Patronage or Meritocracy: Political Institutions and Bureaucratic Efficiency

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Abstract

This article categorizes bureaucratic institutions into patronage and meritocracy. Under patronage politicians influence the selection of bureaucrats. Under meritocracy this influence is prevented by objective criteria for recruitment and promotion. A simple model of these two institutions reveals that patronage may be inefficient because it hampers competition amongst bureaucrats. Patronage is chosen nonetheless if political power is highly concentrated. Thus, the model gives an explanation for the apparent correlation of bureaucratic and political institutions. The underlying mechanism crucially depends on the attractiveness of public good provision relative to rent extraction. If rents are large patronage and inefficiency prevail.

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1 Introduction

There are two ways to enter government. The first is regulated by political institutions like, for example, elections or hereditary rule. Recent research has tried to understand to what extent and how these institutions influence economic welfare.¹ The second way into government is regulated by bureaucratic institutions. Given the immense size of state bureaucracies and their involvement in policy issues one can expect that the choice of bureaucratic institutions, too, has an impact on economic welfare.² This has spurred another branch of investigation on the role of bureaucratic institutions, the incentives they provide to bureaucrats³ and their comparison with political incentives.⁴

This article analyzes one aspect of the interaction between politics and bureaucracy, the degree and impact of political involvement in the selection of bureaucrats. Along this dimension bureaucratic institutions can roughly be categorized into patronage and meritocracy. Patronage is defined here by the political allocation of posts in the bureaucracy. Bureaucrats can be hired, promoted and fired by the political leadership without institutional restrictions. Under meritocracy the political leadership can interfere less in recruitment and promotion of bureaucrats. Objective standards, firing restrictions and independent bodies all hinder political involvement with the declared aim of maximizing bureaucratic competence.

Starting point for the theoretical discussion of meritocracy and patronage are two observations. First, there is some empirical support for the well-established idea that meritocracy leads to more desirable welfare outcomes than patronage.⁵ Secondly, it is illustrated here that bureaucratic and

²See Page and Jenkins (2005) or Dolan (2000) on a detailed overview of activities of civil servants in the UK and the US. Their survey results indicate that bureaucrats do not only implement but propose and initiate policies themselves.
⁴See, for example, Alesina and Tabellini (2007), Besley and Coate (2003) or Maskin and Tirole (2004).
⁵See Rauch and Evans (2000) provide cross-country evidence. Iyer and Mani (2008) show that the link seems to hold within the state bureaucracy of India. Theories regarding this hypothesis reach back to Max Weber whose rational bureaucracy has selection by
political institutions could be linked. More concretely, there is some support for the idea that the democratic selection of politicians is often complemented by a politically independent bureaucracy.

It is shown that both observations can be explained by a model in which the set of political institutions affects the choice of bureaucratic institutions. In this model, the political leadership (incumbent) chooses between patronage and meritocracy to influence future bureaucratic selection. The incumbent’s institutional choice affects bureaucratic performance because it alters the career incentives of bureaucrats. If recruitment is strictly by merit bureaucrats gain political influence if they gather expertise. Under patronage, politicians recruit their bureaucrats and a bureaucrat’s influence only depends on the distribution of political power in society.

Somewhat surprisingly, the model explains the superior performance of meritocracy by the fact that it promotes political competition amongst bureaucrats. Since recruitment is strictly by merit, bureaucrats know that they can prevent bureaucratic careers of candidates with different policy preferences if they are more competent. Patronage leads to worse outcomes because it biases recruitment and prevents competition between bureaucrats with different policy preferences. In light of this insight, meritocratic reforms that follow democratic reforms can be regarded as a spillover of political competition from one layer of government to the next.

The correlation between political institutions and bureaucratic institutions can be explained by a simple trade-off for the incumbent. If he chooses patronage, future recruitment is politicized and the future government can choose bureaucrats that work in its favor. If he chooses meritocracy, political influence is prevented and bureaucratic selection is independent of political leadership. Depending on the institutional concentration of political power, the incumbent will be more or less inclined to choose meritocracy. If political reforms give new groups access to political power the incumbent introduces meritocracy to prevent future political influence by these groups. This explains why measures of democracy and bureaucratic independence are correlated.

An important problem with this view is, however, that only politically weak incumbents prefer neutral recruitment to political recruitment. While expertise at its core. The link between meritocracy and efficiency is currently so well-established that bureaucratic independence is seen as a synonym for bureaucratic quality.

Bureaucratic institutions are a state variable. For a related discussion of state debt see Persson and Tabellini (2000).
this finding has some empirical merit it can not explain the common use and stability of meritocratic institutions. The main argument here is that the efficiency advantage of meritocracy can create a consensus in its favor. Meritocracy works as a commitment device to recruit by competence. Even a powerful incumbent can therefore be willing to give up some control over bureaucratic recruitment if the resulting loss of rents is compensated by an increase in bureaucratic competence.

In summary, this article provides a new, micro-founded explanation for the positive welfare impact of meritocracy and links it directly to actual institutional features like the use of state examinations and objective criteria for recruitment and promotion in the state bureaucracy. Comparative statics on the fundamentals of the model also reveal that polarization, defined here as the relative benefit of rent extraction compared to the benefit of public good provision, might play a key role in the introduction of meritocracy. If a society is very polarized, the introduction of meritocracy is unlikely even though patronage is inefficient.

Two extensions of the model illustrate the flexibility of the basic framework. The first extension treats the accumulation of expertise by the bureaucrat as a costly investment. It is shown that the combination of positive investment costs, patronage and shared power can directly harm competence because the volatility of political power reduces the returns to investment. This re-enforces the link between shared political power and the introduction of meritocracy in consensus. The second extension illustrates how endogenous political power can be incorporated into the basic framework. The politician’s choice of bureaucratic institution is shown to be more distorted if his political power relies on groups that are mainly interested in rent extraction. An expansion in the care for public good provision creates consensus for meritocratic reform.

The approach here is most closely related to work on the role of firing restrictions in Hanssen (2004) and Maskin and Tirole (2004). Hanssen (2004) studies the endogenous choice of judicial institutions by a politician and shows theoretically and empirically that more judicial independence arises when politicians are comparatively weak. However, he does not analyze whether and why political influence leads to inefficiencies. Maskin and Tirole (2004) provide a thorough theoretical analysis of the role of political

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7Horn (1995), for example, gives a revealing account of how US presidents expanded the merit system when oppositional groups were about to gain political influence.
accountability. They show that accountable decision-makers might have an incentive to pander to their masters. This creates an inefficiency that has to be balanced against the selection benefits of accountability. The main difference here is that the inefficiency of political recruitment is the result of a lack of effective competition between the bureaucrats, not pandering.

In their model of politicians and bureaucrats, Alesina and Tabellini (2007) argue that career concerns are the main driving force of bureaucratic performance. It is shown here that political influence on bureaucratic careers can create a labor market monopsony for politically aligned types which may distort the career incentive for bureaucrats and lower bureaucratic efficiency. A crucial assumption in this regard is that the actions of a bureaucrat have an independent impact on society and, thus, politicians prefer to recruit and promote bureaucrats that distribute rents towards their group.

Surprisingly, a second effect of assuming politically motivated bureaucrats is that meritocracy improves bureaucratic performance. This assumption links the work here to theoretical work that analyzes the role of intrinsic motivation in the public sector performance.\(^8\) One key difference is, however, that bureaucrats here are driven by group-specific policy preferences not unlike the policy preference in models of politicians or special interest groups.\(^9\) The main advantage of this assumption from a modelling perspective is that the impact of political recruitment bias under patronage is relatively robust to an expansion in the number of bureaucrats who compete for a post. Private wage payments in rank-order tournaments a la Laezer and Rosen (1981) do not necessarily have this property as restricting the pool of bureaucrats in a tournament can have a positive impact on investments because the chance of getting the wage (price) falls with the number effective competitors.

Finally, this article relates to a quickly growing literature in development economics that tries to explain the inefficiency of government. Banerjee (1997), for example, shows that red tape and corruption can be explained with a combination of market failures and agency problems within government. Red tape arises when a money-minded bureaucrat tries to screen a wealth-constrained population for willingness to pay. The model here ignores the agency problem between politician and bureaucrat and instead stresses the inefficiencies that arise due to political selection of bureaucrats. Iyer

\(^8\)For theoretical contributions see, for example, Besley and Ghatak (2006), Francois (2000) or Prendergast (2007).

and Mani (2008) provide empirical evidence for the political influence of politicians on bureaucratic careers in the Indian bureaucracy.\footnote{This and their work are complementary. The aim of the model here is to describe bureaucratic performance and the impact of bureaucratic and political institutions on this performance. Their model aims to provide an account for different bureaucratic career strategies within the same institutional setting and heterogenous bureaucrats.} They also show empirically that states with more political influence perform worse. Their model, however, does not explain this. Acemoglu, Ticchi and Vindigni (2006) model the ability of patronage to strengthen political support for the incumbent to show that inefficient political institutions might be chosen if the incumbent is politically challenged. This leads to an interesting difference to the results shown here. In their model political competitiveness goes hand in hand with the use of patronage, not meritocracy. The analysis here also provides a micro-foundation for findings in Besley and Persson (forthcoming). They show how the investment in fiscal state capacity varies with political polarization and the relative attractiveness of public good provision. It is shown here that this investment can be understood as a change in the underlying bureaucratic institutions.

The following section illustrates the correlation between political and bureaucratic institutions. Section 3 presents the basic model and section 4 and 5 provide two possible extensions. Section 6 gives a discussion of the results.

\section{Political and Bureaucratic Institutions}

This section illustrates the link between political and bureaucratic institutions in two ways. First, cross-country data is used to show that there is a relatively robust correlation between different measures of bureaucratic and political institutions. Secondly, a discussion of British reforms in the 19th century demonstrates how political and bureaucratic changes were connected.

\subsection{Democracy and Bureaucratic Quality}

There is little available data that quantifies specific bureaucratic institutions for a large set of countries.\footnote{Rauch and Evans (2000) provide data that measure the use of state exams specifically but only for a relatively small set of countries.} However, a commonly used measure of overall bureaucratic independence is contained in the International Country Risk
Guide provided by the Political Risk Survey Group (PRSG). The group provides an index of bureaucratic quality based on expert opinions for more than 120 countries. According to the variable description, the index captures the degree to which the bureaucracy of a country is permanent, independent and has its own established mechanism for recruitment and training.\(^{12}\)

Figure I displays the basic correlation between the polity index and bureaucratic quality controlling for GDP per capita. The Polity index is a widely used measure of political institutions. Negative scores of the index indicate a system that leans towards autocracy while positive scores indicate democratic institutions. As can be seen in the graph, more democratic political institutions are associated with higher levels of bureaucratic permanence and independence. Regression analysis confirms that this correlation between democratic and meritocratic institutions is statistically significant and robust to the inclusion of a relatively large set of controls. Table I reports the underlying regression to figure I in column (2). According to the regression result a change of the Polity index from perfect autocracy to perfect democracy is associated with a bureaucratic quality improvement of about 1.2 on a 0-4 point scale. Column (3) shows that the polity score remains a significant predictor of bureaucratic quality when other, relatively exogenous, variables like latitude, share of Muslims, share of Catholics, French and UK legal origin and ethnic fragmentation are controlled for.\(^{13}\)

One problem with the PRSG data is that it does not provide clues as to which institutions exactly are responsible for high bureaucratic quality. This concern can be avoided with data on Central Bank Independence (CBI) as it combines relatively large cross-sections with a specific description of what is measured. The index introduced by Cukierman et al (1992), for example, contains a category which seeks to measure the independence of the Central Bank CEO from politics on a 0 to 1 scale.\(^{14}\) It has recently been updated and extended by Crowe and Meade (2008) so that the data contains some variation across time. Table II, column (1) shows the correlation of CEO

\(^{12}\)The exact wording from www.prsgroup.com is: High points are given to countries where the bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services. In these low-risk countries, the bureaucracy tends to be somewhat autonomous from political pressure and to have an established mechanism for recruitment and training.

\(^{13}\)The table presents OLS results. Ordered logit regression results are similar.

\(^{14}\)The index combines length of CEO tenure, the question of who appoints the CEO, who controls CEO dismissal and whether the CEO can hold other offices in government.
independence in 2003 with the average Polity index for the years 1998 till 2003. The coefficient suggests that a change from perfect autocracy to perfect democracy would be associated with a 0.16 point increase in CEO independence. Column (2) shows that the simple correlation is robust to controlling for GDP per capita while column (3) reveals that running the same regression in the earlier time period yields identical results. Interestingly, the average Polity index in this earlier period does not predict CEO independence in 2003 (column (4)). The underlying reason is considerable change both in political and bureaucratic institutions between the 1980s and 2003. Column (5) confirms that political and bureaucratic change went hand in hand, i.e. the changes in Polity index and CEO independence are correlated. This last result is less likely to be driven by country specific characteristics which are fixed across time.

In summary, the cross-country data suggests a connection between political and bureaucratic institutions. However, it is not clear what mechanisms are responsible for this correlation. The detailed analysis of an actual bureaucratic reform is more illustrative in this regard.

2.2 Meritocratic Reform in 19th Century Great Britain

Within the range of possible systems for recruitment and promotion, the merit system in the United Kingdom is relatively radical when it comes to the application of the merit principle. This implies that even civil servants high up in the bureaucratic hierarchy are relatively immune to political change. But while the country’s reform path is certainly unique there are important parallels to several other countries including the United States. It is therefore useful to take a closer look of the details of the debate surrounding meritocratic reform.

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15. The freedom house measure of electoral democracy yields identical results both in terms of significance and magnitude of the estimated effect. Unbundling the PolityIV index also reveals that the basic correlation holds for the subindexes competitiveness of participation and competitiveness of executive recruitment which is very much consistent with the theoretical explanations chosen here.

16. The result is also robust to a variation of the Polity data used. All results hold, for example, when using the average Polity score from 1970 till 1980.

17. See Fry (2000) for a striking comparison with the United States system.

18. Ruhil and Camoes (2003) for example show that closeness of elections was a key predictor of the introduction of state exams in the United States following the Pendleton Act. This correlation is very much in line with the mechanisms pointed out below.
The starting point of institutionalized meritocratic recruitment in United Kingdom lies in the 19th century. At the beginning of the 19th century, patronage was common in Great Britain while objective indicators of competence or skill hardly played any role in recruitment. Amongst the beneficiaries of this system of patronage were the members of the parliament which represented the interests of the old and new upper classes.

The struggle for the introduction of the merit system began in 1853 when Charles Trevelyan and Stafford Northcote were asked by the then Chancellor of the Exchequer, William Gladstone, to write a report on its recruitment and promotion. In 1854, the Northcote Trevelyan report was published. On its first page the report motivates the reform.

‘The great and increasing accumulation of public business, and the consequent pressure upon the Government, need only be alluded to; and the inconveniences which are inseparable from the frequent changes which take place in the responsible administration are matter of sufficient notoriety. It may safely be asserted that, as matters now stand, the Government of the country could not be carried on without the aid of an efficient body of permanent officers, occupying a position duly subordinate to that of the Ministers who are directly responsible to the Crown and to Parliament, yet possessing sufficient independence, character, ability, and experience to be able to advise, assist, and to some extent, influence, those who are from time to time set over them.’

It is the emphasis of government change as a motive for introducing permanent officers that suggests a connection to political reforms at the time. With the rising power of the parliament in the nineteenth century, the prerogative power of the crown had come to be increasingly taken over by ministers who were held accountable by parliament. At the same time, parliament itself was undergoing radical change. It had received more powers and following the first reform act in 1832 it had become more representative in the sense that the middle classes had gained the right to vote. Thus, the executive had become more volatile in the interests it represented. According to Northcote

\[19\] An indication of the lax standards in recruitment is a minute of the treasury from the year 1820 mentioned by Greaves (1947). The document stresses that men previously convicted of revenue offences should not be appointed as customs officials.

\[20\] One potential reason for the reform effort was bad bureaucratic performance. According to Clark (1959) it was around the same time that stories of bureaucratic incompetence were increasingly common.

\[21\] Northcote and Trevelyan (1954), p. 1 (reprint)
and Trevelyan the bureaucracy had to be isolated from these changes.

A related argument is revealed by a more detailed look at the British reform debate. An integral part of this debate, involving scholars like Mill and Malthus, were the ongoing reforms in the East India Company. The central aim of these reforms was to improve bureaucratic performance by decreasing the influence of the British political elite on bureaucratic recruitment. Describing what he believed to be recruitment and promotion by merit in the East India company John Stuart Mill\textsuperscript{22}, for example, argues

\textit{‘A second great advantage of the present system is, that those who are sent out as candidates to rise by degrees are generally unconnected with the influential classes in the country, and out of the range of Parliamentary influence. The consequence is, that those who have the disposal of offices in India have little or no motive to put unfit persons into important situations [...]’}\textsuperscript{23}

It was the political motive to recruit \textit{unfit} persons that made patronage a bad choice. Mill saw meritocratic promotion as a way to improve competence in this context because it diminished the influence of the political elite on bureaucratic careers.

Whatever the merits of meritocracy, the application to the administration in Great Britain faced considerable resistance. Northcote and Trevelyan had proposed to modify recruitment procedures through the introduction of an entry examination for all public servants, administered by an independent Board of Examiners. Unsurprisingly, one of the strongest opponents of this new way of recruitment was the parliament. Due to the high resistance to the reforms, their implementation took considerable time. State exams were not introduced until 1870 - in the middle of a wave of political reforms that would guarantee representatives of the working class access to political power.\textsuperscript{24} One interpretation of this timing of events is that the still relatively rich members of parliament feared that the control over political recruitment could fall into the hands of the middle and working classes. As their political power was fading, the rich and noble members of parliament preferred to transfer the power of bureaucratic recruitment to a neutral body. Following this interpretation, meritocracy was endorsed by parliament because it kept

\textsuperscript{22}See Ryan (1972) for a revealing account of John Stuart Mill’s arguements and his influence on the Northcote Trevelyan report.
\textsuperscript{23}J.S.Mill, cited in Ryan (1972), p. 44
\textsuperscript{24}See Justman and Gradstein (1999) for a detailed account of the increasing representativeness of the British parliament.
recruitment out of the grasp of a future government with different policy preferences. This adds a separate argument to the concerns of competence and efficiency stressed in the public debate. The model will allow a more structured analysis of their connection.

3 The Model

3.1 Set-Up

Society consists of two groups of equal size identified by the parameter \( t \in \{A, B\} \). Each of two groups is politically represented by a politician of the same type. In addition, two bureaucrats, one of each type, compete for a post in the state bureaucracy. Selection for the post allows the chosen bureaucrat to determine government policies which affect the whole of society. The full game has two periods and is structured as follows.

The politician of type \( A \) (incumbent) is assumed to be in power in period 1. He remains in power with probability \( p \in [0, 1] \) and is replaced by a politician of type \( B \) otherwise.\(^{25}\) At the beginning of period one the incumbent chooses the bureaucratic institutions, \( S \in \{\text{merit, patr}\} \), that govern bureaucratic recruitment in the second period. Patronage \((S = \text{patr})\) implies that the politician in power in period two can choose the bureaucrat. Under meritocracy \((S = \text{merit})\) this power is ceded to a neutral commission that is only interested in bureaucratic competence.

Given \( S \) and \( p \) the two bureaucrats compete by specializing in one of two policy dimensions - public good provision or rent extraction. If a bureaucrat specialized on a policy dimension in period one she is able to provide a successful policy on that dimension with probability \( h \in \left(\frac{1}{2}, 1\right) \) in case she is recruited in period two.\(^{26}\) However, specialization is never perfect in the sense that there is a positive likelihood of \( 1 - h \) that she provides a successful policy on the other policy dimension in period two. The successful provision of public goods by the bureaucrat pays one to every member of society regardless of their type. Policy success in rent-extraction pays \( \tau > 0 \).
group of the bureaucrat and $-\tau$ to the other group. Assume for now that specialization costs on both dimension are equal to zero.

A bureaucrat is defined as competent if she specialized on the dimension of public good provision in period one. Denote the level of competence by $e_t \in \{h, 1-h\}$. The selection of a competent type $A$ bureaucrat ($e_A = h$) then implies, for example, that the public good is provided with probability $h$ while rents are extracted from group $B$ with probability $1-h$. Hence, the expected utility for all individuals (including the bureaucrat) of group $t$ from a bureaucrat of type $t$ and competence $e_t \in \{h, 1-h\}$ is

$$EU_t(t, e_t) = e_t + (1-e_t)\tau$$

where the first term represents the expected benefit from public good provision and the second term the expected benefit from rent extraction. Analogously, the expected utility for group $t$ from a bureaucrat of type $-t$ with competence $e_{-t} \in \{h, 1-h\}$ is

$$EU_t(-t, e_{-t}) = e_{-t} - (1-e_{-t})\tau.$$  

Equation (2) shows that the expected utility provided by a bureaucrat from the opposition is always increasing in her competence. This is because both increased public good provision and decreasing rent extraction by a bureaucrat of type $-t$ benefit a member of group $t$. Expected utility in equation (1), however, is only increasing in competence, $e_t$, if $\tau < 1$. Thus, the parameter $\tau$ measures the extent to which rent extraction implies higher benefits than public good provision. High values of $\tau$ could be either due to large rents (abundant natural resources, low cost of repression, etc.) or small public good gains (heterogeneous tastes, low demand for public goods etc.). Define society as polarized if $\tau \geq 1$. According to this definition, bureaucrats in a polarized society benefit less from public good provision than from extracting rents. When specializing, these bureaucrats are therefore tempted to focus on rent extraction.

Note also that for $e_t = e_{-t} = e$ the difference in expected utilities $EU_t(t, e) - EU_t(-t, e)$ is decreasing in $e$. This captures the idea that an

27Results are similar if the costs of rent extraction to the opposition are zero. More generally, the model can easily be expressed as an effort-exertion problem in which the effort determines a probability by which the bureaucrat knows a state of the world. The only crucial assumption is then that uninformed bureaucrats are more likely to take an action that benefits only their group.
overall specialization in rent extraction \((e = 1 - h)\) radicalizes the political environment because bureaucrats transfer more rents towards their group. In other words, competence \((e = h)\) makes bureaucrats relatively neutral.\(^{28}\) It should be stressed, however, that this neutrality is never perfect, i.e. by assumption \(h < 1\) even competent bureaucrats extract rents from the opposition.

To end the description of the model, the sequencing of the actions is as follows. The incumbent first chooses the bureaucratic system \(S\). Then, given \(S\), the two bureaucrats simultaneously decide on their specialization \(e_t, t = A, B\). The political process determines the politician for period two. One of the two bureaucrats is recruited according to the rules of \(S\) and this bureaucrat implements policies that yield expected payoffs in equations (1) and (2). The next section shows that this game has a unique subgame perfect equilibrium. Backwards induction requires that bureaucratic recruitment in period two and the specialization decisions are discussed first. The combination of both then determines bureaucratic performance of patronage and meritocracy.

### 3.2 Bureaucratic Performance

A discussion of bureaucratic performance is most useful in the light of the first-best benchmark. Given that both groups in society are of equal size, first-best bureaucratic performance is reached whenever the selected bureaucrat in period two is competent \((e_t = h)\). This is due to the fact that rent extraction is welfare neutral while investment in competence improves overall welfare. That means that a bureaucratic system is efficient if it selects a competent bureaucrat. The type of bureaucrat is inconsequential as it only affects the distribution of welfare.

Meritocracy is assumed to give all recruitment powers to a neutral commission that is only interested in competence. Assume that the commission chooses the candidate with the higher level of competence, \(e_t\), and randomizes when both candidates have the same level.

Patronage gives the right of selecting the bureaucrat to the politician in power in period two. Clearly, politicians have an incentive to recruit a

\(^{28}\)Note that this model takes a specific view on the role of expertise in politics by assuming it makes decision-makers more moderate. The worst case for an individual in this view is an incompetent decision-maker with diverging policy preferences - not a competent decision-maker with diverging policy preferences.
bureaucrat of their own type because she will distribute rents towards their group. This group-specific interest can clash with the first-best solution of selecting a competent bureaucrat.

**Lemma 1** A politician of type \( t \in \{A, B\} \) fails to recruit the more competent bureaucrat if she is of type \(-t \neq t\) and \( \tau \geq 2h - 1 \).

**Proof.** Denote the level of competence of the two bureaucrats by \( e_t, e_{-t} \in \{h, 1-h\} \). A politician of type \( t \) selects his own type of bureaucrat if

\[
e_t + \tau (1 - e_t) \geq e_{-t} - \tau (1 - e_{-t}) .
\]

It is straightforward to see that this condition is fulfilled for \( e_t \geq e_{-t} \). The only remaining option is \( e_t = 1 - h \) and \( e_{-t} = h \). With these levels of competence the condition can be re-written into \( \tau \geq 2h - 1 \).

Lemma 1 shows that recruitment under patronage might put more weight to type than competence. The reason is that from the politician’s perspective the allocation of a post to a bureaucrat from the opposition implies a loss of rents. If rents are important (\( \tau \geq 2h - 1 \)) bureaucratic competence is ignored.

An immediate effect of the bias described in lemma 1 is that recruitment under patronage is fully determined by the type of politician in power. For all \( \tau \geq 2h - 1 \) politicians of type \( t \) always choose bureaucrats of type \( t \). This can have consequences for bureaucratic competence under patronage.

**Proposition 1** Under patronage bureaucrats specialize in rent extraction \((e_{A,B} = 1 - h)\) if and only if society is polarized \((\tau \geq 1)\). They never specialize in rent extraction under meritocracy.

**Proof.** See the appendix.

Proposition 1 gives a possible explanation for why meritocracy is often regarded as the more efficient bureaucratic system. Patronage can imply that the bureaucrats specialize in extracting rents from the political opposition if these rents exceed the benefit from public good provision. From a welfare perspective this creates a loss of resources due to bureaucratic incompetence.

But why do bureaucrats specialize in competence under meritocracy even in situations in which rent extraction would yield far higher returns? The reason is that under meritocracy specialization in competence can prevent the competing candidate from taking the bureaucratic post and implementing
rent extraction in her favor. This implies that higher polarization, $\tau$, works as an incentive for a specialization in competence. To see this note that for both levels of $e_t \in \{h, 1-h\}$ the candidate of type $t$ increases her likelihood of being selected as bureaucrat by $\frac{1}{2}$ if she changes her level of competence from $e_t = 1-h$ to $e_t = h$.

Given the result that patronage can be inefficient the question arises whether the incumbent might still choose it as bureaucratic system. The next section shows that the incumbent’s decision is closely related to the political institutions, $p$, in place.

### 3.3 Political and Bureaucratic Institutions

In the first period the incumbent tries to affect outcomes in the second period by choosing the set of bureaucratic institutions, $S \in \{\text{merit}, \text{patr}\}$. His expected utility from patronage is

$$EU_A(S = \text{patr}, p, \tau) = p(e_A + \tau(1-e_A)) + (1-p)(e_B - \tau(1-e_B))$$  (3)

with

$$e_{A,B} = \begin{cases} h & \text{if } \tau < 1 \\ 1-h & \text{if } \tau \geq 1 \end{cases}.$$  

by proposition 1. The expected utility from meritocracy is

$$EU_A(S = \text{merit}, \tau) = \frac{1}{2}(h + \tau(1-h)) + \frac{1}{2}(h - \tau(1-h)).$$  (4)

Note first that under patronage $p$ increases the likelihood that bureaucrat $A$ gets the post in period 2. This immediately implies that as $p$ increases the incumbent can expect more rents to be distributed towards the group he represents. Meritocracy does not have the same properties because recruitment is politically neutral and both bureaucrats are selected with probability $\frac{1}{2}$. Hence, political power affects expected utility under patronage but not under meritocracy. This establishes a first link between political and bureaucratic institutions.

**Proposition 2** Meritocracy is more attractive to the incumbent the weaker he is politically,

$$\frac{\delta [EU_A(S = \text{merit}, \tau) - EU_A(S = \text{patr}, p, \tau)]}{\delta p} < 0.$$  

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If society is not polarized ($\tau < 1$) meritocracy is introduced if and only if the incumbent is politically weak ($p \leq \frac{1}{2}$).

**Proof.** The first part of the proposition follows from the fact that expected utility under patronage is falling with falling political power while it is stable under meritocracy. For the second part note that $e_{A,B} = h$ if $\tau < 1$. Thus, the incumbent introduces meritocracy if

$$\frac{1}{2} (h + \tau (1 - h)) + \frac{1}{2} (h - \tau (1 - h)) \geq p (h + \tau (1 - h)) + (1 - p) (h - \tau (1 - h))$$

or

$$\frac{1}{2} \geq p.$$  

The results in proposition 2 suggest a straightforward link between political and bureaucratic institutions. If political institutions restrict access to political power then meritocratic reform is unlikely. An autocrat, for example, knows that his absolute powers shield the bureaucracy from political influence by the opposition. Meritocracy is only introduced if the incumbent is politically weak.

One immediate problem with this view on bureaucratic reform is that only politically underprivileged groups want to introduce meritocracy. This is a problem because it is unlikely that a given political system leads to a systematic weakness of the group in power. Democracies, for example, are typically associated with a slight incumbency advantage which the model would represent as a $p > \frac{1}{2}$. For an explanation of stable meritocratic reform proposition 2 is therefore unlikely to suffice.\(^{29}\) However, meritocratic reform by a powerful incumbent is possible if patronage is inefficient.

**Proposition 3** For $\tau \geq 1$ there is a range of values $p > \frac{1}{2}$ at which the incumbent wants to introduce meritocracy. This range is decreasing with higher polarization $\tau$.

\(^{29}\)Strictly speaking this is an argument that lies outside of the model because group B is never in a position to choose $S$. However, the result immediately arises if an additional period is added. For $\tau < 1$ the probability of meritocracy in period 3 is then never larger than $\frac{1}{2}$. 

16
Proof. See the appendix. ■

The fact that the incumbent introduces meritocracy for values of \( p > \frac{1}{2} \) implies that there is an area of parameter values for \( \tau \geq 1 \) at which meritocracy leads to a pareto improvement for all members of society and is introduced in consensus. The underlying reason for this possibility of a pareto improvement has been discussed in proposition 1. Meritocracy serves as a commitment device for a specialization in competence. Comparing proposition 2 and 3 shows that this is only an advantage if commitment is needed, i.e. if society is so polarized (\( \tau \geq 1 \)) that patronage implies biased recruitment.

Figure II visualizes propositions 2 and 3. The solid line is the incumbent’s line of indifference between meritocracy and patronage.\(^{30}\) At all points below that line the incumbent (group \( A \)) strictly prefers meritocracy to patronage. The dashed line is the opposition’s line of indifference. Members of group \( B \) prefer meritocracy above that line. The impact of political institutions on bureaucratic institutions is easily illustrated in the graph. Assume, for example, that a given political system excludes members of group \( B \) from political power. Such a system is clearly associated with very high values of \( p \) because a government of type \( B \) is unlikely. The graph shows that in such a situation group \( A \) prefers patronage. An expansion of political rights for group \( B \) can then trigger meritocratic reforms if \( p \) falls below the line of indifference of group \( A \). The graph also shows that for values of \( \tau \geq 1 \) the political reform does not need to make group \( A \) politically weaker than group \( B \) in order to lead to bureaucratic reform.

Note, however, that for a given \( p > \frac{1}{2} \) an increase in \( \tau \) beyond \( \tau = 1 \) can lead to another crossing of type \( A \)’s indifference curve. This means that as polarization increases, the incumbent is more and more likely to switch back to patronage despite the fact that it leads to general incompetence.

In summary, the model delivers a micro-foundation for the choice of inefficient bureaucratic institutions and how this choice links to the political institutions of a country. In the context of large extractable rents, absolutist political institutions always imply a choice of inefficient bureaucratic institutions which are geared towards the extraction of these rents. Political reforms can lead to an improvement of bureaucratic performance if they give a diverse set of groups access to political power. According to the model, shared power implies that the political elite of a country adopts meritocratic reforms, bureaucratic efficiency increases and rent-extraction decreases.

\(^{30}\)The incumbent’s indifference line is formally described in the proof to proposition 3.
The model also reveals that while political polarization has a non-monotonous effect on the choice of bureaucratic system it always decreases competence. This is because patronage is an efficient bureaucratic institution for low levels of polarization and so the choice of the incumbent always reaches first-best. Within the set of polarized societies, however, patronage is inefficient and is adopted more likely by the incumbent if polarization is high. This theoretical finding, the adoption of an inefficient bureaucracy with rising importance of rents relative to public good provision, has many possible applications.\footnote{The connection is most immediate with results in Besley and Persson (forthcoming). An external war, for example, is a clearly connected to low $\tau$. Another possible application is the resource curse. The model here shows that abundant natural resources can be a curse because they imply inefficient bureaucratic institutions.}

4 Extension A: Costly Investment in Competence

Up to now the two dimensions of bureaucratic specialization were treated as equally costly. There are some reasons to believe, however, that a specialization in competence could be more costly than a specialization in rent extraction. This is particularly plausible in a setting where public good provision requires expertise that is relatively specific to the public sector or where bureaucrats are paid for specializing in rent extraction.

Assume that competence costs the bureaucrat $c$ regardless of whether she is selected for the post or not. An immediate result of this cost is that the set of political institutions now affects competence under patronage.

**Proposition 4** For an intermediate range of political polarization, $\tau \in [2h - 1, 1]$, bureaucrats tend to be more competent under patronage if their group holds more political power.

**Proof.** See appendix. $\blacksquare$

The intuition of proposition 4 is that since specialization in competence is costly, a bureaucrat will only invest in competence if she is sufficiently confident that this competence will be put to use. Under biased recruitment ($\tau \geq 2h - 1$) her recruitment and, hence, return to investment is more likely with rising political power of her group. In other words, investment in
competence requires a strong patron because only that can guarantee that investments will pay off.

Under meritocracy the political power of a group still has no impact on the competence of its bureaucrat. However, the introduction of investment costs does affect the overall level of competence that meritocracy provides. In fact, it can be shown that patronage can welfare dominate meritocracy if political power is highly concentrated in either the hands of group A or B.\(^32\)

A corollary of proposition 4 is that competence can suffer if patronage is combined with shared political power, i.e. values of \(p\) around \(\frac{1}{2}\). Shared power is bad for competence because it implies the lowest overall incentives for investment in competence. The fact that patronage performs well under high concentration of power but fails to do so if power is shared adds an additional channel through which political institutions affect the choice of bureaucratic institutions. Meritocracy becomes more attractive because it guards bureaucrats from the political volatility that comes with democratization. It is verified in the appendix that the result is an expansion in the area of consensus in meritocracy to \(\tau < 1\) for all \(c < h\).

It should be noted that the loss of patronage efficiency with rising political volatility provides a possible explanation for the specific arguments brought forward in the Northcote and Tevelyan report. In their words, meritocracy was to be introduced because the combination of patronage and political competition led to ‘inconveniences which are inseparable from the frequent changes which take place in the responsible administration [...]’\(^33\)

5 Extension B: Endogenous Political Power

In the previous sections it was assumed that the likelihood of re-election for the incumbent, \(p\), is exogenous to the actions of both politician and bureaucrat. This assumption is helpful to clarify the impact of political on bureaucratic institutions and to give an explanation for their correlation. However, there are important feedback mechanisms that require at least a brief analysis.

A first thing to note is that this article abstracts from a whole range of possibilities with regard to the impact of the bureaucrat on political out-

\(^{32}\)If \(p \in \{0, 1\}\) for example, patronage leads to higher welfare than meritocracy for all \(c \in (\tau (1-h), (2h-1) (1-\tau))\), \(\tau \in (2h-1, \frac{2h-1}{h})\).

\(^{33}\)Northcote and Trevelyan (1954), p. 1 (reprint)
comes. It is, for example, conceivable that the competence decision is met before the incumbent is re-elected so that the specialization decision affects political outcomes. If voters are forward-looking and interested in competence bureaucrats can affect political outcomes in favor of their group by specializing in competence. This influence is only possible, however, if the politician chose patronage before.\footnote{Bureaucrats under patronage would then have incentives not unlike those of politicians in Alesina and Tabellini (2007).} Incentives under meritocracy would remain unchanged.

Another important feature that has been ignored up to now is that bureaucratic institutions could be chosen to influence political outcomes. A clear example of this mechanism is that patronage can be used to exchange bureaucratic posts for political support.\footnote{In fact, this is a used definition of patronage. See Acemoglu et al (2006) for an argument along these lines.} A partial incorporation of this view into the present model is relatively easy.

For this purpose the political process is modelled as a voting game. There are three kinds of voters. The first kind is only interested in public good provision and votes for the politician that is expected to provide the highest benefit on that policy dimension. This group has a mass of $1 - \alpha$. The second group has a mass of $\alpha$ and votes for the politician that promises most rents. Thus, the parameter $\alpha$ measures the impact of group-specific vested interests on the political process. Assume that the political system is biased in the sense that a share $\lambda \in [0, 1]$ of these voters is of type $t = A$. Uncertainty in the political process is modelled through a third group of noise voters whose votes lead to an aggregate shock on votes $\varepsilon$ for the politician of type $B$. Assume that this shock is distributed uniformly on the interval $[-1, 1]$.

Voting takes place after the type $A$ incumbent chose the bureaucratic system. This allows the system to affect voting behavior. In addition, voting by the first two groups of voters takes place before investments are conducted. Bureaucrats therefore know that their investment has no impact on voting behavior. Indifferent voters are assumed to randomize their vote.

Note that in this model the identity of the politician has no impact on outcomes under meritocracy and it is therefore not important whether the incumbent wins or looses political power.\footnote{Introducing an additional group of voters that vote for their type of politician would not change the results derived in this section qualitatively.} In addition, both bureaucrats always invest into competence regardless of which group is more pow-
erful. Overall, the incumbent’s expected utility from $S = merit$ remains unchanged.

Under patronage all vested interest voters vote for their candidate. Competence between the two bureaucrats is identical. The incumbent therefore wins the election if

$$\alpha \lambda + \frac{1}{2} (1 - \alpha) \geq \alpha (1 - \lambda) + \frac{1}{2} (1 - \alpha) + \varepsilon$$

or

$$\varepsilon \leq \alpha (2\lambda - 1)$$

Given that $\varepsilon$ is distributed uniformly on uniformly on the interval $[-1, 1]$ the probability of re-election can then be written

$$p (patr, \lambda, \alpha) = \frac{1}{2} + \frac{\alpha (2\lambda - 1)}{2}.$$ 

which implies that the strength of vested interests, $\alpha$, increases the likelihood of re-election only if the political system is biased in the incumbent’s favor. The following result follows immediately.

**Proposition 5**  If society is not polarized ($\tau < 1$) meritocracy is introduced if and only if the political system gives a disadvantage to group $A$ ($\lambda \leq \frac{1}{2}$). If polarization is high ($\tau \geq 1$) meritocracy is introduced if and only if

$$\frac{2h - 1}{h} \geq \alpha (2\lambda - 1) \tau.$$ 

**Proof.** See appendix.

The novelty in proposition 5 is that it contains a statement about the importance of vested interests in maintaining power. Meritocracy is introduced in polarized societies if $\alpha$ is small. Another important message from proposition 5 is that the political bias needs to be in the incumbent’s favor to justify the use of patronage. The reason is that, here, patronage can only be used to mobilize not to buy support.

The fact that meritocracy is generally chosen if the incumbent is politically weak ($\lambda \leq \frac{1}{2}$) leads to the insight that meritocratic reforms can be

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37 This is consistent with the historic context of 18th and 19th century enlightenment in countries like France, Prussia or England. Driven by the ideal of rational explanations, the population could have become more attentive to government competence.
used to dissipate political resistance because they dislink politics from outcomes. In fact, this might point to a central problem with the selection of decision-makers by merit instead of elections. Meritocracy can lead to efficient outcomes which are not in line with the preferences of the majority. At the same time meritocracy implies growing indifference towards political selection.

6 Discussion

This article has made an attempt to classify bureaucratic institutions according to the extent of political involvement they allow in recruitment and promotion of bureaucrats. Two sets of institutions, meritocracy and patronage, have been modelled with the aim to analyze their impact on economic welfare and their relationship with political institutions such as elections.

The model reveals that meritocratic institutions perform better in most settings because patronage leads to a political bias in recruitment which hinders competition for bureaucratic posts by merit. How realistic this formally identified mechanism is can be seen in actual policy debates. A recent report by the UK House of Commons Public Administration Select Committee, for example, concludes

‘On a purely utilitarian basis, there remains a strong case for an impartial civil service. In Northcote Trevelyan terms, even when appointment from outside becomes routine, able people are encouraged to apply to the public service because they know that appointment will be on merit, not by patronage.’

In a second step the model identifies the channels through which political institutions affect the choice and performance of bureaucratic institutions. According to the basic model democratic reforms destabilize political recruitment under patronage and make that bureaucratic institution unattractive as a control mechanism for the government. It is important to note, however, that without an element of efficiency only the politically weaker group in society favors meritocracy. The derived competence advantage of meritocracy could therefore play an important role in making this bureaucratic institution attractive for governments. In addition, competence under patronage suffers when political power is shared more equally in society. From a bureaucrat’s

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perspective meritocracy provides a return to investments in competence that is not related to political power. Thus, meritocracy complements democracy because shared power benefits the relative performance of meritocracy over patronage.

A clear drawback of the present model is that it takes political power as exogenously given. This drawback is partly alleviated in a second extension which analyzes the case where the choice of bureaucratic institutions feeds back to political support for the politician. It can is shown that patronage is more likely if the politician’s power relies on vested interest that are supporting him for the sake of rent extraction. In this way the model is able to link the influence of interest groups to the choice of inefficient bureaucratic institutions. The extension also highlights the fact that the depolitization of the bureaucracy makes the distribution of political power less important for outcomes. Both political resistance and support are therefore diminished if meritocracy is adopted.\textsuperscript{39}

A possible criticism regarding the categorization of bureaucratic institutions in meritocracy and patronage is that, theoretically, meritocracy and patronage could be combined to prevent a trade-off between political preference and competence. And indeed, in the presented model a pre-selection according to objective criteria followed by a choice by the political elite would perform as well as meritocracy in terms of welfare. An obstacle for implementing this idea is, however, that two real candidates will rarely have the same level of competence. This fact always leaves some scope for the modelled trade-off.

This article has modelled a specific aspect of the interaction between the political and bureaucratic elite of a country - the political influence on bureaucratic careers. The model shows that political institutions might affect government quality indirectly through the incentives they establish within the bureaucracy. This has two main empirical implications. First, our understanding of the performance of political institutions might benefit from a thorough classification and measurement of bureaucratic institutions. It would be interesting, for example, to know how important the indirect effects of political reforms on bureaucratic reforms are for growth outcomes. Secondly, the measurement of bureaucratic institutions might reveal an addi-

\textsuperscript{39}While this is not the main point of the paper it is interesting to note that the Prussian nobility resisted strong pressures for political liberalization in the 19th century while at the same time introducing rules of recruitment and promotion that improved the access to power for the rising bourgeoisie.
tional channel through which polarization affects welfare. The more polarized a society, the less likely is the adoption of bureaucratic institutions that are geared to public good provision.

An intriguing application of this last finding is the military. To see this, note that the definition of polarization here captures the difference between external and internal wars. If an external war looms, all members of society would suffer a huge loss if national defence is not successful. Thus, the present government wants to recruit the military by merit because this maximizes defence (public good provision). In a civil war the government wants to recruit the military by patronage because it wants to be sure that the hired military is loyal, i.e. the group-specific control of rents is more important than maximizing the overall level of military competence. The model also states that this mechanism will be subject to the control that can be gained through patronage.

On a more theoretical level this article has highlighted the trade-off between representation and competence that is at the core of the selection problem for both politicians and bureaucrats. A crucial assumption in this regard has been that meritocratic recruitment leads to perfect representation of the population. Since this is unlikely to be true in general, promotion by merit might lead to an overrepresentation of particular groups. A discussion of welfare with this meritocratic bias lies beyond the scope of this paper but it should be kept in mind that meritocracy is no guarantee for a welfare optimum - even if it works.

A Proof of Proposition 1

Note first that \( \tau \geq 1 \) implies \( \tau \geq 2h - 1 \) so that recruitment under patronage is biased. Given a level of competence \( e_B \) the candidate of type \( A \) wants to specialize in rent extraction if

\[
p(h + \tau (1 - h)) + (1 - p)(e_B - \tau (1 - e_B)) \leq p(1 - h + \tau h) + (1 - p)(e_B - \tau (1 - e_B))
\]

which is the case if and only if \( \tau \geq 1 \). Independence of \( p \) and \( e_B \) implies that the candidate of type \( B \) has exactly the same incentives and specializes in rent extraction if and only if \( \tau \geq 1 \). For levels of polarization \( \tau < 2h - 1 \) patronage is unbiased and selects politically only when both bureaucrats are
of equal competence. It can be shown that both candidates specialize in public good provision in that case.

Under meritocracy there is two cases to be considered. Given that the candidate of type \(-t\) is competent the candidate of of type \(t\) also wants to be competent if

\[
\frac{1}{2} (h + \tau (1 - h)) + \frac{1}{2} (h - \tau (1 - h)) > h - \tau (1 - h)
\]

or

\[
\tau (1 - h) > 0.
\]

And if the other candidate does not specialize in public good provision the candidate of type \(t\) wants to be competent if

\[
h + \tau (1 - h) > \frac{1}{2} (1 - h + \tau h) + \frac{1}{2} (1 - h - \tau h)
\]

or

\[
2h - 1 + \tau (1 - h) > 0.
\]

Note that \(h \in \left(\frac{1}{2}, 1\right)\) and \(\tau > 0\). Hence, both competence conditions are satisfied which implies that both candidates have a weakly dominant strategy of specializing in public good provision, \(e_t = e_{-t} = h\).

**B Proof of Proposition 2**

For values of \(\tau \geq 1\) patronage leads to incompetent bureaucrats by proposition 1. The incumbent then introduces meritocracy if

\[
\frac{1}{2} (h + \tau (1 - h)) + \frac{1}{2} (h - \tau (1 - h)) \geq p (1 - h + \tau h) + (1 - p) (1 - h - \tau h)
\]

or

\[
p \leq \frac{2h - 1}{2h\tau} + \frac{1}{2}
\]
which implies that the incumbent is indifferent between meritocracy at a level of political power \( \hat{p} \in \left( \frac{1}{2}, 1 \right) \) for all \( \tau \geq 1, h \in \left( \frac{1}{2}, 1 \right) \). The second part of the proposition follows from

\[
\frac{\delta \hat{p}}{\delta \tau} = -\frac{2h - 1}{2h^2} < 0.
\]

C Proof to Proposition 3

Note first that Lemma 1 still holds. The condition \( \tau \geq 2h - 1 \) ensures that bureaucrats get hired if and only if their type of politician is in power. Given a competence level \( e_B \in \{h, 1 - h\} \), candidate A then invests in competence if

\[
p( h + \tau (1 - h)) + (1 - p) (e_B - \tau (1 - e_B)) - c > p (1 - h + \tau h) + (1 - p) (e_B - \tau (1 - e_B))
\]

or

\[
p(2h - 1)(1 - \tau) > c
\]

which is easier to satisfy for high \( p \) as long as \( \tau < 1 \). The proof for candidate B is analogous.

D Investment Costs and Biased Recruitment

This section proves that meritocracy can be strictly preferred to patronage for \( \tau < 1 \) if investment costs are positive. In order to verify the statement in the text it is sufficient to show that with positive investment costs \( c > 0 \) meritocracy leads to more competence at \( p = \frac{1}{2} \) for some \( \tau \in (2h - 1, 1) \). The reason is that for \( p = \frac{1}{2} \) the incumbent is indifferent between the two bureaucratic institutions if they result in identical competence. However if both candidates increase their competence his expected utility is strictly increasing.

Note first that \( \tau > 2h - 1 \) implies biased recruitment under patronage and investment in competence follows the rules in the proof for proposition 3. This implies incompetence in patronage for all

\[
p(2h - 1)(1 - \tau) \leq c
\]
which is always satisfied for $c > 0$ and $\tau \to 1$.

In order to complete the proof one needs to analyze investment under meritocracy. There are two cases. A candidate invests given that the other candidate invests if

$$\frac{1}{2}(h + \tau (1 - h)) + \frac{1}{2}(h - \tau (1 - h)) - c > h - \tau (1 - h)$$

or

$$\tau (1 - h) > c$$

while she invests given that the other candidate does not invest if

$$h + \tau (1 - h) - c > \frac{1}{2}(1 - h + \tau h) + \frac{1}{2}(1 - h - \tau h)$$

or

$$2h - 1 + \tau (1 - h) > c$$

which implies that for $\tau (1 - h) \leq c < 2h - 1 + \tau (1 - h)$ there is no pure strategy equilibrium in investments. It can be shown that meritocracy has a unique symmetric equilibrium in which both candidates invest into competence with probability

$$\Pr(inv) = \begin{cases} 
1 - \frac{1}{2h - 1} & i f \quad c < \tau (1 - h) \\
\frac{c - \tau(1-h)}{2h - 1} & i f \quad \tau (1 - h) \leq c < 2h - 1 + \tau (1 - h) \\
0 & i f \quad 2h - 1 + \tau (1 - h) \leq c
\end{cases}$$

and, thus, there is some competence under meritocracy for all $c < 2h - 1 + \tau (1 - h)$. For $\tau \to 1$ this condition becomes

$$c < h.$$

Thus, meritocracy leads to more competence than patronage for all $0 < c < h$ and $\tau$ close to 1. At $p = \frac{1}{2}$ the incumbent therefore strictly prefers meritocracy.
E Proof of Proposition 4

Assume first that $\tau < 1$ and patronage manages to create competent bureaucrats. The incumbent therefore wants to introduce meritocracy if

$$\frac{1}{2} (h + \tau (1 - h)) + \frac{1}{2} (h - \tau (1 - h)) \geq \left( \frac{1}{2} + \frac{\alpha (2\lambda - 1)}{2} \right) (h + \tau (1 - h)) + \left( 1 - \left( \frac{1}{2} + \frac{\alpha (2\lambda - 1)}{2} \right) \right) (h - \tau (1 - h))$$

which simplifies to

$$\lambda \geq \frac{1}{2}.$$ 

Assume now that patronage creates incompetent bureaucrats ($\tau \geq 1$). Meritocracy is then introduced if

$$\frac{1}{2} (h + \tau (1 - h)) + \frac{1}{2} (h - \tau (1 - h)) \geq \left( \frac{1}{2} + \frac{\alpha (2\lambda - 1)}{2} \right) (1 - h + \tau h) + \left( 1 - \left( \frac{1}{2} + \frac{\alpha (2\lambda - 1)}{2} \right) \right) (1 - h - \tau h)$$

or

$$2h - 1 \geq \alpha (2\lambda - 1) \tau h$$

which implies that meritocracy is introduced for $\alpha \to 0$ or $\lambda \to \frac{1}{2}$.

References


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### Table I: The Correlation of Political and Bureaucratic Institutions - Basic Robustness Checks

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) bureaucratic quality</th>
<th>(2) bureaucratic quality</th>
<th>(3) bureaucratic quality</th>
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<td>0.0593***</td>
<td>0.0785***</td>
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<td></td>
<td>(0.0126)</td>
<td>(0.0115)</td>
<td>(0.0197)</td>
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<td>share of muslims</td>
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<td>105</td>
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<tr>
<td>R-squared</td>
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<td>0.611</td>
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Standard OLS Errors in parenthesis, *** p<0.01, ** p<0.05, * p<0.1

Sources: Bureaucratic Quality is 1999 value from Policy Risk Survey Group. Polity score is from the PolityIV dataset. All other data is from Andrei Shleifer’s website. Polity Score is the average Polity2 score between 1980 and 1999. GNP per capita is ln(GNP per capita average 70-95). Latitude is abs(latitude of capital)/90. Share of Catholics and Muslims are 1980 values. Ethnic fragmentation is the average of 5 indices by Esterly and Levine.
### Table II: Democracy and Independence of Central Bank Chief Executive Officer (CEO)

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<th>(4)</th>
<th>(5)</th>
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<td>Independence of Central Bank CEO (2003)</td>
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<td></td>
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<td>GDP per capita</td>
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Standard OLS Errors in parenthesis, *** p<0.01, ** p<0.05, * p<0.1

Sources: Independence of Central Bank CEO is from Crowe and Meade (2008). Policy score is from the PolityIV dataset. GDP per capita is from the IMF website. Polity Score is the average Polity2 score for the stated periods. GDP per capita is ln(GDP per capita, 2002, in Billion US Dollars). For a detailed description of CEO Independence see Cukierman et al (1992).
Figure I: Basic Correlation of Political and Bureaucratic Institutions

*Controlled for GDP per capita, i.e. the y-axis displays the residual bureaucratic quality not explained by GDP per capita.
Figure 2: Indifference Lines and Consensus in Meritocracy

- Group A prefers Patronage
- Group B prefers Patronage
- Meritocracy as a Pareto Improvement

Political Power of Group A (Incumbent)

Polarization (\(\tau\))