Rashness, Reputation, and Reappointment

Amihai Glazer
Department of Economics
University of California, Irvine
Irvine, CA 92697

November 7, 2002

Abstract

Consider a principal who is unsure about the ability of an executive he appoints, but believes that a good one can solve a problem at lower cost than can a bad one. An executive who cares about his short-run reputation may then show a bias towards acting even though the principal would prefer that the executive delay until the nature of the problem is better understood. Nevertheless, because an executive who is reappointed cannot improve his reputation by distorting his actions, the principal may reappoint an executive revealed to be bad.

1 Introduction

Governments are often accused of delaying action, at great costs to their nations. A prominent example is the appeasement of Hitler in Munich. The delay in military mobilization in Israel before the 1973 October War is another example, and a rich literature explores delay in macroeconomic stabilization. Governments, however, can also err in acting too rashly or precipitously. In 1938, Great Britain gave up control of its naval bases in Ireland. Central to the debate in 2002 over a possible war by the U.S. over Iraq was whether it was best to give inspections a chance to work before engaging in military action. The state of California, facing an electricity crisis in 2001, rashly entered into long-term contracts to buy electricity and to build power plants.

Although these actions may have contributed to ameliorating the problem, they may also have needlessly burdened the state with billions of dollars of costs.

Rashness is not limited to government. Executives in the telecommunications industry invested heavily in fiber optics capacity before it was clear what demand would be, and Japanese firms committed to standards for high definition television before exploring alternative technologies.

This paper builds on a model of decision making in the presence of uncertainty that may be resolved over time. Applying the standard analysis of option value shows the conditions under which an executive who expects to get more information soon should not immediately take an irreversible, costly, action.[1] The novel element of the model is to introduce reputational considerations—if executives differ in their costs of taking action, then a bad executive may increase his short-term reputation by mimicking the behavior of a Good executive. Such behavior by a Bad executive could even induce a Good executive to alter his own behavior, exacerbating the distortion.

2 Literature

2.1 Reputation

The idea that a leader cares about his reputation is old. Alexander Hamilton, wrote in *Federalist* Number 72 that "the love of fame [is] the ruling passion of the noblest minds." The desire for fame appears to have motivated America's Founding Fathers to look beyond their narrow self interest and take actions to benefit later generations (see Adair 1974).

How the quest for a favorable reputation affects managerial decisions is studied by Scharfstein and Stein (1990); they show that concern about reputation may induce herd-like behavior by managers. Tirole and Maskin (2002) model politicians who pander to the public, taking actions the public may incorrectly believe are the better ones, because the incumbent can thereby increase his chances of re-election.

Harbaugh (2002) insightfully uses the observation that when a project is likely to fail, failure little damages a person's reputation, since even skilled people are likely to fail. A manager who is risk averse with respect to his

[1]See Arrow and Fisher (1974), Pindyck (1991) and Dixit (1992).

reputation may therefore favor projects unlikely to succeed. Many predictions made by prospect theory, which assumes violations of expected utility, can thus be explained by a concern for reputation. Other research examines a manager who signals ability by continuing policies he had adopted in the past.[2]

Hess and Orphanides (1995) claim that a president with a bad reputation may risk war to give him an opportunity to improve his reputation. My explanation is that a bad executive acts (as by going to war) when he should not.

2.2 Delay

Some literature considers how political factors affect the timing of policy. Alesina and Drazen (1991) explain delay in macroeconomic stabilization with a model of attrition: any stabilization policy would harm some group, so each group wants to force a policy that protects its interests. Van Wijnbergen (1992) shows that gradual decontrol of prices may induce hoarding; the induced political pressures make continued decontrol less likely, and therefore make immediate decontrol more attractive. My approach complements theirs: while they consider uncertainty about the costs or benefits of a policy, I consider uncertainty about a policymaker's ability. And while they consider a government which requires the assent of different groups to act, I consider an executive (who can be the leader of a majority government) with full authority.

Glazer and Lohmann (1999) see rashness as arising when the incumbent wants to solve a problem to eliminate it is a campaign issue. Anxiety may also justify rashness. If people worry about the pain they may suffer from an unsolved problem, they may prefer that the problem be addressed immediately, even if it likely could be solved later at much lower cost. Anxiety, though not in the context of rashness, is analyzed by Caplin and Leahy (1999, and 2001), but shall not be covered here.

[2]See Kanodia, Bushman, and Dickhaut (1989), Boot (1992), Prendergast and Stole (1996), and Brandenburgem and Polak (1996).

3 Assumptions

3.1 Policies

A perceived problem arises that may require corrective policy. With probability r the problem is real, and if not solved in the current period must be addressed in the next period. If a real problem is unsolved, the principal (which can be the voters) suffers a loss (or pain) P in the period following the one in which the problem was not addressed. This cost P can include the cost of a corrective policy in a later period. With probability $1 - r$ the problem is transitory or not real; it will disappear by period 2, and is best left unaddressed.

Action taken in period 1 solves the problem. With probability f an executive knows whether he is facing a real or a transitory problem; with probability $1 - f$ he does not.

I shall first consider a two-period model with the reputational benefit to an executive taken as exogenous. The model is later extended to consider how reputation affects reappointment.

3.2 Executives

Executives are of two types, Good or Bad (indicated by G and B). An executive is Good with prior probability γ. The executives differ only in the costs of acting, with $c_B > c_G$, and with both c_B and c_G less than P. In period 1 the executive chooses between acting and not acting. The principal observes whether the executive acted or delayed. But in the initial period the principal does not observe the executive's type, or the type of problem he faced. And if the executive did act, the principal does not immediately observe the cost of the action, and so cannot infer the executive's type. The only information that the principal can use to estimate the incumbent's type are the parameter values (γ, c_i, and so on), and the observation whether the executive acted or delayed.

I initially assume that an executive has lexicographic preferences. If his behavior affects his reputation, then he will make the choice that generates a better reputation (that is, that maximizes the probability that the principal thinks the executive is Good). If the behavior does not affect the executive's reputation, then the executive makes the choice that maximizes the princi-

pal's welfare.[3] The assumption of lexicographic preferences is later relaxed.

4 Optimal policy without reputation

Consider first optimal choices when reputation is absent. If the executive knows that the problem is transitory, then he should not act (or, as I shall sometimes say, he should delay). If the executive knows that the problem is real, then he should act.

If the executive acts, the principal's loss is c_i. If the executive does not know what type of problem he faces and does not act, the expected loss to the principal is rP. Thus, the principal would want the executive to act if and only if $c_i < rP$. To make the analysis interesting, suppose that $c_G < rP$ but that $c_B > rP$. That is, in period 1 a Good executive who does not know what type of problem he faces should act, but a Bad one should not. Assume further that $c_G < P$ and that $c_B < P$, so that an executive who knows he is facing a real problem should act.

Since with probability f the executive knows the type of problem he faces, and in a fraction $1 - r$ of these the problem is transitory, a Good executive should act in a fraction $1 - f(1 - r)$ of the cases. A Bad executive should act in a fraction fr of the cases; in a fraction $1 - fr$ he should not act.

5 Equilibrium with reputation

Now let reputation matter. Since in the efficient solution described above a Good executive is more likely to act than would a Bad executive, an executive who chose action would improve his reputation. Given lexicographic preferences, any executive, including a Bad one, cares more about his reputation than about the outcome of his actions, so that a Bad executive would prefer to act even when he believes the problem is transitory: direct costs

[3]Even if an executive's utility depends only on reputation, he may care about outcomes. Suppose, as I will elaborate when discussing reappointment, that after some time it will become known whether the problem was real or not, and that an executive's utility increases with his reputation over multiple periods. Then a good executive may favor action—it may hurt him in the short run, but help him in the long run. The executive may also care because, like a politician, he is a member of society. If a CEO, the executive may care about profit-sharing.

may be higher, but his reputation improves. Therefore, the equilibrium with reputation differs from the equilibrium without reputation.

Because executives are assumed to care foremost about reputation, no separating equilibrium (in which a Bad and a Good executive would behave differently) can exist. The equilibrium must instead have pooling, with a Bad executive making each choice with the same probability that a Good executive does.

The first possibility to consider is that each type of executive makes each choice (act and delay) with positive probability. An executive's choice then says nothing about his type, and the executive will make that choice which minimizes non-reputational costs. But that means that a Bad executive will prefer to delay—in the putative equilibrium delay will not affect his reputation, but will reduce non-reputational costs. Thus, no equilibrium can exist in which both choices are made with positive probability.

The only equilibrium must therefore have either all executives in period 1 act, or else none act.

Suppose in equilibrium executives are always expected to act. A Good executive would want to deviate (that is, would expect an increase in non-reputational benefits) only if he believed that the problem is transitory. A Bad executive would want to deviate both when he believes the problem is real and when it is transitory. So if someone does deviate, he is more likely a Bad executive than a Good one. Then by the Intuitive Criterion (Cho and Kreps (1987)) an executive who delays is more likely Bad than Good. So when reputation is important, the equilibrium with an executive always choosing to act can be sustained. Analogous arguments show that it is not an equilibrium for all executives to always delay: a Good executive would more often want to deviate than would a Bad executive.

Since the only equilibrium has actions taken in period 1, rashness appears: executives act for reputational reasons, even when realizing that the problem is transitory.

5.1 Pooling equilibrium and non-lexicographic utility

Consider next executives who are willing to trade off reputation and costs. Let the executive's reputational benefit be the posterior probability that the executive is Good. Let the non-reputational cost be a constant δ times the costs imposed on the principal, and let the executives utility be sum of these

two terms.

Clearly, if δ is sufficiently low, the solution described above—an executive (whether Good or Bad) always chooses action—can be an equilibrium. But another equilibrium may have them sometimes act and sometimes delay.

Consider the following possible equilibrium. A Good executive delays if he observes that the problem is transitory; otherwise he acts. A Bad executive acts when observing a real problem, and in a fraction α of cases when he has no observation. That is he acts with probability $fr + \alpha(1-f)$. Otherwise he delays. Note that the higher is α the lower is the probability that an executive who acted is a Good one. This gives the intuition for an equilibrium with mixed strategies by a Bad executive. Consider an initial equilibrium in which reputational behavior is absent. If a Bad agent acts, then the posterior probability that he is Good is high, making it attractive for him to act. But if Bad executives are expected to act often, then the posterior probability that an executive who acted is Good little exceeds the prior probability that that an executive is Good. That is, the reputational gain from acting has declined.

Using Bayes' theorem in this possible equilibrium with mixed strategies by a Bad executive yields

$$\text{pr(Good|Act)} = \frac{\text{pr(Act|Good)pr(Good)}}{\text{pr(Act| Good)pr(Good)+pr(Act|Bad)pr(Bad)}}. \quad (1)$$

Note that a Good executive will act with probability $1 - f(1-r)$. We have pr(Act|Bad) is $fr + (1-f)\alpha$. Thus we have

$$\text{pr(Good|Act)} = \frac{(1-f(1-r))\gamma}{(1-f(1-r))\gamma + (fr+(1-f)\alpha)(1-\gamma)}. \quad (2)$$

Similarly,

$$\text{pr(Good|Delay)} = \frac{\text{pr(Delay|Good)pr(Good)}}{\text{pr(Delay|Good)pr(Good)+pr(Delay|Bad)pr(Bad)}}. \quad (3)$$

The value of pr(Delay|Bad) is $(1-r)f + (1-f)(1-\alpha)$. The value of pr(Delay|Good) is $f(1-r)$. We thus have

$$\text{pr(Good|Delay)} = \frac{f(1-r)\gamma}{f(1-r)\gamma + ((1-r)f + (1-f)(1-\alpha))(1-\gamma)}. \quad (4)$$

In equilibrium, α must satisfy the condition that a Bad executive is indifferent between acting and delaying when he does not observe the type of problem (real or transitory) he faces. If he acts, his expected utility is

$$-\delta c_B + \frac{(1-f(1-r))\gamma}{(1-f(1-r))\gamma + (fr+(1-f)\alpha)(1-\gamma)}. \tag{5}$$

If the Bad executive delays, his expected utility is

$$-\delta r P + \frac{f(1-r)\gamma}{f(1-r)\gamma + ((1-r)f + (1-f)(1-\alpha))(1-\gamma)}. \tag{6}$$

We must also check that a Good executive will indeed delay when observing a transitory problem and will act otherwise. The condition for acting is that $c_G < rP$. The condition for delaying is that in the equilibrium with $\alpha > 0$, pr(Good|Delay)>-δc_G+pr(Good|Act). This becomes

$$\frac{f(1-r)\gamma}{f(1-r)\gamma + ((1-r)f + (1-f)(1-\alpha))(1-\gamma)} \tag{7}$$

$$> \quad -\delta c_G + \frac{(1-f(1-r))\gamma}{(1-f(1-r))\gamma + (fr+(1-f)\alpha)(1-\gamma)}. \tag{8}$$

If this inequality is violated, then a Good executive will always choose to act. So delay would indicate that the executive is Bad, and the equilibrium may have all executives always act. Here are some solutions:

P	r	γ	δ	c_B	f	Equilibrium α	Range of c_G
3/2	1/2	1/2	3/10	1	1/2	0.88	$1/4 < c_G < 3/4$
3/2	1/2	1/2	3/10	1	1/4	8/9	$1/2 < c_G < 3/4$
3/2	1/2	1/2	3/10	1	3/4	0.71	$1/4 < c_G < 3/4$
3/2	1/2	1/4	3/10	1	1/2	0.83	$0 < c_G < 3/4$
3/2	1/2	1/8	3/10	1	1/2	0.67	$1/4 < c_G < 3/4$

I chose the parameter values $P = 3/2$, $r = 1/2$ and $c_B = 1$ to demonstrate that the equilibrium can be inefficient. For a Bad executive who does not know whether the problem is transitory or real, the expected non-reputational costs when acting are $c_B = 1$. This exceeds non-reputation costs when delaying, namely $(3/2)(1/2) = 3/4$. Nevertheless, because of reputational considerations, in equilibrium a Bad executive chooses to act with positive probability.

Notice that if c_G is less than the lower value of the range indicated in the table, then a Good executive would act even when observing a transitory problem. An equilibrium could then have all executives always act. As in the discussion with lexicographic utility, if an executive deviated from acting, the principal would believe that he is a Bad executive. An executive who observed a transitory problem would choose to act rather than to delay if $-\delta c_i + 1 > 0$, or if $\delta c_i < 1$. When this inequality holds, both a Good and a Bad executive would always act, even when knowing that the problem is transitory. That is, even a Good executive's decisions would be distorted.

6 Reappointment

We saw that an executive may distort his decision to enhance his reputation. But an executive whose quality is revealed has no such reputational incentive—he is a known quantity.

If the equilibrium has all executives behaving in the same way in period 1, then an executive's choice reveals nothing about his type. The expected quality of a reappointed executive is the same as the expected quality of a new executive, and the principal is indifferent about reappointing or not.

Matters are more interesting if the equilibrium has a Bad executive use mixed strategies when he does not observe the type of problem he faces. Now the executive's actions can inform the principal about the incumbent's ability.

To analyze the reputational effects when reappointment is possible, I must consider at least three periods. For with only one period, reputation would be irrelevant. If there were only two periods, then period 2 is the last period, reappointment then is impossible, and no executive would distort his decision in period 2; the principal cannot prefer reappointing a known Bad executive over appointing a new executive. I shall therefore consider three periods.

In period 1 an incumbent faces a problem and chooses between action and delay. The results of his choice are recognized only in period 2. The incumbent can be reappointed or not at the end of period 1. At the end of period 2, after the state of nature in period 1 was revealed (that is, after it becomes known whether the problem was real or transitory), the incumbent in period 2 can be reappointed or replaced.

Reappointing a Bad executive at the end of period 1 involves a tradeoff.

The executive next period will be Bad, foregoing the chance of appointing a Good executive. On the other hand, a Bad executive who is reappointed will on average perform better than would a new executive who turns out to be Bad.

The analysis is interesting only if the executive had delayed in period 1, because that makes the posterior probability that the executive is Bad exceed the prior probability. So I shall consider that case. If the incumbent in period 1 is reappointed, the executive in period 2 will be Good with pr(Good|Delay). Expected costs are then $(1-f)c_G + rfc_G$.

The reappointed executive will be Bad with probability pr(Bad|Delay). Reputational considerations do not make him bias his decisions, and he will act only if he observes the problem is real. Thus, expected costs are $(1-f)rP+frc_B$. So when an executive who had delayed is reappointed, expected costs in period 2 are

$$\text{pr(Good|Delay)}\left((1-f)c_G + rfc_G\right) + \text{pr(Bad|Delay)}\left((1-f)rP + frc_B\right). \tag{9}$$

Recall that

$$\text{pr(Good|Delay)} = \frac{f(1-r)\gamma}{f(1-r)\gamma + \left((1-r)f + (1-f)(1-\alpha)\right)(1-\gamma)}. \tag{10}$$

So expected costs when an executive who had delayed is reappointed are

$$\frac{f(1-r)\gamma}{f(1-r)\gamma + \left((1-r)f + (1-f)(1-\alpha)\right)(1-\gamma)}\left((1-f)c_G + rfc_G\right) \tag{11}$$

$$+\left(1 - \frac{f(1-r)\gamma}{f(1-r)\gamma + \left((1-r)f + (1-f)(1-\alpha)\right)(1-\gamma)}\right)\left((1-f)rP + frc_B\right) \tag{12}$$

If the incumbent is replaced, then with probability γ the new executive is Good, and expected costs are $(1-f)c_G + rfc_G$. If the new executive is Bad, he will act when observing that the problem is real, and in a fraction α of the cases where he has no information. With probability r the problem is real. Expected costs are $r(fc_B + (1-f)\alpha c_B + (1-f)(1-\alpha)P)$. If the problem is transitory, expected costs are $(1-\alpha)(1-f)c_B$. Combining these, expected costs in period 2 when the incumbent is replaced are

$$\gamma\left((1-f)c_G + rfc_G\right) \tag{13}$$

$$+(1-\gamma)\left(r(fc_B + (1-f)\alpha c_B + (1-f)(1-\alpha)P) + (1-\alpha)(1-f)c_B\right). \tag{14}$$

Consider the solutions with $P = 3/2$,$r = 1/2$, $\gamma = 1/8$, $\delta = 3/10$, $c_B = 1$, $f = 1/2$, and the equilibrium value f $\alpha = 0.88$ (the last line in the table). Let c_G be 3/4. Then expected costs in period 2 when the incumbent is replaced are 0.69. Expected costs when the incumbent who delayed is reappointed are 0.60: it is optimal to reapppoint an incumbent even when he is more likely Bad than his replacement would be.

7 Delay

The analysis above considered rash decisions. But a similar analysis, with somewhat different assumptions, can also generate delay. The point is not that reputation always causes precipitous action, but rather that it can cause biased decisions.

One modification of the model which would generate delay is to allow for two actions, with a strong action more likely to solve the problem than is weak action. A Good executive could have a lower cost for both actions. But if the Good agent has a comparative advantage in weak action (that is, has a higher marginal cost of acting strongly), then a Good agent will act weakly, and a Bad agent will want to imitate him.

8 Conclusion

Children, CEOs, and presidents have all engaged in cover ups. These usually take the form, as with Watergate, of a person denying that he had done wrong. Here I looked at perhaps a more serious phenomenon: an executive taking costly action when he should not.

When officials have incentives to take actions which are bad for the public, constitutional rules or institutional rules may arise to limit them. The biases I examined arise because an official cares about his short-term reputation. Term limits and mandatory retirement, which reduce an official's benefits from a better reputation, may therefore reduce the biases. And were the benefits of a good reputation increased in the long run (that is, after the success of a policy is realized), then the official would have greater incentive to take the action that would most benefit the public or the organization. Politicians, caring as they do about the verdict of history, and as members

of the public suffering the direct consequences of bad policy, may therefore perform better than do officials in the private sector.

References

[1] Adair, D. (1974) "Fame and the founding fathers." In T. Colbum, ed., *Fame and the Founding Fathers, Essays by Douglass Adair*. New York: W.W. Norton.

[2] Alesina, Alberto and Allan Drazen (1991) "Why are stabilizations delayed?" *American Economic Review*, 81(5): 1170-1188.

[3] Arrow, Kenneth and Anthony C. Fisher (1974) "Preservation, uncertainty, and irreversibility." *Quarterly Journal of Economics, 88(2): 312-319.*

[4] Boot, Arnold W.A. (1992) "Why hang on to losers? Divestitures and takeovers." Journal of Finance*, 47(4): 1401-1423.*

[5] Brandenburgem, Adam and Ben Polak (1996) "When managers cover their posteriors: Making decisions the market wants to see." RAND Journal of Economics*, 27(3): 523-541.*

[6] Caplin, Andrew and John Leahy (1999) "The supply of information by a concerned expert." C.V. Starr Center For Applied Economics, New York University, RR# 99-08.

[7] Caplin, Andrew and John Leahy (2001) "Psychological expected utility theory and anticipatory feelings." Quarterly Journal of Economics*, 116(1): 55-80.*

[8] Cho, In Koo and David Kreps (1987) "Signaling games and stable equilibria." Quarterly Journal of Economics*, 102(2): 179-221.*

[9] Dixit, Avinash (1992) "Investment and hysteresis." Journal of Economic Perspectives*, 6(1): 107-132.*

[10] Glazer, Amihai and Susanne Lohmann (1999) "Setting the agenda: Electoral competition, commitment of policy, and issue salience." Public Choice*, 99(3-4): 377-394.*

[11] Harbaugh, R. (2002) "Skill reputation, prospect theory, and regret theory." Working Paper, Claremont College.

[12] *Hess, Gregory D. and Athanasios Orphanides (1995) "War politics—An economic, rational-voter framework."* American Economic Review, *85(4): 828-846.*

[13] *Kanodia, Chandra, Robert Bushman, and John Dickhaut (1989) "Escalation errors and the sunk cost effect: An explanation based on reputation and information asymmetries."* Journal of Accounting Research, *27(1): 59-77.*

[14] *Pindyck, Robert S. (1991) "Irreversibility, uncertainty, and investment."* Journal of Economic Literature, *29(3): 1110-1148.*

[15] *Prendergast, Candice and Lars Stole (1996) "Impetuous youngsters and jaded old-timers—Acquiring a reputation for learning."* Journal of Political Economy, *104(6): 1105-1134.*

[16] *Scharfstein, David S. and Jeremy C. Stein (1990) "Herd behavior and investment."* American Economic Review, *80(3): 465-479.*

[17] *Tirole, Jean and Eric Maskin (2002) "The politician and the judge: Accountability in government." School of Social Science, Institute for Advanced Study, Working Paper No. 20.*

[18] *van Wijnbergen, Sweder (1992) "Intertemporal speculation, shortages and the political economy of price reform."* Economic Journal, *102(415): 1395-1406.*

9 Notation

c_i Cost of action to executive of type i

f Probability executive knows the type of problem he faces

P Pain (or loss) from having problem unsolved

r Probability problem is real

α Probability a Bad executive acts when he does not know what kind of problem he faces

γ Prior probability an executive is Good