A NOTE ON MONITORING COSTS AND VOTER FRAUD

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Abstract: Election fraud can threaten democracy if many ineligible people are allowed to vote. The usual policy prescription is to increase monitoring cost. However, this is very costly. This paper proposes a more cost effective strategy: substitute tougher and consistent statutes across states against voter fraud.
**Introduction**

The economics of crime literature [Becker 1968; Tullock 1971; Barro 1973; Ehrlich 1973, 1975; Becker and Landes 1974; Becker and Stigler 1974 and McCormick and Tollison 1984] introduces the concept of a market for criminal activities. In short, like a profit-maximizing firm, an individual commits a crime when the marginal benefit of this activity is greater than the marginal cost. The supply of criminal activity is a function of four factors: (1) the probability (risk) of capture, (2) the severity of the sanction if captured, (3) the expected profit from the criminal activity and (4) the opportunity cost of the crime. Any of these four variables can impact the crime rate. In this paper, we focus on the severity of the sanction.

There is an optimal tradeoff between the probability and magnitude of fines. Under risk neutrality, the probability of catching a person engaging in an externality generating activity should be set as low as possible and the fine should be set as high as possible [see Polinsky and Shavell 1979]. For example, litter fines were increased from $500 to $1000 in many states where those laws were rarely enforced, a substitution of a tougher statute for potentially quite costly monitoring. In this article, we consider the separation of statute setting and enforcement efforts because often those setting standards do not consider the full cost of compliance.

The role of policing, and its cost, in the setting of what may usefully be thought of as "optimal voting fraud limits" is an important but often overlooked feature of policies designed to reduce or eliminate voting fraud behavior. In a world of costly and imperfect enforcement, policy makers need to seek methods that make compliance cost effective.

The problem is that voter fraud is usually difficult to detect without costly monitoring and investigation costs, especially in light of mail-in votes and failure to require picture ID’s. Clearly, voter fraud is real and can affect elections: According to the Wall Street Journal, “in
2001, the Palm Beach Post reported that more than 5,600 people who voted in Florida in the 2000 Presidential election had names and data that perfectly matched a statewide list of suspected felons who were barred from voting. Florida was decided by about 500 votes. In 2003, the Indiana Supreme Court overturned the result of a mayor's race because of absentee ballot fraud—a case that led to a stricter Indiana ID law, recently upheld by the U.S. Supreme Court. A 2005 Tennessee state Senate race was voided after evidence of voting by felons, nonresidents and the deceased. A Washington State Superior Court judge found that the state's 2004 gubernatorial race, which Democrat Christine Gregoire won by 133 votes, had included at least 1,678 illegal votes.¹ Costly monitoring efforts involving independent observers suggest that a great deal of fraud occurred in the recent Russian elections, with the incumbent United Russia party estimated to have actually received only 36% of the vote rather than the “official count” of 47%.² Since the extensive use of independent observers to monitor voting fraud is very expensive, alternative approaches to monitoring have been explored, such as “Photo Quick Count,” in the context of Afghanistan elections.³ However, high monitoring costs remain an obstacle in overcoming widespread voter fraud.

One solution would be for the government to be less tolerant of fraudulent voting by setting higher fines. With higher fines a smaller amount of enforcement cost would be necessary to achieve a given reduction in fraudulent voting because of the deterrent effect. An optimal increase in the fine would be preferred to jail time because it would be less costly to taxpayers. Of course, there would still be court cost to prosecute the fraudulent voters but the deterrent effect of a higher fine would costlessly reduce the number of potential fraudulent voters and reduce monitoring costs.
Judge Richard Posner (2007) writes, “One response, which has a parallel to littering, another crime the perpetrators of which are almost impossible to catch, would be to impose a very severe criminal penalty for voting fraud. Another, however, is to take preventative action, as Indiana has done by requiring a photo ID.”

**Enforcing the Limits**

As already noted, without stiff sanctions a fraction of voters might choose to fraudulently vote at levels that are non-optimally large from a social perspective. Specifically, individual voters will choose levels (equating marginal private benefits and marginal private costs) that are in excess of those which equate marginal social benefits and costs, a classic "externality" case in the jargon of economics.

What is the optimal voter fraud limit? From economic theory, it would be where the marginal social cost and benefits of voter fraud were equated. [Note that the economist includes the benefits to engaging in voter fraud as true benefits, perhaps a philosophical difficulty for some]. Suppose one takes the private benefits from the fraudulent voter, properly measured (i.e. does the fraudulent voter really "benefit" from his or her actions?) as being small and views the social damages to other voters as being large. In this case, if regulatory compliance were achievable costlessly, the optimal voting fraud limit would be zero, or something quite near that. The crucial feature of our present model, which incorporates the fact that achieving the optimal voting fraud limit requires monitoring and enforcement, comes from the recognition that the average voter fraud level will depend on both tolerance of voter fraud (reflected in the penalties imposed) and on the cost of policing voter fraud.

Formally, let the average voter fraud level, $F$, be a function of both the tolerance for voter fraud, $T$, and the level of policing, $P$. This function is given by $F(T,P)$. Over relevant ranges of
T and P, it is reasonable to assume that F increases at a decreasing rate with respect to T and decreases at a decreasing rate with respect to P. Letting subscripts represent partial derivatives with respect to the indicated variable, we have

\[ F_1 > 0, \quad F_{11} < 0, \quad F_2 < 0, \quad F_{22} < 0 \]

The private net benefit realized from the average voting fraud level is given by the function \( B(F) \). Since the purpose of a tougher sanctions is to keep voters from engaging in fraudulent voting as much as they otherwise would, it is assumed that \( B'(F) < 0 \) over the relevant range, with \( B''(F) < 0 \). The cost of externalities, \( E(F) \), is given as a function of average voting fraud level only, with \( E'(F) > 0 \) and \( E''(F) > 0 \). It is assumed that the marginal and average cost of policing is given by the positive constant \( \Theta \). Finally, it is assumed that there is some sanction, \( T_{MIN} \), below which it is politically impossible to lower the sanction further.\(^6\)

We are now in a position to express the objective of the voting fraud limit policy as solving for the \( T, P, \) and \( \lambda \), which maximizes

\[ Z(T,P,\lambda) = B[F(T,P)] - E[F(T,P)] - \Theta P + \lambda (T - T_{MIN}) \quad (1) \]

The Kuhn-Tucker solution to this inequality-constrained maximization problem is:

\[ \frac{\partial Z}{\partial T} = [B'(F) - E'(F)] F_1 + \lambda \leq 0 \quad (2) \]

\[ \frac{\partial Z}{\partial P} = [B'(F) - E'(F)] F_2 - \Theta = 0 \quad (3) \]

\[ \frac{\partial Z}{\partial \lambda} = T - T_{MIN} \geq 0 \quad (4) \]

\[ T, \quad P, \quad \lambda \geq 0 \quad (5) \]

\[ \{[B'(F) - E'(F)] F_1 + \lambda\} T = 0 \quad (6) \]

\[ \lambda(T - T_{MIN}) = 0 \quad (7) \]
The intuition behind these conditions is clear. Condition (3) calls for an increase in policing until its marginal value, \([B' - E'] F_2\), is equal to its marginal cost, \(\Theta\). Since \(\Theta > 0\) and \(F_2 < 0\), it follows from (3) that \(B' - E' < 0\). This, along with the fact that \(F_1 > 0\), means that \(\lambda\) is strictly positive in (6), hence \(T - T_{MIN} = 0\) from (7).

The preceding model can readily be interpreted with reference to Figure 1, where the level of fraud is on the vertical axis. Larger levels of voter fraud are associated with greater tolerance (i.e., \(F_2 > F_1 > F^*\)), holding constant policing effort. For a given level of tolerance, increased policing reduces fraud at a decreasing rate. Since policing is costly while tolerance can be changed by sanctions not employing society’s scarce resources, the level of fraud that is socially optimal is \(F(0, T_{MIN})\) in Figure 1. The same level of fraud could be obtained on \(F_2(P, T_2)\), but that would require \(P_0\) level of costly policing. Were, however, the optimal level of fraud to become smaller when already at \(T_{MIN}\), policing could be increased from zero, ultimately to an amount that would yield zero fraud. This would be equivalent to the much less costly, but perhaps politically unpalatable \(T = 0\) level on \(F^*(P, T = 0)\).
The relative resource savings from imposing more stringent sanctions as compared to greater policing effort should continue on efficiency grounds until tolerance is lowered (sanctions raised) to the political minimum. In this simple case the optimal fraudulent voting level is completely independent of the functions $B(F)$ and $E(F)$, with only the amount of policing being affected by the benefits or costs associated with fraudulent voting.

Hence, in the context of the present model, there are only two ways to reduce the average level of fraudulent voting: stiffen the sanctions or raising the level of policing. The former is relatively socially costless in terms of resource usage (but perhaps not in terms of equity, the motivation for a $T_{MIN}$) while the latter is not, since it costs more to put additional monitors at polling places and check the authenticity of mail-in votes. Obviously, the efficiency advantage

![Figure 1. Fraud levels as they vary by policing and tolerance.](image-url)
lies in substituting tougher sanctions for socially costly policing to the fullest extent possible, where public input is likely to be critical in the determination of $T_{\text{MIN}}$.

The relatively straight-forward implications of this theoretical model dealing with the economics of voter fraud raises the immediate question of its empirical relevance: how much would greater emphasis on fines reduce voting fraud? In an ideal world, one would compare fraudulent voting percentages before and after the institution of fines of varying magnitude, that comparison being done both cross-sectionally and intertemporally in a panel data framework (to obtain evidence about the likely importance of information lags in compliance). However, as with most illegal activity, even rudimentary data on voting fraud is rarely available, with most evidence being essentially anecdotal as in the introductory examples. The voting context is particularly problematic, since a significant percentage of the electorate is likely to be sympathetic to fraudulent voting activity that favors the candidate that they wish to see elected (as opposed to, say, littering where virtually all, except the litterer, find litter to be aesthetically displeasing). Data limitations aside, most individuals in a democratic society have strong antipathy toward voter fraud generally, hence relatively high fines are unlikely to be widely condemned as unfair. As a consequence, despite lacking any deep understanding of their empirical impact, the clear qualitative prediction of their effect should be sufficient justification for substituting high fines for costly monitoring.

**Conclusions**

Once the cost of enforcing fraudulent voting is recognized, the tolerance should be set as low as politically feasible, that is, sanctions should be set as high as is politically feasible. The feasible level would be expected to depend on what the public believes is "fair," and this implies that public input into the appropriate level of tolerance would be desirable on equity grounds.
But surely the current climate of public opinion running strongly against voter fraud would lead to optimal fraudulent voting levels below the prevailing levels. And, as taxpayers, the public is likely to prefer tougher sanctions to costly detection efforts.

Footnotes

http://online.wsj.com/article/SB122506752884870663.html?mod=googlenews_wsj

2 See “Field Experiment of Electoral Fraud in Russian Parliamentary Elections,” R. Enikolopov, et al. for a detailed discussion of the extent of voter fraud estimated to have occurred in this election.

3 See “Institutional Corruption and Election Fraud: Evidence from a Field Experiment in Afghanistan,” Michael Callen and James D. Long for a discussion of this lower-cost monitoring approach.


5 The authors have used this statute/policing tradeoff model in other research (Graves, Lee and Sexton, 1989). It is closely related to the seminal Becker (1968) contribution.

6 We let T be sufficiently low so that if the fraudulent voting level T were perfectly enforced, the result would be an average fraudulent voting level of F, F < T, where B'(F) - E'(F) > 0.
References


