The problem of political calculation in autocracies

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Abstract Autocrats depend on their followers to remain in power. They compensate the followers in exchange for their support. Yet, they have few tools to guide them in determining the compensation commensurate with the value of each follower's support. The failure of political calculation can easily lead to the autocrat's demise. In semi-authoritarian and democratic regimes, elections provide a solution to the problem of political calculation. In elections, citizens cast votes in exchange for public or private goods. Thus, the number of votes received by candidates and parties can be used as a proxy for the value of their support.

Keywords Autocracy · Authoritarian elections · Semi-authoritarian elections · Political calculation · Winning coalition · Political parties · Uncertainty · Entrepreneurial opportunity

JEL Classification D72 · D83 · B53

1 Introduction

Autocrats never rule alone. To an outsider, the regime of Turkmenbashi, Turkmenistan's former lifelong president, may have seemed to serve the whims of only one man—Turkmenbashi himself. Yet for all his eccentricities he was a keen politician carefully balancing the power of rival elite factions in order to remain on top (Collins 2006). He had the power to rename the days of the week and erect a life-size golden statue of himself in the main square of the Turkmen capital. However, he still had to keep his key supporters happy, especially the secret service

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and the police, since "a single person, no matter how physically impressive, cannot rule against the wishes of *all* of his subjects" (Turchin 2006, p. 25).

The literature on modern autocracies is rather extensive. Yet, most of the literature focuses on contentions between the ruling elites and the oppressed population within the framework of social movements, revolutions and democratic transitions (see Bunce 2000; Geddes 1999). Other authors compare governance aspects of autocracies and democracies, exploring the impact of regime type on economic development (e.g., Niskanen 1997; Ross 2006). Few authors, however, explore the dynamics of the relationships among the ruling elites, in particular between the autocrat and his supporters.

In their seminal work "The logic of political survival" Bueno de Mesquita et al. (2003) present a general model of the relationship between the leader and his supporters. They use the term "leader" since their model applies to both autocratic and democratic regimes. They define the selectorate as a portion of the population that is eligible to participate in the selection of the leader. A winning coalition is a subset of the selectorate that is sufficient to put the leader in power. Thus, in order to remain in power the leader has to ensure the support of his winning coalition. Smaller winning coalitions are characteristic of autocracies, while larger winning coalitions are indicative of democratic regimes.

At the core of the relationship between the leader and his winning coalition is political exchange. Similar to Olson's stationary bandit, the leader extracts resources out of the economy through taxation (Olson 1993; McGuire and Olson 1996). He then distributes a portion of rents to his coalition in exchange for their political support. In smaller coalitions, the leader distributes primarily private goods. In larger coalitions, his ability to provide private goods diminishes given the budget constraints. At some point the leader can only maintain the winning coalition by providing public goods, which are cheaper on a per capita basis. Consequently, the size of the winning coalition determines the type of goods provided by the leader in exchange for political support.

Focusing on political exchange, Bueno de Mesquita's model seamlessly integrates political and economic aspects of the dynamics between the leader and his supporters in autocracies and democracies. Yet, it leaves out a key component of political exchange—political calculation, i.e., the process through which the autocrat determines the value of the political support provided by each member of the winning coalition and the share of rents commensurate with this support. For simplicity, the model assumes that all members of the winning coalition are equal in the amount of political support they can lend in exchange for rents. Therefore, the rents are divided equally among them, making political calculations rather straightforward. Such an assumption, however, is hardly realistic. This paper examines the problem of political calculation facing the autocrat in maintaining the support of his followers.

The purpose of this paper is twofold. First, it argues that the autocrat suffers from the lack of mechanism that evaluates the relative power of his supporters and consequently their commensurate share of rents. Such mechanism is analogous to a pricing mechanism in markets. Deprived of such mechanism, the autocrat faces the problems similar to those of a central planner in a socialist economy. The paper

extends the insights of Mises's (1935) seminal paper "Economic calculation in the socialist commonwealth" to the context of autocracy.

Second, the paper argues that autocrats often use elections in order to reduce the political calculation problems. In a manner similar to the pricing mechanism, elections provide autocrats with the exchange value of the relative power of political factions. Consequently, this paper argues that elections in autocratic regimes are not mere façades; they can serve as a partial solution to the autocrat's information problems.

This paper contributes to a wider discussion on the impact of electoral institutions on autocratic regimes. Similar to other authors (e.g., Brownlee 2007; Gandhi 2008; Gandhi and Lust-Okar 2009; Lust-Okar 2006; Magaloni 2008), the paper argues that while electoral institutions in autocratic regimes do not serve the same purpose as in democratic ones, they are crucial to the stability of autocracies. The paper concurs with these authors that electoral institutions should not be dismissed as irrelevant. On the contrary, they deserve a more careful examination.

The structure of the paper is as follows. The next section describes the threats to the autocrat arising from imperfect information. The third section presents the framework of political calculation in autocracies. It discusses the impact of imperfect information and uncertainty on the autocrat's ability to distribute rents. The fourth section describes the strategies employed by some autocratic regimes in response to the problem of political calculation, including the formation of political parties and multiparty elections. The fifth section discusses the role of elections as a tool of political calculation. The final section describes elections within the autocratic context. It discusses both the advantages and limitations inherent in elections in repressive environments.

2 The perils of autocracy

One of the major obstacles that the autocrat faces in dividing the rents is his inability to gain accurate information on the relative power of political factions. In autocracies, sensitive information is often distorted, filtered out or is simply hard to obtain. The autocrat's advisors may distort the crucial information in order to promote a course of action that benefits their own faction at the expense of the autocrat—a standard principal-agent problem (Congleton 2001). They may also filter the sensitive information out, since being the bearer of bad news may result in severe punishment in an autocratic regime (Wintrobe 1998).

Finally, the autocrat faces the problem of inferring the true preferences of population due to the strong incentives for citizens to falsify their opinions (Kuran 1989). In general, citizens will publicly express their support for the autocrat even if they privately wish for a different policy or form of government. Yet, even a smallest increase in the strength of the opposition may lead citizens to switch their support. Thus, seemingly unshakeable autocracies may crumble unexpectedly as a result of relatively moderate changes in the environment. This may be one reason why many revolutions are unpredictable ex ante.

Some scholars suggest that the autocrat need not depend on rewards to stay in power. Another strategy is to eliminate potential rivals through terror and purges (Haber 2006). A less extreme version of the strategy includes rotation of high level officials, i.e., potential challengers, in order to deny them the ability to form an independent base of support (Tullock 1987). The autocrat can also create several competing organizations vying for power (Haber 2006). A faction needs a launching organization in order to challenge the autocrat. Increasing the number of organizations increases the size of the minimum winning coalition, making it harder for factions to coordinate and overthrow the autocrat. Since control of any one organization is insufficient to overthrow the autocrat, factions face significant coordination and commitment problems in organizing a coup.

Yet, even with these strategies the autocrat needs to reward his supporters. Purges require a specialized terror organization. People who join this organization need to be compensated for their work; otherwise, they would have no incentives to carry out their orders. No one can purge them since they are the organization that executes the purges. The reward is similarly important in the case of proliferation of the launching organizations. If the autocrat's supporters within these organizations are not compensated adequately, the decision to collude and overthrow the autocrat will be a simple one.

Beyond the autocrat's inability to gain the valid information necessary to evaluate the relative power of various factions, the underlying circumstances may change quite rapidly. Thus, economic shocks, military actions or the loss of support from a major international donor can shift the balance of power towards one or the other faction (Huntington 1991). Since such changes tend to be rapid, they allow the autocrat little time to adapt to the new political arrangement.

The autocrat's problems are compounded by the fact that these events alter not only the relative power among the existing members of the winning coalition but also the relative power of the coalition vis-à-vis the selectorate (Rueschemeyer et al. 1992). Mobilization of new political actors increases the power of the members of the selectorate that are not part of the winning coalition. Thus, the original coalition may no longer be sufficient to secure victory.

3 The problem of political calculation under uncertainty

At the root of the autocrat's problem of political calculation is the absence of a mechanism for collecting information on the relative power of each political faction and ensuring the accuracy of that information. Such a mechanism may be thought of as a pricing mechanism, following the idea that the principal role of the price mechanism in markets is to aggregate and communicate the information dispersed among many people (Hayek 1945). Since the information on relative power of factions is normally dispersed among various factions, ability to obtain and evaluate such information is crucial to the autocrat's survival.

In economics, the implications of the absence of a pricing mechanism are studied in two different contexts: new markets and socialist economies. In the first case, entrepreneurs introduce entirely new products into the market. Prices for these

products do not exist and the current price structure is not applicable. Thus, entrepreneurs operate under the conditions of uncertainty, i.e., inability to determine the value of the new products ex-ante. The second case is the socialist economy, in which a pricing mechanism is artificially removed. Implications of both cases on the problem of political calculation in autocracies will be considered in this section.

Before proceeding, however, note that the problem of political calculation is not wholly insurmountable. This is evident in the lengthy tenures that many autocrats enjoy. Suppose a country is in a state of political and economic stability. Both the autocrat and political factions face the problem of political calculation. In other words, neither of them has sufficient information to determine the relative power of the other factions and the autocrat. Yet, in the absence of political or economic changes, it is only reasonable for all parties to assume that the current distribution of rents among factions is commensurate with their political and economic clout. Consequently, the current distribution of rents is likely to indicate the relative power of factions within the winning coalition. Given the choice between the certainty of the current (most likely adequate) level of rents and highly uncertain possibility of higher rents, no faction is likely to defect from the winning coalition. Thus, as long as the state does not experience drastic changes in economic or political conditions, the relative power of factions remains stable eliminating the need for political calculation. The autocrat needs only to maintain the current arrangement to remain in power.

Autocracies may reach stability in various ways. Some of them inherit pre-existing power-sharing arrangements from their predecessors. If the succession has been agreed upon and carefully orchestrated, the status quo is maintained. Examples of such transfer of power include dynastic successions in monarchies, e.g., Jordan and Morocco, or other authoritarian regimes, e.g., Syria and Azerbaijan. In other cases, autocrats achieve stability by forming a successful winning coalition, whether by chance or through superior organizational skills. This process is discussed in more detail below.

Suppose an autocracy experiences major economic or political changes. These changes signal to political factions that the current distribution of rents may no longer be commensurate with their relative power. Yet, no political faction, including the autocrat, has sufficient information to evaluate the altered strength of various factions. The autocrat is likely to make changes to his coalition based on his internal judgment. But not all factions may agree with the new distribution of rents. Some of them may decide to challenge the autocrat and form an alternative coalition. Even though they do not have ex-ante knowledge of the strength of their coalitions compared to that of the autocrat, they may still take a chance based on a perceived opportunity. Such attempts often fail, as numerous unsuccessful coups and revolutions attest (Goldstone et al. 2005; Marshall and Marshall 2007).

While such behavior is risky, it is not entirely irrational. The risk that challengers take is in many ways similar to the risk undertaken by business entrepreneurs in introducing new products into the market. Both challengers and entrepreneurs introduce innovations, whether new winning coalitions or products, in the absence of the information necessary to evaluate the probability of success of such endeavors (Shane 2003). Their actions are based on internal judgments that may be

different from those of others. This judgment may prove to be false and the enterprise may fail. But if it proves to be right, the rewards may be substantial.

Uncertainty is crucial in creating entrepreneurial opportunities. For entrepreneurs to perceive an opportunity, their internal judgment of the value of the current distribution of resources has to be different from that the others (Gifford 2005; Shane 2003). Absent such differences, the distribution of resources will reflect the shared opinion of the market. Entrepreneurs reach different judgments either due to additional information that only they possess or due to different interpretations of the existing information. If a current pricing structure provides full information regarding the profitable distribution of resources, differences in judgment are not likely. Yet, if the current pricing structure does not apply, as in the case of new markets, differences in judgment are unavoidable. Consequently, uncertainty leads to the creation of entrepreneurial opportunities.

Theoretically, the overall impact of uncertainty on the autocrat should be neutral. Given that both the autocrat and potential challengers suffer from incomplete information, the autocrat's strength is just as likely to be overestimated as underestimated. Thus, the autocrat may benefit from uncertainty when he goes unchallenged even though his coalition is weaker than that of other factions. He may also suffer from it when he is challenged despite having the strongest coalition. In the latter case, he incurs the costs of suppressing an attempted coup.

In practice, however, uncertainty seems to work against the autocrat. According to dataset compiled by Marshall and Marshall (2007), less than a third of all coups plotted between 1960 and 2006 have been successful. This seems to indicate that uncertainty prompts factions to underestimate the strength of the autocrat's coalition. Consequently, better information on the relative strength of each faction is likely to reduce the number of coup attempts, reducing the costs to the autocrat.

Beyond uncertainty, the main impact of the absence of a pricing mechanism is the inability of the autocrat to make timely adjustments to his winning coalition. This is similar to the problem of a central planner in a socialist economy. In both systems, allocation of resources is in the hands of a single individual or office. And in both systems, the absence of a pricing mechanism makes calculation and, consequently, efficient allocation of resources impossible.

In his seminal essay "Economic calculation in the socialist commonwealth," Mises (1935) describes the problems of economic calculation in a centrally planned economy. In particular, he points to the difficulty of valuing goods. All decisions on allocation of resources in a socialist economy are made by a single authority—the central planner. Thus, the value of each good is determined by the subjective calculations of the planner based on its use-value. For a simple economy, e.g., a household, such calculations are not necessarily difficult. The head of the household can easily determine the relative use-value of each good in the household economy. Consequently, he can allocate resources and effort based on the subjective use-value of goods.

When it comes to more complex and lengthy processes, basing calculation on the subjective use-value of goods is no longer possible. Many of these processes are not geared towards producing the final product for consumption but rather towards producing intermediary goods. These goods have value only as inputs into other

processes. In complex economies, an efficient allocation of effort and resources among the bewildering multitude of processes and products is beyond the mental capacities of a single person, no matter how intelligent. Absence of objective valuation mechanism makes economic calculation in a socialist economy impossible.

An alternative method of economic calculation used in a capitalist free market is based on the exchange value, rather than use-value, of goods. Resources and labor efforts in such economies are not centrally controlled. The decision-making process is decentralized and dispersed among all the members of the economy. Individuals exchange goods and services freely according to their subjective use-value of goods. Yet, the process of continuous exchange determines the exchange value of each good, normally expressed in monetary terms.

Valuation based on the exchange value, rather than the subjective use-value, of goods provides a threefold advantage. First, the exchange value of each good is based on the calculations of all parties to the exchange rather than subjective valuation of a particular individual. Second, it provides each individual with a reference point to the efficient utilization of goods. Third, it makes it possible to express the value of each good in the same units. Thus, it allows comparison of values of different goods through the price mechanism. Consequently, it provides individuals within the market economy with a pricing mechanism for goods.

Another advantage of the market economy is that it is dynamic. The relative value of each good is constantly updated, which is reflected in its price. Yet, these changes are the result of local actions of individuals dispersed throughout the economy rather than the outcome of a deliberate centralized action (Hayek 1945). The market does not depend on any single individual to consciously update the prices of goods. These prices are the outcome of numerous individuals engaging in market exchange in pursuit of their private interests.

Mises' argument regarding the problems of economic calculation in socialist economies illuminates a number of points. The more complex the political structure in a country is in terms of the number of factions and variation of their preferences, the harder it is for any single person to evaluate the relative strength of each faction. A skillful autocrat may be able to curtail the power of potential challengers in a relatively small homogenous coalition. But as coalitions get larger and the interests of their members more diverse, the complexity of managing the political arrangement increases exponentially. The latter scenario is more likely to occur in larger, economically advanced countries. Thus, the level of economic development of a country influences the ability of the autocrat to remain in power. Empirical evidence indicates that higher levels of economic development increase the chances of democratization (see Boix and Stokes 2003; Epstein et al. 2006).

Autocracies further lack an established mechanism that would ensure a timely adjustment of the share of resources allocated to each political actor. As in a socialist economy, reallocation of resources in autocracy does not happen automatically; it depends on a conscious decision of the central authority. If the autocrat fails to adapt in time, allocation of resources is readjusted through a coup or a revolution—either outcome highly undesirable for the autocrat.

4 The rise of semi-authoritarianism

The literature on democratic transitions generally suggests that the problem of political calculation cannot be solved under autocratic regimes. Some scholars argue that a shift in the balance of power towards the poor, i.e., people outside of the winning coalition, always leads to democratization (e.g., Acemoglu and Robinson 2005). Even if the autocrat attempts to co-opt the opposition, he cannot credibly commit to a new distribution arrangement. Consequently, the poor push for the establishment of democracy in order to institutionalize their de facto power. There is simply no distributional arrangement that the autocrat can offer in order to maintain his power.

Other authors working within the elite pact tradition (e.g., Colomer 2000; Gates and Humes 1997; Przeworski 1991) claim that attempts by the ruling elites to readjust the distributional arrangement during the rapid shifts in power result in democratization. In these models, democratization is the outcome of miscalculation on the part of the elites rather than outright rejection of these attempts by the people. According to these authors, a portion of the winning coalition, which they call 'soft-liners', chooses to initiate reforms in the belief that they can co-opt opposition into a broadened autocracy. Yet, due to imperfect information, they underestimate the power of the opposition, which leads to full democratization rather than partial reforms.

The problem with this literature is that it focuses on the countries that have already democratized. The review of autocracies, on the other hand, suggests that many of them have adapted in response to the problems of political calculation, among other things. While these adaptations often have a facade of democratic institutions, they leave the autocratic essence of the regimes unchanged. These regimes were originally conceptualized in the literature as transitioning towards full democratization. Yet, in recent years, they have come to be recognized as a separate category, distinct from both full democracies and full autocracies (Carothers 2002). Various authors have categorized them as 'electoral authoritarian' (Schedler 2006), 'semi-authoritarian' (Ottaway 2003), 'competitive authoritarian' (Levitsky and Way 2002) or 'hybrid' regimes (Diamond 2002).

What makes these regimes different from full autocracies is that they permit a substantial degree of political freedom for the opposition (Ottaway 2003). They generally allow the formation of opposition parties and nongovernmental organizations. In some cases, they are home to a lively independent press. Most importantly, they feature multiparty elections in which opposition candidates are allowed to run. Yet, unlike full democracies, elections in these regimes never threaten the autocrat or his core supporters. These regimes often resort to fraud, voter intimidation and restrictions on opposition in order to ensure that their dominant position remains unchallenged.

Despite the temptation to dismiss elections in semi-authoritarian regimes as a mere façade, a number of scholars have argued that political parties as well as multi-party elections are crucial to the regime's survival. Magaloni (2008) suggests that regular elections provide a credible commitment on the part of the autocrat to promote the rank-and-file supporters on a routine basis. Furthermore, institutionalized succession rules provide the ranking officials within the regime with a reasonable expectation of

succeeding the autocrat. Multiparty elections, on the other hand, allow the ranking supporters to make a credible threat to join a rival political party and challenge the autocrat. Thus, they increase the bargaining power of the members of the coalition vis-à-vis the autocrat.

However, the main advantage of elections to the autocrat is that they provide him with information on the political preferences and strengths of factions both within and outside his immediate circle. Thus, "elections under authoritarian regimes provide information about rulers, their critics, and the support competing factions command in the wider population" (Brownlee 2007, p. 9). In regimes that allow opposition groups to form political parties and contest elections, legislatures act as a forum for the autocrat to negotiate policy concessions with the outside groups, thereby co-opting the opposition and broadening the winning coalition (Gandhi and Przeworski 2006). In other regimes, opposition tends to be marginalized. Consequently, elections are contests among the supporters of the regime (Lust-Okar 2006). They allow the autocrat to reward the supporters that command a larger popular backing. The autocrat further has a strong incentive to ensure that a wider variety of special interests is represented in the legislature (Congleton 2001). A more representative legislature provides the autocrat with a wider range of policy assessments. Consequently, its median policy is less biased.

5 Elections as a tool of political calculation

Elections are common to both democratic and semi-authoritarian regimes. In both types of regime they serve as a tool of political calculation, although this is not their only function. In particular, they provide a pricing mechanism that allows for evaluation of the relative strength of various political factions. How this information is used constitutes the primary difference between the regimes. It will be discussed in more detail in the next section. Let us first consider the process through which elections make political calculation possible.

One of the key features of elections is exchange. Candidates promise voters either favorable policies or patronage in exchange for their votes. Each individual voter makes a subjective calculation regarding the value of each candidate running in the voter's district by casting a vote. The votes within the district are then summed up and the candidate with the highest number of votes wins. Thus, the outcome of the elections is not based on the subjective valuation of any single individual. Rather, it is based on the calculations of all voters within the district. The number of votes each candidate receives in the elections can be thought of as the exchange value or price of the candidate. The winner is the candidate with the highest value.

In addition to indicating the exchange value of political candidates, elections provide the candidates with a reference point for the efficient use of resources and effort. They demonstrate which policies appeal to voters in a particular district or which coalition of voters is likely to propel a candidate to victory. Candidates can adjust their tactics based on this information. Furthermore, since the exchange value of candidates is expressed in the same units, i.e., the number of votes, the relative value of each candidate can be easily compared. Even if candidates have different

bases of power, e.g., tribal links, religious affiliation or support of business elites, their relative strength can be readily ranked. Thus, in elections, votes perform the same role as money in markets.

Elections indicate the strength of not only individual candidates but also political parties and factions within the ruling party. While some candidates choose to run as independents, many candidates appeal to voters as members of a party. Parties appeal to a larger section of population, beyond a single district. The strength of a party is, therefore, measured on a national level. It is determined by the number of candidates affiliated with the party that are elected into the legislature. Since the strength of each party is expressed in the same units, i.e., the number of legislative seats, it can be easily compared.

Yet, as a tool of political calculation, elections have a number of limitations. One of these limitations is the formation of parties, particularly in new democracies. The ability of elections to determine the true strength of each political faction hinges on the ability of factions to organize themselves into efficient political parties. If some of these factions are less successful in their electoral campaigns than others, then the system will result in distorted allocation of power. The factions that perceive their true strength to be higher than given under election results will be less supportive of the system and may abandon it when given a chance.

The reasons for the failure of political factions to form efficient political parties are many (Carothers 2006). Some are the fault of the factions, e.g., infighting, poor leadership and organizational structure; others have to do with structural variables beyond their control. High levels of fractionalization and polarization reduce the viability of political parties (Schwedler 2006; Angrist 2006). High volatility of public opinion makes it harder for parties to identify winning policies (de Marchi 2003). Also, the variety of policies that are available to political actors is rather limited given the constraints imposed by the global markets (Carothers 2006).

The usefulness of elections may also be undermined by the fact that some of the most powerful factions in the country, i.e., the military and secret police, normally do not participate in the process. Consequently, elections offer little guidance in gauging their strength. In addition, even democratic leaders may be tempted to subvert the rules and ignore the election results, particularly if the elections clearly indicate the stronger winning coalition of the challenger. Thus, the challengers in Georgia and Ukraine had to resort to mass protests, Rose and Orange revolutions respectively, in order to take power (Hale 2005).

6 Elections in semi-authoritarian regimes

Elections are one of the most critical aspects of semi-authoritarian regimes, since they make political calculation possible. They provide the autocrat with a pricing mechanism that allows him to evaluate the relative strength of various political factions. Thus, elections help the autocrat to decide which factions should be included in the winning coalition and what their share of rents should be.

Yet, for all the similarities between elections in democratic and semi-authoritarian regimes, they differ in one key aspect. The autocrat and his supporters

in semi-authoritarian regimes never cede the control over the formation of the winning coalition to the people. They apply a wide variety of strategies to maintain their tight grip on power. Thus, in some countries, the position of the head of state is kept out of electoral competition, e.g., the position of the monarch in Jordan or Supreme Leader in Iran. In other countries, competition in presidential elections is severely constrained through a screening processes, voter intimidation and ballot fraud, e.g., Egypt, Russia or Azerbaijan (Ottaway 2003). Since most semi-authoritarian regimes feature emasculated parliaments and concentration of power in the office of the head state, these strategies effectively keep the control of the winning coalition in the hands of the autocrat.

Bans on opposition parties and candidate screening are not limited to the elections of the head of state. In some countries they are extended to the elections for legislature and other offices, especially if these offices wield substantial powers. In these cases, elections determine the relative power of the factions within the winning coalition. For example in Iran only the members of the winning coalition are allowed to run in the presidential elections (Green et al. 2009). Over time pragmatist, reformist and conservative factions of the winning coalition have alternated in control of the influential presidential office. Note that in Iran the president is the head of government and not the head of state. He is subordinate to the Supreme Leader.

In general, autocrats in semi-authoritarian regimes attempt to use the elections as a tool of political calculation while avoiding the risks of rotation of power that may result from free elections. As a result, the signal provided by such elections is distorted. Furthermore, the problems that plague elections in new democracies are exacerbated in semi-authoritarian regimes. Political factions in these regimes are even less likely to form effective political parties and the role of the military in politics is even more ubiquitous. The main goal of elections in semi-authoritarian regimes is not to estimate the exact power of each political faction, but rather to detect changes in their power over time.

One advantage of elections for the autocrat that is unique to semi-authoritarian regimes is a shift from uncertainty to the environment of measured risk. Without elections, political factions do not have sufficient information to evaluate the relative power of other factions. As described in a previous section, this uncertainty works against the autocrat as it creates entrepreneurial opportunities for his challengers. Elections allow political factions to evaluate the strength of the winning coalition. Thus, the probability of success or failure of challenging the autocrat is more readily measured. Challenges to the autocrat are less likely if they are known to have a low probability of success. Since dealing with challenges is costly, reducing their number certainly benefits the autocrat. In the end, elections increase the durability of semi-authoritarian regimes and allow them to adapt to the changing environment more effectively.

7 Conclusions

This paper examines the problem of political calculation that faces the autocrat. Since every autocrat depends on a coalition of supporters to stay in power, he has to

reward his coalition through policy concessions or distribution of rents in exchange for its support. Yet, he has no mechanism to determine the amount of the reward commensurate with the amount of support he receives from a given faction. The problem of political calculation is particularly relevant at times of major political or economic disruptions. As these disruptions change the relative strength of various factions, the formula for distribution of rents needs to be altered as well. Otherwise, the newly strengthened factions may force the autocrat from power.

The problem of political calculation is similar to the problem of a central planner in a socialist economy. In the absence of market exchange the central planner has to rely on the subjective use-value of goods in economic calculations. As the economy grows, economic calculation becomes more complex and less accurate. Consequently, at some level of development economic calculation under socialism becomes impossible. Free markets resolve this problem by relying on the exchange value of goods. The value of each good is determined by all parties to the exchange. It is expressed in the same units, normally in monetary terms. Therefore, the value of different goods can be easily compared. Finally, it provides individuals with a reference point to the efficient use of goods.

Elections under both semi-authoritarian and democratic regimes resolve the problem of political calculation in a manner analogous to free markets. They provide leaders with the exchange value of the strength of each political faction. Since candidates running in elections exchange votes for policies or rents, the share of votes each candidate receives represents the exchange value of that candidate. The number of seats a political party or faction receives in the legislature further represents the strength of that party or faction. Regular elections ensure that the exchange value of candidates and factions is continuously updated. Yet, elections under semi-authoritarian regimes are less accurate, since autocrats generally manipulate the election results to ensure a particular outcome.

Elections under both semi-authoritarian and newly democratic regimes suffer from major limitations. Feasibility of elections as a pricing mechanism hinges on the ability of political factions to organize themselves into efficient political parties, which often is not the case. The leaders in both regime types have strong incentives to subvert the results of the elections in order to hold onto power. Furthermore, elections generally do not include the military or secret police in the equation. If these institutions have a history of acting as independent political factions, they may have incentives to undermine the elections.

In semi-authoritarian regimes elections provide a unique advantage to the autocrat by reducing uncertainty. As they provide information on the relative power of political factions, elections allow for an objective valuation of the winning coalition. Consequently, they reduce the probability that some political factions would disagree with the autocrat's judgment and decide to challenge his coalition. In general, elections increase the durability and adaptability of semi-authoritarian regimes.

The main implication of this paper is that electoral institutions may have a substantial impact on the stability of the autocratic regimes. Autocratic regimes may adopt some electoral institutions not as a step towards democratization but in order

to increase their longevity. Further research is necessary to determine the impact of particular institutions on the various types of autocratic regimes.

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