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Abstract

All dictatorships provide public goods, but levels of provision generally differ from those found in otherwise similar democracies. Some theoretical treatments of this phenomenon emphasize differences in the degree of monopoly power enjoyed by dictators versus leaders of governments, while others stress differences in the size of the group a dictatorial versus democratic government leader must satisfy in order to remain in office. Empirical analysis is still at an early stage and has been oriented mainly toward determining the magnitude of the governance effect on public good provision, rather than devising tests that would distinguish between alternative theories of dictatorial behavior. While the empirical record is far from unanimous, the weight of evidence indicates that dictatorships under-provide public goods relative to democracies and that the estimated effects are both large in magnitude and statistically significant.

JEL Classifications: H1, D72, H11

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1 Introduction and motivation

A dictatorial government is one that does not grant significant political powers to its population or their representatives. By this definition, dictatorships are not at all uncommon. They constituted a majority of the world's governments between 1950 and 1991 and comprised over 40% at the start of the 21st century.[1] During the period since 1970 roughly half of the world's countries in any given year did not have legislatures that exercised significant power and 46% either prohibited political activity or restricted it to a single official party.[2] It is easy to dismiss dictatorships as aberrations in an otherwise democratic world because many of them hold elections and display other trappings of democracy. Indeed, since 1950 over half of all countries classified as dictatorship had an

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[1] These statistics are from Mulligan, et al, (2004, p. 51).
[2] See Deacon (2003) p. 3.

elected chief executive and over 70% had elected legislatures.[3] Whether by limiting

ballot choices, by rigging the results, or by dominating those who are elected, the

authoritarian rulers of these countries permitted elections without ceding their absolute

power.

All dictatorships provide public goods to some degree, but casual empiricism

suggests that the levels provided fall short of what democracy would produce. There is

also evidence that the quality of public services declines when dictatorship is imposed

and improves when dictatorship is replaced.[4] After Nigeria came under military rule in

1983, the proportion of children staying in school to the fourth grade fell from 81% to

72% and childhood disease immunization rates fell by more than one-half. In Argentina,

the rural population's access to safe water increased after civilian rule was established in

1973, but then dropped markedly after the military coup in 1976. Greece's infant

mortality rate dropped by one-fourth as the country made the transition to democracy

during the 1970s.

This chapter reviews the current state of knowledge on how broad differences in

governance—dictatorship versus democracy—affect public good provision. The

empirical evidence presented to date agrees with the preceding anecdotes more often than

not, but there are exceptions. At present the body of evidence on this question is not at all

extensive.[5] Given the importance of nondemocratic governance in the world and the

emphasis now placed on spreading democracy as a matter of international policy, this is

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[3] The underlying data are from Marshall and Jaggers (2000) and Banks (1997). The criterion for autocracy is that a state's Polity score, defined shortly, is less than .50.

[4] These observations and the following examples are from Lake and Baum (2001) pp. 587, 588. See Saiz (2005), however, for contrary evidence on road quality.

[5] Lake and Baum (2001) claim their analysis provides the first concrete evidence comparing public good provision under democracy and autocracy.

both surprising and unfortunate. By contrast, the theoretical and empirical literature on public good provision under various democratic institutions is now extensive. That literature reports that variations in democratic institutions such as different methods of apportioning votes, parliamentary versus presidential regimes, term limits for incumbents and voter registration rules do affect public good outcomes.[6] While this work is clearly important, it has focused on institutional nuances that pale in comparison to the stark differences separating dictatorships and democracies.

In what follows the term 'public good' is used to indicate a good or service enjoyed in common by all or a large share of a jurisdiction's population. Such goods may or may not exhibit rivalness in consumption, i.e., one individual's consumption may or may not detract from what another enjoys. The crucial distinction is that the good is provided on (approximately) a nonexclusive basis. Thus, we view public education as a public good if it is widely available to the children of a jurisdiction and the 'rule of law' as a public good if a country's population enjoys roughly equal treatment by the police and the courts. Governments often provide private goods and transfers exclusively to specific individuals or small groups. Although provided by government, these targeted favors are not considered public goods—we have more to say about this phenomenon later.

The following section defines what we mean by 'dictatorship' and 'democracy,' a necessary preliminary for using these terms later. Sections 3 and 4 present our primary contribution, an assessment of the theoretical and empirical literature on public good provision by dictatorships. To add meaning to our assessment of dictatorship, we often draw comparisons to the primary alternative form of government—democracy. To enable

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[6] See, for example, Besley and Case (2003, p. 20-23) and Persson and Tabellini (1999, 2000, 2004). For a contrary view, however, see Mulligan, et al. (2004).

such comparisons and to properly understand why differences might arise, we briefly

examine theories and evidence on public good provision under democracy in Section 5.

Section 6 concludes.

2 Defining Dictatorship and Democracy[7]

Dictatorship is a system of governance in which the few, sometimes a single individual,

rule over the many. The word dictator derives from a practice in the Roman Republic of

suspending the normal institutions of government in time of crisis and appointing an

absolute ruler, a dictator, to deal with the emergency. By tradition, the Roman dictator

ceded powers back to the Republic after the crisis passed. In modern times the label

dictator has been applied to rulers of hereditary dynasties earlier described as 'emperors,'

'monarchs,' 'despots,' or 'tyrants,' and more generally to any system of governance in

which the control of political, social, financial and military powers is concentrated in the

hands of a single individual or small elite (Gregor, 2001, and Magalhaes, 1995, p. 546).

Dictators often gain power by force, though some have risen via constitutional processes

that they subsequently usurp. Dictators often use propaganda, repression, control of

information, and restrictions on speech, assembly, and political activity to stay in power

(Magalhaes, 1995, p. 547, 548).[8] While dictators by definition hold absolute power, they

often permit groups such as unions, churches, legislatures, and political parties to operate,

but only so long as they cannot hold the dictator accountable in any way (Magalhaes,

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[7] The following descriptions, definitions, and examples rely extensively on Magalhaes (1995), Newell (2001), Caltagirone (1995), Dahl (2001), and Gregor (2001).
[8] Magalhaes (1995) argues, however, that even dictatorial governments require the consent of a substantial portion of the population, perhaps 20-30%, to stay in power and that this support is often obtained by appeals to ideology, religion, or the provision of political favors.

1995, p. 547). Over the long sweep of history dictatorship has been the dominant form of government and at the start of the 21st century it remains one of the principal forms of political organization (Magalhaes, 1995, p. 546).

The political science literature commonly distinguishes between totalitarian and authoritarian dictatorships, based on the regime's objectives. A totalitarian dictatorship pursues a specific ideology, utopian objective, or worldview by use of indoctrination, censorship, propaganda, repression and domination of everyday life (Newell, 2001, pp. 60, 61, Magalhaes, 1995, pp. 548, 549.) Authoritarian dictatorships wield absolute power, but the objectives are less philosophical and the domination of all aspects of society is absent or weakened. [9] This distinction has not been prominent in the theoretical and empirical work of economists who study dictatorship and public good provision, however. [10]

Democracy is the other principal form of political system. [11] Dahl (2001) describes democracy as a system of governance in which almost all adult members of society have essentially equal opportunities to offer proposals for consideration, make their own views

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[9] Germany under Hitler, the Soviet Union under Stalin, and possibly Iran after the 1979 revolution are examples of totalitarian regimes. Authoritarian dictatorships are exemplified by the Middle Eastern hereditary rulers, such as the Saudi Arabian government established by Ibn Saud, and by paternal rulers such as Anastasio Somoza in Nicaragua, Ferdinand Marcos in the Philippines, and Idi Amin in Uganda (Magalhaes p. 548). Some authoritarians have come to power in populist revolutions that promise to redistribute wealth or enfranchise the politically powerless, e.g., Juan Peron in Argentina and Kemal Ataturk in Turkey. Others, such as Jomo Kenyatta in Kenya, came to power in the vacuum created by the end of colonial rule.

[10] Wintrobe (1990) provides formal definitions for totalitarian and authoritarian (termed 'tinpot') dictators based the ruler's objectives. According to Wintrobe, totalitarians seek to maximize that political power while authoritarians minimize the cost of maintaining sufficient power to stay in office, a distinction roughly similar to output maximizing versus profit maximizing theories of the firm. In Wintrobe's view both types of dictatorship derive power from their ability to repress populations and to engender loyalty.

[11] The word democracy derives from two Greek words, *demos* meaning 'the people', and *kratos* meaning 'rule.' See Caltagirone (1995).

known, and vote on the outcome.[12] Requiring that the franchise be this broad separates the modern definition from the 'democracy' of ancient Greece. If applied literally, this definition would exclude many 20th century regimes commonly described as democracies due to exclusions from political participation on the basis of gender, literacy, property ownership, and citizenship.

Different ways of apportioning powers give rise to different forms of democracy. A parliamentary democracy delegates executive authority to a member of the majority party in the legislature and the parliamentary executive, often called a premier or prime minister, can be removed by a legislative vote of no confidence. In a presidential democracy the chief executive is directly elected for a prescribed term and, except in rare circumstances, cannot be removed by a vote of the legislature. The other major difference in democratic regimes is in the way votes are counted.[13] Under *plurality* voting the state is typically divided into districts from which representatives are elected by plurality rule. Legislative decisions are then made by majority rule among elected representatives. As is well known, decisions in such a system can in theory be controlled by slightly more than one-fourth of the voting population. Under proportional voting, seats in the legislature are apportioned to parties in accordance with each party's share of the total vote. Proportional voting is most common in presidential systems and plurality voting in parliamentary systems, but the correspondence is not strict.[14] The separation of powers is generally stronger in presidential systems than in parliamentary systems. Plurality

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[12] To this, we would add the stipulation that the elected government actually controls what the government does—to rule out systems with rigged election and powerless legislatures such as the former Soviet Union, modern communist states and some Middle Eastern dictatorships.

[13] The following descriptions and examples rely primarily upon Caltagirone (1995, pp. 513, 514).

[14] The U.S. system is presidential/plurality, while many Latin American countries are presidential/proportional. The U.K. has a parliamentary/plurality system, while the rest of Western Europe primarily practices parliamentary/proportional governance. See Caltagirone, (1995, pp. 514).

systems often result in two dominant parties, while proportional systems afford greater representation to minorities (Linz, 2001, pp. 134-5).

Bueno de Mesquita, *et al* (2003) (hereafter BDM) abandon descriptive definitions of governance systems in favor of a more unified approach based on two concepts, the selectorate and the winning coalition. The selectorate includes all individuals who can potentially affect the selection of the government and therefore its policies. The selectorate roughly equates to the electorate in a modern democracy, to Communist party membership in a Soviet style communist state, and to the ruling family in a hereditary monarchy. The winning coalition, a subset of the selectorate, is the set of individuals whose support is necessary for the government to stay in power. In a democracy, a winning coalition must include at least 50% of the selectorate, while in a military dictatorship it could be a small cadre of officers. According to BDM, the performance of government with regard to public good provision, corruption, the leader's longevity in office and other matters can all be shown to depend on the size of the selectorate and the size of the winning coalition. This and other theories of governance and government policy choices are examined next.

3 Provision of Goods by Dictatorships: Theory

Economic models that assess the public policy performance of dictatorships versus democracies are relatively rare. Those that exist have generally taken one of two modeling strategies. The first views a dictatorship as a government that promotes the interests of a relatively small, exclusive group in society, neglecting, and generally

exploiting, those who are not members of the favored group. As shown below, this view

has implications for the provision of public goods, the use of public office for corruption,

and the survival of political leaders. Also, as shown in Section 4, it resembles an

approach used to model variations in democratic institutions. The second view begins

with the premise that the interactions between governments and citizens resemble an

exchange relationship; those in power offer public goods and/or direct payments to

favored groups in exchange for political support. According to this exchange, or market-

based approach, differences in the behavior of political systems correspond to differences

in degree of the monopoly power or contestability present in these market relationships.

Theoretical models

A useful starting point is the theory of BDM (1999, 2002, and 2003), which develops

predictions on how governance institutions affect public goods provision, corruption, and

the longevity of rulers. Differences in behavior along each of these three dimensions are

traced to a single political parameter, the size of the winning coalition (W) relative to the

size of selectorate (S), i.e., W/S. As explained in Section 2, the selectorate is the subset of

the population who can potentially affect the selection of the government and the winning

coalition is the group, a subset of selectorate, whose support is necessary for the

government to stay in power. Different descriptive regimes, such as democracy,

monarchy, and military dictatorship can generally be associated with qualitatively

different values for W, S, and hence W/S, enabling predictions on the policy performance

of these regimes.

To retain power the 'leader', or incumbent head of government, in BDM's model must keep the welfare of his or her winning coalition members sufficiently high that they will not defect to a challenger. The leader can employ two policy instruments in pursuing this goal: provision of public goods that benefit all citizens in roughly equal fashion and provision of private goods targeted to members of the leader's winning coalition, e.g., corruption payments or rent transfers from government. According to BDM, a 'challenger' can propose alternative levels of public goods and corruption payments to members of the selectorate, seeking to win the support of a group large enough to become a winning coalition.[15]

The key to their analysis is that the choice of providing public goods versus targeted payments depends, for both leader and challenger alike, on the country's political system. In a system that requires the winning coalition to be large relative to the group governed, e.g., a democracy, spending funds on public goods is a relatively attractive way to gain support due to the economies of scale inherent in providing public goods to large groups. At the same time, spending government funds on targeted rent transfers is unattractive when W/S is large because they must be thinly spread, diluting their effectiveness. This tilts the government's spending decision in favor of public good provision and against targeted transfers for large W/S political systems such as democracies. In systems where W/S is small, so the support of only a small proportion of the selectorate is required for political survival, the incentives for public good provision versus corruption are tilted in the opposite direction. Targeted payments can now be focused on a smaller, enhancing

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[15] In the BDM model, the leader is not deposed unless the challenger can attract the support of at least W members of the selectorate *and* reduce the leader's support group to less than W individuals. In addition, the challenger is unable to commit firmly to include specific individuals in his/her winning coalition if the challenger is successful. This gives the leader a natural advantage in their model that is not entirely satisfying; strictly speaking BDM's leader can never be successfully deposed.

their effectiveness, while only a small portion of the benefits from any public goods

provided would accrue to coalition members. The BDM theory thus provides a unified

treatment of two important aspects of government behavior, public goods provision and

corruption, and the predictions gained do not rely on descriptive definitions of political

regimes or on assumed differences in the motivations of democratic versus dictatorial

leaders.[16]

In a democracy, the winning coalition and the selectorate are both large and W/S is

also large relative to other systems.[17] W/S can also be large in a system where W and S

are both small, such as a monarchy, however, and their model does not predict

differences in public policy performance between these two very disparate systems of

governance.[18] While this is arguably a shortcoming, their model's central implication—

that the size of the group the leader needs to satisfy to stay in power influences the use of

government resources for provision of public goods versus corruption—is a valuable

insight.

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[16] The BDM theory also has implications for the choice of coalition members and the survival of political leaders. Each member of the selectorate is assumed to have an affinity or preference for the leader, and these affinities are common knowledge. To attract support at the lowest possible cost, the leader forms a winning coalition from those individuals who have the highest affinity for him or her. The challenger is assumed to face a more difficult challenge, however; individual affinities for the challenger are not revealed until and unless the challenger deposes the leader. Individuals who contemplate defecting from the leader's winning coalition consequently face the risk of being excluded from the challenger's coalition if the challenger succeeds. With simplifying assumptions, the probability that any selectorate member will be included in the challenger's coalition is W/S. In political systems for which W/S is small, members of the leader's coalition will exhibit a high degree of 'loyalty'; they will be reluctant to throw their support to the challenger because the challenger cannot commit to including them in any new coalition, a phenomenon BDM call the 'loyalty norm.' The cost of being excluded from the government's winning coalition is the foregone corruption payments that coalition members receive. BDM claim that W/S is smallest, and hence the loyalty norm is strongest, in autocracies with rigged electoral systems such as Iraq, China or the former Soviet Union. The model also predicts that a political system with small W will assess higher tax rates. Though high taxes discourage economic activity, the leader can more than compensate the few members of the winning coalition for the loss they incur from taxation and thereby secure their support.

[17] For an ideal democracy (one immune to special interests, campaign spending, etc.) one can view S as the population eligible to vote and W/S as 50% plus 1/S.

[18] The BDM theory considers the sizes of W and S to be exogenous. Ideally, these factors would be built up from more primitive attributes of the populations being considered.

McGuire and Olson (1996) develop a model in which public good provision and taxation differ under autocratic versus democratic rule because the objective functions of political leaders are different in the two systems. The public good they examine is a public input, which contributes to GDP but does not affect utility directly. Under all regimes, the only source of public revenue a proportional income tax and the tax imposes a deadweight loss that increases with the tax rate.[19] In an autocracy, the ruler's only source of income is the government's budgetary surplus, which the autocrat pockets. Accordingly, the autocrat seeks to maximize the difference between tax revenue and government expenditure, recognizing that using public funds to provide the public input increases GDP which the autocrat can tax. The autocrat always sets the tax rate to maximize total tax revenue, regardless of the government spending level.[20] The autocrat always spends some government revenue on the public input, rather than appropriating it entirely for personal use, because the public input ultimately increases the autocrat's tax revenue. The autocrat places no value on the after-tax income of ordinary citizens, however, and consequently produces less public good than would be required to maximize society's net income. The greater is the share of GDP captured by the autocrat in tax revenue, however, the more 'encompassing' is the autocrat's interest and the closer the autocrat's public spending policy comes to maximizing societal income.

Using the same technological setup, McGuire and Olson (1996) model a 'redistributive democracy' as a political system that maximizes the interests of an elite group or ruling party. The ruling party earns a fixed fraction, F, of the economy's after-tax private sector income. It also captures any surplus of tax revenue over public

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[19] The loss the tax causes is assumed to be the same in all political regimes.

[20] That is, the tax rate is set to achieve the top of the Laffer curve. A proviso is that tax revenue must be at least as great as public spending.

expenditure.[21] The fraction F indicates the degree to which the party's interests 'encompass,' or coincide with, the interests of society as a whole. In the general case where F<1, the ruling party captures the fraction F of any *benefit* associated with public good spending via its share of the economy's after-tax output. It bears the entire *cost* of public good spending, however, via foregone transfers to itself of any governmental surplus. Accordingly, a redistributive democracy will under-provide the public input relative to the level that would maximize societal income, but the degree of under-provision declines as F increases. By comparison, an autocrat earns none of the economy's after-tax private income—its sole source of income is governmental surplus. Accordingly, an autocracy is predicted to spend less on public good provision than a redistributive democracy, regardless of the democracy's level of F. Their model also implies that a democratic government will impose a lower tax rate than an autocratic government.[22]

A central prediction from McGuire and Olson's model is that public good provision in a redistributive democracy depends critically on the degree to which the ruling party's interests encompass the interests of society as a whole. In this regard, their parameter F, the share of private after-tax income captured by the ruling party, plays much the same role W/S plays in the analysis of BDM. Changing governance institutions in a way that

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[21] The assumption that the ruling party in a redistributive democracy earns a fraction of the nation's after-tax income, whereas the dictator does not, is an important source of differences in the predicted policy choices of democrats versus autocrats.

[22] The authors argue that for F sufficiently large, the redistributive democracy's ruling party has an incentive to spend all tax revenues on the public input and transfer none to its own members. They refer to this case as a super-encompassing ruling interest. Intuitively, a higher F increases the ruling party's share of deadweight losses from taxation, diminishing its desire to raise the tax rate. At the same time, a higher F increases the ruling party's share of the benefit from public good spending. Both forces work against raising taxes simply for the purpose of redistributing surplus toward the favored group. McGuire and Olson argue that there is a critical level of F beyond which the ruling party will forego *any* redistribution and will choose public good and tax rate levels to maximize society's net income. They also show that this outcome matches what would occur in an ideal society where redistributive incentives are absent and tax shares are such that each member desires the same level of public good.

increases the size of the winning coalition needed to make political decisions in the BDM model would arguably also increase the share of societal income represented in the decisions of McGuire and Olson's redistributive democracy. Both models predict that such institutional change would increase the provision of public goods and decrease the share of government revenue spent on transfers to the politically powerful.[23] Most observers would presumably see such institutional change as a move away from autocracy and toward democracy.

Niskanen (1997) examines the fiscal decisions of autocratic, democratic, and optimal government using a model that shares several features with McGuire and Olson (1996). Niskanen's autocrat seeks to maximize the difference between tax revenue and public good spending, which he/she captures as political rent. Total national income is enhanced by spending on public goods and diminished by taxation, and the payoffs to the various parties are always expressed in terms of the incomes rather than utilities. Citizens in a democracy earn income both from the private sector and from government transfers, whereas the autocrat's only source of income is the government surplus. Contrary to McGuire and Olson, Niskanen's democratic government seeks to maximize the welfare of the median citizen, assumed to be the citizen with median income. (An 'optimal' government is defined to be one that maximizes total economy-wide income.) Not surprisingly, Niskanen's predictions largely agree with McGuire and Olson: tax rates are lower and pubic spending higher under democracy than under autocracy.[24]

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[23] Targeted transfers to members of the winning coalition in BDM's model are similar to expropriation of government budgetary surplus by McGuire and Olson's autocrat or ruling party under redistributive democracy. The fact that BDM model political competition and consider the ruler's longevity in office, whereas McGuire and Olson look only at the ruler's choice of policy in the absence of a challenger, is a significant difference.
[24] Unlike McGuire and Olson, Niskanen simulates the implications from his model using an assumed functional form for aggregate production and parameter values calibrated from data for the U.S.

The models just described share a common insight: differences in the policy choices under alternative political systems are driven by differences in the degree to which government represents the interests of broad versus narrow segments of society. This insight plays a central role in the model Deacon (2003) specifies for empirical examination of public good provision. Public good spending decisions are made to maximize the aggregate welfare of an 'elite' subset of the population, ignoring any public good benefits that may spill over to non-elites. Different systems of government are characterized by differences in the size of the elite group relative to the population, termed the system's inclusiveness. In an ideal democracy, the elite group is the entire population, while in a dictatorship the elite is a single individual. Clearly, inclusiveness plays much the same role as an 'encompassing interest' in McGuire and Olson's model and W/S in the BDM paradigm.[25] By assumption, the elite captures a disproportionate share of the economy's output and hence pays a disproportionate share of taxes.

Because the elite bear a more than proportionate share of public good costs and ignore any public good benefits that spill out to non-elites, the model predicts under-provision of public consumption goods in political systems that are less than perfectly inclusive. Given the similarity of central concepts, it is no surprise that this general prediction agrees with BDM and McGuire and Olson (1996). If the government good is a

Quantitatively, his simulations imply that moving from autocracy to democracy would bring huge income gains, whereas only modest gains would accompany a switch from democracy to optimal government. His simulations also indicate that government spending is over twice as great under democracy as under autocracy.

[25] In Deacon's framework a public good can enter utility directly or enhance output as an input to production. The model also allows for environmental protection as a public good. Government revenue is collected from a non-distorting proportional tax on income.

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pure public input, however, the level of provision maximizes total net income under all political systems.[26]

In all political systems, government leaders provide public goods and/or rent transfers to groups in society and receive political support in return. This notion of political exchange is a central feature of the second strand of theories on how governance institutions affect the provision of public goods. Lake and Baum (2001) articulate an informal theory of democratic versus dictatorial policy-making around differences in the degree of competition present in such political exchanges. Because citizens cannot easily shop among alternative systems of government, political leaders in all systems enjoy a degree of monopoly power. According to Lake and Baum (2001), political leaders invariably exercise this power in order to earn rents from the citizenry, but differences in the contestability of the leader's position in dictatorships versus democracies cause differences in their behavior.

Contestability in this context refers to competition for the political leader's monopoly position by potential political challengers. The intensity of such competition depends on the costs of entering and exiting the political fray. In a democracy, the leader's position is highly contestable because entry and exit costs are relatively low. Entry costs are relatively low because the electoral process provides challengers with safe, relatively inexpensive path to power and defeated contenders often stay in government as members of opposition parties. Exit costs are also relatively low because deposed incumbents and failed contenders may try again in a subsequent election or find

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[26] This differs from McGuire and Olson's prediction, who find that autocrats under-provide public inputs relative to democracies. The difference arises in part because Deacon's tax is non-distortionary, whereas the McGuire-Olson tax instrument is imposes a distortion and democracies and dictatorships respond differently to this distortion.

lucrative employment elsewhere in the economy. Entry and exit costs in an autocracy are an entirely different matter. Entry might require deposing an all powerful ruler by force and, if unsuccessful, the contender might face exile or even death. Exit by a deposed autocrat can be equally costly. Accordingly, Lake and Baum expect political exchanges between leaders and citizens to result in relatively competitive outcomes in democracies and less competitive outcomes in autocracies. Drawing analogies to results from industrial economics, they expect the relatively high level of competition that accompanies democratic governance to result in relatively greater public good levels and smaller rent capture by politicians than would be observed under less competitive, autocratic regimes.

A market analogy also motivates Wintrobe's (1990) examination policy choices under two extreme forms of dictatorship, tinpot and totalitarian. Both types of dictator enjoy a monopoly position and both use repression and investments in loyalty to control their subjects. Where they differ is in the objectives pursued. A tinpot, otherwise known as an authoritarian, seeks to minimize the cost of maintaining sufficient power to stay in office. The totalitarian dictator pursues a more grandiose aim: to maximize power over the population in the pursuit of ideological or utopian goals. This basic difference, which roughly corresponds to the difference between profit maximizing and sales maximizing monopolies, leads to differences in the ways tinpots versus totalitarians respond to economic upturns or downturns and to particular predictions on the way military dictatorships behave. None of these predictions have direct implications for public good provision, however, and are thus of limited interest here.[27]

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[27] Wintrobe (1988) extends his analysis to two additional forms of dictatorship, tyrannies and timocracies, and examines factors responsible for making dictatorial regimes stable or unstable. He does not examine

Two categories of theories were reviewed here, one drawing implications from the existence of favored political elite and the other drawing implications from differences in the monopoly power present in political markets. Both considerations may well be relevant and casual empiricism indicates that the two phenomena are not independent. Democracies seem to be both relatively inclusive and relatively competitive, while autocracies have opposing attributes. This implies that predictions from the two approaches about any given government's public good provision are likely to agree, which is reassuring. The framework of BDM also suggests that the concepts of inclusiveness and political competition may be logically linked. Their model regards W/S, the size of the winning coalition relative to the selectorate, as a key determinant of policy. According to BDM, leaders in low W/S (less inclusive) political systems find it politically advantageous to spend government revenue mainly on transfers targeted to their winning coalitions, allocating relatively little to public goods. The same model predicts that political leaders in low W/S political systems are largely insulated from competition. According to BDM, low W/S political systems engender a high degree of loyalty from the leader's supporters, making it more difficult for challengers to succeed in deposing them. Combining both observations, low W/S political systems are likely to be characterized by political exchanges in which the government enjoys monopoly power vis a vis the governed and by systems of government decision making that are not highly inclusive.

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public good policies under different regime types, however, making his analysis of limited relevance to this review. He does conclude that dictatorships engage in more income redistribution than democracies.

4 Provision of Public Goods by Dictatorships: Empirical Evidence

In this section we examine evidence on the empirical relationship between governance and public good provision. We begin with evidence from statistical tests linked directly to theoretical models reviewed in the preceding section and then move on to evidence from purely empirical studies.

Preliminaries

The fact that political institutions tend to persist within countries implies that marked variations in institutions are most readily observed by looking across countries, rather than within countries over time. As a consequence, the empirical work examined here relies almost exclusively on cross country data. Countries can differ in ways not observed by the researcher, however, raising the possibility that unobserved factors are responsible for observed associations between governance and public good provision. There is no obvious remedy for this problem when the analysis rests on cross section data, except to incorporate all relevant determinants that can be observed. When cross country panels are available, fixed effects can be included to control for unobserved heterogeneity, enabling more compelling tests of the link between governance and public good provision. The fact that political institutions tend to persist, however, makes it difficult to estimate governance effects precisely once the influence of unobserved country-specific factors has been controlled statistically. Given this issue, it is prudent to pay careful attention to the estimation methods used in empirical work.

   A large number of public good 'quantity indicators' are reported by international agencies, particularly for health and education. Several agencies also report expenditure

data for education, health care, and other services. There are practical reasons why cross country expenditures may not accurately indicate quantities, particularly in dictatorships. In corrupt states, government spending can serve as a conduit for transferring rents to favored groups through inflated salaries, generous construction contracts, or pork barrel projects.[28] Also, cross country variations in factor prices or technology, if uncontrolled, can cause output per dollar spent to vary from country to country even if the rent transfer phenomenon is not present. We return to this point in the reviews of some individual studies.

The most commonly used data source for governance institutions is the Polity dataset compiled by Marshall and Jaggers (2000). Polity reports data by country and year for eight governance factors, including the competitiveness and openness of recruitment to the chief executive position, the degree of party competition, how well the legislature represents the interests of the population, and constraints on the chief executive's power. A summary measure of 'democracy' derived from these data is frequently used in empirical work.[29]

Empirical Results

David A. Lake and Matthew A. Baum (2001) examined cross country data on 17 indicators of public education (including the adult literacy rate, persistence to 4th grade,

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[28] To make this point, Lake and Baum (2001, p. 597) provide cautionary evidence from Jordan and Jamaica. While Jamaica spends 4% of its GDP on health care versus 5% in Jordan, the percentage of births attended by health care personnel is substantially higher in Jamaica. Further corroboration comes from Tanzi and Davoodi (1997), who report that the exposure of a major corruption scandal in Italy was closely followed by a 50% drop in the unit cost of transport infrastructure.

[29] Polity reports two summary measures, Democracy and Autocracy, both of which range from 0 to 10. It is now common practice to collapse this information into a single index, Democracy minus Autocracy, for empirical work. According to Gleditsch and Ward (1997), the primary source of variation in this summary index is the significance of constraints on the chief executive.

proportion of school age children attending school and student-teacher ratios) and public health (including access to health care and clean water, population per physician, percent of births attended by physicians, child immunization rates for several diseases, death rates, infant mortality rates and life expectancy at birth.) Their governance measure is the Polity index. As control variables, the authors include GNP per capita, population, degree of urbanization, land area and a dummy for OECD countries.

Lake and Baum estimate cross section models for individual years, reporting 39 sets of results in all, 16 for public education and 23 for health care. The governance coefficient agrees with their model, indicating lower public good provision in dictatorships than in democracies, in all but one case (measles immunization, which is insignificant) and 33 of the 39 coefficients are significant at 5%. The estimated governance effect is generally large. The predicted effects of switching from the least to the most democratic form of governance are: a 26 percentage point difference in adult literacy rates, a 26 percentage point difference in the fraction of the population having access to health care, a 22-28 percentage point difference in the fraction of the population having access to safe water, a 32-42 percentage point difference in the infant mortality rate and a 6-11 year difference in life expectancy.[30] Overall, Lake and Baum (2001, p. 616) find a "remarkably consistent" positive association between democracy and public good provision.

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[30] Lake and Baum also examined pooled time series cross section data for a smaller set of public good indicators (immunization rates, infant mortality rates, access to safe water, and secondary school enrollment rates). They augmented their cross section specification by adding a trend and a regime change variable (suggested by their theory,) but did not add country fixed effects. The dependent variables in these models were transformed into first-differences, but (apparently) the independent variables were not. In addition, the estimated models included the absolute value of year to year changes in the democracy variable, both in levels and interacted with democracy. While these coefficients are often significant, interpretation of their meaning is strained by the fact that, given the specification, movements away from democracy are predicted to have the same effect on public services as movements to democracy. Given these unusual features, these results from pooled data are not emphasized here.

The selectorate theory developed by Bueno de Mesquita, *et al* (2003) predicts that

public good provision is positively related, and corruption inversely related, to the size of

the winning coalition relative to the selectorate (W/S). BDM use data from Polity and

Banks (1997) to form indicators of W and S. Selectorate size is measured by an indicator

of how well a country's legislature represents its population.[31] The size of the winning

coalition is based on indicators of regime type and political competition. Higher values

for the W variable are assigned for nonmilitary regimes, for regimes with relatively open

and competitive methods for executive recruitment, and for regimes with stable, enduring

parties that compete for political influence. The resulting W and S variables are then

combined non-linearly to represent W/S.

Data on public good levels are drawn from across countries and in many cases over

time. Their empirical specification treats the public good level as a function of W/S and a

set of fixed effects for continents interacted with years. In some specifications they

include the residuals from two auxiliary regressions as additional regressors. The first is a

regression of the Polity 'Democracy' index on W/S and the second is a regression of

GDP per capita on W/S. When included, these variables reflect the variation in

Democracy and GDP that is not systematically correlated with W/S.[32]

BDM find significant, positive associations between W/S and the share of GDP spent

on education, the adult literacy rate, educational attainment for an average working adult,

and the percentage of secondary school students who are female. The predicted effects of

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[31] The variable is LEGSELEC from Polity. They set S=0 if no legislature exists, set S=1 if a legislature is chosen by heredity or by the chief executive, and set S=2 for a legislature chosen by popular election. They then scale the resulting index to the unit interval.

[32] BDM report results from several specifications for each public good examined. Some include W alone, some include only W/S, and some include one of these two variables plus the residual variables for Democracy and GDP.

shifts in W/S are dramatic: switching W from its minimum to maximum value is associated with an 80% increase in the share of GDP spent on education, a 20-40% reduction in illiteracy rates and an additional 3-4 years of educational attainment for adults. They also find strong positive associations between W/S and several of the health care indicators examined by Lake and Baum, plus health care spending as a percent of GDP, the availability of doctors and hospital beds per 1,000 population and government spending on social security. BDM also regard political and civil liberties as public goods and examine the Freedom House indicators using the same empirical specification. Again, significant, positive associations with W/S are evident and the implied effects are large: the predicted effect of switching W/S from its minimum to maximum value is a 4 to 5 point swing in the 7 point Freedom House scales.[33]

Income is clearly correlated with W/S, and both income and W/S are plausible determinants of public goods provision. With the empirical strategy BDM employ, they cannot reject the hypothesis that their estimated governance effects are really due to variations in income. By including the residuals from a regression of income on W/S as a regressor rather than income itself, they attribute all of the variation in income that is correlated with W/S to a governance effect rather than assigning part of it to an income effect.[34]

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[33] A corollary of the BDM theory for public goods provision is that corruption levels are negatively related to W/S. The authors test this with data on black market exchange rate premiums, the difference between the official and black market exchange rates, and with a corruption index reported by Transparency International. (A gap between the official and black market exchange rates is more accurately a measure of potential corruption; it indicates that government officials who have access to currency at the official rate have an opportunity to grant favorable access to their friends.) The correlations of both variables with W/S are strong and of predicted sign, though the explanatory power of the exchange rate premium model is low.

[34] Bueno de Mesquita, et al (1999) test a second major prediction of their theory. In keeping with their model, they find that the survival of political leaders following periods of poor economic performance is significantly higher in systems with low, rather than high, W/S, indicating that unsuccessful economic policies are more likely to persist in dictatorships.

Data on five different public goods are examined in Deacon (2003). The concept of 'inclusiveness' in a country's governance system, the degree to which government decisions pay attention to the welfare of all citizens, plays a central role in his framework. Empirically, inclusiveness is measured in three different ways to allow robustness checks: (i) the country's Polity index, (ii) its regime type, ranging from democracy to military dictatorship, and (iii) the presence or absence of specific institutional features that signal the presence or absence of inclusiveness.[35]

Cross section data are examined for three public goods, the density of road networks (miles per square mile of area), access to safe water, and access to sanitation. Cross country panels are examined for secondary school enrollment rates and for the lead content of a country's gasoline pool, a measure of environmental protection. The three cross-section models include continent level fixed-effects and both panel data models include country fixed-effects. The estimation strategy also allows the response of public good levels to per capita income to be different in different political systems and uses an instrumental variables approach to deal with the possibility that governance indicators are measured with error. Measures of ethnolinguistic fractionalization and income inequality are included to deal with the possibility, pointed out by Alesina, *et al* (1999), that heterogeneous tastes and disagreements over the specific features of public goods can affect public good provision under any system of government.

Results for all five public goods indicate strong, positive associations with the three measures of inclusiveness. Much of the governance effect is found to operate through a difference in the income responses of more vs. less inclusive governments. The results

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[35] Examples of factors indicating non-inclusiveness are the absence of an elected legislature, the absence of political opposition and restrictions on the operation of political parties.

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for lead in gasoline portray a dynamic process involving the response to information on the health risks of lead. The central conclusion is the same, however; more inclusive governments provide greater environmental protection than less inclusive governments. In all cases, the effects of governance are quantitatively large. For roads and for lead in gasoline, provision levels under democracy and dictatorship differ by roughly a factor of two. Differences for safe water, sanitation, and education are generally in the 25-50% range.

According to the 'Chicago' doctrine, public good levels and other public policies are determined primarily by fundamental determinants such as income, tastes, technology, and interest group size; political institutions are either unimportant or are simply the means used to implement the allocations determined by economic fundamentals (Mulligan, *et al,* 2004, Stigler, 1971, and Becker, 1983). Mulligan, *et al* (2004) set out to test this hypothesis and, contrary to results from the preceding studies, find no significant differences in the public good policies of dictatorships and democracies. The vehicle for their empirical tests is data on government spending for education, general government consumption, and social security systems. The observations are a cross section of within-country averages for the period 1960-1990, covering 102-131 countries. Results on education are emphasized here as that is the only spending category that corresponds to a public good. They use the 'Democracy' variable from the Polity dataset to indicate political institutions. Other independent variables in their models are real per capita GDP, dummy variables for communist countries and for British legal origin, the fraction of population older than 65, the share of value added in agriculture, and (in some specifications) military spending as a share of GDP.

The major finding from Mulligan *et al* (2004) is that Democracy is typically an insignificant determinant of education spending.[36] Lake and Baum (2001), BDM, and Deacon (2003) all examined education indicators and found opposite results. One possible reason for this disagreement is that the latter three studies examined quantity indicators, e.g., enrollment rates, literacy, persistence to 4th grade, whereas Mulligan *et al* (2004) look at data on spending. As mentioned earlier, high public spending in dictatorships may indicate the presence of corruption rather than high public good levels. Also, Mulligan *et al* (2004) base their analysis on a cross section of within-country averages for the period 1960-1990. Political regimes changed in many of the countries examined during this period, e.g., Argentina, Brazil, Chile, Greece, Indonesia, Malaysia, the Philippines, Portugal, Spain, and Turkey, and any links between governance and public good that may be present might be difficult to detect in data on average spending and 'average regime'. It is also possible that the dummy variables for communist states and British legal origin capture much of the variation in governance institutions that 'Democracy' is intended to represent.

Two hallmarks of totalitarian government are tight control of information and indoctrination in an official ideology. Building on this observation, Lott (1999) hypothesizes that totalitarians use spending on state controlled education and government control of the media to accomplish these ends. He tests these hypotheses by estimating models of state spending on education and state ownership of television stations.[37] Lott also examines state spending on health care and immunization rates, hypothesizing that, because state health care does not serve the totalitarian's indoctrination objective, there

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[36] They also examine characteristics of tax policy and the prevalence of repressive or militaristic activity.
[37] Lott relies on both cross section and panel datasets. In panel data models he controls both for country fixed effects and for continent-specific year effects.

should be no positive association with totalitarianism. Lott represents totalitarianism with the Freedom House indexes of political freedoms and civil liberties. Independent variables in these models include GDP per capita, a totalitarianism-income interaction term, and total government expenditure as a fraction of GDP.

In agreement with several studies already reviewed, Lott (1999) generally finds lower health care spending and immunization rates in totalitarian than non-totalitarian states.[38] He also finds that totalitarian states spend significantly *more* on education, however, which agrees with his hypothesis, but disagrees with results in Lake and Baum (2001), BDM and Deacon (2003).[39] The fact that Lott examined education spending, whereas the other studies looked primarily at quantity indicators, may partially explain this difference. Also, because Lott includes total government spending as a regressor, the totalitarian coefficient indicates the association between totalitarianism and the *education share* of total government spending, leaving ambiguous totaliltarianism's association with the education spending level. The education share of spending might be high in totalitarian states even if the education spending level is relatively low. Another possible factor is that Lott's maximum likelihood estimation yielded more than one local maximum, so consistent estimates of the model's parameters were not obtained.[40] Finally, because Lott's education spending models include country fixed-effects, the estimated totalitarianism effects primarily reflect the influence of within-country regime changes.

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[38] Because his specification includes totalitarianism directly and interacted with income, the partial effect of totalitarianism is a function of the income level. This clouds the question of statistical significance in the health care spending and immunization regressions. In regressions on within-country averages, Lott (1999) finds significant, negative associations between immunization and totalitarianism.

[39] These results are from panel regressions with country fixed effects and from cross section regressions using within-country means as data.

[40] See Lott (1999), p. S137, fn. 15. Experimentation with models that exclude country fixed effects produced estimates in which the relationship between totalitarianism and educational spending is unambiguously positive only for the poorest 17% of the sample.

During his sample period, 1985-1992, dramatic regime changes were most prominent among former Soviet block countries. Given this, his strong education results may largely reflect the well-known inclination of former Soviet states to spend heavily on education, rather than a phenomenon of totalitarian countries more generally.[41]

In a cross section of data from 58-73 developing countries (depending on specification,) Saiz (2005) finds a consistent positive association between the Freedom House index of political rights and the fraction of a country's paved roads classified to be in poor condition. That is, more democratic countries tend to have poorer quality paved roads than less democratic countries.[42] He also examines associations between governance and the length of road networks in a cross section of observations for the mid 1980s. Here, he finds a large, positive association between democracy and total road length, which agrees with Deacon (2003).[43] His detailed results indicate that the 'democracy contribution' to this total comes mainly in the form of unpaved roads. Subsequent panel data regressions show no significant association between democracy and total road length, but do indicate a significant negative association between democracy and paved roads.

Saiz (2005) considers several alternative explanations for these findings. One interesting hypothesis that receives some empirical support is that dictatorial governments invest in high quality road networks to facilitate repression and military

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[41] Among the countries in Lott's sample, former Soviet states (Albania, Bulgaria, Czechoslovakia, Hungary, Poland and Romania) account for two-thirds of the countries experiencing improvements in the Freedom House index of 6 points or more. Decreased education spending in these states is clearly consistent with Lott's hypothesis, it is not clear but raises the question of whether or not the phenomenon applies to non-Soviet autocracies. However, Lott (1999, p. S139) did test, and failed to reject, the hypothesis that the observations from a sample that excludes communist countries comes from the same population as the sample for which his results are reported.

[42] The empirical model controls for climate conditions, income, land area, population, and other factors.

[43] The predicted effect of switching from dictatorship to democracy is a 71% increase in total road length.

operations. Adding an interaction term to his model he finds that the 'high quality roads' phenomenon in dictatorships is substantially stronger in countries with high military spending. As noted shortly, Tanzi and Davoodi (1997) found a negative association between corruption and the quality of road and electric distribution infrastructure. Because corruption and dictatorship tend to be positively related, their finding suggests poorer quality roads in dictatorships, contrary to what Saiz (2005) reports.

Several authors have found an empirical link between public good provision and corruption. In turn, Bueno de Mesquita *et al* (2003, pp. 200-205) and others have shown that corruption is generally more common in dictatorships than in democracies. This suggests viewing corruption as an indicator of nondemocratic governance, and this gives relevance to the literature on corruption and pubic goods provision. Because one can only *infer* a dictatorship-public good association from this literature, rather than observe it directly, we present this evidence as suggestive and provide only a brief review.

Mauro (1998) hypothesizes that corruption affects the composition of government spending because corruption payments are easier to hide if allocated toward certain functions, e.g., construction, than others. This motivates an examination of cross section data on public expenditures and corruption in a model that controls for per capita GDP. Overall, he finds that corruption is associated with lower spending on public education and public health.[44] Tanzi and Davoodi (1997) hypothesize that corruption often takes the form of expenditures on unproductive or low quality public capital, which should in turn indicate low quality public service. In a sample of pooled time series cross section data, they find corruption to be associated with significantly poorer quality road and electric

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[44] Arguing that corruption indexes may be subject to measurement error, Mauro uses instrumental variables to estimate the corruption effect on spending.

distribution systems.[45] Finally, Welsch (2004) examined the relationship between corruption and pollution, conditioning on income levels and other potential determinants of pollution.[46] He found significant, positive associations between corruption and most of the 12 pollution indicators examined, indicating lower environmental protection in corrupt states.

While there is not consensus in this literature, the most common finding is lower public good levels in dictatorships than in democracies. Two prominent cases of contrary evidence, e.g., Mulligan et al (2004) and Lott (1999), both focused on educational spending data, which may not accurately represent public service levels in a cross-country context, particularly when a large portion of the results come from corrupt states. The findings by Saiz (2005) are not subject to this caveat, and an apparent link to military functions of the state is intriguing.

5 Public Good Provision Under Democracy: Theory and Evidence

There is now a broad literature on how variations in the institutions of democracy affect public good provision. While the theoretical literature is well developed, no single paradigm has yet emerged and the results of different models sometimes conflict. Testing the empirical implications of these theories is still at an early stage. The two institutional dimensions of democracy studied most intensively in this literature are electoral rules, particularly majoritarian versus proportional systems, and the separation of powers, in

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[45] Tanzi and Davoodi (1997) also found significant associations between corruption and overall government investment spending and spending for operations and maintenance. The former result contradicts what Mauro (1998) found.
[46] This is part of the 'environmental Kuznets curve' literature on the relationship between economic growth and environmental quality.

presidential versus parliamentary regimes. These rules structure the incentives of political

parties, making them accountable to voters in different ways, and thereby influence

policy choices. We review a small sample of this literature in order to indicate the types

of analysis and issues addressed, and thereby to provide context for our primary interest,

the policy choices of dictatorships.

The influence of majoritarian versus proportional voting rules on policy choices has

been studied by Persson and Tabellini (1999, 2000, 2004). They model these choices

from the perspective of 'pre-election' politics, assuming that parties can make binding

policy commitments to voters and then stand for election. The policies in question are the

overall tax rate, spending on a public good, spending on redistribution and the rent

captured by politicians. There are three groups of voters and each has a distribution of

preferences or affinities for the relative ideological attributes of political candidates.

These groups differ in their average affinities for one candidate over another and in their

'ideological homogeneity,' the within-group range of variation in their ideological

preferences.

Given this context, Persson and Tabellini model majoritarian voting as a system with

three regional districts, each of which elects a representative by majority rule. A party

must gain a majority of votes in two of the three districts to control government

decisions. Their model of proportional representation is one with a single electoral

district in which a candidate must garner more than 50% of the votes to win. [47] Given

assumptions on the distribution of voters' preferences, they identify a group of 'swing

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[47] Their characterization of proportional voting does not capture the phenomenon of parties sharing the available legislative seats in proportion to their shares of the total vote cast. It does, however, capture the phenomenon of 'at large' elections in proportional systems versus regional representation in majoritarian systems.

voters' whose ideological preferences are both rather narrowly distributed and located away from the extremes. Under majoritarian voting, competition among candidates focuses on this pivotal group and voters in the other two groups (whose votes for either candidate are not highly sensitive to differences in their platforms) are largely ignored. Accordingly, their model predicts greater targeted redistribution toward the swing voters under majoritarian voting than under proportional voting. Additionally, with majoritarian voting parties do not incorporate the benefits that non-swing groups derive from public goods, and for this reason public goods are under-provided with majoritarian voting relative to provision with proportional voting. [48]

The same authors (Persson and Tabellini 1999, 2000) formulate a model of post-election politics, assuming majoritarian voting and three districts, to examine the separation of powers in stylized presidential versus parliamentary systems. After winning election, the incumbent must decide how much rent to allocate to current consumption versus enhancing the probability of being re-elected, recognizing that voters base their voting choices on retrospective assessments of candidates' performance records. Strict separation of powers is a feature of the stylized presidential regime: a single district's representative becomes the agenda-setter for a particular policy dimension and approval by one of the other two representatives is needed to adopt the policy. Representatives of these two districts compete against one another to form a coalition with the agenda setter, with the result that the agenda setter captures the available surplus. All redistribution goes to the agenda setter's home district and public goods are under-provided (relative to a parliamentary regime) because the benefits to residents outside the agenda-setter's district

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[48] They also show that, for distortionary tax systems, the tax rate will be higher in a majoritarian system than in a proportional system. Rents to politicians are lower with majoritarian voting, however, because relatively intense competition for swing voters leaves less rent to politicians in equilibrium.

are not internalized. Separation of powers is effectively absent in their parliamentary regime and political influence is more equally distributed among districts. According to their analysis, in parliamentary regimes redistributive transfers are shared among all districts and public good provision is greater than would occur in a majoritarian system.[49]

Persson and Tabellini (1999) use cross country data on public spending for transportation, education, police, and health care to test their theory. Countries are categorized as presidential or parliamentarian based on the voting system used for legislative elections. Their empirical model then specifies public spending to be a function of the voting system, per capita GDP, openness, the share of population above age 65, and ethnolinguistic fractionalization. While the point estimates generally agree in sign with the model's predictions, the results are often lack statistical significance.[50] They also test their model's prediction of lower public goods provision in presidential systems than parliamentary systems and they find clearer empirical support for this implication.

The question of how proportional versus majoritarian electoral rules affect total government spending and its allocation between public goods and transfers is also addressed by Milesi-Ferretti *et.al* (2002). In their model transfer payments can be targeted to particular interest groups, such as pensioners or the unemployed, but cannot be differentiated by region. By contrast, public goods can be targeted exclusively to specific geographic regions, but are equally available to all social groups. Voters in each district choose among elected representatives who express preferences, in the form of

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[49] Because there is less competition among the politicians in a parliamentary regime, Persson and Tabellini predict larger equilibrium rents for the politicians with parliamentary democracy. This prediction contradicts BDM, who note that a single-member district parliamentary system needs a smaller winning coalition than a presidential system and should, according to their model, lead to lower public good provision. In addition, Persson and Tabellini examine an aspect of governance, the separation of powers, that cannot be addressed in any obvious way by the BDM approach.

[50] The samples are small, generally ranging from 35 to 40 observations in various specifications. The authors do find consistent confirmation for the model's predictions on total government spending.

utility functions, both for transfer payments and for public goods. The government's overall policy decision is chosen to maximize the joint utility of the elected representatives. This fact induces voters to elect representatives whose utility functions will promote policy outcomes favorable to them.

In a majoritarian voting system, representatives are elected from each of several regional electoral districts and hence are motivated to cater to regional interests. Assumptions on the distribution of social groups guarantee both that social interests do not vary systematically by region and that no single interest group can always win under majority rule. Under majoritarian voting, voters in all districts are led to choose representatives whose utility functions place a lot of weight on regionally targeted public goods, and less on transfer spending for special interests. With proportional voting, regional representation is absent; the entire nation is a single electoral district and public goods are made equally available to all. In this case, representatives can only cater to special interests, and the only policy for doing so is the special interest transfer. Consequently, voters in proportional voting states are induced to elect representatives whose utility functions emphasize special interest transfers over public goods.

The broad predictions from Milesi-Ferretti *et al* (2002) are that majoritarian systems emphasize public good spending relative to transfers, in comparison to proportional voting systems. These predictions disagree with Persson and Tabellini (1999), although comparisons are clouded by the different treatment of public goods in the two models. Milesi-Ferretti *et al* (2002) conduct empirical tests based on a rather vague measure of public good provision, government spending for consumption plus net investment, and a measure of transfer payments that includes spending on social security, transfers to

households and transfers to firms. They examine two indicators of the degree of proportionality in a country's voting system. Their data are cross country samples of roughly 40 OECD and Latin American countries and their model controls for income and the age structure of the population. The signs of their point estimates generally support their theory: more proportional systems, especially in OECD countries, spend significantly more on transfers and (insignificantly) less on public goods. Their results are qualitatively similar for Latin America, but less significant.[51]

Besley and Case (2003) examine the policy effects of institutional variations that are more detailed than the coarse majoritarian versus proportional and presidential versus parliamentary dichotomies. The institution they consider are the presence or absence of poll taxes, the extent of voter literacy tests, policies that ease voter registration, open primaries, campaign spending limits, term limits for incumbents, and provisions for citizen ballot initiatives. Their empirical strategy exploits the variation found among different states in the U.S. The policy outcomes they examine are public spending per capita, taxes per capita, spending on family welfare, and spending on workers compensation. Of these, total state spending comes closest to indicating public good provision. Their empirical model controls for income, the age structure of the population, and the political leanings of voters. While their results are too numerous and varied to summarize here, they find some tendency for total spending and transfer spending to be

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[51] Lizzeri and Persico (2001) provide a different treatment of how proportional versus majoritarian voting affects spending decisions. They examine provision of a pure public good, the benefits of which accrue to all citizens, and for redistributive, pork-barrel projects which can be targeted to specific groups. Their majoritarian system has a 'winner take all' character, rewarding the spoils of office entirely to the party with the largest vote share. With their proportional system, spoils are spilt in proportion to vote shares. Their model predicts (among other things) that government spending on public good provision is more sensitive to the value citizens attach to public goods in a proportional system, where candidates care about the numbers of votes actually received, than in a majoritarian system, where additional votes have no value once a majority is secured.

affected by voting registration rules, campaign spending limits, term limits, and legislative voting rules.[52]

6 Conclusions

Two approaches to the study of dictatorship have provided useful insights and helped organize empirical work. One approach views political life as a marketplace in which political leaders provide public goods in exchange for political support, e.g., Lake and Baum (2001), and Wintrobe (1990). Differences in the contestability or monopoly power present in such markets lead to differences in public good provision levels. While the basic argument is persuasive, the analysis to date has been somewhat informal and a more rigorous development of this theory might yield deeper insights. The other approach focuses the breadth or narrowness of the group whose interests are represented in government policy, e.g., BDM, McGuire and Olson (1996) and Deacon (2003).[53] Both approaches take the objective function of the state as given. Extending both approaches to treat the degree of monopoly power or inclusiveness in government as endogenous, determined by deeper social, demographic, religious or other forces deserves to be a high priority for future work. Research on the welfare effects of different forms of governance

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[52] See Besley and Case (2003) Tables 7, 13, and 14.
[53] The breadth or inclusiveness of the group governing has a different name in each of these models, but the essential motivation for differences in policy outcomes is the same. In the model of BDM the factor is W/S, in McGuire and Olson's (1996) model of redistributive democracy it is F, and in Deacon's (2003) framework it is E/N. Niskanen's (1997) model has a similar flavor, but is not characterized by a similar parameter.

will remain 'academic' until the process of changing governance institutions toward more inclusive, less exploitative forms is better understood.[54]

These two views of dictatorship are not necessarily mutually exclusive. Both may contain elements of truth and integrating the two into a unified whole may provide a better understanding of how different forms of governance affect the populations governed. As noted earlier, the modeling framework of BDM suggests one path toward integration. Their analysis indicates that low W/S states are characterized by low public good provision, due simply to the effect of W/S on the costs and benefits of providing public goods versus targeted payments to supporters. It also indicates that leaders in low W/S states enjoy a high degree of loyalty from their supporters, and therefore face relatively little competition from challengers. Thus, the two effect of W/S on public good provision seem to reinforce one another, although this point has not yet been developed formally.[55]

An important new direction for future empirical work is suggested by results from Saiz (2005), indicating that public road infrastructure may be valued by a dictator because it broadens the scope for corruption or enhances the power of repression. Similarly, dictatorial governments might spend more on police and military as a way of suppressing opposition and ensuring their own survival. This implies that future empirical work should draw a sharp distinction between public goods which can in no way further the dictator's interests and public goods which might facilitate the dictator's goal of extracting resources from the citizens. The former category would arguably include

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[54] An emerging literature on this subject regards the homogeneity versus fractionalization of the populations governed as an important factor. See, for example, Aghion *et al* (2004).
[55] The loyalty effect that produces monopoly power in low W/S states hinges on an assumption that political challengers cannot guarantee potential supporters membership in a future winning coalition if their challenge succeeds. Some readers may find not find this assumption compelling.

provision of safe water, health care, clean air, sanitation and education to enhance human capital. The latter category might include roads, police and national defense. Recognition of this possible dual role for public expenditure might reconcile disagreements in results on education from different studies, e.g., Lott (1999) and Mulligan *et al* (2004) versus BDM, Lake and Baum (2001) and Deacon (2003). Spending on public indoctrination might appear in the data as high education spending, and yet do little to enhance such educational 'quantity' indicators as adult literacy, educational attainment among adults, persistence to grade levels and school enrollment rates.

The welfare of the world's populations depends heavily on the quality and quantity of public services they receive. The education of children, promotion of adult literacy, control of contagious diseases and provision of safe water, sanitation, hospitals and physicians all contribute to longer and more productive lives. The weight of evidence from the studies reviewed indicates that the provision of such services depends heavily on a country's system of governance. The evidence now available is not extensive, however. In light of the importance of public services to human welfare and the dramatic shifts in political institutions now being experienced in the world, further research on the link between governance and public good provision deserves to be a high priority.

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