy, may therefore be designed and implemented. In other words, the centralized structure helps the members of the clerical body to overcome their collective action problem.

What the above implies is that, with a centralized church, the autocrat will have to give away in rents a minimum of $E\theta V(\alpha, \beta)$. This minimum ensures that all church members can be compensated for the disutility of the reforms undertaken and the embezzlement committed by the ruling clique. Yet, it does not guarantee that the head of the church will be willing to himself support the autocrat. They both bargain over the rents generated by the reforms and the bribes, and they are both selfish. We focus on the Nash bargaining solution.⁶ The bargaining power of the church's leader, denoted by $c \in [0, 1]$, is assumed to be exogenously given. The power of the autocrat is $1 - c \in [0, 1]$. In case of disagreement, the autocrat and the church's head get their status quo utility: their disagreement point is zero. The problem to be solved is, therefore, the following:

$$\begin{aligned} \max_{w, \alpha, \beta} & \left(G(\alpha, \beta) - w \right)^{1-c} \left(w - \theta^c V(\alpha, \beta) \right)^c & (11) \\ \text{s.t.} & \quad w \geq E\theta V(\alpha, \beta) \end{aligned}$$

Solving this problem, we are able to establish the following result.

Proposition 4 *Let $\theta^c \in \{\underline{\theta}, \bar{\theta}\}$ be the head of the organization representing the centralized religion. The level of reforms, α^c , implemented by the autocrat, his level of corruption, β^c , and the monetary transfers, w^c , received by the religious organisation are characterized by the following conditions.*

$$(i) \quad \frac{G_\alpha(\alpha, \beta)}{V_\alpha(\alpha, \beta)} = \frac{G_\beta(\alpha, \beta)}{V_\beta(\alpha, \beta)}$$

⁶The bargaining model presented by Nash (1950) can be formulated as a Nash Bargaining Product (see Binmore et al. 1986).

- (ii) $\frac{G_\alpha(\alpha, \beta)}{V_\alpha(\alpha, \beta)} = \theta^c$ and $w^c = (1 - c)\theta^c V(\alpha^c, \beta^c) + cG(\alpha^c, \beta^c)$ if $E\theta < c\frac{G(\alpha^c, \beta^c)}{V(\alpha^c, \beta^c)} + (1 - c)\frac{G_\alpha(\alpha^c, \beta^c)}{V_\alpha(\alpha^c, \beta^c)}$
- (iii) $c\frac{G(\alpha, \beta)}{V(\alpha, \beta)} + (1 - c)\frac{G_\alpha(\alpha, \beta)}{V_\alpha(\alpha, \beta)} = E\theta$ and $w^c = E\theta V(\alpha^c, \beta^c)$ otherwise.

Proof. See Appendix 5.4. ■

Condition (i) in Proposition 4 is the same as equation (6) in Proposition 1. It simply states that an efficient allocation of the autocrat's effort between reform and corruption must equalize his marginal rate of substitution between the two with the marginal rate of substitution of the (gross) clerics' disutility. This condition is an efficiency condition, and it must therefore be valid whatever the type of policy implemented, or the way it is decided.⁷ Proposition 1 thus remains true under conditions of religious centralization. Proposition 2 is therefore also true in the centralized case. Under autocratic systems legitimized by religion the level of reforms and of embezzlements are in most cases complement: modernization and regime corruption tend to be intimately intertwined.

Case (ii) in Proposition 4 holds when θ^c is relatively large, that is, when the head of the church tends to be hostile to the autocrat. For instance, it always holds when $\theta^c = \bar{\theta}$.⁸ When θ^c is large, the autocrat has to abandon large rents to the church in order to win the support of its leader. The monetary transfer is so large that the individual rationality constraint of the members of the church is easily met: the constraint $w^c \geq E\theta V(\alpha^c, \beta^c)$ is not binding.

Case (iii) can hold only when $\theta^c = \underline{\theta}$. To see this point, consider the limit case where the church head has almost no bargaining power (i.e., c is close to 0). For Case (ii) to hold, the condition becomes $E\theta < \theta^c$. It implies that with the binomial distribution and c close to zero, Case (ii) holds if and only if $\theta^c = \bar{\theta}$. Case (iii) holds otherwise, that is, if $\theta^c = \underline{\theta}$.

⁷This result continues to hold when the autocrat efficiently bargains over reforms and bribes with the head of the church. If it does not hold, indeed, it is possible by changing α and β to either increase the utility of the autocrat without increasing the disutility of the church leader, or to decrease the disutility of the church leader without decreasing the utility of the autocrat, a contradiction.

⁸The proof is straightforward: bearing in mind that $\frac{G(\alpha, \beta)}{V(\alpha, \beta)} > \max\{\theta^c, E\theta\}$, we have that $c\frac{G(\alpha, \beta)}{V(\alpha, \beta)} + (1 - c)\frac{G_\alpha(\alpha, \beta)}{V_\alpha(\alpha, \beta)} = c\frac{G(\alpha, \beta)}{V(\alpha, \beta)} + (1 - c)\theta^c > \theta^c$.

The problem of the autocrat is thus to transfer enough resources to the church to be able to buy the support of the average clerical member: the individual rationality constraint of the clerical body is binding.

We just have shown that, for Case (iii) to hold, it is necessary that $\theta^c = \underline{\theta}$. We now show that this condition is not sufficient. To prove this result, we consider again the example of $G(\alpha, \beta) = \beta K \frac{\alpha^g}{g}$, and $V(\alpha, \beta) = W \frac{\alpha^v}{v(1-\beta)}$, with $v > 1 > g > 0$ and $K, W > 0$. Since Case (i) in Proposition 4 is the same as equation (6) in Proposition 1, we have $\beta^c = \frac{v}{v+g}$ independently of α^c (see the proof in Appendix 5.3). Moreover, we can check that

$$(ii) \quad \alpha^c = \left(\frac{K}{W} \frac{gv}{(v+g)^2} \frac{1}{\theta^c} \right)^{\frac{1}{v-g}} \quad \text{if} \quad E\theta < \left(1 + c \frac{v-g}{g} \right) \theta^c$$

$$(iii) \quad \alpha^c = \left(\frac{K}{W} \frac{gv}{(v+g)^2} \frac{1 + c \frac{v-g}{g}}{E\theta} \right)^{\frac{1}{v-g}} \quad \text{otherwise}$$

Let us assume that $\theta^c = \underline{\theta}$. Case (ii) is optimal if $E\theta < \left(1 + c \frac{v-g}{g} \right) \underline{\theta}$, which is equivalent to $\bar{\theta} < \left(1 + \frac{c}{1-\mu} \frac{v-g}{g} \right) \underline{\theta}$. There is hence a whole range of parameter values so that Case (ii) still holds when $\theta^c = \underline{\theta}$.

It is straightforward to check that the amounts of reforms and corruption decrease with θ^c in Case (ii) and with $E\theta$ in Case (iii). In these circumstances, the autocrat would like to control the nomination process of the head of the church. Case (ii) corresponds to the medieval struggle between secular and Christian religious authorities in Europe. Tensions were then continuous between Rome and the Christian kings. On the other hand, the situation of proximity between the autocrat and the church, which was a phenomenon of early modern Europe rather than of the Middle Ages, is well captured by Case (iii). Finally, to move from Case (ii) to Case (iii), the autocrat is willing to pay up to the difference in its rents.

With national churches, the autocrat's decisions tend to be driven by the *average* cleric. By contrast, in the case of a decentralized religion, they are driven by the *marginal* cleric. As we show in the next subsection, this difference matters a great deal.

2.3 Comparison of centralized vs decentralized religions: reforms, corruption and stability

In this section, we would like to compare how the optimal mix of reforms and bribes chosen by the autocrat to maximise his utility differs depending on whether the religion is centralized or decentralized. In particular, is one structure more conducive to secular reforms (and therefore generally more corruption) than the other? The next, related issue is which structure leads to more political stability. In order to conduct our comparisons of equilibria, we start from a situation where the only difference between the two autocracies is the structure of their religion. In other words, the cost and benefit of reforms and embezzlement of national wealth as well as the distribution of the clerical body between the two types are the same in the two economies.

Let us first compare the stability of the two regimes. With a centralized religion, the autocrat negotiates directly with the head of the church. He needs to transfer enough resources not only to seduce him personally but also to compensate the church's members for their dislike of his reforms and corruption. In exchange of these rents, he gets the support of the hierarchy and the full clerical body as well. In equilibrium, therefore, the system is fairly stable. By contrast, under a decentralized religion, the autocrat has to gain the support of each cleric individually. Since it is costly to enroll the whole clerical body (i.e., the transfer must be large enough to seduce the most radical type), the autocrat may choose to co-opt only a fraction of them, μ in our setup. Let p^d denote the probability that the autocrat stays in power under a decentralized religion. We deduce that *everything else being equal, centralized religions lead to more stability than decentralized religions: $p^d \leq 1$* .⁹ It is indeed more easy for an autocrat to enrol an entire clerical body when its members obey to a centralized church authority than when they are allowed to behave in relative independence and in the absence of a collective discipline. To the extent that the clerics can transform themselves into effective leaders of popular rebellions if frus-

⁹See Proposition 5 in Auriol and Platteau (2016) for a generalization of this result to the continuous case.

trations against the regime run too high, political instability is more likely to be observed in countries dominated by a decentralized religion than in those where a centralized religious structure is in place. This prediction is borne out by Blaydes and Chaney (2013) who have compared the degree of political instability in the Western Christian and the Muslim worlds from 800 to 1600. They find that on average political rulers in Christianity had significantly longer tenure than rulers in Islam, and the duration gap is widening as time elapses. Moreover, duration for Catholic kings was the longest when they started to create national churches and move towards absolutism.

We next aim to compare the amounts of reforms and corruption in periods of political stability. Toward that purpose, we compare the values of α and β chosen by the autocrat under a decentralized religion when he opts for political stability with the values obtained under a centralized religion. As analyzed in Proposition 3 in Section 2.1, the autocrat may chooses $p^d = 1$ under a decentralized religion.

Proposition 5 *Let $G(\alpha, \beta) = \beta\mathcal{G}(\alpha)$ and $V(\alpha, \beta) = \frac{\mathcal{V}(\alpha)}{1-\beta}$ with $\beta \in [0, 1)$. Let condition (8) holds and let $\frac{\mathcal{V}(\alpha)}{\mathcal{V}(\alpha)} \geq \frac{\mathcal{G}'(\alpha)}{\mathcal{G}(\alpha)}$. In conditions of political stability, the level of reformist effort and the amount of corruption under a decentralized religion, α^d and β^d , are always smaller than the amounts obtained under a centralized one, α^c and β^c .*

$$p^d = 1 \Leftrightarrow \alpha^d \leq \alpha^c \quad \text{and} \quad \beta^d \leq \beta^c \quad (12)$$

Proof. See Appendix 5.5 ■

Decentralized religions are less conducive to reforms and corruption than centralized ones in conditions of political stability, that is, when all the clerics are bought off by the autocrat under both types of religious organization. This result seems intuitive when the religious authority is close to the autocrat. More surprisingly, however, it is also true when the clerical authority is antagonistic to the ruler. As a matter of fact, buying stability in the presence of a decentralized clerical body is comparatively costly because he must seduce the most radical cleric. Under a centralized religion,

by contrast, he must only convince the head of the church and transfer enough resources to buy the average cleric. Since the compensation unambiguously increases with the amounts of reforms and corruption, stability comes with reform inertia (a bad outcome) and moderation of embezzlement (a good outcome) when the religion is decentralized. The structural heterogeneity of the clerical body is clearly what drives the autocrat to better take account of the clerics' preferences.

If we relax the assumption of political stability, is it still true that a decentralized religion mitigates secular reforms and corruption? The answer is not necessarily: there are equilibria where, everything else being equal except the type of religious organization, the decentralized religion yields larger amounts of reforms and corruption but at the cost of greater instability. To prove this result, it is sufficient to find an example where it is indeed the case.

Let $G(\alpha, \beta) = \beta K \frac{\alpha^g}{g}$, and $V(\alpha, \beta) = W \frac{\alpha^v}{v(1-\beta)}$, with $v \geq 1 > g > 0$ and $K, W > 0$. Let v and g be such that in the decentralized case the autocrat prefers the interior equilibrium to the corner one (i.e., 10 does not hold). We deduce that $\alpha^d = \left(\frac{\mu}{\bar{\theta}} \frac{K}{W} \frac{gv}{(v+g)^2} \right)^{\frac{1}{v-g}}$ (see equation 32 in the appendix). Let $\theta^c = \bar{\theta}$ so that Condition (ii) in Proposition 4 holds. We deduce that $\alpha^c = \left(\frac{K}{W} \frac{gv}{(v+g)^2} \frac{1}{\bar{\theta}} \right)^{\frac{1}{v-g}}$. Comparing α^d and α^c , it is straightforward to check that $\alpha^d > \alpha^c \Leftrightarrow \mu > \frac{\bar{\theta}}{\theta}$, which is always true by Assumption (2). There is therefore a whole range of parameter values such that the autocrat dealing with a decentralized religious organization carries out more progressive reforms and indulges in more absolute embezzlement than the same autocrat dealing with a centralized church. To achieve these relatively large amounts of reforms and bribes, he disregards a fraction of the clerics. This is not an option with a centralized organization, which is inclusive by nature. If the church is dominated by clerics who are deeply attached to religious principles (the radical clerics), the reform path will be slow and embezzlement limited.

3 Illustrative Examples: lessons from Islam

We are now ready to embark upon a journey throughout the modern Muslim world. The following discussion of country and regime case studies does not pretend to offer a rigorous testing of the above theory. More modestly, it serves the purpose of illustrating its most important propositions and showing that it can be used as a powerful analytical narrative to throw light on political and societal processes in which autocrats and religious clerics occupy center stage. We start by discussing the main assumptions of our paper: religious clerics can be brought into submission by means of material privileges, and some religions, such as Islam, are decentralized while others, such as Catholicism or Eastern Orthodox Christianity, possess a centralized organization.

3.1 Corruptible religious leaders?

The idea that the men of religion can be bought off by the men of power may appear odd or even shocking. There is nonetheless ample evidence attesting that clerics may be quite responsive to material incentives. This has been expressed in the starkest and most cynical manner by Adolf Hitler when he made his case for a concordat with the Catholic church (the Reichskonkordat signed in September 1933) in the hope of gaining legitimacy from the Vatican and the German episcopate for his totalitarian national-socialist regime. In his own words: "We should trap the priests by their notorious greed and self-indulgence. We shall thus be able to settle everything with them in perfect peace and harmony... Why should we quarrel? They will swallow anything in order to keep their material advantages..." (cited from Lewy, 1964: 26). The centralized organization of the Catholic church has played a key role in this instance. As a matter of fact, German Catholic bishops were generally opposed to the Reich yet the Vatican persuaded them to manifest their allegiance to the Nazi regime as a way to keep their educational and social institutions running (Falconi, 1967; Lapidé, 1967).¹⁰

¹⁰It soon became apparent, however, that Hitler preferred intimidation and violence to co-option as a tactic to tame opposition. When such conditions obtain, our analytical

Situations in which the clergy surrenders to autocrats are easily found in other parts of the Christian world, including in countries where Eastern Orthodoxy is dominant. Just to cite one example, the Russian Orthodox church has collaborated with the tsarist regime to such an extent that it ended up being largely discredited in the eyes of the population. Sergey Witte, the first prime minister following the Constitutional Manifesto of 1905 and a remarkable actor and observer of his times, thus wrote: “Our church has turned into a dead, bureaucratic institution, and its services are conducted to celebrate not God in heaven but the earthly gods” (cited from Obolonsky, 2003: 137). Alexander Obolonsky agrees with this judgement and stresses that the church hierarchy showed almost complete indifference toward the lot of common people, being “satisfied with an ostentatious display of piety” (137).

In Islam, there is abundant evidence that, like Catholic priests and bishops, the clerics can be bought off with the help of material and non-material incentives. Here, we are content with citing one of the best historians of Islam who, referring to the Ottoman Empire, writes:

The biographies of scholars show that, with the elaboration of a bureaucratic hierarchy, interest in careers outweighed genuine piety and learning. The influence of entrenched families enabled them to promote their children into the higher grades of the educational and judicial hierarchies without having reached the proper preliminary levels, while theological students who could not find patronage were excluded. In the course of the eighteenth century the ulama became a powerful, politically conservative pressure group. As servants of the state the ulama no longer represented the interests of the people, nor protected them from the abuses of political power. No longer did they represent a transcendental Islamic ideal opposed to worldly corruption. Their integration into the Ottoman empire made them simply the spokesmen of Ottoman legitimacy (Lapidus, 2002: 268).

apparatus is of limited relevance.

Adeel Malik confirms this observation when he points out that the "cozy relationship" between the religious clerics (meaning not only the ulama but also the Sufi orders) and the sultan translated into significant economic and political privileges for the former (2012: 8). At the highest level, such privileges consisted of offices involving lucrative functions which included revenue generation and the administration of religious endowments that controlled vast tracts of land. Because the associated incomes were exempt from taxes, religious appointments were highly coveted, and religious families possessing long-standing honourable ancestries competed for the offices as well as for titles and tax farms. When they succeeded, they became a core component of the Ottoman nobility and a linchpin of provincial administration (Hourani, 1991: 224-25; 1993; Coulson, 1964). It is therefore not surprising that it is only in exceptional circumstances that a great mass of religious clerics have been willing to antagonise the ruler. This attitude is deemed justified by the need to avoid civil disorder and the ensuing chaos. In Islam, there existed no constitutional machinery, and in particular no independent judiciary, to guarantee that the ruler would not abuse his powers. The doctrine actually recognised its total impotence by enunciating the principle that obedience was due to the political power whatever its nature, and that even the most impious and tyrannical regime was preferable to civil strife (Coulson, 1964: 129-30, 133-4).

3.2 Centralization in European Christianity, Decentralization in Islam: Historical roots

In Christianity, after the Western Roman Empire collapsed in 476, the new states of Western Europe were too weak to block corporate organizations, which included not only guilds and cities but also religious orders and the Catholic church (Kuran, 2017, section 3). From very early on, therefore, autonomous entities could develop with possibly diverging interests from the state. This said, depending on specific circumstances, their relative influence was more or less constrained by political power. While in Eastern Christianity, the state was able to act most assertively in a continuous manner, the history of state-church relations in the Western Christian world

did not follow a linear path. Yet, from the 17-18th centuries onwards, when modern European states were formed or consolidated, the relationships between political (absolutist) rulers and the church became more stable and less antagonistic. As a result of intensified cooperation, national religions became important vehicles of state legitimacy, as reflected in the famous principle 'cuius regio eius religio'. Consistent with the theory, absolutism was a period of intense reforms: ending of feudal partitioning, consolidation of power in the hands of the monarch, rise of the state along with its professional standing army and rationalized bureaucracy, and codification of state laws designed for uniform enforcement across the national territory.

The history of the relationship between religion and politics in European Christianity contrasts with the situation observed in the lands of Islam. This is because, since after the times of the Prophet, religion became unambiguously dominated by temporal rulers in these lands. There, unlike what was observed in Western Christianity, the state had both the motivation and capability to prevent the emergence and consolidation of autonomous organisations (Kuran, 2017, section 3). As a consequence, no Muslim church was established (Lewis, 2002; Greif, 2006: 206), and a long tradition of political autocracy has prevailed until today.

Because Islam is a decentralized religion without a church structure, it does not offer a clear-cut picture regarding the extent of religious support for a political regime. In the name of the fundamental principle that Muslim believers directly relate to God, they do not have to obey to a church hierarchy. The clerics cannot be brought to a centralized negotiation process with an autocrat. A wide variety of situations have been observed consistent with our theoretical predictions. The following case studies gleaned from Platteau (2009, 2011, and 2017: chap. 6), illustrate them. Political instability characterised Sadat's Egypt and Bhutto's Pakistan where radical clerics constituted a continuous threat to the regime. By contrast, Boumedienne's Algeria and Nimeiri's or Bashir's Sudan, achieved a fair measure of political stability thanks to the complete or near-complete allegiance of the religious clerics, and the presence of abundant gaz resources in Algeria.

3.3 Case study 1: Egypt under Sadat

Upon accession to power (1970), Anwar al-Sadat immediately sought legitimacy from the official institutions of Islam, and he never really departed from this attitude. If the official ulama from al-Azhar were under control and the ruling elite had nothing to fear from them, the same could not be said of the Muslim Brothers whose leaders had antagonised Nasser and been thrown into jail or forced to go underground. Sadat decided to release them gradually during the years 1971-75, with the official objective of driving them "to cooperate in the service of the country". In reality, he wanted to broaden his constituency and consolidate his power in the face of a rival faction that had privileged links to the "deep state" of Egypt (the army, the police, and the intelligence service). Moreover, he intended to use the Brothers against two political forces that continued to threaten his rule even after he succeeded in eliminating the above faction: the forces of the political left, consisting of Marxists, Socialists and Nasserites, who criticised his economic liberalisation policies, and those of the extreme religious right, the "Jama'at Islamiyya" (the Islamic Group) and the "Takfir wa-l Hijra" (Excommunication and Exodus) (Cook, 2012: 124-7).

Sadat allowed the Brotherhood to re-establish its press to proselytize openly and to organise freely on university campuses. He also named a lawyer with strong ties to the Brothers as the new head of the Socialist Youth Organisation of the Arab Socialist Union (ASU), and a prominent Islamist as director of the Professional Associations Syndicate. All these measures had a profound influence on Egyptian politics, and the Brotherhood gradually took control of the prestigious engineers, doctors, lawyers, scientists, and pharmacists professional associations (Cook, 2012: 123, 125). The so-called neo-Muslim Brothers, whose opinions were voiced in al-Da'wa, were in complete accord with the official ideology of Sadat when they fought against communism, equalled to atheism. Their demand for the gradual Islamisation of the Egyptian state was never neatly dismissed, and was sometimes apparently encouraged, by state authorities (Ramadan, 1993: 164-78; Kepel, 2005: 105-31).

In spite of his shrewd political manoeuvring, Sadat was playing with

fire because the people of Egypt expected him to end the country's humiliation at the hands of the Israelis. The success of the demonstrations initiated by students of all hues, including Islamists, Nasserists, and Leftists, made it clear that the opposition was far broader than the regime admitted and that it was difficult to disentangle demands for democratic reforms from demands for military redress (Cook, 2012: 129-30). To counter these threats, the authorities did not hesitate to encourage religious militant movements and even support them, organisationally and financially (Ayubi, 1991: 74-5). The movement called Islamic Community started to organize government-sponsored summer camps. These camps were held with increasing frequency during the post-1973 years and in 1974, Sadat managed to organise the takeover of the Egyptian Student Union by the Islamic Community. He also issued a decree providing that the Union's chief purpose was "to deepen religious values among the students" (Dreyfuss, 2005: 154).

Two main policies followed by Sadat were to eventually seal his fate, despite the temporary rise of his popularity as a result of the successful crossing of the Suez Canal by Egyptian troops in the opening phase of the 1973 war against Israel. First, his policy of economic opening and liberalisation, known as the "infitah" (opening), widened the gap between the masses and an emerging class of new wealthy businessmen tightly connected to the regime. When subsidies on basic necessities were reduced at the behest of the International Monetary Fund, causing suffering among the lower and lower middle classes, the response from the latter was swift and took Sadat off guard. What came to be known as the "bread riots" forced him to backtrack. The deteriorating economic situation, rising inequality, and the unabashed corruption of the regime brought added fuel to the people's and militants' grievances. In the food riots of January 1977, bearded youths set fire to nightclubs and cabarets, considering that the belly-dancing and other sinful activities around these places were a serious affront to Islam, especially during the holy month of Ramadan (Ayubi, 1991, p. 75). The religious symbolism and idiom of the Islamist movements increasingly became "the language through which the petite bourgeoisie and lower classes

expressed not only their resentment of corruption, decadence and inequality, but also their hostility towards the very state machine that embodied these evils” (Gilsenan, 1982: 225-6, as cited by Ayubi, 1991: 80).

Second, in the aftermath of the 1973 war, Sadat chose to strike peace with Israel through the privileged mediation of the United States. The warming of relations between Egypt and the United States went hand in hand with the development of a close personal relationship between Sadat and Henry Kissinger, then the American Secretary of State. These daring moves were bitterly resented by many Egyptians, especially so because they coincided with a Westernisation of the society for the benefit of a narrow elite generally linked to the clique in power. Particularly vocal was the opposition by the Islamists and the Nasserists (Cook, 2012, pp. 135-43). In contrast to the enduring alliance between official Islam and the autocratic regime of Sadat, the climate of cooperation with the Brotherhood sharply deteriorated after the negotiation of the peace treaty with Israel.¹¹ The neo-Muslim Brothers openly challenged the regime, calling for an abrogation of the treaty, a return to military options regarding Israel, and non-alignment (Cook, 2012: 151-2). As for more radical Islamist groups, such as the Jama’at, they went much further by denouncing the Islamic illegitimacy of the ”iniquitous prince”: making peace with Israel is ”munkar”, meaning absolute evil or abomination, and its prosecution is the first commandment of Islam (Kepel, 2005: 163).

In an attempt to pacify the Islamists, Sadat amended Article 2 of the constitution, now proclaiming that ”Islam is the religion of the state and Arabic its official language”, and that ”principles of Islamic law are the principal source of legislation”. He also introduced the ominous ”Law of Shame” aimed at criminalising all forms of opposition to the government: almost any act of dissidence became interpretable as violation of public,

¹¹After Sadat accepted to go to Jerusalem and to sign a peace treaty with Israel in March 1979, the opposition to his rule became more bold, open and broad-based than it had ever been, including on the benches of the People’s Assembly. However, the ulama belonging to the official establishment came to Sadat’s rescue when the sheikh of al-Azhar issued a fatwa in May 1979, called the ”Islamic Opinion” and the ”Religious Legal Verdict”, to provide religious sanctioning of the peace treaty and the Camp David Agreement (Ramadan, 1993: 169; Kepel, 2005: 51, 116; Marsot, 2007: 163-5). It cancelled a previous al-Azhar’s fatwa that forbade peace with Israel (1962).

religious, and national morals, and therefore as a criminal offence (Cook, 2012: 153). At the same time, Sadat adopted the public posture of a pious leader (Ayubi, 1991: 75), which only had the effect of causing sarcastic comments about the hypocritical attitude of a "Believer-President" who ruled over a deeply corrupt regime but perfunctorily acted as a good Muslim. When, under the impulse of the Brotherhood, a coalition of Islamic groups came together to seek Sadat's overthrow, it was clear that the regime had nurtured "the snake that would later strike it" (Kepel, 2005: 138). Sadat was eventually assassinated by an extremist from the "al-Jihad" (Sacred Combat) group, of which many members previously belonged to the Jama'at (Ibrahim, 1995: 53-68; Kepel, 2005: 16, 51-9, 105-68; Marsot, 2007: chaps. 6-7; Cook, 2012: 147-56).

3.4 Case study 2: Pakistan under Bhutto

Zulfikar Ali Bhutto was initially a modern, left-oriented politician with social democratic ideas. This did not prevent him, however, from participating in the designing of the 1973 constitution, which declared Islam to be the state religion (Article 2), provided that all existing laws were to be brought into conformity with the injunctions of Islam (Article 227), and prescribed that the tenets of Islam and the Quran should be taught in schools (Article 31). In an attempt to defeat the political opposition (united under the so-called Pakistan National Alliance) which rebelled against its arrogant authoritarianism and called for the enforcement of the Islamic system of government, he declared gambling and horse racing illegal, banned the sale and use of alcohol, and declared Friday as the weekly holiday (Abbas, 2005: 84-5). Moreover, to destabilize the regime of Muhammad Daoud who seized power in Kabul through a state coup on 17 July 1973, Bhutto did not hesitate to use right-wing Islamic dissidents from Afghanistan (Roy, 1993: 495; Abbas, 2005: 81). In the conflict of Kashmir, too, Bhutto adopted a pro-Muslim populist stance: his strong anti-India case -Kashmir should either be attached to Pakistan or be an independent state- was made in the name of Islam. In all these cases, we should bear in mind that Bhutto was under the powerful pressure of the army which never digested his taking over of

political power after his predecessor, General Yayha Khan, was overthrown in the aftermath of the disastrous civil war which led to the independence of Eastern Bengal (Bangladesh) (Platteau, 2017: chap. 6). Moreover, the proximity of the army to the religious right exacerbated the threat that the latter raised for Bhutto, forcing him to increase his co-option effort.

Bhutto's proclivity to appeal to Islam and advocate the Islamization of the country out of political expediency became increasingly apparent over the years of his rule. He thus surrendered to the demands of a radical Islamist movement, the "Jamaat-i-Islami" (founded by Mawdudi), to exclude the Ahmadi sect from the Muslim community (Abbas, 2005: 81-2). He took over the religious parties' agenda, encouraged the expression of sectarian opinion, and tilted toward an obscurantist interpretation of Islam, partly for reasons connected to his economic and national security agendas (Haqqani, 2005: 107-9). Thus, on the occasion of the Arab oil embargo (1973), Bhutto wanted Pakistan to benefit from the flow of petrodollars, and this required that the country's Islamic identity be emphasised. The Islamic summit conference was hosted in Lahore, enabling Pakistan to take the lead in creating permanent structures for the Organisation of Islamic Conference (OIC).

Perhaps the greatest flaw of Bhutto's rule was his decision to place General Zia ul-Haq at the top of the army, over the heads of half a dozen senior and more deserving generals. An obsequious but ambitious man, Zia was also a devout Muslim closely connected to several Islamists by virtue of his social and family origins. Not only did he bear responsibility for the arrest and execution of Bhutto (in 1978) after proclaiming martial law in cahoots with the head of the secret services (General Ghulam Jilani Khan) but he did more than any other Pakistani ruler to destroy the secular character of the country and to Islamize the bureaucracy, the army, and the education system. Because he favoured the growing influence of a reactionary strand of Islam, the Deoband school (close to Wahhabism), he was responsible for a dramatic subversion of Pakistani institutions.

The central lesson of Bhutto's rule is therefore that, in order to remain in power and withstand the hostile pressures of the military, he made

concessions to men of religion that contradicted his initially proclaimed ideals. These concessions, however, were not sufficient to compensate for the inequitable economic policies that he enacted and for the rent-seeking, corruption and state-organized racketeering that he tolerated. Since the radical clerics resented these practices as deeply unfair, they were or became too costly to buy off. Cooperating with them in any sustainable manner was impossible, especially so because Bhutto continued to be regarded as an ambiguous leader travelling between religious and secular values. Partial religious co-option therefore prevailed with the attendant effect of political instability.

3.5 Case study 3: Sudan under Nimeiri and Bashir

A new constitution established Sudan as a secular state in 1973, implying that in civil and criminal matters civilians' behaviour was governed by a secular law, while personal and family matters were covered by sharia law for Muslims and customary law for tribal populations of the south. Like in the case of Egypt, the combination of state corruption and liberalisation policies that caused abrupt increases in the price of oil, bread and sugar prompted widespread riots by students and angry consumers, and it intensified political opposition (Jok, 2007: 72-73). Nimeiri reacted by getting closer to Islamic factions and by inviting into his government (in 1977) two prominent Islamic politicians, including Hassan al-Turabi, leader of the Muslim Brotherhood and founder of the National Islamic Front (NIF) whom he had previously imprisoned. Appointed attorney-general, Turabi exerted steady pressure for the Islamic reform of the legal system (Lapidus, 1988: 859; Jok, 2007: 74).

In 1982, at the risk of losing his secular support base, he began to dismantle the accord of Addis-Ababa (1972) which had ended the first north-south civil war triggered by the brutal Arabization and Islamization policies of Ibrahim Abbud (1958-1964). He actually wanted to please Islamist groups such as the NIF which regarded the south as a challenge to Islam. In September 1983, Nimeiri completely reversed his initial secular policy by declaring an "Islamic revolution" and transforming the Sudanese

state into an Islamic republic to be governed by Islamic law, with no exemption for non-Muslim regions. Sudanese law was to be immediately reformed according to the sharia, and the so-called September laws gave rise to highly publicised public executions, amputations of limbs for theft, and lashing for alcohol consumption (Jok, 2007: 74-6). Similarly to what Zia ul-Haq did in Pakistan, Nimeiri demanded an oath of unconditional allegiance from all members of the civil service and judiciary, thereby causing the departure of prominent secularists and the dominance of the civil service, the army and the financial sector by Islamists (de Waal, 1997: 88). Members of the NIF and Muslim Brotherhood were left free to gain influence within the civil service, intelligence, and institutions of government that deal with education and welfare.

More ominously still, Nimeiri let Turabi draft the Criminal Bill (presented to parliament in 1988) which included an ominous provision for outlawing apostasy sufficiently vague to allow its application to be politically determined (de Waal, 1997: 91; Meredith, 2005: 356-7). The execution of Mahmud Muhammad Taha, the founder of the Republican Brothers, on the charge of apostasy (1984), offers a perfect illustration of the cynical use that can be made of the Bill. The fact is that "opposition to an Islamic government can be, and has been, defined as an act of apostasy", and this was directed not only against secular Muslims and other political opponents (e.g., communists), but also against other Islamic sects (such as the Khatmiyya, Ansar and Ansar-Sunna) that were regarded as a threat to the ruling clique (Johnson, 2003: 129).

Brigadier (later General) Omer el Bashir, who seized power in 1989, immediately professed his goal of creating a theocratic rather than a democratic state, in the mist of the mounting influence of the party of the Muslim Brothers. In no time he re-created the apparatus of Nimeiri's police state in more extreme form, and he promulgated the Sudanese Penal Code of 1991, which included the aforementioned provision on the crime of apostasy. He also formed his own Islamic militia, the People's Defence Force (PDF), and its training was made compulsory for civil servants, teachers, students and higher-education candidates. All rights of free expression and

belief were outlawed, and public protests in objection to the government's policies were considered not only as a treasonable offence, but also as an insult to Islam (Johnson, 2003: 128; Meredith, 2005: 589; Jok, 2007: 162).

The Arabization and Islamization policies of the previous junta were actively pursued with dreadful consequences. People in the south were forced to renounce their faith and embrace Islam in order to be eligible for food aid (a major famine occurred in 1990-1), and their churches and schools were demolished under the pretext that they were built in violation of zoning regulations. In the Darfur, the government remained strangely passive when herders, both Muslim and Arab, armed themselves to force their way into the grazelands occupied by farmers, mostly Muslim but non-Arab. Politicization of Islam and Arabism were the reaction of the government of Khartoum to the bloodshed in Darfur (Jok, 2007: 89-90, 120-7) and, when the idea of a United Nations involvement was initially proposed, it was immediately rejected as a "conspiracy against the Arab and Islamic world" (Economist, 4-10 March 2006: 39).

During the whole period 1990-999, al-Turabi was a dominant force in Sudanese politics. He became the speaker of the national assembly and acted energetically to make Sudan a base for extremists from all over the Islamic world, including Osama bin-Laden (Jok, 2007: 136-7). A clash eventually erupted between al-Bashir and al-Turabi and the latter was dismissed. The fact remains that in Sudan "the bidding process forced religion to the centre of what had started as a conflict over the distribution of offices and economic resources" (Duffy Toft, 2007: 125). The result has been catastrophic, as manifested in lethal famines coexisting with the considerable wealth of people close to the regime and one of the longest and most brutal civil wars in the twentieth century.

The Sudanese example shows that autocrats may sometimes go a long way toward pleasing religious clerics by adopting regressive institutional reforms and policies. Pervasive favouritism and corruption of the ruling clique may be simultaneously observed, attesting that the levels of reforms and corruption may be, as suggested by the theory, disconnected rather than strictly complementary choices of the political authority. Specific

to Sudan is a context characterised by strong centrifugal tensions between regions and ethnic groups, which makes national unification a quite arduous task. The north-south conflict was especially nasty because it opposed a Muslim north to a Christian south. For radical clerics, nothing short of an Islamisation of the south was acceptable. Worse, the whole clerical body became radicalised as a result of the conflict with the consequence that Nimeiri and Bashir gave in to pressures exerted by the religious forces. The upshot has been stability of the political regime paid with a very dear price: southern secession, persisting conflicts in Darfur and other parts of the country, and a return to reactionary customs justified on religious grounds. The move, which in this instance meant a descent into the abyss, was rather brutal, illustrating the possibility of a discontinuous jump from a politico-religious equilibrium in which only a fraction of the clerics (the moderates) is co-opted to one in which even the most radical elements are enlisted in support of the ruler.

3.6 Case study 4: Algeria under Boumedienne

General Houari Boumedienne seized power from Ben Bella in June 1965, supported by left-wing groups in and outside the National Liberation Front (FLN) which won independence from French colonial power. Boumedienne also became the chief spokesman for a Muslim and Arab identity, and the discourse of reformist Islam infiltrated all political language. A bizarre alliance was sealed between the new socialist, anti-imperialist regime and the ulama represented by the Conseil Supérieur Islamique. The unpopular policies of Boumedienne, based on state control of the economy, but also his strong-arm tactics and the corrupt patrimonial practices which he and the clique around him systematically followed soon aroused a determined opposition led by intellectuals, students and trade unions. Represented, in particular, by the National Union of Algerian Workers (UGTA) and the National Union of Algerian Students (UNEA), these oppositional forces seriously challenged his hold on political power during the year 1968 (Laabas and Bouhouche, 2011).

To break the students' movement, Boumedienne mobilised Islamist stu-

dents of the El Hamel Brotherhood, inciting them to infiltrate the university of Alger and demonstrate their strength with impunity. In 1971, the UNEA was dissolved and transformed into the FLN's Student Youth wing after its leaders were arrested and exiled to the harsh prison of the south (Tamzali, 2007: 199-202). More generally, Boumedienne used Islam to counteract any oppositional movement and to lock up the entire civil society. He thus gave freer rein to the ulama and the more reactionary clerics among them. In particular, he granted them the right to lead the Arabisation of the country and to manage the education system (including the right to rewrite school textbooks). In a more ominous move, still, he encouraged the rise of the Islamic Salvation Front (FIS) whose more radical strand was headed by Ali Belhadj, a puritan cleric who called for the formation of an Islamic state, if necessary by violent means (Bouamama, 2000: chap. 3; Lapidus, 2002: 599-600). According to Bachir Hadjadj, a close observer of the Algerian scene and himself a victim of the regime: "Such decisions, populist and demagogical, bore the seal of an illegitimate regime which exploited the religious feelings and emotions of the people of Algeria. The idea was to persuade common citizens that their religion was under threat and that the new laws enacted by the state were intended to preserve it (Hadjadj, 2007: 436, our translation; see also Layachi, 1995: 180).

The more radical or ideologically conservative members of the religious establishment then started to assert their views more aggressively and to meddle openly in matters of social policy (such as dressing codes, amount of brideprices, etc.). Moreover, they exerted considerable effort to implement the Arabisation programme and, toward the late 1970s, all education levels were completely Arabised. It is thus with the full support of the regime that the religious dignitaries started to spread the message of a conservative Islam through the creation of a wide network of Islamist institutes directly governed by the Ministry of Religious Affairs. Radical views inspired by the writings of Taymiyya, Qutb and Mawdudi were widely diffused (Chachoua, 2001: 271-2).

Disastrous effects followed from the Arabisation policy. Like in Pakistan under Zia, under-qualified teachers coming from the Quranic schools

were suddenly promoted and many members of the intelligentsia left the country (Grandguillaume, 1983). In addition, by imposing Arabic as the only language taught in official schools, it caused considerable frustration among the newly educated people who quickly found that they could not effectively compete with the Francophone elites for access to the highest positions in the state system. A fertile ground for future recruitment by Muslim extremists was thereby created.

The growing expression of puritanical views was part and parcel of the above Islamic drift. In particular, the idea of a "renaissance" of the country based on the Islamic tradition and culture was explicitly taken over by the government (Chachoua, 2001: 271-2). The Minister of Information and Culture, Ahmed Taleb Ibrahimi, thus declared that "a cultural revolution implies a return to the sources", and that Islam represented the central value upon which to build the new Algerian society: "the other values owe their importance, their existence and their prestige only to their articulation with Islam or to the fact that they are inspired by or subordinated to Islam" (cited from Bouamama, 2000: 163). Such views gained the highest official recognition when the Islamic character of the Algerian state was embedded most explicitly into the National Charter considered as the ideological and political programme of revolutionary Algeria.¹² The emphasis on Islam as being the harbinger of social justice and equality shockingly contrasts with the actual display of wealth by the regime's clique which, like in Pakistan and Egypt, includes the high-level staff of the army.

To sum up, Boumedienne succeeded in buying the allegiance of the official ulama or the high-level clerics. In return, the clerics consistently paid allegiance to him by condoning his policies, rulings and practices. He went actually quite far in his concessions to radical clerics, such as when he

¹²"The Algerian people is an Arab and Muslim people. Islam is the religion of the state, and one of the fundamental components of the national Algerian personality... It is to Islam, the religion of militant endeavour, of rigour, justice and equality, that the Algerian people returned to in the darkest times of the Crusades and colonial domination, and it is from Islam that they drew the moral force and spiritual energy required to sustain hope and achieve eventual victory. Islam has shaped the Algerian society and made it a coherent force, attached to the same land, the same beliefs and the same Arab language that enabled Algeria to start again contributing to the works of civilisation" (cited from Bouamama, 2000: 161; authors' translation).

allowed them to Islamise the schooling system and to meddle in mundane matters like dressing code, alcohol drinking, etc. This strategy achieved its main purpose, to guarantee the stability of his autocratic regime, yet at the cost of a great measure of obscurantism and the elimination of all influences exerted by secular forces, the intelligentsia in particular. What needs to be added is that because the country possesses abundant gaz resources and its economy generates huge natural resource rents, the autocratic regime of Boumedienne had the ability to earmark high incomes for itself and simultaneously redistribute a good share of the national wealth towards the religious clerics, and what was left to the Algerian people. Moreover, the rents accruing to the ruling elite was not much affected by the lack of growth-promoting reforms, particularly in the field of education, which followed from the regime's strategic choice to meet the demands of radical members of the clergy.

4 Conclusion

Autocratic regimes require a legitimacy that cannot be awarded by popular voting. In countries where the masses are not only materially deprived but also poorly educated, religion appears as an alternative vector of legitimacy. A nationalist ideology can also unite a nation around an autocrat but it is more effectively combined with a religion that the state officially espouses and projects as a source of identity transcending local particularisms. This is because religious functionaries or figures tend to be highly respected by the population, which perceives them as possessing not only advanced knowledge but also supernatural powers.

In this paper, we argue that autocratic regimes prevailing in Muslim countries tend to be unstable because of the decentralized nature of Islam: only a fraction of religious clerics is generally successfully co-opted by the autocrat. As a result, the clerical body is divided along political lines: on the one hand, we find the official, high-level ulama who support the regime in exchange for substantial favours and, on the other hand, we have the non-official, self-appointed ulama or mullahs who have openly taken the

side of the oppressed masses. Since the clique in power uses religion to justify repression of political opposition, what has evolved is a nasty state of affairs in which religion-based condemnations replace logical arguments and the whole political debate is framed in the language of religion.

More inclusive co-option of the clerics and, hence, greater political stability can nonetheless be obtained if special circumstances prevail. One of these circumstances is an abundant supply of natural resources, which produces two effects favourable to inclusive co-option. First, the availability of considerable resource rents enables the autocrat to redistribute a significant share of the national wealth while appropriating high incomes (in absolute value) for the benefit of his inner circle. Second, since natural resources can be effectively exploited even in the absence of growth-conducive conditions in the wider economy, the autocrat can abstain from progressive reforms, and thereby placate the clerics, at minimal cost both for himself and for the population at large.

Saudi Arabia offers a perfect example of the above situation. From the time of its creation in 1932, the Saudi state has rested on a tight cooperation between the Saud family and the Wahhabite clerics. The latter would never have gained the influence that they wield today if the Sauds did not decide to make Wahhabism the national religion and the symbol of the national identity. It can however be argued that political stability and inclusive co-option in Saudi Arabia has caused political instability and polarising co-option in many other Muslim countries. The mechanism at work is worth elucidating as it should help us better understand why the case of partial co-option and political instability is dominant in the lands of Islam. The theory propounded in the present paper precisely highlights this mechanism.

To begin with, the immense wealth and the imperialist ambitions of the Saudi regime greatly contributed to the wide diffusion of the puritanical doctrine defended by the followers of al-Wahhab (1703-1792) throughout the Muslim world (Roy, 2004; Gerges, 2009; Platteau, 2017: chap. 7). Our model predicts different effects of a more intense diffusion of radical religious doctrines or ideologies depending on which type of clerics is affected.

Since Wahhabism is a puritanical and scripturalist doctrine (the sacred law enunciated by the Prophet matters more than anything else, and it should therefore be strictly followed), and since it does not hesitate to preach the use of violence to achieve its proselytizing end (the jihad), its propagation is mostly effective among radical clerics. Those are emboldened by the Wahhabist propaganda and become even more radical than they were before. The predicted response of the autocrats to this partial radicalisation of the clerical body consists of the adoption of policies and reforms that antagonise the emboldened radical clerics and therefore result in greater political instability. This argument sheds light on the fact that many Muslim autocracies gave up their attempts to collaborate with Islamist parties or movements, opting instead for an open confrontation with them.

The problem, as evident from our regime case studies, is that autocrats allied themselves with religious clerics whenever their policies were criticised and their power was disputed by the left-wing opposition. Rather than fending off criticisms against their iniquitous regime, they thus chose to stick to their unpopular policies and prebendary practices while intensifying their efforts to seduce the men of religion and the forces of the religious right. In a context where the secular left had been crushed while only a fraction of the clerics was co-opted and thereby brought under the regime's control, an explosive situation was created for the reason explained by Platteau (2017: chap. 10):

A bidding war between the regime and its allies in the high clergy and the masses led by members of the low clergy is thereby unleashed, which leads to a religious radicalization of the political debate. Every term of the debate becomes framed in the religious idiom, fatwas pronounced by religious officials are succeeded by counter-fatwas issued by lower or self-appointed clerics, anathema is substituted for reasoned controversies, and violent confrontation risks replacing peaceful discussion. Placing the political debate in religious territory becomes even more risky when the regime's dark forces embedded into the deep state give discreet support to violent movements of the reli-

gious right, as attested by the examples of Egypt, Pakistan, Algeria and Syria.

It is therefore distressing to realise that, in order to protect their personal interests and satisfy their lure for power, secular political leaders did not hesitate to betray their ideals by cynically appealing to Islam without due consideration for the obnoxious long-term effects of their strategy. Because it is decentralised, Islam can be highly divisive when it engages into politics. It is a combustible material that can easily degenerate into obscurantism, and the risk is especially high when the secular left has disappeared, or almost disappeared from the political stage.

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5 Appendix

5.1 Proof of Proposition 1

Lets first consider the corner solution $p = \mu < 1$. The autocrat solves:

$$\max_{\alpha, \beta} U^{a\mu}(\alpha, \beta) = \mu G(\alpha, \beta) - 2\theta V(\alpha, \beta). \quad (13)$$

Optimizing (13) with respect to α and β yields the first-order conditions:

$$\frac{\partial U^{a\mu}}{\partial \alpha} = \mu G_{\alpha}(\alpha, \beta) - 2\theta V_{\alpha}(\alpha, \beta) = 0 \quad (14)$$

$$\frac{\partial U^{a\mu}}{\partial \beta} = \mu G_{\beta}(\alpha, \beta) - 2\theta V_{\beta}(\alpha, \beta) = 0 \quad (15)$$

we deduce that at the optimum

$$\frac{G_{\alpha}(\alpha, \beta)}{V_{\alpha}(\alpha, \beta)} = \frac{G_{\beta}(\alpha, \beta)}{V_{\beta}(\alpha, \beta)} \quad (16)$$

Let us now look at the corner solution $p = 1$. The autocrat solves:

$$\max_{\alpha, \beta} U^{a1}(\alpha, \beta) = G(\alpha, \beta) - 2\bar{\theta}V(\alpha, \beta). \quad (17)$$

Optimizing (17) with respect to α and β yields the first-order conditions:

$$\frac{\partial U^{a1}}{\partial \alpha} = G_{\alpha}(\alpha, \beta) - 2\bar{\theta}V_{\alpha}(\alpha, \beta) = 0 \quad (18)$$

$$\frac{\partial U^{a1}}{\partial \beta} = G_{\beta}(\alpha, \beta) - 2\bar{\theta}V_{\beta}(\alpha, \beta) = 0 \quad (19)$$

we deduce that at the optimum

$$\frac{G_\alpha(\alpha, \beta)}{V_\alpha(\alpha, \beta)} = \frac{G_\beta(\alpha, \beta)}{V_\beta(\alpha, \beta)} \quad (20)$$

Equations (16), (20) and (6) are all equivalent.

For the second order condition, since $V_{\alpha,\alpha}(\alpha, \beta) \geq 0$ and $G_{\alpha,\alpha}(\alpha) \leq 0$ and since $V_{\beta,\beta}(\alpha, \beta) \geq 0$ and $G_{\beta,\beta}(\alpha) \leq 0$ the autocrat's objective function is concave. The first-order condition is therefore sufficient. QED

5.2 Proof of Proposition 2 and illustration

Equation (6) is equivalent to $G_\alpha(\alpha, \beta)V_\beta(\alpha, \beta) - G_\beta(\alpha, \beta)V_\alpha(\alpha, \beta) = 0$.

Totally differentiating this expression yields:

$$\frac{d\beta}{d\alpha} = \frac{G_\beta(\alpha, \beta)V_{\alpha\alpha}(\alpha, \beta) - G_{\alpha\alpha}(\alpha, \beta)V_\beta(\alpha, \beta) + G_{\beta\alpha}(\alpha, \beta)V_\alpha(\alpha, \beta) - G_\alpha(\alpha, \beta)V_{\beta\alpha}(\alpha, \beta)}{G_\alpha(\alpha, \beta)V_{\beta\beta}(\alpha, \beta) - G_{\beta\beta}(\alpha, \beta)V_\alpha(\alpha, \beta) + G_{\alpha\beta}(\alpha, \beta)V_\beta(\alpha, \beta) - G_\beta(\alpha, \beta)V_{\alpha\beta}(\alpha, \beta)} \quad (21)$$

This can be rewritten as

$$\frac{d\beta}{d\alpha} = \frac{G_\beta(\alpha, \beta)V_{\alpha\alpha}(\alpha, \beta) - G_{\alpha\alpha}(\alpha, \beta)V_\beta(\alpha, \beta) + G_\alpha(\alpha, \beta)\left(G_{\beta\alpha}(\alpha, \beta)\frac{V_\alpha(\alpha, \beta)}{G_\alpha(\alpha, \beta)} - V_{\beta\alpha}(\alpha, \beta)\right)}{G_\alpha(\alpha, \beta)V_{\beta\beta}(\alpha, \beta) - G_{\beta\beta}(\alpha, \beta)V_\alpha(\alpha, \beta) + G_\beta(\alpha, \beta)\left(G_{\alpha\beta}(\alpha, \beta)\frac{V_\beta(\alpha, \beta)}{G_\beta(\alpha, \beta)} - V_{\alpha\beta}(\alpha, \beta)\right)} \quad (22)$$

By virtue of (6) the two terms in parenthesis in the numerator and in the denominator are equal. Since the terms outside the parenthesis are strictly positive by the concavity of G and the strict convexity of V in (α, β) , we deduce that a sufficient condition for $\frac{d\beta}{d\alpha} \geq 0$ is that

$$G_{\alpha\beta}(\alpha, \beta)\frac{V_\alpha(\alpha, \beta)}{G_\alpha(\alpha, \beta)} - V_{\alpha\beta}(\alpha, \beta) \geq 0. \quad (23)$$

This condition holds if and only if the function $\frac{G_\alpha(\alpha, \beta)}{V_\alpha(\alpha, \beta)}$ is non decreasing in β . This complete the proof of Proposition 2.

We now turn to the analysis of the example. Let assume that $G(\alpha, \beta) = \beta\mathcal{G}(\alpha)$ and $V(\alpha, \beta) = \frac{\mathcal{V}(\alpha)}{1-\beta}$ with $\beta \in [0, 1)$. It implies in (6) that

$$\beta = \frac{\mathcal{V}'(\alpha)\mathcal{G}(\alpha)}{\mathcal{V}'(\alpha)\mathcal{G}(\alpha) + \mathcal{V}(\alpha)\mathcal{G}'(\alpha)} \in [0, 1) \quad (24)$$

We deduce that

$$\frac{d\beta}{d\alpha} = \frac{\mathcal{V}''(\alpha)\mathcal{G}(\alpha) + \mathcal{G}'(\alpha)\mathcal{V}'(\alpha)}{\mathcal{V}'(\alpha)\mathcal{G}(\alpha) + \mathcal{V}(\alpha)\mathcal{G}'(\alpha)} - \frac{\mathcal{V}'(\alpha)\mathcal{G}(\alpha)(\mathcal{V}''(\alpha)\mathcal{G}(\alpha) + 2\mathcal{G}'(\alpha)\mathcal{V}'(\alpha) + \mathcal{G}''(\alpha)\mathcal{V}(\alpha))}{(\mathcal{V}'(\alpha)\mathcal{G}(\alpha) + \mathcal{V}(\alpha)\mathcal{G}'(\alpha))^2}. \quad (25)$$

$\frac{d\beta}{d\alpha} \begin{matrix} \geq \\ \leq \end{matrix} 0$ is therefore equivalent to:

$$\frac{\mathcal{V}''(\alpha)}{\mathcal{V}'(\alpha)} + \frac{\mathcal{G}'(\alpha)}{\mathcal{G}(\alpha)} \begin{matrix} \geq \\ \leq \end{matrix} \frac{\mathcal{V}''(\alpha)\mathcal{G}(\alpha) + 2\mathcal{G}'(\alpha)\mathcal{V}'(\alpha) + \mathcal{G}''(\alpha)\mathcal{V}(\alpha)}{\mathcal{V}'(\alpha)\mathcal{G}(\alpha) + \mathcal{V}(\alpha)\mathcal{G}'(\alpha)}. \quad (26)$$

Multiplying left and right by $\mathcal{V}'(\alpha)\mathcal{G}(\alpha) + \mathcal{V}(\alpha)\mathcal{G}'(\alpha)$ and simplifying yields

$$\frac{\mathcal{G}'(\alpha)}{\mathcal{G}(\alpha)} - \frac{\mathcal{G}''(\alpha)}{\mathcal{G}'(\alpha)} \begin{matrix} \geq \\ < \end{matrix} \frac{\mathcal{V}'(\alpha)}{\mathcal{V}(\alpha)} - \frac{\mathcal{V}''(\alpha)}{\mathcal{V}'(\alpha)} \quad (27)$$

which is (8). QED

5.3 Proof of Proposition 3

Assume that $G(\alpha, \beta) = \beta K \frac{\alpha^g}{g}$, and $V(\alpha, \beta) = \frac{W}{1-\beta} \frac{\alpha^v}{v}$, with $K, W > 0$ and $v > 1 > g > 0$. We deduce that (6) is equivalent to

$$\frac{\beta K \alpha^{g-1}}{K \alpha^g} g = \frac{W \alpha^{v-1}}{(1-\beta) W \alpha^v} v (1-\beta)^2. \quad (28)$$

Simplifying this equation yields:

$$\beta^* = \frac{v}{v+g}. \quad (29)$$

Substituting this value in the autocrat's utility function yields for a pair $(\theta, p) \in \{(\underline{\theta}, \mu), (\bar{\theta}, 1)\}$:

$$U^{ap}(\alpha, \beta^*) = p \frac{v}{v+g} K \frac{\alpha^g}{g} - \theta \frac{v+g}{g} W \frac{\alpha^v}{v} \quad (30)$$

Deriving $U^{ap}(\alpha, \beta^*)$ with respect to α yields the first order condition:

$$\frac{\partial U^{ap}(\alpha, \beta^*)}{\partial \alpha} = p \frac{v}{v+g} K \alpha^{g-1} - \theta \frac{v+g}{g} W \alpha^{v-1} = 0 \quad (31)$$

Under our assumptions that $g < 1$ and $v > 1$ it is easy to check that the second order condition is satisfied: $\frac{\partial^2 U^{ap}(\alpha, \beta^*)}{\partial \alpha^2} < 0$. We deduce that:

$$\alpha^*(\frac{p}{\theta}) = \left(\frac{p}{\theta} \frac{vg}{(v+g)^2} \frac{K}{W} \right)^{\frac{1}{v-g}} \quad (32)$$

Substituting β^* and α^* in the utility function of the autocrat yields:

$$\begin{aligned}
U^{a^*}(p, \theta) &= \left\{ \frac{pv}{v+g} \frac{K}{g} - \theta \frac{v+g}{g} \frac{W}{v} (\alpha^*)^{v-g} \right\} (\alpha^*)^g \\
&= \left\{ \frac{pv}{v+g} \frac{K}{g} - \theta \frac{v+g}{g} \frac{W}{v} \left(\frac{p}{\theta} \frac{vg}{(v+g)^2} \frac{K}{W} \right) \right\} \left(\frac{p}{\theta} \frac{vg}{(v+g)^2} \frac{K}{W} \right)^{\frac{g}{v-g}} \\
&= p \left(\frac{p}{\theta} \right)^{\frac{g}{v-g}} \left(\frac{vg}{(v+g)^2} \frac{K}{W} \right)^{\frac{g}{v-g}} \frac{K}{g} \frac{v-g}{v+g}
\end{aligned}$$

We deduce that

$$U^{a^*}(\mu, \underline{\theta}) > U^{a^*}(1, \bar{\theta}) \quad \Leftrightarrow \quad \mu \left(\frac{\mu}{\underline{\theta}} \right)^{\frac{g}{v-g}} > \left(\frac{1}{\bar{\theta}} \right)^{\frac{g}{v-g}} \quad (33)$$

which is equivalent to (10). QED

5.4 Proof of Proposition 4

We need to solve

$$\begin{aligned}
&\max_{w, \alpha, \beta} \left(G(\alpha, \beta) - w \right)^{1-c} \left(w - \theta^c V(\alpha, \beta) \right)^c \\
&\text{s.t.} \quad w \geq E\theta V(\alpha, \beta)
\end{aligned}$$

The Lagrangian associated to this problem is

$$L = \left(G(\alpha, \beta) - w \right)^{1-c} \left(w - \theta^c V(\alpha, \beta) \right)^c + \lambda \left(w - E\theta V(\alpha, \beta) \right)$$

It yields

$$\frac{\partial L}{\partial \alpha} = (1-c)G_\alpha(\alpha, \beta) \left(\frac{w - \theta^c V(\alpha, \beta)}{G(\alpha, \beta) - w} \right)^c - c\theta^c V_\alpha(\alpha, \beta) \left(\frac{G(\alpha, \beta) - w}{w - \theta^c V(\alpha, \beta)} \right)^{1-c} - \lambda E\theta V_\alpha(\alpha, \beta) = 0$$

$$\frac{\partial L}{\partial \beta} = (1-c)G_\beta(\alpha, \beta) \left(\frac{w - \theta^c V(\alpha, \beta)}{G(\alpha, \beta) - w} \right)^c - c\theta^c V_\beta(\alpha, \beta) \left(\frac{G(\alpha, \beta) - w}{w - \theta^c V(\alpha, \beta)} \right)^{1-c} - \lambda E\theta V_\beta(\alpha, \beta) = 0$$

$$\frac{\partial L}{\partial w} = -(1-c) \left(\frac{w - \theta^c V(\alpha, \beta)}{G(\alpha, \beta) - w} \right)^c + c \left(\frac{G(\alpha, \beta) - w}{w - \theta^c V(\alpha, \beta)} \right)^{1-c} + \lambda = 0$$

Moreover, we have that $\lambda(w - E\theta V(\alpha, \beta)) = 0$. Two cases are possible.

1. If $w > E\theta V(\alpha, \beta)$, it follows that $\lambda = 0$ so that the solution to this problem is $w^c = (1-c)\theta^c V(\alpha, \beta) + cG(\alpha, \beta)$ and α^c and β^c are such that $G_\alpha(\alpha, \beta) = \theta^c V_\alpha(\alpha, \beta)$ and $G_\beta(\alpha, \beta) = \theta^c V_\beta(\alpha, \beta)$, which implies $\theta^c = \frac{G_\alpha(\alpha, \beta)}{V_\alpha(\alpha, \beta)} = \frac{G_\beta(\alpha, \beta)}{V_\beta(\alpha, \beta)}$ and therefore condition (6). The condition $w > E\theta V(\alpha, \beta)$ is then equivalent to $(1-c)\theta^c V(\alpha^c, \beta^c) +$

$cG(\alpha^c, \beta^c) > E\theta V(\alpha^c, \beta^c)$. Substituting $\theta^c = \frac{G_\alpha(\alpha, \beta)}{V_\alpha(\alpha, \beta)} = \frac{G_\beta(\alpha, \beta)}{V_\beta(\alpha, \beta)}$ and dividing right and left by $V(\alpha^c, \beta^c)$ yields $E\theta < c \frac{G(\alpha^c, \beta^c)}{V(\alpha^c, \beta^c)} + (1 - c) \frac{G_\beta(\alpha^c, \beta^c)}{V_\beta(\alpha^c, \beta^c)} = c \frac{G(\alpha^c, \beta^c)}{V(\alpha^c, \beta^c)} + (1 - c) \frac{G_\alpha(\alpha^c, \beta^c)}{V_\alpha(\alpha^c, \beta^c)}$. We deduce condition 1.

2. If $\lambda > 0$, we have that $w^c = E\theta V(\alpha, \beta)$. We deduce from $\frac{\partial L}{\partial w} = 0$ that $\lambda = (1 - c) \left(\frac{(E\theta - \theta^c)V(\alpha, \beta)}{G(\alpha, \beta) - E\theta V(\alpha, \beta)} \right)^c - c \left(\frac{G(\alpha, \beta) - E\theta V(\alpha, \beta)}{(E\theta - \theta^c)V(\alpha, \beta)} \right)^{1-c}$. Substituting this value in $\frac{\partial L}{\partial \alpha} = 0$ yields $(1 - c)(G_\alpha(\alpha, \beta) - E\theta V_\alpha(\alpha, \beta)) + cV_\alpha(\alpha, \beta) \frac{G(\alpha, \beta) - E\theta V(\alpha, \beta)}{V(\alpha, \beta)} = 0$. Dividing right and left by $V_\alpha(\alpha, \beta)$ and simplifying yields $(1 - c) \frac{G_\alpha(\alpha, \beta)}{V_\alpha(\alpha, \beta)} + c \frac{G(\alpha, \beta)}{V(\alpha, \beta)} = E\theta$. Similarly when we substitute λ in $\frac{\partial L}{\partial \beta} = 0$ it yields $(1 - c)(G_\beta(\alpha, \beta) - E\theta V_\beta(\alpha, \beta)) + cV_\beta(\alpha, \beta) \frac{G(\alpha, \beta) - E\theta V(\alpha, \beta)}{V(\alpha, \beta)} = 0$. Dividing right and left by $V_\beta(\alpha, \beta)$ and simplifying yields condition 2.

5.5 Proof of Proposition 5

Let $G(\alpha, \beta) = \beta \mathcal{G}(\alpha)$ and $V(\alpha, \beta) = \frac{\mathcal{V}(\alpha)}{1 - \beta}$ with $\beta \in [0, 1)$ and $\frac{\mathcal{V}'(\alpha)}{\mathcal{V}(\alpha)} \geq \frac{\mathcal{G}'(\alpha)}{\mathcal{G}(\alpha)}$. For instance if $\mathcal{G}(\alpha) = K \frac{\alpha^g}{g}$, and $\mathcal{V}(\alpha) = W \frac{\alpha^v}{v}$, with $K, W > 0$ and $v > 1 > g > 0$, the condition $\frac{\mathcal{V}'(\alpha)}{\mathcal{V}(\alpha)} \geq \frac{\mathcal{G}'(\alpha)}{\mathcal{G}(\alpha)}$ is equivalent to $v \geq g$, which holds by assumption. Let also assume that the autocrat picks the corner solution $p^d = 1$ over the interior solution in the case of a decentralized religion. With the power functions example this occurs if $\mu^{\frac{v}{g}} > \frac{\theta}{\bar{\theta}}$.

We deduce from (6) and from (i) in Proposition 4 that $\beta^d(\alpha) = \beta^c(\alpha) = \beta(\alpha)$ so that:

$$\beta(\alpha) = \frac{\mathcal{V}'(\alpha)\mathcal{G}(\alpha)}{\mathcal{V}'(\alpha)\mathcal{G}(\alpha) + \mathcal{V}(\alpha)\mathcal{G}'(\alpha)} \in [0, 1). \quad (34)$$

The level of reform in the decentralized case, α^d , solves (see equation 18): $\frac{G_\alpha(\alpha, \beta(\alpha))}{V_\alpha(\alpha, \beta(\alpha))} = 2\bar{\theta}$, which is equivalent to $\beta(\alpha)(1 - \beta(\alpha)) \frac{\mathcal{G}'(\alpha)}{\mathcal{V}'(\alpha)} = 2\bar{\theta}$.

In the centralized case the level of reform is lower when θ^c is large so we focus on the case where $\theta^c = \bar{\theta}$ (i.e., it is the less favorable scenario for reforms in the centralized case). We've already established that when $\theta^c = \bar{\theta}$ then case (ii) in Proposition 4 holds. We deduce that α^c is so that: $\frac{G_\alpha(\alpha, \beta(\alpha))}{V_\alpha(\alpha, \beta(\alpha))} = \bar{\theta}$, which is equivalent to $\beta(\alpha)(1 - \beta(\alpha)) \frac{\mathcal{G}'(\alpha)}{\mathcal{V}'(\alpha)} = 2\bar{\theta}$.

So to prove the result that $\alpha^c \geq \alpha^d$ we need to show that the function $\beta(\alpha)(1 - \beta(\alpha)) \frac{\mathcal{G}'(\alpha)}{\mathcal{V}'(\alpha)}$ is decreasing in α .

$$\frac{d\left(\beta(\alpha)(1-\beta(\alpha))\frac{\mathcal{G}'(\alpha)}{\mathcal{V}'(\alpha)}\right)}{d\alpha} = \frac{d\beta(\alpha)}{d\alpha}(1-2\beta(\alpha))\frac{\mathcal{G}'(\alpha)}{\mathcal{V}'(\alpha)} \quad (35)$$

So since $\frac{d\beta(\alpha)}{d\alpha} > 0$, a sufficient condition for $\frac{G_\alpha(\alpha, \beta(\alpha))}{V_\alpha(\alpha, \beta(\alpha))}$ to decrease with α is that $\beta(\alpha) \geq 0.5$, which is equivalent to $2\mathcal{V}'(\alpha)\mathcal{G}(\alpha) \geq \mathcal{V}'(\alpha)\mathcal{G}(\alpha) + \mathcal{V}(\alpha)\mathcal{G}'(\alpha)$. We deduce the condition $\frac{\mathcal{V}'(\alpha)}{\mathcal{V}(\alpha)} \geq \frac{\mathcal{G}'(\alpha)}{\mathcal{G}(\alpha)}$.