Regularized Rioting:
Informational Mechanisms in an Authoritarian State

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Abstract

Authoritarian governments face two major informational challenges. Lacking a free press, opposition parties, or other independent voices, it is difficult both to control the lower levels of the government hierarchy and to assess the true level of support the government has among different groups of citizens. This paper suggests a mechanism by which a government principal can solve both problems simultaneously. By rewarding citizens for engaging in costly protest activities, the government both diverts them from regime-challenging revolutions and gains an "alarm" signal that enhances its ability to monitor its agents. The theory is motivated by the example of post-1989 China and its implications are tested in this context.
1 Introduction

How do authoritarian governments learn what is going on within their borders? The answer might seem obvious if one imagines Cold War-era totalitarian regimes, equipped with pervasive networks of secret police and informers. Yet around the world we have seen apparently strong authoritarian regimes collapse suddenly, revealing systems riddled with corruption and a populace eager for change. The very pervasiveness of oppression and the severe punishments meted out to those who express discontent under such states suppress the information flows that might otherwise inform an authoritarian leadership of the precariousness of its position. Gathering information about the behavior and preferences of low-level government actors and citizens is a major challenge for all governments, but is particularly acute in authoritarian regimes, as they lack the many informational mechanisms of functioning democracies. This paper argues that where mechanisms such as a free press and competitive elections are weak or absent, popular protest, carefully managed, can be an important tool of the regime. Such a mechanism can help to control corruption and maintain political stability either to perpetuate an oppressive regime, or to allow a gradual transition toward a more open society.

Popular unrest in non-democratic countries is often viewed as a sign of government weakness and a possible harbinger of regime collapse. Indeed, in many countries we have seen that a few initial protests, by showing the weakness of the existing government, can spread like a "prairie fire" and lead to political transition (Kuran 1989, 1991, 1995; Lohmann 1994a). Yet in contemporary China, urban and rural protests have arisen regularly over the past decade without touching off any wider conflagration. This paper suggests an alternative to this standard view: a large number of protests may result from strategic choices by the central government, rather than indicating a shift in the balance of power between state and society. In the model examined here, an authoritarian central government responds to street protests by punishing local government agents and rewarding the protesters, thus encouraging further protests by others who are dissatisfied with their lot in life. The principal thus relies on "alarms" from the citizens to indicate when its agents are corrupt, rather than or in addition to using audit mechanisms such as secret police investigations. This kind of implicit social contract strengthens the incentives of the agents to manage their jurisdictions honestly and efficiently and at the same time serves to buy off the most discontented and potentially revolutionary elements of the citizenry. This paper demonstrates that such an alarm mechanism is feasi-
ble and efficient for the government under plausible conditions, and that it is an effective complement to audit mechanisms. Furthermore, unlike many other existing theories of popular protest, this model makes clear predictions about the variation we should expect to see both in the protest activities of citizens and in government responses.

Examining this interaction is important not just to improve our understanding of China’s politics, but also to further our understanding of political development in general. While these information and agency problems may be more extreme in authoritarian regimes, they exist in most societies to varying degrees. The institution of managed protest described here is one of what Yingyi Qian has characterized as the "feasible, imperfect" institutions China has used in its process of transition from a closed, centrally planned society to an open, market-driven society. Such institutions, while far from ideal, are interest-compatible for multiple levels of society, enabling Pareto-improving bargains to be struck and reforms to continue (Qian, 2003). Despite the normative appeal of democracy, a narrow focus on competitive elections as the only institution capable of solving the informational problems faced by leaders of a semi-closed society could blind us to other less-sophisticated mechanisms that can serve similar functions.

Methodologically, this paper follows the approach to institutional analysis advocated by Greif (forthcoming), using game theory to give structure to disorderly facts, and using facts to discipline and guide the development of the game theoretical model. The political sensitivity of the topic of public disorder in China makes the use of this method particularly appropriate. As in the historical contexts in which Greif’s methodology was developed, we are forced to rely on first and second-hand accounts of intelligent observers, rather than a systematically gathered quantitative dataset.

This paper proceeds as follows. Section 2 discusses in more detail the problems of monitoring and control China faces as a large bureaucracy. Section 3 outlines the stylized facts of the Chinese case in the period since the Tiananmen protests of 1989, discusses some existing theories of popular protest, and highlights some additional important features of the strategic interaction. Section 4 presents a formal model of the argument. Section 5 discusses the implications of the model and compares them with the empirical evidence. Section 6 concludes.
2 Agency Problems in Authoritarian Bureaucracy

All bureaucracies face agency problems. Monitoring and providing incentives to the lower levels of a bureaucracy creates numerous challenges (see Mookherjee, 2003, for an overview). Within firms, however, output, revenue, profits, and other important outcome measures are relatively objective and verifiable. Government bureaucracies, in contrast, often have much more poorly measured objectives, making control more difficult (Moe, 1984). In fact, Levin and Tadelis (2004) argue theoretically and empirically that government bureaucracies tend to take on precisely those functions for which quality is difficult to monitor. McAfee and McMillan (1995) show that agency problems are exacerbated when the hierarchy has multiple levels, as is the case in most large organizations.

In democratic states, a variety of external monitors keep tabs on the bureaucracy. The independent news media compete to be the first to provide credible evidence of government malfeasance. Activist organizations push their political agendas in part by suing or publicly shaming agencies that deviate from their mandated tasks. Opposition parties seek to identify and point out the failings of the ruling group. Local elections reduce the number of hierarchical levels between the bureaucrats and their more-accountable political masters. In authoritarian polities such mechanisms are watered down or entirely absent, making agency problems particularly acute.

2.1 Existing formal models of authoritarianism

While a formal literature on authoritarian government has begun to emerge in recent years (Olson, 2000; Wintrobe 1998; Acemoglu and Robinson, 2001, 2004; Acemoglu, Robinson, and Verdier, 2004; Gandhi and Przeworski, 2001; Padro y Miquel, 2004) these models generally focus on what amounts to bargaining under complete information among various unified social groups. Yet the historical and qualitative literature suggests that in addition to dealing with these large-scale conflicts among social classes, political movements, and ethnic groups, authoritarian leaders must also deal with daily challenges of public administration. Herbst (2004) highlights this failure to build state capacity as a crucial reason for sub-Saharan Africa’s lack of economic growth. North and Weingast (1989) have argued that a particular problem is to ensure that the sovereign, once granted the power necessary to ensure peace, does not then use that power to expropriate the citizens. Formal political institutions such as constitutions and legislatures help to
ensure this. Yet many states grow without functioning democratic institutions (Robinson, 2002; Haber et al 2004). Furthermore, even if a sovereign can credibly commit to growth-promoting policies, it will fail if it cannot restrain predation and demand good performance from its agents. This paper explores one partial solution to this problem of bureaucratic supervision.

2.2 Fire Alarm Monitoring

McCubbins and Schwarz (1984), analyzing congressional oversight of the American bureaucracy, argued informally that members of congress make use of two mechanisms of control. The first is routine, randomized audits, which they refer to as "police patrols." The second is "fire alarms," investigations spurred complaints from voters or interest groups. McCubbins and Schwarz argue that Congress prefers fire alarm mechanisms because it is less costly to investigate occasional fire alarms than it is to conduct regular police patrols, because citizens have better information about the occurrence and importance of bureaucratic deviations than do members of congress, and because members of congress like to be seen actively correcting mistakes. Lupia and McCubbins (1994) and Hopenhayn and Lohmann (1996) have provided models that formalize parts of the original verbal theory. Surprisingly, however, both models have only two players, the principal and the agent, neglecting consideration of a crucial third player, the citizen who must pull the fire alarm.

Prendergast (2003) provides a true three-level model, with a principal, an agent, and a consumer. In this model, the agent is delegated to investigate whether the consumer should be allocated some good, such as a welfare check. The consumer, upon learning the outcome, can complain to the principal, potentially triggering an investigation. Prendergast shows that bureaucracies of this sort are required only when the consumer cannot be trusted to honestly report whether he needs the good, and that in this case bureaucracies will necessarily be both inefficient and slow. Prendergast’s model differs from the setting considered here in three important ways. First, complaining is riskless for the consumers. Investigations by the principal can only be either fruitless (conveying no new information) or accurate, so consumers complain if and only if they have been treated unjustly. Second, the agent has no ability or incentive to take advantage of the consumers. Third, the principal is attempting to maximize social welfare, rather than responding to a political process.
2.3 Problems of Bureaucratic Control in China

Social scientists studying China have long emphasized the difficulty of maintaining control over such a vast territory and large population. Exacerbating this was the decentralization and devolution of power that occurred in the post-Mao period. Susan Shirk (1993) argues that devolution of power from central to provincial authorities was a crucial part of the political bargain that enabled Deng Xiaoping to enact his reforms over the wishes of advocates of central planning in Beijing. Montinola, Qian, and Weingast (1995) argue further that this decentralization generated competition among jurisdictions that pushed them toward better economic policies.

Excessive decentralization, however, can be damaging. Huang (1996) shows that in the early nineties, provincial authority over banking resulted in a tragedy-of-the-commons problem, as each province encouraged excessive, inflation-inducing granting of credit by the state-run banks under the province’s control. Huang argues that the central government showed its continued authority over lower-level authorities by reining in this excessive investment.

Investment flows, moreover, are relatively easy to monitor, with negative effects that show up in macroeconomic variables such as inflation. The other activities of local governments—taxation, provision of public goods and services—are far more opaque, providing opportunities for corruption. This has been the major challenge facing the Chinese government in the post-Tiananmen era. Local governments are notorious for collecting a wide variety of fees and surcharges, only some of which are authorized by higher levels of government. While these are used in part to fund provision of public goods, they are also frequently used to fund bureaucratic perks and increase the size the government payroll. In addition, they are often administered arbitrarily and can have the effect of stifling local business investment (Lin, 2005).

The next section discusses the characteristics of popular protest and other forms of unrest since 1989. While this unrest has often been characterized as a consequence of corruption, I argue that these protests may instead be a (partial) cure.

3 Protests in Contemporary China

In 1998, the state-owned Jiamusi textile plant shut down, throwing 6,000 workers out of work. The enterprise gave workers stipends of $20/month for two years, then cut them off without warning. In 2002, the firm offi-
cially declared bankruptcy. Workers conducted a petition drive and sent representatives to the provincial capital, then on to Beijing, complaining of corruption at the factory and demanding the unpaid wages and unemployment benefits they believed they were owed, but to no avail. In November of that year, groups of workers numbering in the thousands began staging sit-ins on the city's railway tracks in the freezing cold, blocking the essential transport artery for as long as a day at a time. One might expect that China's communist party, a group whose top leaders had survived decades of ruthless in fighting and who were willing to send tanks into Tiananmen square to suppress student protests, would not deal kindly with such resistance. Yet the Jiamusi police only arrested a few of the apparent organizers of the blockade, letting the sub-zero temperatures serve as punishment for the rest. Less than a month after the first railway blockade, city leaders had arranged to make payments of $15/month to the laid-off workers, who returned home (Rosenthal, 2003; Foreman, 2003).

In southern China, the 1400 rural residents of Yuntang village fought for three years against their township government, refusing to pay taxes that they argued were both illegal and impossibly high after repeated flooding and poor harvests. Finally in 2001, more than 600 armed police raided the village before dawn, killing two villagers and wounding many others (Eckholm, 2001). Yet three years later, the villagers' taxes had been eliminated and the village had been given an improved road and electricity for the first time (Ruwitch, 2004).

Although systematically gathered nationwide data are unavailable, China has undoubtedly seen an increasing number of protests such as these. According the Public Security Bureau, the number of "mass incidents" went from 8,700 in 1993 to 32,000 in 1999, and has continued to increase since then (Tanner, 2004). Many journalists and other observers have called this trend a "social powderkeg" that could imperil the substantial economic gains and smaller but still notable political progress of China's past twenty-five years of reform (Bernstein 2000).

This interpretation implicitly relies on one of the oldest theories of protest, what E.P. Thompson has described as the "spasmodic view." That is, protests and riots take place as "simple responses to economic stimuli." Economic conditions become "unendurable," "distress" increases, so people rise up in protest (Thompson, 1971). While the correlation between misery and protest is undeniable in a broad-brush sense, taken seriously it implies that above some threshold of "miserableness" no one would ever protest. Thompson (1971) and Scott (1976) suggested instead that protests are sparked by perceived violations of a "moral economy," a set of rights and
norms, most crucial of which is a right to subsistence. This provides a better explanation of how protests could continue to occur even in relatively prosperous countries, because norms could be expected to evolve over time. Theodore Gurr (1970) presented a different adaptation of the spasmodic view, in which the disconnect between expectations and attainment (“relative deprivation”) serves to spark rebellion. These expectations may be based on the individual’s previous (better) status, or on the observation of others who are better off. While they differ in emphasis, these theories all present protesters who are not consequentialist, let alone strategic. Protesters take action based on their passions or their values, with no consideration of the risks and rewards of their actions.

Others have argued that the Chinese protests are driven by changes in citizens’ cognitive processes. For instance, Kevin O’Brien has argued that rural protests are driven by farmers’ increasing "rights consciousness" (O’Brien 1996), while Ching Kwan Lee has emphasized workers’ "collective memories" and "new identities" (2000). On the other side of the coin, Marc Blecher (2002) has argued that we have seen far less protest activity than we should expect, given the number of workers who have lost out in the economic reforms. He argues that the surprisingly low level of unrest reflects workers’ uncritical (and, he implies, irrational) acceptance of the government’s market ideology. Taking a different tack, Yongshun Cai (2002) uses the rational choice theory of collective action to focus on the practical factors limiting or facilitating different groups of workers’ attempts to organize. While each of these theories holds important insights, they all implicitly hold the government’s reaction constant. Under this assumption, an increase in protest could come about only because of increased social distress or ability to mobilize, or because of government weakness. In such a framework, protests can only imply political instability.

Yet, the growing body of qualitative research has highlighted a number of characteristics that are not fully captured in these theories. Researchers in the field have often limited themselves to addressing specific types of protesters, such as rural villagers, laid-off urban workers, democracy activists, or religious movements such as the Falun Gong, but the strategic interactions between the government and these various social groups share many common features. Furthermore, the ways in which these interactions differ are as important as the ways in which they are the same.
3.1 Loyalist Protest

The most common pattern of protest is what I call "loyalist protests." These protests are conducted by narrow, well-defined groups and make claims only on behalf of these groups. Cai (2002) points out that "collective actions of Chinese workers... have often been based on individual enterprises." Zhao (2001) also finds that in the 1990s "many grievances of the Chinese urban population were now aimed at leaders of a particular factory or firm." Similarly, all of the case studies and examples of protest discussed in Chen (2000, 2002) are based in individual enterprises. Lee (2000) notes that workers in one case "consciously avoided co-ordinating with other factories involved in petitions." Worker protests are typically triggered by plant closures, mass layoffs, or default on unemployment or pension benefits by the enterprise or the local government, and their demands are narrowly focused on economic compensation for these changes (Hurst and O'Brien, 2002). In the rural context, O'Brien and Li (2004) note that "in the 1980s and early 1990s, contentious villagers tended to focus on concrete issues such as excessive fees and rigged elections in their own village." As China's economy has continued to grow, an emerging issue became the seizure of land for commercial development from the farmers who worked it. China's economic growth in the early eighties had been driven largely by the granting of long-term land-use rights to farmers (McMillan et al 1989, Naughton 1995). The apparently arbitrary withdrawal of these rights by entrepreneurial local governments with weak legal justification and only nominal economic compensation reportedly was a major cause of "riots and protests [that] erupted across China for much of [2004]" (Yardley, 2004). As in the example of Yuntang given earlier, excessive taxation continued to be an important issue into the early 2000s (Guo, 2001; Bernstein and Lu, 2003), although indications are that changes in central government policy have ameliorated the problem (Ruwitch, 2004).

Protesters do not just demand economic transfers. Most loyalist protests pair complaints about their economic suffering with accusations of corruption or malfeasance by the local government or by state-owned enterprise managers, demanding an investigation by higher levels of government (Chen, 2000; Bernstein and Lu, 2003; O'Brien and Li, 2004). The complaints are also carefully phrased in patriotic and legalistic language, focusing on corruption or poor local implementation of national policies, without questioning the legitimacy of the national government, the Communist party or the political system as a whole.\(^1\)

\(^1\)O'Brien (1996) was among the first to emphasize this point. For one of many examples based on more recent research, see Guo (2001).
While not all protests fit this loyalist pattern, most do. More importantly, the government’s response to protests clearly depends on whether this form is followed. One public security (police) official referred to the most common strategy as "cutting off the heads of both sides" (Hurst, 2004a). Both the local officials whose mismanagement or corruption compelled the protesters to act, and the protesters themselves, incur costs. The local officials may be investigated and, depending on the findings, removed from office, jailed, or even executed. The protesters incur up-front costs from the time spent protesting, as well as the risk of beatings or other reprisals by the local government. But the higher levels of government often add to these costs, even where the protest is considered to be legitimate. Any identifiable leaders are typically arrested, threatened, and jailed without recourse (e.g. Cai, 2002). Other participants run the risk of injury or death, as in the Yuntang case, if the government decides to break up the protest forcibly. Yet after incurring these costs, the protesting group often receives some form of monetary compensation—pensions or unemployment payments are reinstated, taxes are lowered, or one-off payments are made.

Within this broad picture there is still a great deal of variation. Not every complaint is treated equally. The New York Times (3/10/2003) reports that "There is a credo well known to laid-off workers these days: 'A small disturbance leads to a small solution, a large disturbance leads to a big solution. No disturbance leads to no solution.'" Disaffected groups usually start small, gradually escalating their demands until they reach a satisfactory solution or give up. The most common first step for protesters is to make use of the complaint bureaus that exist at every level of government (Luehrman, 2003). Such complaints rarely elicit a response (Chen, 2004). Some groups then move on to peaceful public demonstrations, sit-ins, or strikes. Only a very few go to the extremes of disrupting traffic or engaging in violence or rioting. Those cases inevitably lead to serious government investigations and payoffs. The villagers of Yuntang took great risks but ultimately received serious consideration of their plight. In contrast, in a 1999 case of land expropriation in a poor, isolated region of China, a series of small-scale protests were easily dispersed by the local government, and petitions to higher levels of government as well as to an investigative television show were ignored (Guo, 2001).

The government response depends not only on the scale of the demonstration, but also on the location and type of workers protesting. In urban China, protests rarely rise to the level of violent strikes, while such incidents
are far more commonly reported in the countryside.\footnote{Note that information about events in major urban centers if much more readily available, so any bias should be in favor of us hearing more about violence in cities.} It appears that the level of protest and the size of the grievance experienced by farmers must be much greater in absolute terms in order to attract interest from higher levels of government. In contrast, when employees of a state-owned Shanghai shoe company protested a management buyout of their firm, accusing the managers of asset stripping, they were able to block this action with a much lower-key response. Along with sending numerous letters of complaint, they staged four marches on the municipal government over three months, with fewer than two hundred participants in each march. The privatization plan was cancelled (Chen, 2002). In the much poorer rust-belt city of Jiamusi mentioned at the beginning of this section, it took thousands of marchers blocking a crucial transport link to attain a subsistence-level stipend. In Datong, a poor, relatively remote city of one million, a protest of two hundred fifty workers outside the city hall appears to have been largely ignored by the authorities (Hurst, 2004).

### 3.2 Outlaw Protest

Protests and political actions that deviate in any way from the loyalist model are dealt with much more harshly, with punishments increasing with the extent of the deviation. A widely publicized series of demonstrations by workers in Liaoyang culminated in seven- and four-year sentences for the two most important leaders, as well as the short-term detention and alleged beatings of others who had taken organizing roles. These protests were unusual in that, at their height, they involved a reported thirty thousand workers from at least six factories (Eckholm, 2003; Pan, 2002). What is less often highlighted is that the government’s reaction to the first wave of protests, involving only workers from a single ferro-alloy factory, was quite moderate. Although protesters numbered as many as a few thousand in some of these incidents, most of the protests in 2000 and 2001 were tolerated and leaders were detained only briefly. Only when employees from other factories joined in the protests in March 2002 did the government escalate its response. Notably, the organizer given the longest sentence had been organizing protests since 1992 and was not himself one of the employees of the ferroalloy factory whose workers he was organizing, although his wife was. (Pan, 2002). Yet, as with loyalist protests that fall more firmly within bounds, protesters who had not taken leadership roles received some of their back pay and pensions. The government ultimately launched an
investigation that resulted in a thirteen-year criminal sentence for the former manager of the ferro-alloy plant (Eckholm, 2003).

In the Liaoyang case, attempts to unite workers from multiple organizations brought a stern response from the government, but protesters did not attempt to go beyond this scope, for instance by demanding systemic changes such as the legal right to demonstrate or to form independent labor unions or political parties. Attempts to organize such movements, as with the short-lived China Democratic Party, attract only negative attention, and prison terms of over ten years for the leaders (HRW, 2000).

The Chinese government’s harshest response, however, was to the spiritual and health movement called the Falun Gong. In April, 1999, over ten thousand followers of the movement from six provinces and municipalities conducted an all-day sit-in in front of the party headquarters in Beijing. The contrast with loyalist protests could not have been sharper. The official People’s Daily numbered the organization’s members at over two million, while the Falun Gong’s leaders claimed over seventy million. In mobilizing the Beijing protest and many smaller protests around the country, the Falun Gong showed that it had established itself as a national organization. While it did not have a clear political goal other than to be allowed to register and legally organize at the national level, this would have made it the only truly national organization outside the control of either the Communist party of the Chinese government (Leung, 2002). This show of power brought no conciliation or payoffs from the Chinese government, but rather an unrelenting political purge and propaganda campaign stronger than any since the 1989 Tiananmen protests. Its top leaders in China were arrested and quickly given sentences ranging from eight to eighteen years. Television shows repeatedly broadcast stories of practitioners who became insane after following Falun Gong practices, who turned down urgently needed health care and died, and otherwise experienced terrible outcomes. All the national media accused the movement of being a highly profitable cult designed to enrich its leaders (Tong, 2002). Communist party branches and enterprises held "study sessions" to reinforce and transmit the party’s view of the group. All subsequent attempts at public protest were rapidly and effectively broken up.

3.3 Nationalist Protest

A third form of protest in China, although far less common, is nationalist demonstrations. The most high-profile such event was the 1999 protests at the US embassy in Beijing that followed the US bombing of the Chi-
inese embassy in Belgrade. The foreign news media at the time emphasized the fact that the Chinese government apparently facilitated these protests, providing buses to bring protesters from universities in the suburbs to the embassy downtown. However, the Chinese government restricted attempts to protest over other nationalist issues that arose before and after the Belgrade incident (Zhao, 2003).

4 A Model of Protest Monitoring

This section develops a model of protest monitoring that captures the crucial features of both loyalist protest and outlaw protest, building on the institutional details highlighted above. This model extends a variant of the standard principal-agent model to include a third party, subordinate to both. By establishing a screening mechanism (costly protest) the principal can induce citizens to help it monitor the agent, making more efficient use of scarce bureaucratic and economic resources. In addition to showing how such a mechanism could work and helping to unify some of the disparate informal theories of protest in China, the model has testable implications for variation in the behavior of citizens and the government in China, and for the likelihood of similar processes occurring in other countries.

We will first examine the two interactions separately, modeling the central government principal’s interactions with groups of potentially discontented citizens, and then modeling the interaction between the central government principal and its local bureaucratic agents. After examining these two parts separately, we will consider the effect of bringing them together.

4.1 Managing Discontent

We will first consider solely the problem of managing citizen discontent, leaving aside the agency problem for the moment. Considered in isolation, this becomes a fairly standard screening model. A group of citizens first gains private information about its economic state (roughly, expected lifetime earnings). This value is either low or high, and is represented by $x \in \{x_L, x_H\}$. Let $\beta = \Pr(x = x_L)$, that is, the probability of the bad state of the world. For now we will take $\beta$ as fixed, although later it will become a function of the agent’s action $a$. A group of citizens (treated as a unified actor) can choose to abandon their status quo outcome and participate in revolutionary activities such as the outlaw protests described above, or in more subtle subversive activities such as joining or organizing independent
political parties, trade unions, or religious movements. The expected utility of such an activity is \( R_C \).

\( R_C \) depends on all of the factors that affect a group’s odds of successfully overthrowing the government and its members’ expected status should such a revolution succeed. For example, urban workers are located at transportation and communications hubs and are more educated than rural peasants, meaning they would be more able to coordinate and communicate if they began a revolution. In addition, being located at major production centers makes economic sabotage much easier for urbanites. The ability of a group of citizens to coordinate action among its members will also enter into this variable. Groups such as farmers from one village, or employees from a single state-owned factory are likely to have been together for decades, whereas migrant workers in cities are more atomized.

I assume \( x_L < R_C < x_H \), meaning citizens would prefer attempted revolution to remaining in the bad state, but would prefer to accept the status quo with value \( x_H \) over attempting revolution. Only citizens observe the actual realization of \( x \), but \( R_C, \beta, x_H, \) and \( x_L \) are known to the principal ex ante.

The government of course wishes to divert citizens from revolutionary forms of protest at a minimum cost, but cannot directly observe the citizens’ state \( x \). Instead, the government can establish a screening mechanism, making it known that groups that protest in loyalist fashion will receive transfers \( t(\lambda) \), where the observable \( \lambda \) can be thought of as time spent protesting and foregone wages. Thus, a citizen group that protests for time \( \lambda \) will receive utility \( x(1 - \lambda) + t(\lambda) \). Once a group protests, the government is able to identify and monitor the group and in particular its leaders, making it difficult for them to subsequently engage in revolutionary activities even if they wished to. Thus, the citizens’ utility is:

\[
U_C = \begin{cases} 
  x & \text{if they accept the status quo} \\
  x(1 - \lambda) + t & \text{if they protest} \\
  R_C & \text{if they attempt revolt}
\end{cases}
\]

The government incurs an expected cost of \( R_P \) if this group of citizens attempts to revolt. This encompasses both the cost of suppression and the risk of overthrow. If no revolution is attempted, the government only loses the amount of the transfers \( t \). The government thus has three options. The first is pure suppression, in which the government disregards all protests and sets \( t = 0 \). In that case, citizens will not protest, but will instigate revolt if they get a bad outcome \( x_L \), so the principal’s expected loss under this strategy is \( \beta R_P \). The second option is pure cooptation, paying off
every group of citizens in order to pre-empt both protests and revolutions, setting \( t = R_C - x^L \), which will be the principal’s guaranteed loss. The most interesting case is where the government chooses to use protests as a screening mechanism to distinguish the truly discontented citizens from the rest. I now solve for the optimal such mechanism.

To ensure that citizens protest instead of revolting, we must satisfy the participation constraint:

\[
x(1 - \lambda) + t \geq R_C
\]

which we can rewrite as:

\[
t \geq R_C - x + \lambda x
\]

If this holds for the badly-off \( (x = x^L) \) it will also hold for the well-off \( (x = x^H) \). To ensure that well-off citizens do not protest, we need to satisfy the incentive compatibility constraint:

\[
x^H(1 - \lambda) + t \leq x^H
\]

which simplifies to \( t \leq \lambda x^H \). The government’s expected loss is then \( \beta t \), which it minimizes subject to the two constraints, as illustrated in Figure 1. This is possible for any \( \lambda \) that satisfies:

\[
\lambda \geq \frac{R_C - x^L}{x^H - x^L}
\]

Since the transfer \( t \) implied by \( \text{PC}_C \) is increasing in the amount of protest \( \lambda \), the principal will also choose the lowest possible \( \lambda \). Thus \( \text{IC}_C \) and the above equation will each hold with equality, yielding:

\[
t^* = x^H \lambda^* = \frac{R_C - x^L}{x^H - x^L} x^H
\]

From this expression we can draw two types of predictions. First, by considering the comparative statics of \( t^* \)and \( \lambda^* \) we can make a number of predictions about the variation we should expect to see in the actions of citizens and government when the screening mechanism is being used:

**Lemma 1** \( \frac{\partial t^*}{\partial \lambda} > 0 \). The bigger the protest, the bigger the payout.

As noted earlier, it is a commonplace observation among protesters that "A small disturbance leads to a small solution, a large disturbance leads to a big solution. No disturbance leads to no solution." This is supported by the qualitative research discussed earlier, as well as by a recent statistical study of government public security records in one Chinese city (Chen, 2004).
Lemma 2 \( \frac{dt^*}{dRC} > 0 \). Groups of citizens who are more willing or more able to revolt will receive larger transfers.

This is illustrated graphically in Figure 2. Intuitively, it is clear that as the quality of the citizens’ "outside option" of revolutionary action improves, they must be offered larger transfers in order to ensure that they stay within the bounds of legitimate protest. This helps to explain why farmers, who are less-educated, are remote from the centers of power, and have little leverage over key parts of the economy, are treated less well than urban workers. Both farmers and workers, however, have advantages over migrant laborers, in their ability to coordinate collective action within their groups. The long-standing restrictions on job and geographical mobility in China under the planned economy meant that even people in cities grew to know their neighbors and co-workers very well, a benefit not shared by the migrants.3

Lemma 3 \( \frac{d\lambda^*}{dx^H} < 0, \frac{d\lambda^*}{dx^L} < 0 \). The government will require less-costly protest by better-off groups of citizens to trigger a response.

This also follows from the expression for \( \lambda^* \) above. \( \lambda^* \) is decreasing in \( x^H \), the best-case outcome a group can receive, because as the opportunity cost to the lucky types of imitating the unlucky type increases, the principal can decrease the amount of protest required and give the protesters a smaller payoff. More surprisingly, \( \lambda^* \) also decreases in \( x^L \), the worst-case outcome. An increase in \( x^L \) has two simultaneous effects. First, it increases the marginal cost of protesting for the people the government wants to have protest. If this were the only effect we would see \( \lambda^* \) and \( t^* \) increase in \( x^L \). However, this effect is outweighed by a second effect, the decrease in the relative attractiveness of the outside option over the status quo, \( R_C - x^L \). Hence the net effect of improvements in the status quo outcomes for either the lucky or unlucky groups will be to lower both \( \lambda^* \) and \( t^* \). This is illustrated graphically in Figures 3 and 4.

As shown in some of the examples of loyalist protest above, protesters who are residents of prosperous coastal cities like Shanghai receive quick government responses when they take to the streets. Their protests require far less effort than was required of the protesters in impoverished Jiamusi or Yuntang.

Lemma 4 \( \frac{db^*}{dx^H} < 0, \frac{db^*}{dx^L} < 0 \). Wealthier groups will receive smaller transfers for their protests.

Lemma 5  \( \frac{\mathcal{W}}{x} = x^H \). Wealthier groups will receive larger transfers for a given level of protest.

While this second result fits with the accepted facts, the first is somewhat surprising. However, there is no clear evidence for or against this, as wealth \( (x) \) and revolutionary capabilities \( (R_C) \) are so highly correlated in practice. Poorer groups tend to have less education, less crucial economic roles, and fewer transport and communications links to other potential allies.

Secondly, noting that the expected cost to the government of using this screening mechanism is \( \beta t^* \), we can examine what the tradeoffs are for the government of using the screening mechanism as opposed to the options of total suppression or total cooptation discussed earlier. These results should be interpreted in two ways. First, they help explain variation in the government’s actions within China, identifying under what circumstances a government will encourage protests (if implicitly), as opposed to driving discontented actors underground or coopting them by paying them off without requiring costly protest. Second, these results are useful in understanding why China is the only state in which this kind of protest has become such a major policy tool.

Lemma 6 Screening is preferred to co-optation where \( \frac{x^L}{x^H} < 1 - \beta \).

This suggests that screening is more likely to be used where the probability of the bad outcome is smaller, or when the difference between the best-case and the worst-case outcomes for a group of citizens is larger.

Lemma 7 Screening is preferred to suppression where \( R_P > t^* \).

This comparison points out that the higher the transfers that have to be made to protesters, the more likely it is that the government will simply abandon efforts at screening and suppress all protests. As we saw in examining the comparative statics of \( t^* \) above, increases in either the wealth \( (x^L, x^H) \) or the expected payoff of revolution \( (R_C) \) of a group will make these transfers larger.

Lemma 8 Co-optation is preferred to suppression where \( \beta R_P > R_C - x^L \).

Where screening is not desirable, co-optation will occur where there is a higher likelihood of a group getting a bad outcome \( (\beta) \), where the expected cost to the government of a revolutionary attempt \( (R_P) \) is higher, and where the citizens’ expected gain from revolting \( (R_C - x^L) \) is smaller.
These three results together highlights the importance of the (unmod-elled) observable information the government has about a group of citizens. If the government could segment society into groups of citizens with either very high or very low $\beta$, either co-optation or suppression would be optimal and screening would be unnecessary. The problem in China is that market reforms have made it much harder for the government to identify which citizens are truly suffering, and which might have found some new source of income.

Pensioners have been found to be "particularly prone to take to the streets" with pensions arising as a major issue in 42% of one sample of 62 protests (Hurst and O’Brien, 2002). Hurst and O’Brien argue that this is due to the "biographic availability," which is to say their low opportunity cost. However, if this were the only consideration, the government could simply pay them all off without requiring them to protest. The fact that they are required to take to the streets suggests that not all pensioners are alike, leading the government to separate out the truly desperate from the rest by requiring protest. While pensioners may have similar economic circumstances, the important consideration in this case may be their families. Those whose children or other relatives have found good jobs should be less likely to take to the streets.

Having laid out how protests can work as a screening mechanism and having established the fit between this interpretation and the stylized facts, we will now move on to the question of managing the bureaucracy.

4.2 Managing Bureaucrats: Alarms and Audits

As noted above, the central government principal faces a classic agency problem in dealing with its bureaucratic agents. The agent maximizes the utility function $U_A = w + a - p$ where $w$ is a wage received in advance, $a$ is the level of graft (profits from corruption), and $p$ is the punishment inflicted by the principal. That is, the agent wants to steal, if he can get away with it. For simplicity, I assume $a \in \{0, g\}$. That is, the agent has a specific corrupt opportunity, paying $g$, that he can either take or leave.

The principal is concerned about the outcome $x$ of the agent’s work. I assume that $x \in \{x_H, x_l\}$, where the principal incurs cost $\phi$ if the low outcome occurs. This outcome is less likely when the agent is corrupt, so where $pr(x = x_l; a) \equiv \beta(g)$, $\beta(g) > \beta(0)$. However, this outcome will occur after the agent has left the post and it cannot be blamed directly on him if the principal takes no special action to monitor the agent. The principal has two options for monitoring the agent. The first is what has been called
"fire alarm" monitoring. With fire alarm monitoring, the principal receives a signal when the bad outcome occurs \((x = x_l)\) and pays some cost \(K_F\) if and only if that signal is received. The second method is auditing, in which the principal investigates the agent with probability \(\alpha\) in order to receive a signal of the agent’s action. That signal is imperfect, suggesting "guilt" with probability \(\gamma(a)\) where \(\gamma(g) > \gamma(0)\). Conducting an audit has cost \(K_A\).

The principal decides ex ante what the agent’s base wage \(w\) is, what signal will be invested in, and what punishment \(p\) will be imposed on the agent if the signal indicates misbehavior. Punishing the agent costs the principal \(c(p)\). This differs from standard agency models because the principal is unable simply to take back the agent’s money. The most likely punishments for a government agent are not pay deductions, but rather removal from office or imprisonment. In both cases, the principal incurs costs in punishing the agent, in part because the size of the punishment exceeds the agent’s cash budget constraint.

The principal minimizes the expected loss function:

\[
EL = w + \beta(a)\phi + \begin{cases} 
\quad \beta(a)(K_F + c(p)) & \text{under alarm monitoring} \\
\quad \alpha(K_A + \gamma(a)c(p)) & \text{with auditing}
\end{cases}
\]

Either mechanism will need to satisfy participation constraints (with the outside option normalized to 0) and incentive compatibility constraints. Under alarm monitoring, we have the participation constraint \(w \geq p\beta(0)\) and the incentive compatibility constraint \(p \geq \frac{g}{\beta(g) - \beta(0)}\). Since punishment and wages are both costly to the principal, both constraints will hold with equality. Therefore the minimum-cost alarm mechanism will give the principal an expected loss of

\[
\beta(0) \left( \phi + K_F + \frac{g}{\beta(g) - \beta(0)} + c \left( \frac{g}{\beta(g) - \beta(0)} \right) \right).
\]

Under audit monitoring, the participation constraint is \(w \geq \alpha\gamma(0)p\) and the incentive compatibility constraint is \(\alpha \geq \frac{g/p}{\gamma(g) - \gamma(0)}\), both holding with equality. We can therefore rewrite the government’s loss function as \(\beta(0)\phi + \frac{\gamma(0)g}{\gamma(g) - \gamma(0)} + \frac{g/p}{\gamma(g) - \gamma(0)}(K_A + \gamma(0)c(p))\). Assuming that \(c(p) = cp^2\), it is straightforward to solve for the optimal \(p^* = \sqrt{\frac{K_A}{\gamma(0)c}}\). The government’s
expected loss under this mechanism will be:

$$\beta(0)\phi + \frac{g\gamma(0)}{\gamma(g) - \gamma(0)} \left( 1 + 2 \sqrt{\frac{K_A}{\gamma(0)c}} \right) \gamma(g) - \gamma(0)$$

Comparing the two, we find that alarms will be preferred where:

$$\beta(0) \left( K_F + \frac{g}{(\beta(g) - \beta(0))} + c \left( \frac{g}{(\beta(g) - \beta(0))} \right)^2 \right) > \frac{g\gamma(0)}{\gamma(g) - \gamma(0)} \left( 1 + 2 \sqrt{\frac{K_A}{\gamma(0)c}} \right) \gamma(g) - \gamma(0)$$

As we would expect, a mechanism will be less costly when its signal is more informative ($\beta(g) - \beta(0)$ or $\gamma(g) - \gamma(0)$ is higher), when the cost of carrying it out ($K_F$ or $K_A$) is lower, and when the likelihood of false positives ($\beta(0)$ or $\gamma(0)$) is smaller.

Having established how the interaction between central government and local government and the interaction between government and citizen work in isolation, we will now examine what happens when these two problems are integrated.

### 4.3 A Three-Level Model: Government, Bureaucrat, and Citizens

The game now has three participants, as shown in figure 5. The sequence of play is as follows: First, the government announces the rules of the informal institution. Secondly, the bureaucrat receives the wage $w$ and chooses action $a \in \{0, g\}$. Nature then assigns to the citizens an outcome $x \in \{x_H, x_l\}$. The citizens then choose to accept the status quo, revolt, or engage in loyalist protest (if that option is made available by the government). The government then responds in accordance with its earlier announcement.

The characterizations of the mechanisms described above hold. The cost of alarm monitoring $K_F$ simply becomes the transfer $t^*$. The cost of the bad outcome ($\phi$), now depends on what mechanism is used. If protest monitoring is used, revolution is forestalled and $\phi = 0$. If alarms are used, the bureaucrat is kept in line and there will be fewer cases of dissatisfied citizens since $\beta(0) < \beta(g)$. However, where the citizens do receive the bad outcome, they will still become revolutionary, imposing costs $\phi = R_P$. 

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As discussed with regard to the bureaucratic monitoring problem, these revolutionary activities will not immediately become apparent. If that were the case, the government could use that signal as a trigger to punish the bureaucrats. In practice, as we have observed in a variety of authoritarian societies, even severe discontent can simmer below the surface for a long time. Citizens will only challenge the regime when they see an opportunity. By this time, from the regime’s perspective, it is far too late to go back to identify and punish the corrupt bureaucrats that caused the discontent.

Returning to our earlier comparisons of the protest mechanism with the non-informative mechanisms of suppression and co-optation, we can see that protest has the additional value of facilitating monitoring of the bureaucrat. Stated another way, using protests to monitor the bureaucrat has the positive side effect of channeling citizen discontent away from revolutionary activities. Thus, the same mechanism helps to solve both problems simultaneously.

5 Discussion and Implications

5.1 Applying the three-level model to China

This model helps to understand the variation we observe between 1980s China and more recent years. In the 1980s, the private economy was very small. Most people worked on farms or in state-owned enterprises, then later in the parastatal township and village enterprises. In addition, a strict household registration system made it difficult for people to seek opportunities away from their registered residences without losing their rights to education, health care and other social services. The majority of economic reforms were Pareto-improving, allowing citizens to keep what they had had under the planning system but seek out new and more efficient activities if these became available (Lau et al, 2000). Most business was still tightly linked to the state, meaning communist party cadres did not have many opportunities for advancement outside the government structure. Under these circumstances, protest monitoring was not a very useful institution. Since citizens’ economic lives were still largely within the planned economic system, the government did not need a screening mechanism to identify discontent. Since government bureaucrats were pursuing long-term careers within the state system, they were less able to escape the consequences of mismanagement or corruption in their jobs. As a consequence, loyalist protests were rare. Moreover, when protests did occur they were much larger and more sweeping in their goals. The student-led Tiananmen
Square protests of 1989 were simply the culmination of this pattern of unrest (Zhao, 2001).

By the 1990s, "reform without losers" was no longer feasible (Qian, 2003). State-owned enterprises began massive layoffs, the private sector grew dramatically, and many farmers left their land to pursue work as construction or factory workers in the cities, creating a "floating population" that went from an estimated 50 million in 1990 to 200 million by 2000 (Sisci, 2000). While the central government had the administrative capacity to determine which workers had a right to a pension or unemployment benefits, these were so numerous it was no longer financially feasible to live up to these commitments. Similarly, while the government officially capped rural taxes at 5% of income, local governments were also given a number of unfunded mandates to provide education and other services that they could not afford without raising taxes above this level (Bernstein and Lu, 2002). The private economy, however, was very poorly monitored, to the extent that the Chinese government in 2004 still found it impossible to raise a significant portion of its budget through personal income taxes. Paying off everyone with a legitimate claim to government transfers would have meant paying off people who had found satisfactory jobs in the private sector or who could be supported by relatives who had. These facts made the implementation of the loyalist protest monitoring system a better alternative. It was under these circumstances that loyalist protests emerged. In terms of the model, the costs of running an audit mechanism stayed about the same, whereas the benefits of the alarm mechanism became much greater. Even now it appears that wealthier cities, where there are relatively few groups in such dire straits that they might revolt (low $\beta$), and the government is less cash-constrained ($t$ low relative to $RG$), the government is more willing to make widely distributed payoffs (Hurst, 2004b).

5.2 Publicizing the institution

One of the assumptions made in the setup of the model deserves extra discussion. Signalling models in general suffer from the problem of multiple equilibria. That is not an issue for the model here, because it is set up as a screening mechanism, where the principal makes the first move by telling the other players how it will respond. However, this suggests that the Chinese central government needs to publicize its policies with regard to protests and show by example that it is holding to the contract. The evidence for this is ambiguous. The Washington Post reports "a strict policy forbidding state media from reporting on labor unrest" (Pan, 2002). On the other hand,
the national television network, CCTV, has a regular show that frequently highlights cases of corruption (Guo, 2001), and the state media widely report when corrupt officials are punished. The government’s crackdown on the Tiananmen and Falungong protests was also widely publicized by the official media, although the level of violence used was understated. Chen (2000) mentions a worker protest reported in the Workers’ Daily (Gongren Ribao), and Cai (2002) quotes several other accounts of successful protests from Chinese publications, so it is not clear how firm this news embargo really is. In addition, police publications are increasingly sympathetic to protesters and discuss explicitly how to use less violent tactics and when to make economic concessions (Tanner, 2004).

The limited extent to which the government has made clear both the costs and benefits of protesting appears to be due to additional constraints that are not formally in the model. First, the law in China currently states that groups formally petitioning government agencies should not exceed five (Cai, 2002). Thus, publicly acknowledging that larger protests are acceptable would make it harder for the government to impose costs on participants through arrests and violence, weakening the government’s ability to maintain protest as a separating mechanism. Second, the Chinese government wishes to maintain its image in front of the international community and to avoid sanctions from other governments such as the U.S. that might link human rights violations with other areas of policy. Third, while different social groups such as workers and farmers are well aware that in practice they have different rights and privileges, it would be inconsistent with both the old Maoist ideology and the new market-oriented ideology to make this explicit. Given that it is costly to formally publicize the mechanism, the government may simply take advantage of the informal spread of rumors among China’s increasingly mobile, interconnected population. Although many such rumors have been reported, researchers do not appear to have focused their attention systematically on what citizens know about the outcomes of protests in other parts of the country. One covertly implemented opinion survey of 947 Chinese villagers found that 84% of respondents rated each level of government as progressively more trustworthy than the level below, but the survey did not explore the information on which these opinions were based (Li, 2004). Further facilitating convergence on this informal institution may be the fact that China has a historical tradition of using similar mechanisms (Yang, 2003).4

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4 Yang’s model resembles this one in that protests by citizen taxpayers keep a tax farming agent in line. However, her model differs in a number of key ways. First, she
5.3 Protests: A self-sustaining or a self-undermining mechanism?

An important though as-yet unanswerable question about this mechanism is whether in the medium-to-long-run it is self-sustaining or self-undermining. It is arguable that its self-sustaining properties have already been proven. While the communist regimes of eastern Europe and the Soviet Union collapsed under the pressure of popular movements, China’s communist leaders have held on to power over fifteen years more. During this time they were able to continue a process of economic and political opening that has left many groups behind while allowing others to enrich themselves through both legitimate and illegitimate means.

Yet there are also indications that permitting protests of this kind may be self-undermining in the sense of Greif and Laitin (2004). Most obviously, China’s rapid economic growth has contributed to the development of an educated middle class that may begin to demand formal representation in government. In addition, the very act of protesting has allowed some citizens to build up human capital as organizers and participants in protests. Police journals report that protesters have improved their organization, in some cases beginning protests "having already raised funds for petition drives, hired lawyers, and invited news reporters" (Tanner, 2004). Based on their own fieldwork in Hunan, in southern China, and secondary sources, O’Brien and Li (2004) report that "some activists have become committed movement entrepreneurs" able to mobilize networks that link up protesters from multiple villages in pursuit of common goals.

The Chinese government has attempted to slow this process by arresting any identifiable leaders and harshly punishing those responsible for any protests involving multiple constituencies. This has made it much more difficult for groups to organize protests and even to negotiate with authorities, since individuals are reluctant to step forward as representatives (Cai, 2002). Nevertheless, some activist leaders have continued to take leadership roles even after prison, in part because their efforts on behalf of the community win them increased status (O’Brien and Li, 2004). While evidence for this trend is still spotty, it suggests that the current protest mechanism, like township and village enterprises, may ultimately be supplanted by other
institutions that look more familiar to developed countries.

6 Conclusion

Authoritarian governments suffer from poor information both about the actions of their agents and the dissatisfaction of their citizens. This paper demonstrates that a carefully calibrated response to protests can provide one partial solution to these informational problems. This paper also provides an explanation of the Chinese government's tolerance and even encouragement of (some) protesters that contradicts the conventional and often unspoken assumption that protest inevitably indicates a weakening government and a strengthening civil society. Through the development of a formal model we also get a clearer explanation of variation within China across time, space, and social groups.

7 References

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Figure 1: The optimal screening mechanism \((\lambda^*, t^*)\) must make the dissatisfied protest and the comfortable stay home.

\[\text{Solution: } t^* = \lambda x_H = x_H \left( R_c - x_L \right) / (x_H - x_L)\]

- \(t\) = transfers received by protesters
- \(\lambda\) = length (or danger) of protest
- \(R_c\) = expected utility of attempted revolution
- \(x\) = economic status quo without protest
- \(H\) = high status quo outcome
- \(L\) = low status quo outcome
Figure 2: As $R_c$ increases, $\lambda^*$ and $t^*$ increase.

$t =$ transfers received by protesters

$\lambda =$ length (or danger) of protest

$R_c =$ expected utility of attempted revolution

$x =$ economic status quo without protest

$H =$ high status quo outcome

$L =$ low status quo outcome
Figure 3: As $x_L$ increases, $\lambda^*$ and $t^*$ decrease.

$t=$ transfers received by protesters
$\lambda =$ length (or danger) of protest
$R_c =$ expected utility of attempted revolution
$x =$ economic status quo without protest
$H =$ high status quo outcome
$L =$ low status quo outcome
Figure 4: As $x_H$ increases, $\lambda^*$ and $t^*$ decrease.

$\text{ICH: } t \leq \lambda x_H$

$\text{PCL: } t \geq R_c - x_L + \lambda x_L$

$t=$ transfers received by protesters
$\lambda=$ length (or danger) of protest
$R_c =$ expected utility of attempted revolution
$x =$ economic status quo without protest
$H =$ high status quo outcome
$L =$ low status quo outcome
Figure 5: The three-level game

Central Principal

Wages $w$, punishments $p(\lambda)$

Local Agent

Transfers $t(\lambda)$

Corruption level $a$, leading to economic outcome $x$

Citizen Group

Protest level $\lambda$