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# THE POLITICS OF COOPTATION

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# ABSTRACT

## The Politics of Cooptation*

Group 1 holds political power. Group 2 threatens this power. Group 1 decreases the upheaval probability by coopting some agents from Group 2 into a more benign Group 3. Improvements in upheaval technology lead to less cooptation. Increasing the relative size of Group 1 implies larger co-optation payments to a smaller group, decreasing the total resources committed to cooptation. In an extension in which Group 3 also threatens Group 1, although less destructively than does Group 2, cooptation transfers are reduced. Growth causes political stabilization. The theory applies to the origin of the welfare state, post-communist privatization and other situations.

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# NON-TECHNICAL SUMMARY

Examples abound of situations in which one social group threatens to take political power away from a second group that holds that power. In 19th Century Europe traditional elites in many countries were threatened with revolutions. In Russia this threat was eventually fulfilled. In recent times, communist countries in the Soviet Union and Eastern Europe faced a similar threat that was eventually realized. Then, in a final twist, in the Post-Soviet era many market-oriented regimes in these countries have faced various reversal threats to their reformist policies.

A common response of governments that face such threats is to coopt potential opposition. The introduction of the Welfare State in Bismarck's Prussia can be viewed in this way. The social legislation introduced by Bismarck in the 1880s, which included workers' accident, sickness and old age insurance, is widely interpreted by historians as a response to the mobilization of the working class through trade unions and political parties. The goal was to undercut more radical demands by coopting the working class into the prevailing political order. In fact, a similar story can be told about various changes in the social contract implemented in the rest of Western Europe and North America during this period.

Many of the privatization processes conducted in Eastern Europe and the former Soviet Union in the 1990s can also be viewed as attempts to build an active constituency in favour of the transition from central planning to the market. The Russian case would be a prime example. The Russian government took the view that there already existed in the country a very strong power elite. It decided that any economic programme that attempted to disenfranchise this power structure would be undermined by it. Therefore, the privatization process was designed to pass most of the government's wealth to the established elite. The idea was, explicitly, to coopt this crucial group so that its own interest would be tied to the marketization of the economy. The strategy was successful in the sense that it allowed the reform process to proceed.

The above situations are of a wrenching, even revolutionary sort, but there are other types of upheavals that, while not favoured by groups in power, do not carry the same cataclysmic implications. These include what are commonly called 'middle-class' revolutions where a newly enriched and empowered group carries out a more benign and progressive reordering of society in which old elite groups lose their special privileges. The classic example is the French revolution. This scenario seems particularly relevant for contemporary Asia. Taiwan's democratization already fits into this pattern and many people are hoping for similar developments in countries like Indonesia, Singapore,

and China. In these countries we can view the co-optation strategy as a government policy that allows people to grow rich through their own efforts rather than stifling entrepreneurial activity. This allows a middle class to develop that might eventually challenge the political monopoly of the party in power, albeit in a less disruptive way than an expropriative revolution.

In this Paper we develop a general theory of cooptation, as a means for a social group to retain control, in order to analyse the social processes previously described. We start with a basic framework where one social group, Group 1, holds political power that is threatened by another group, Group 2. The threat is represented by expropriation of a substantial portion of Group 1's wealth, which occurs with a probability that is increasing in the number of members of Group 2. To diminish the likelihood of such an outcome Group 1 co-opts some people from Group 2 into a new group, Group 3, that group newly empowered in the system, does not support revolutionary measures. In other words, Group 3 is coopted into the ideology of Group 1. Entry into Group 3 yields the benefit of a cooptative transfer together with the cost of giving up an option to benefit from a successful upheaval.

We show that the size of the co-opted group is determined by the 'technology of upheaval', which is described by two parameters. The first gives the fraction of the total wealth of society that would be destroyed in the event of upheaval, the second governs the relationship between the number of (uncoopted) people in Group 2 and the probability of upheaval. Improvements in upheaval technology in both dimensions lead to less cooptation and higher cooptation transfers. The intuition stemming from these results can be applied to the privatization process in transition economies. It suggests that the countries that were the least stable, i.e. those facing significant chances of reversals, would be expected to implement privatization programmes that gave large benefits to a small group. This seems roughly consistent with actual experience. For example, Russia, in which an anti-reform communist party continues to control about one third of the electorate, handed over huge pieces of wealth to a very narrow section of the society that supported Boris Yeltsin's re-election. On the other hand, Poland and Hungary, where even the successors to the local communist parties are very pro-market, have spread privatization benefits out much more widely. Next we study the impact of a society's initial class structure. Increasing the size of Group 1 relative to Group 2 leads to less cooptation and to higher individual cooptation transfers. The net effect of these two changes is that less total resources are expended on co-optation. This can explain the differences in the evolution of welfare policies in Europe and the United States, with a larger welfare state emerging in more elitist Europe.

Finally we extend the basic framework to incorporate the possibility of a different type of upheaval driven by Group 3 that could be viewed as a middle

class or bourgeois revolution that would have the effect of equalizing income between Groups 1 and 2. Because of the additional option opening up for Group 3, individual and aggregate cooptation transfers are now lower than before. In other words, a society with a more demanding Group 3 ends up with smaller total transfers. One can in fact view a large welfare state as a way to keep the middle class happier and more loyal.

It is important to stress that our cooptation payments do not necessarily need to be interpreted as direct transfers. They could, for example, refer to a loosening of government restrictions on economic activity, to the extension of political rights, or the manipulation of symbolic rewards such as social status. More generally, there are alternative methods, primarily repression, that groups in power use to perpetuate their power. In practice, different tools would be used in combination with each other. Therefore, a prime goal for future research will be to try to unify these approaches and develop a more general analysis where the optimal control tool is endogenously determined and evolves over time with a society's characteristics.

# 1 Introduction

Examples abound of situations in which one social group threatens to take political power away from a second group that holds the power. In nineteenth century Europe traditional elites in many countries were threatened with revolutions. In Russia this threat was eventually fulfilled. In recent times, communist countries in the Soviet Union and Eastern Europe faced a similar threat that was eventually realized. Then in a final twist, in the Post-Soviet era many market-oriented regimes in these countries have faced various reversal threats to their reformist policies.

A common response of governments that face such threats is to co-opt potential opposition. The introduction of the Welfare State in Bismarck's Prussia can be viewed in this way (Flora (1981), Tampke (1981)). The social legislation introduced by Bismarck in the 1880s, which included workers' accident, sickness and old age insurance, is widely interpreted by historians as a response to the mobilization of the working class through trade unions and political parties. The goal was to undercut more radical demands by co-opting the working class into the prevailing political order. In fact, a similar story can be told about various changes in the social contract implemented in the rest of Western Europe and North America during this period (Flora and Alber (1981)). [1]

Many of the privatization processes conducted in Eastern Europe and the former Soviet Union in the 1990s can also be viewed as attempts to build an active constituency in favor of the transition from central planning to the market. The Russian case would be a prime example (see Boycko, Shleifer and Vishny (1995)). The Russian government took the view that there already existed in the country a very strong power elite. It decided that any economic program that attempted to disenfranchise this power structure would be undermined by it. Therefore, the privatization process was designed to pass most of the government's wealth to the established elite. The idea was, explicitly, to co-opt this crucial group so that its own interest would be tied to the marketization of the economy. The strategy was successful in the sense that it allowed the reform process to proceed.

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[1] Russia attempted similar co-optation policies, including Prime Minister Stolypin's "wager on the strong and sober" that tried to give ambitious peasants a stake in the system (Nove (1972). Lenin greatly feared this policy, opining that "if this should continue for very long periods of time ... it might force us to renounce any agrarian program at all." (Moorhead (1958), p. 69). But obviously these co-optative efforts were not sufficient to avoid revolution.

The above situations are of a wrenching, even revolutionary, sort but there are other types of upheavals that, while not favored by groups in power, do not carry the same cataclysmic implications. These include what are commonly called "middle class" or "bourgeois" revolutions where a newly enriched and empowered group carries out a more benign and progressive reordering of society in which old elite groups lose their special privileges. The classic example is the French revolution.[2] This scenario seems particularly relevant for contemporary Asia. Taiwan's democratization already fits into this pattern and many people are hoping for similar developments in countries like Indonesia, Singapore, and China. In these countries we can view the co-optation strategy as a government policy that allows people to grow rich through their own efforts rather than stifling entrepreneurial activity. This allows a middle class to develop that might eventually challenge the political monopoly of the party in power, albeit in a less disruptive way than an expropriative revolution.

In Section 2 we develop a model in which one social group, Group 1, holds political power that is threatened by another group, Group 2. In particular, with a probability that is increasing in the number of members of Group 2 there will be a major upheaval that will expropriate a substantial portion of Group 1's wealth. To diminish the likelihood of such an outcome Group 1 co-opts some people from Group 2 into a new group, Group 3, that, newly empowered in the system, does not support revolutionary measures. In other words, Group 3 is co-opted into the ideology of Group 1. Entry into Group 3 yields the benefit of a co-optative transfer together with the cost of giving up an option to benefit from a successful upheaval. The size of the co-optation transfer must, therefore, satisfy an incentive constraint requiring that individuals will only accept co-optation transfers that improve their welfare. Group 1 chooses the number of people to co-opt in a manner that maximizes its own utility subject to this incentive constraint. We have two different parameters in the model, both of which comprise what we call the "technology of upheaval". The first gives the fraction of the total wealth of society that would be destroyed in the event of upheaval. Decreasing this parameter represents an improvements in upheaval technology and will lead Group 1 to co-opt fewer people. The reason is that such improvements make it harder to induce people to give up their upheaval options so the price of co-optation rises. Improvements in upheaval technology involving a

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[2]Some would argue that the overthrow of Communism in Eastern Europe and the Soviet Union had more of the character of this second type of upheaval than the first.

parameter that governs the relationship between the number of (unco-opted) people in Group 2 and the probability of upheaval have similar effects.

Next we show that increasing the size of Group 1 relative to Group 2 leads to less co-optation and higher co-optation transfers. Intuitively, a smaller Group 2 poses less of a threat to Group 1, requiring less co-optation. The price of co-optation goes down because it becomes easier to get people to give up their upheaval options as the probability of upheaval goes down. We show that the net effect of these two changes is that less total resources are expended on co-optation.

The basic model has the property that neither the absolute wealth of the society nor the income distribution have any effect on Group 1's behavior and, hence, on the upheaval probability. However, we give a simple extension with the outcome that the equilibrium upheaval probability is decreasing in income, i.e., growth is politically stabilizing.

In Section 3 we extend the model to incorporate the possibility of a different type of upheaval driven by Group 3 that could be viewed as a middle class or bourgeois revolution that would have the effect of equalizing income between Groups 1 and 2. Because of the additional option opening up for Group 3, co-optation transfers are now lower than before. On the other hand, in our simple formulation, the fraction of people being co-opted turns out to be exactly the same as in the model with only one type of upheaval. This stems from two countervailing forces cancelling each other out. The first makes co-optation less beneficial to Group 1 because Group 3 now also poses a threat that it did not before, while the second makes it easier to co-opt people who now have the chance to benefit from this new type of upheaval.

In the sociology literature, and in particular within the theory of organizations, there has been some attention to the study of co-optative processes, viewed as a mechanism of adjustment aimed at guaranteeing stability for an authority in the face of a threat (Selznick (1948), Collins (1988)). This approach is clearly consistent with ours. Our theory of co-optation is linked with political economy literature starting with Tullock (1971) who raises the question of why people take the extreme risk of participating in revolutionary movements rather than free riding on the activity of others. Grossman (1991) resolves this issue in an interesting way in a model in which time spent participating in an insurrectionary movement is treated as an investment in an agent's post-insurrectionary income, if an insurrection occurs. The spirit of this model is similar to ours. However, Grossman only considers events analogous to our first type of upheaval. Moreover, he models families allo-

cating their time between productive work, support for the existing regime through paid soldiering and activities to overthow the current regime, while in our model membership in a social group automatically places one either for or against each of the two types of upheaval and our focus is on mobility between groups. Grossman (1994) elaborates on his work in a context in which insurrectionary activity, with a stochastic return, is replaced with deterministic banditry against landlords. The latter can give land to peasants to divert their efforts from banditry to farming. Such giveaways are similar to, although more specific than, our co-optation payments, although in our case the goal is to decrease the probability and soften the consequences of upheaval rather than to prevent banditry. Horowitz (1993) has a dynamic model of land reform in which gifts of land to peasants only makes them press for even more land. In this approach there are only two groups, as opposed to the three in our model, so that any transfers are given equally to all peasants. Also, all conflicts are resolved according to an exogenous probability distribution. In Acemoglu and Robinson (1996) the extension of the franchise can be seen as a sort of co-optation policy to avoid upheaval, although they study the problem of how a government can credibly promise to redistribute income. Also, for them franchise extension is an either/or decision so they do not discuss degrees of co-optation. Biais and Perotti (1997) model a privatization process in which the government underprices assets with the goal of getting the median voter to oppose redistribution. Their concerns are similar to ours but they study democratic societies with majority-rules voting.

Finally, in Roemer (1985) revolution is a game between two agents (Lenin and the Tsar) whose payoffs, the probabilities of a revolution, are endogenously determined by their political strategies. In this work, the Tsar's tool for holding power is, rather than co-optation of potential opposition, the threat of retribution against participants in a revolution that fails. In Robinson (1997) development makes revolution more lucrative for a disadvantaged group, possibly leading the elite group to democratize to forestall this outcome. The elite's strategy in this work is refraining from investing in public goods rather than co-optation.

## 2    The Basic Model with One Type of Upheaval

Consider a society comprised of two groups. Group 1, of size $\mu_1$, holds political power and Group 2, of size $\mu_2 = 1 - \mu_1$, threatens this power.

Individuals in the two groups have incomes $y_1$ and $y_2$ respectively.

Group 2 threatens to carry out an upheaval that would completely expropriate Group 1 and divide up the spoils that are not destroyed in the process evenly amongst its members. In order to decrease the chances for an upheaval, Group 1 co-opts some agents from Group 2 into a third group, Group 3, that is given a sufficient stake in the status quo so that it does not support upheaval. Let $\mu_3$ denote the size of Group 3. This will be endogenously determined in a manner to be specified shortly. We assume that the probability of upheaval is determined by the number of people who remain in Group 2 after co-optation has taken place according to the formula $(\mu_2 - \mu_3)^\alpha$, $0 < \alpha < 1$, where the parameter $\alpha$ is a measure of the strength and organization of the non-co-opted individuals. In the event of upheaval Groups 1 and 3 receive incomes of 0 while each member of Group 2 will get $\frac{(1-\delta)(\mu_1 y_1 + \mu_2 y_2)}{\mu_2} \equiv \frac{(1-\delta)Y}{\mu_2}$ where $0 < \delta < 1$ represents the fraction of the total wealth of the society that would be destroyed in an upheaval.[3]

Group 1 has strong redistributive powers. In particular, it can, and does, tax away all of Group 2's income.[4] The next step is that Group 1 uses some of its resources to co-opt part of Group 2 into Group 3. For this purpose it makes a co-optation offer, $c$, to a mass, $\mu_3$, taken from Group 2. Any individual who accepts a co-optation offer forfeits his right to benefit from a successful upheaval, i.e., he gives up an option on income $\frac{(1-\delta)Y}{\mu_2}$ to be collected with probability $(\mu_2 - \mu_3)^\alpha$. On the other hand, the co-optation transfer will only be consumed by the individual it is offered to in the event that upheaval does not occur. Therefore, the minimal acceptable co-optation offer must satisfy the incentive constraint

$$[(\mu_2 - \mu_3)^\alpha] \frac{(1-\delta)Y}{\mu_2 - \mu_3} = [1 - (\mu_2 - \mu_3)^\alpha] c \qquad (1)$$

which implies that

$$c(\mu_3) = \frac{(\mu_2 - \mu_3)^{\alpha-1}(1-\delta)Y}{[1 - (\mu_2 - \mu_3)^\alpha]} \qquad (2)$$

The problem for Group 1 is to maximize its expected income by deciding

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[3] The income of 0 for Groups 1 and 3 in the event of an upheaval is just a normalization. These groups might have some resources that are completely out of the reach of Group 1 and would retain them whether or not there is an upheaval.

[4] Again this is a normalization, i.e., Group 1 actually taxes away that part of Group 2's income that the latter Group cannot shield from the former Group.

how many people to co-opt, given the fact that it must respect the incentive constraint. In other words, Group 1 solves the problem

$$\max_{0 \le \mu_3 \le \mu_2} [1 - (\mu_2 - \mu_3)^{\alpha}][\frac{Y - \mu_3 c(\mu_3)}{\mu_1}] \tag{3}$$

For $\alpha + \delta > 1$ there is an interior solution given by

$$\mu_3^* = \frac{\alpha + \delta - 1}{\alpha \delta}\mu_2 \tag{4}$$

which implies that the co-optation payment will be

$$c^* = \frac{\left[\mu_2 \frac{(1-\alpha)(1-\delta)}{\alpha\delta}\right]^{\alpha-1}(1-\delta)Y}{1 - \left[\mu_2 \frac{(1-\alpha)(1-\delta)}{\alpha\delta}\right]^{\alpha}} \tag{5}$$

For $\alpha + \delta \le 1$ we get the corner solution $\mu_3^* = 0$ and $c^* = \frac{\mu_2^{\alpha-1}(1-\delta)Y}{1 - \mu_2^{\alpha}}$, i.e., no co-optation takes place. This analysis leads to the following proposition.

*Proposition 1. Suppose $0 < \mu_3^* < \mu_2$. Then a higher (lower) $\delta$ leads to higher (lower) $\mu_3^*$ and lower (higher) $c^*$, a higher (lower) $\alpha$ also leads to higher (lower) $\mu_3^*$ and lower (higher) $c^*$ and a higher (lower) $\mu_1$ leads to lower (higher) $\mu_3^*$ and higher (lower) $c^*$. $\mu_3^*$ and $c^*$ do not depend on $y_1$, $y_2$ or $Y$.*

Decreasing $\delta$ can be interpreted as an improvement in the technology of upheaval, since lower $\delta$ means that less resources would be wasted in the event of upheaval. This has the effect of making upheaval more attractive to Group 2 members, raising the cost of co-optation. Group 1 responds to this higher price by co-opting fewer of them.

Decreasing $\alpha$ amounts to an improvement in upheaval technology in another dimension, since a lower $\alpha$ means a higher probability of an upheaval for any given $(\mu_2 - \mu_3) < 1$. This type of improvement has the same qualitative effect of decreasing $\delta$, i.e., it leads Group 1 to co-opt more people at a lower price per person. To be noticed is that decreasing $\alpha$ does more than just shift the probability-of-upheaval curve up. It also increases its slope for every $(\mu_2 - \mu_3)$. So the benefit to Group 1 of co-opting additional individuals will now be higher because the probability of upheaval will be decreasing more rapidly than before in $\mu_3$. This effect will push in the direction of more co-optation. Our result shows that the former effect dominates the latter one with the final result of more co-optation at a lower price.

The last two results can be applied to the privatization process in transition economies. They suggest that the countries that were the least stable, i.e., those facing significant chances of reversals, would be expected to implement privatization programs that gave large benefits (large $c^*$) to a small group ($\mu_3^*$). This seems roughly consistent with actual experience. For example, Russia, in which an anti-reform communist party continues to control about 1/3 of the electorate, handed over huge pieces of wealth to a very narrow section of the society that supported Boris Yeltsin's reelection. On the other hand, Poland and Hungary, where even the successors to the local communist parties are very pro-market, have spread privatization benefits out much more widely.

The next result in the proposition is also intuitive but not to be taken for granted. A larger Group 1 means that co-optation costs are shared among a larger number of individuals so one might expect them to co-opt more Group-2 people. However, Group 2 will also be smaller in this case with a correspondingly smaller upheaval probability. It is the weaker threat that dominates and Group 1 co-opts fewer people.

The last result makes sense since it is only relative incomes in the three groups after redistribution that matter.

Proposition 1 also implies the following corollary.

*Corollary 1. Suppose $0 < \mu_3^* < \mu_2$. Then a higher (lower) $\mu_1$ leads to lower (higher) $\mu_3^* c^*$.*

A variation in the initial society's structure therefore has implications for the size of total transfers. In particular, a society where the elite group is smaller leads to larger transfers. While a smaller Group 1 implies, from Proposition 1, a smaller individual co-optation transfer, it also implies a larger fraction of Group 1 being co-opted. On the other hand, a society that starts with a larger Group 1 ends up with a smaller size of government. This conclusion can explain the differences in the evolution of welfare policies in Europe and the United States, with a larger welfare state emerging in more elitist Europe.

Another question to ask is whether co-optation payments will be so large that Group 3 ends up better off than Group 1. Group 1 gets strictly more income than Group 3 iff $\frac{Y}{\mu_1 + \mu_3} > c^*$, which happens iff

$$1 > \frac{\left[\mu_1 \left(\frac{(1-\mu_1)(1-\alpha)(1-\delta)}{\alpha\delta}\right)^{\alpha-1} + \left(\frac{(1-\mu_1)(1-\alpha)(1-\delta)}{\alpha\delta}\right)^{\alpha}\right](1-\delta)}{1 - \left(\frac{(1-\mu_1)(1-\alpha)(1-\delta)}{\alpha\delta}\right)^{\alpha}} \qquad (6)$$

This condition will be satisfied for a wide range of sensible parameter values. For example, if $\mu_1 = \frac{1}{4}, \delta = \frac{1}{4},$ and $\alpha = \frac{1}{2}$ the RHS of the inequality is negative so it is easily satisfied.

Finally, a simple extension of our model captures the notion that wealthier societies tend to be more stable. In particular, they seem to face vanishingly small chances of radical upheavals. Alesina et al. (1996) show evidence that low economic growth increases the likelihood of government turnover, particularly in the case of dramatic changes in regime like the ones we consider. Suppose that the parameter $\alpha$ depends positively on $Y$, i.e., $\alpha'(Y) > 0$. Such a property would mean that as a society becomes richer it gets increasingly difficult for any fixed fraction of the population to completely overthrow the existing order. This might be true because a wealthy elite would be willing to commit a large fraction of its wealth to defend against upheaval. In this case, the solution to the model would be of the form

$$\mu_3^*(Y) = \frac{\alpha(Y) + \delta - 1}{\alpha(Y)\delta}\mu_2 \qquad (7)$$

with the size of Group 3 increasing in $Y$. This implies that economic growth would cause political stabilization in the sense that the probability of upheaval would be decreasing in income.

## 3   Two Types of Upheaval

We now add a second type of upheaval, lead by Group 3, into the model. The idea is that, despite the fact that its members have all been co-opted, Group 3 might still pose a threat to Group 1, albeit of a different nature. In this context, one might view Group 1 as an elite group, Group 3 as a lower and disadvantaged class and Group 2 as an emergent middle class. In Section 2 Group 3 was co-opted into the ideology of Group 1, which opposes an expropriative upheaval. But at the same time Group 3 does not acquire all the privileges of Group 1, which keeps control of society's redistributive policies. In many societies, however, it is really the middle class that presents

the most plausible threat to an elite group since, despite the fact that they do not pursue expropriation, they do aim at increasing their power and wealth. We capture these ideas by introducing a second type of upheaval that would, in effect, merge Groups 1 and 3. Specifically, if an upheaval of type 2 takes place then each member of Group 1 and Group 3 will receive $\frac{Y}{\mu_1 + \mu_3}$ while Group 2 will get 0 (once again, a normalization). In other words, Group 3 in this formulation is pursuing an equalitarian redistribution of income and control between Group 1 and 3. Indeed, one can view the equalized payoff associated with a type 2 upheaval as the outcome of a deeper reform process which has allowed to Group 3 to determine, jointly with Group 1, society's redistribution policies. A type 2 upheaval can therefore be viewed as a democratization process. Finally, notice that no destruction is associated with type 2 upheavals.

Upheavals of type 1 lead, as before, to 0 incomes for Group's 1 and 3 and income per member of Group 2 of $\frac{(1-\delta)Y}{\mu_2}$. Type 2 upheavals only make sense if Group 1 is richer than Group 3, i.e., if equation (6) is satisfied, so we will assume in this section that it is satisfied. Otherwise, there would be no incentive for Group 3 to support this new type of upheaval which has the effect of merging the two groups.

It does not make sense for both types of upheavals to occur simultaneously. Therefore, we assume that the probability of an upheaval of type 1 is $(\mu_2 - \mu_3)^\alpha$ just as before while the probability of a type 2 upheaval is $[1 - (\mu_2 - \mu_3)^\alpha] \mu_3^\beta$ where $0 < \beta < 1$. This means that the probability of a type 2 upheaval, given that a type 1 upheaval does not occur, is an increasing function of the number of people in Group 3.

There are two effects of adding type 2 upheavals into the model. First, it is now easier to co-opt people because, although accepting a co-optation offer still forces people to give up their option to benefit from a type 1 upheaval, they have the compensation that they can benefit from type 2 upheavals. This lowers the price of co-optation making Group 1 inclined to make more offers. Second, the benefit to Group 1 of co-opting people is now lower because Group 3 poses a threat that it did not before, namely the threat of a type 2 upheaval. Of course, this makes Group 1 inclined to make fewer offers. However, it turns out that in this formulation the two effects cancel out and we end up with exactly the same number of people getting co-opted.

In the generalized model the co-optation offer, $\hat{c}$, must satisfy

$$[(\mu_2 - \mu_3)^\alpha] \frac{(1-\delta) Y}{\mu_2 - \mu_3} = [1 - (\mu_2 - \mu_3)^\alpha] \left[ \frac{\mu_3^\beta Y}{\mu_1 + \mu_3} + \left(1 - \mu_3^\beta\right) \hat{c} \right] \qquad (8)$$

implying that

$$\hat{c}\left(\mu_3\right) = \frac{(\mu_2 - \mu_3)^{\alpha - 1} (1 - \delta) Y}{[1 - (\mu_2 - \mu_3)^\alpha] \left(1 - \mu_3^\beta\right)} - \frac{Y \mu_3^\beta}{(\mu_1 + \mu_3) \left(1 - \mu_3^\beta\right)} \qquad (9)$$

Group 1 solves

$$\underset{0 \le \mu_3 \le \mu_2}{max} [1 - (\mu_2 - \mu_3)^\alpha][(\frac{Y - \mu_3 c(\mu_3)}{\mu_1})(1 - \mu_3^\beta) + \mu_3^\beta \frac{Y}{\mu_1 + \mu_3}] \qquad (10)$$

The fraction of people being co-opted is the same as before, i.e.,

$$\hat{\mu}_3^* = \frac{\alpha + \delta - 1}{\alpha \delta} \mu_2 \qquad (11)$$

when the solution is interior , with $\mu_3^* = 0$ when $\alpha + \delta \le 1$.

The co-optation offer is now

$$\hat{c}^* = \frac{Y}{1 - (\frac{\alpha + \delta - 1}{\alpha \delta} \mu_2)^\beta} \{ \frac{\mu_2 [\frac{(1-\alpha)(1-\delta)}{\alpha \delta}]^{\alpha - 1} (1 - \delta)}{\left[ 1 - \left( \mu_2 \frac{(1-\alpha)(1-\delta)}{\alpha \delta} \right)^\alpha \right]} - \frac{(\frac{\alpha + \delta - 1}{\alpha \delta} \mu_2)^\beta}{\left[ 1 - \mu_2 \frac{(1-\alpha)(1-\delta)}{\alpha \delta} \right] \left[ 1 - \left( \mu_2 \frac{\alpha + \delta - 1}{\alpha \delta} \right)^\beta \right]} \}$$
$$(12)$$

We summarize with the following proposition.

*Proposition 2. Suppose $0 < \hat{\mu}_3^* < \mu_2$. The number of people co-opted in the model with two types of upheaval is the same as in the model with only one type of upheaval, i.e., $\mu_3^* = \hat{\mu}_3^*$. The probability that there will be an upheaval with two types of upheaval, $\left( \mu_2 - \hat{\mu}_3^* \right)^\alpha + \left[ 1 - \left( \mu_2 - \hat{\mu}_3^* \right)^\alpha \right] \left( \hat{\mu}_3^* \right)^\beta$, is greater than that with one type, $(\mu_2 - \mu_3^*)^\alpha$. With two types of upheaval the co-optation offer is lower than with one type.*

It is interesting that the number of people co-opted is independent of $\beta$. However, clearly the relative probabilities of the two types of upheavals

depend on both $\alpha$ and $\beta$. Turning to the comparison between the co-optation transfers $\hat{c}^*$ and $c^*$, recall that for two types of upheavals to be considered Group 3 must earn less than Group 1 in the model with one type of upheaval. Then in the model with two upheaval types the offer $c^*$ made to $\hat{\mu}_3^* = \mu_3^*$ individuals would be beyond the necessary threshold for acceptance because individuals accepting it would receive something extra that they do not get in the model with one type, specifically, the chance to benefit from the second type of upheaval. Therefore, in this case $\hat{c}^* < c^*$. This implies that when Group 3 does contemplate upheaval Group 1 gives lower transfers than would be the case without this threat. A comparison between the two alternative models leads to the following corollary.

*Corollary 2. Suppose* $0 < \mu_3^* < \mu_2$ *and* $0 < \hat{\mu}_3^* < \mu_2$. *Then* $\mu_3^* c^* > \hat{\mu}_3^* \hat{c}^*$ .

In other words, a society with a more demanding Group 3 ends up with smaller total transfers. One can in fact view a large welfare state as a way to keep the middle class happier and more loyal.

Of course, the extension from the previous section to cover the case where $\alpha'(Y) > 0$ is still valid, with the conclusion that growth would lead to political stabilization. As in the basic model with one type of upheaval, this implies that growth would cause political stabilization in the sense that the probability of the worst kind of upheaval would be decreasing in income.

# 4    Conclusion

Our co-optation payments do not necessarily need to be interpreted as direct transfers. They could, for example, refer to a loosening of government restrictions on economic activity that allow a previously stifled class to enrich itself through its own labor. In the Soviet period the whole system of Communist Party membership, with its associated array of special privileges, was clearly aimed at co-opting potential opposition. Indeed citizens of communist countries held no realistic chances of rising to positions of authority in the system unless they were communist party members. At the same time, the advantages of membership were conditional on full loyalty and support for the regime (Voslensky (1984)). Nevertheless, co-optation achieved through material reward, direct and indirect, is only one species of co-optative control. Another approach might involve the manipulation of

symbolic rewards such as social status, or self-motivation. A third could be the extension of political rights as in Acemoglu and Robinson (1996). More generally, there are other methods that groups in power use to perpetuate their power. In fact, this paper flows out of a more general research program on the strategy of elite groups for hanging onto power. In this work an elite uses rapid growth in Overland and Spagat (1998) and repression in Spagat (1999). In practice, the above and other tools would be used in combination with each other. For example, an authoritarian ruler may seek legitimization through persuasion, or employ monetary rewards to build an effective army. Socialist societies were ostensively built on self-motivation, but often used coercion as well as co-optation to maintain a status quo. In fact, a society can evolve smoothly from one form to another. For example as repression becomes too expensive, an elite can implement a co-optation policy similar to the one we describe. Or, as self-motivation loses its effectiveness, a socialist society can turn to co-optation as a more stable means of control. Therefore, a prime goal for future research will be to try unify these approaches and develop a model where the optimal control tool is endogenously determined and evolves over time with a society's characteristics.

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