Public Party Funding and Intraparty Competition: Clean Elections in Maine and Arizona

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Abstract

This paper inquires whether public campaign funding increases electoral volatility at the intraparty level. It introduces the Intra-party Volatility Index, a new technique for estimating electoral volatility and competition in primary elections, and applies it to the primary elections conducted in Arizona and Maine from 1990 to 2010. Results suggest that Clean Elections funding encouraged non-incumbent candidates to run in their party's primaries, and contributed to large swings in intra-party voting within districts controlled by either the Republican or Democratic parties. Such an intensification of intra-party competition was coupled in turn with decrease in intra-party cohesion.

I. Introduction

Does public campaign funding increase electoral competitiveness? In an otherwise impressive literature on political finance, the question remains one of the least satisfactorily answered. This is true not only of the USA [1] but several factors combine to render the research into the effects of public party funding on American elections especially vexing. One is the autonomous role of interest groups, political action committees, corporations, and unions who may spend independently in an effort to sway the vote[2]. Another is the ability of states, and often units within them (Malbin and Gais, 1998), to establish independent funding arrangements[3]. Yet a third factor is "partial campaign funding". At the federal level and in most states public grants make up only a fraction of overall campaign fundraising and expenditures, and with the escalation of cost this has relatively declined[4].

The "Clean Elections" laws adopted by Maine (1996), Vermont (1997), Arizona (1998), Massachusetts (1998), Connecticut (2005), and New Jersey (2005 and 2007[5]) allayed these impediments.

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[1] Attempts by European scholars to tackle the question are somewhat more prevalent. They led however to ambivalent results and a general recognition of the need for more research. Probably the first to treat the issue, Khayyam Paltiel , argued that the undeclared objective of public campaign funding was "to entrench the electoral position of established groups" (Paltiel 1979, 38; 1980, 369. See also See also Nassmacher 1989, Bischoff, 2006, Scarrow, 2006). Others, however, pointed to opposite effects in some of the European and European –like systems, e.g. Israel (Mendilow 1992, 1996. Nassmacher too came to doubt the claim. See Nassmacher and Nassmacher , 2001). The cartel party thesis (Katz and Mair , 1995) pointed to the possibility of a double effect . Competition among the established parties may remain as it was (or even be intensified), while entry of newcomers and small competitors is rendered more difficult. However, the theory was not universally accepted (e.g. Koole, 1996) and Katz and Mair themselves (2009) have offered a reformulation, according to which public campaign funding exacerbates existing patters.

[2] In its holding in the Citizens United Vs Federal Election Commission case, the Supreme Court defined restrictions on corporations and trade unions seeking to finance independent electoral advertizing without using employee funded PACs as "outright ban on speech " (Supreme Court ,2010 ;4) . The consequences were already felt in the outpour of such monies in the 2010 elections. One could assume that future contests will witness the added importance of super PAC funding and of spending by corporations and Trade Unions.

[3] To this one can add the unique presidential –congressional form of government. Contributions could be made directly to candidates and their personal campaign committees, but also to the political parties who consequently compete in effect for donations with their own candidates. For efforts to generalize on the basis of state and local studies see , among others, Milyo, Primo and Groseclose, 2002 ; Kousser and LaRja, 2002 ; and Mayer , Werner and Williams , 2004.

[4] For studies of public funding at the federal level see Mann 2003, 69-83; Gittell 2003, 106-13. For the initial impact of public subsidy in the 1970s and 1980s , see Alexander ,1989, 95-123.

[5] Several municipalities did likewise, e.g. Austin, Boulder, Cincinnati, Oakland and San Francisco.

Particular provisions were tailored to fit specific political systems, but all share several common denominators. Candidates seeking to participate in the programs had to raise specified amounts of seed money from individuals residing in their state. Those who thereby demonstrated their potential electoral support were offered initial sums for the primary and, in line with the results, for the general elections. Up to 2011, and regardless of the various allocation formulae[6], funds were upwards adjusted throughout the campaign to prevent financial disadvantages to Clean Elections funded candidates.   The latter, in turn, undertook to forgo private and special interest contributions and to adhere to expenditure ceilings that are equal to the amount of public funding. In June 2011, the Supreme Court struck down the matching funds provision of the Arizona Election Act as unconstitutional. The reason offered was that "the government has [no] compelling state interest in "leveling the playing field" that can justify undue burdens on political speech" (Supreme Court, 2011). Whether this terminates the experiment of Clean Elections in the US is too early to tell at the time of writing. Nevertheless, on the assumption that public campaign funding (both in its other forms and in revised versions of "Clean Elections") will persist, what happened where such arrangements were implemented is highly instructive. The combination of the disincentives to "soft money" issue advocacy and inability of corporations, pressure groups, and PACs to augment campaign budgets, the core common principles and the "full" (as against "partial") funding allows us to identify the effects more clearly and to treat them as seedbed of hypotheses concerning the effects of public campaign funding elsewhere.

However, not all the states mentioned are equally suitable for such examination. In Massachusetts, Clean Elections was eliminated by the state legislature following the Supreme Court's instruction to sell public property to finance the arrangement (Walker, 2003). In Vermont, funding was restricted to the offices of governor and lieutenant governor. New Jersey signed the Clean Election bill into law only in March 2007 (it was offered on a limited pilot basis in 2005), and has tested it in only three of its forty districts. And the uniqueness of the Connecticut program (a complex formula that takes account of the difference between various circumstances, a three-tiered funding system in the general election, limited funding for third-parties based on prior performance, etc) makes it difficult to assess its impact on the electoral system (Brickner and Mueller , 2008: 38-40). Most research has consequently focused on Maine and Arizona. The impact on electoral competitiveness in these states was investigated from several perspectives. GAO (2003: 29-43) and Mayer et al (2004) looked at the effects of Clean Elections on changes in overall electoral vote margins. Phelps (2004) and Werner and Mayer (2007) checked whether the program encourages female candidates to compete, Malhotra (2008. See also GAO, 2003:12-17) broadened the question to the overall number of candidates competing in elections, and Mendilow and Brogan (2012) inquired whether the decision to participate in the program influences the candidate's electoral prospects. Still, no consensus has emerged.

Phelps, Mayer et al, Werner and Williams, and Malhotra found that Clean Elections exerted a modest effect on electoral competitiveness by providing access to campaign funds to candidates who would otherwise be deterred from participating in the electoral process. The GAO and Mendilow and Brogan (for similar results under different funding methods see Mayer and Wood, 1995) found that such benefits are likely to be muted by the continued pivotal role of traditional factors such as partisanship, incumbency, and economic forces that tend to reduce the number of competitive elections (Jones 1981; Bashman and Polhill, 2005) [7].

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[6] These include the allocation of percentage dollar matches adjusted to inflation, absolute spending ceilings, and calculations based on an average cost of similar contests over previous election cycles. See Brickner and Mueller, 2008. Even before 2011, the clause proved problematic. In New Jersey, lack of clarity concerning what triggers additional allocations in mid campaign caused brouhaha during the second pilot test (2007) and a backlash against Clean Elections itself. Interview with Ingrid Reed, Eagleton Institute, 26 May 2010

[7] To this one can add unintended consequences of the public funding scheme that could strengthen the major parties or reduce the electoral competitiveness between parties. For instance, in Arizona and Maine from 1990 to 2006, Clean Elections has had no significant electoral impact on third parties despite the significant impact on the two major parties (Mendilow and Brogan 2012). Nevertheless, the strength of the two major parties is unevenly distributed across jurisdictions, resulting in the critical role of partisanship and incumbency patterns within districts in explaining electoral results. Public campaign finance schemes like Clean Elections, therefore, may simply perpetuate these types of trends.

Further, since to overcome incumbent name recognition and other advantages challengers must often overspend them (Jacobson, 2009: 98), expenditure ceilings set by public funding can militate against challengers and actually reduce the number of competitive elections (Kousser and LaRja, 2002)[8].

The current paper seeks to add some clarity to the consideration of the linkage between public campaign funding and electoral competitiveness by examining a neglected aspect of the question. All the works mentioned above focused on the effects of Clean Elections on interparty electoral competition. Our aim is to center on the effects on intra-party dynamics. To estimate these impacts we develop the "Intra-party Volatility Index", that helps determine (1) whether Clean Elections has increased electoral volatility in primary elections (defined as the degree of variation in changes in party voting by district from all primary elections during a given election year), and (2) whether an increase in intra-party volatility caused by Clean Elections precipitates an increase in intra-party competition .

The use of this index permits us to examine the effects of Clean Elections on the primary elections in Arizona and Maine from 1990 to 2010. This examination shows that irrespective of the failure to shift the interparty electoral patterns, Clean Elections had noteworthy, though unintended, consequences. It significantly weakened the dominance of party elites over the candidate selection process, while enhancing the role of various intra-party factions in the selection of candidates for general election contests. It thereby reduced intra-party cohesion. Such intra-party volatility is linked to intra-party competition. Instability in party dynamics, as a result of major shifts in primary contests from election-to-election, causes intra-party contests to become more competitive. The likelihood of Clean Elections ' impact on intra-party contests is the greatest when (1) there is no clear favorite by the party establishment, (2) there is an embattled incumbent or an open seat, (3) or /and when control of a district after the general election is unlikely. Furthermore, primary elections are crucial to understanding the first hurdle candidates and parties must cross prior to the general election. In terms of electoral competitiveness, especially in districts dominated by either of the major parties, primaries may in fact be the only opportunity for voters to have a choice as to which candidate they would prefer prior to the general election**.**

The following section presents the Intra-party Volatility Index. The third part of the paper will present the results of its operationalization on the primaries in Maine and Arizona. We shall close in a discussion of these results and what they add to our understanding of the connection between public campaign funding and the competitiveness of elections.

II. The Intra-party Volatility Index

Did Clean Elections increase volatility and competition in Arizona and Maine primary contests? The Intra-party Volatility Index helps to answer this question by estimating variation in changes in party voting from primary election to election, before and after the implementation of full campaign funding. Our aim is not only to capture year-by-year changes in party voting but also how these changes relate to overall shifts in all primary contests. The index is based on logic similar to that used to estimate stock price volatility. Large shifts in a stock's price over time, relative to overall changes in the market, indicate a stock's volatility; stocks that feature such patterns signal higher levels of inventor risk. Likewise, electoral districts that exhibit patterns of intra-party volatility result in higher levels of risk for parties and candidates. We theorize a causal link between public campaign funding and intra-party volatility. The program alleviates the imperative to raise the financial resources necessary to the running of the campaign, thereby accentuating other factors in the candidate's electoral calculus. Thus, variables such as the existence of ideological challenges, or challenges to the party establishment, acquire an elevated role in the decision to compete in primary elections. Even though the electoral risks associated with fundraising are reduced, new pressure points emerge as a result of public funding schemes that encourage challenges to the party leadership's preferred candidates.

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[8] Mixed outcomes in the research on the effects of public funding on electoral competitiveness have also been found in congressional, presidential and gubernatorial contests. Though a full review of the literature in these areas is beyond the scope of this paper, see , among others, Jacobsen 1978; Abramowitz 1991 and Goidel and Gross , 1996 for the U.S. Congressional level; Primo , 2006 for gubernatorial elections ; Weisberg, 2002, and Cantor , 2005 for the presidential elections .

A discussion of the dependent variables used to specify intra-party volatility is warranted. Before doing so, we would like to briefly point out some of the limitations of existing measures of electoral competition and why our measure improves upon them. We do not, however, wish to engage in a broader debate that has already been extensively featured in the literature regarding the traditional measures of electoral competition (see, among others, Gelman and King, 1990; Niemi, Jackman, and Winsky ,1991; Carey, Niemi, and Powell, 2000; Hogan ,2003). Our focus is on the reason measures such as vote margins or the number of candidates in a given election are limited in their ability to explain the effects of primaries on intra-party dynamics. We argue that both indicators are ill suited for capturing the dynamics of electoral volatility in intra-party contests. Differences in vote margins tend to be skewed in favor of incumbents, or towards the candidate(s) who have been selected, or nominated, by the party leadership. Extensive research has found that incumbents tend to deter quality challengers (Jacobson 1990). Whether or not a primary is contested, districts where party support is high, and the likelihood of winning in the general election is also high, the results tend to be biased in favor of the incumbent and/or the party establishment's candidate(s) (Hogan, 2003).

Thus, for instance, in Maine and Arizona from 1990 to 2010, the number of districts that held contested primaries range between 5% to 14% for the Democratic Party and 1% to 5% for the Republicans. The numbers were no better in districts controlled by either of the two major parties: approximately 1% of both Democrat Party and Republican primaries were contested. Another problem is that the use of vote margins or number of candidates within particular districts is liable to miss some of the primaries that may occur during a given year. Thus, in 2008, and again in 2010, the Tea Party movement effected electoral systems at both the national and state levels, causing comparatively stable districts to register increased volatility relative to the electoral system on the whole. In terms of assessing intra-party volatility, our measure picks up both district characteristics of intra-party cohesion and intra-party variation in relation to all primaries in a state, by chamber, during a given year.

Students of comparative politics broadly agree that inter-party electoral volatility means the net change in votes received by a party between subsequent elections (Pederson, 1979; Bartolini and Mair ,1990). Widely used measures include indices of party strength, party fragmentation, the number of parties competing in a given election, and/or the number of parties who enter or exit from election to election (Przeworski, 1975; Ascher and Tarrow, 1975; Pederson ,1979; Powell and Tucker, 2009). Here the comparative literature provides only a starting point for the measure of intra-party electoral volatility in the U.S. Current volatility measures are limited in that they do not measure long-term trends. To estimate volatility beyond short-term shifts in party voting, the number of competing parties, or overall party strength, we need to evaluate whether changes in party voting is a result of a particular circumstances or long-term shift in party power. Our model addresses both short-term and long-term intra-party electoral volatility. We do this by building on the logic pioneered by comparative politics scholars to measure electoral volatility by expanding it to two levels: localized and systemic volatility. Localized volatility measures net changes in party votes over time; systemic volatility evaluates electoral deviation system-wide during the same period. Splitting volatility into two dimensions provides a more comprehensive understanding of intra-party dynamics. Primary elections tend to be dominated by party elites who are connected to diverse localized power bases. However, system-wide changes do impact localized elections. National and state factors—e.g. presidential elections, macro-economic changes, and/or the introduction of clean election funding, etc.—influence intra-party dynamics.

Our approach to constructing intra-party electoral volatility, at the local and system levels, ensures it is an index that is easy to interpret, can easily be replicated across states, and is based on solid theoretical framework regarding party dynamics. Fundamentally, changes in intra-party volatility capture underlying fault lines within a party. Deviations at both the local and system levels are important indicators for party leaders, candidates, and activists to assess party strength, electoral competition, as well as political representation. In terms of political strength, intra-party volatility increases intra-party electoral competition. Therefore, if this does occur then it is more likely for party leaders, and incumbents, to shift their positions in order to attenuate any division within the party. Indirectly, intra-party volatility captures elements of political representation. Increases in intra-party dynamics may at times stem from a dissatisfaction among party voters with the incumbent, or party establishment's candidate(s), due to such things as scandals, shifting power bases within the party, or as a result of ideological challenges within the party. The intra-party volatility index is measured as a two-step process.

The first step develops a primary electoral competition scale that takes into account the number of candidates competing in a primary contest as well as the percentage of the vote they received per state legislative district (Hogan, 2003; Hernson and Gimpel, 1995). The scale ranges from 0 to 1 with higher numbers on it indicating more competitive elections and lower numbers on the scale less competitive primaries. For example, if a given primary election has three candidates who receive 33%, 27%, 22% and 18% of the vote $1-(.33^2 + .27^2 + .22^2 + .18^2)$ the index for that district would be .73. Special cases apply to lower house races in Arizona because these districts are multi-member. So in the example provided above, the index would be based on pseudo-districts where the first place candidate and fourth place candidate would be treated as a separate contest and the second and third place candidates would be considered another race. The average between these two contests would be used as the final index score, which would be .47; this is computed as 1- .52 (this is based on the average of the following estimates: .54 for first/fourth place and .5 for second/third place). For races with more than four candidates the same methodology would be treated as normal districts; this presumes higher levels of intra-party competition. Equation 1 defines the index for both Republican and Democratic primaries where *p* equals the percentage of vote won per candidate and *i* represents the number of candidates per district[9]:

$$(Eq1.) 1 - \sum p_i^2$$

Once the index of primary competition has been estimated, we calculate the weighted moving average of this index per district as well as the overall weighted moving average of the index for all primaries in a given state, per chamber, per year. Our motivation is to not only electoral volatility during a specific election, but also to evaluate changes in district competition over time. Since we are dealing with cross-sectional time-series data, we split the districts into elections before (1992 to 2000) and after (2002-2010) to account for redistricting changes. For example, to calculate the smoothed index of primary competition for a district that had scores of .73 in 2002, .65 in 2004, .55 in 2006, .78 in 2008, and .8 in 2010, the adjusted estimate would be .73 in 2002, .68 in 2004, .61 in 2006; .68 in 2008; and .75 in 2010. From these results, we place greater weight on recent elections in each subset in order to capture inter-temporal changes in primary competition across districts. Equation 2 summarizes the weighted moving average for Democratic and Republican primaries where *x* represents each observation over time:

$$(Eq.2)(1/5) * [1 * x(t-2) + 2 * x(t-1) + x(t)]; x(t)$$

The second step in our process of calculating intra-party volatility is to estimate the adjusted mean deviation of the moving average electoral competition scale per district, per chamber, by the overall moving average electoral competition for a party over all districts by chamber for a given year. The index captures the dynamics of primary election voting in a particular district as it relates to overall returns for the party across all districts in a given election. The measure of variation is quite intuitive and straightforward: it can be understood as the percentage difference in vote for a particular party in given district compared to the party's vote share in all other districts in a given election year. Equation 3 is used to calculate intra-party volatility score per district, per chamber, for the Democratic or Republican parties.

$$(Eq.3)\sqrt{\frac{n\pi}{n}}\frac{1}{n}\sum_{n-1}^{j=0}|r_{t-1}|$$

District volatility is defined in Equation 3 by $|r_{t-j}|$ which captures the absolute percentage point difference between district level results from overall average results for all of a party's given elections, per chamber, per year. Adjusting for the square root of panel differences, $\sqrt{\frac{n\pi}{n}}$, ensures the intra-party volatility index is an unbiased estimator of variance of the population (Stewart and Ord, 1998).

To model intra-party volatility we utilize a variance weighted least squares regression method. The reason for choosing this technique is to correct for heteroskedasticity while making adjustments for serial correlation among the model's variables characteristic of cross-sectional panel data.

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[9] For lower house races in Arizona, we created pseudo-districts in which one district is defined as the first place candidate competing against the fourth place candidate and the second districts is defined as the second place candidate versus the third place candidate. For a fuller discussion of this technique see Niemi, Jackman, and Winsky (1991).

This is achieved by taking the estimation of given weights of each of the model's independent variables and adjusting them on the basis of the model's error predictions. We have specified a disturbance term that is divided into short-term forces and random observations (Greene, 2001). Short-term forces are included in estimating the next period's estimates. For instance, when estimating changes current party voting, we include short-term changes in lagged partying voting from the previous election. To test for differences before and after the implementation of Clean Elections on primary contests in Arizona and Maine we have conducted a structural break analysis that compares the model's intercept on a split dataset (election years 1994-1998 and election years 2000-2010; note 1992 and 2002 have been excluded due to redistricting). To test for parameter differences, we have employed a Chow Test. The multivariate model for estimating party volatility is summarized in Equation 4.

$$(Eq.4) Intra - PartyVolatility = constant + \beta DistrictPartyControl - \beta OpenSeat + \beta Challengers(CE) + \xi 2k - i + \varepsilon k, 1$$

A Brief Overview of Data: Election results in Maine and Arizona are measured as panel data at the district level from 1992 to 2010 for both lower and upper house races. The data come from the Office of the Secretary of State in Arizona and the Bureau of Corporations, Elections, and Commissions in Maine.

The estimation of the multivariate model was done separately across state and chamber. This ensures that state-level, chamber-level, and election-year effects are independent. Lastly, panel-corrected clustered standard errors were used to reduce serial correlation within the dataset.

Independent variables used for the model include:

District Party Control: The Democratic Party's estimates are a binary variable coded "1" if the Democratic Party controls the district and "0" if the party does not control it. For the Republican Party's primary estimates, "1" equals Republican control the district and "0" when the party does not control it.

Clean Election Before/After: This is coded as "1" for all elections held after 1998 and "0" for all prior elections. The sample has been split in order to compare differences in effect sizes in the model's intercept and parameters before and after implementation of public funding in each state.

Non-Incumbents Participating in Clean Election Funding: This is the number of non-incumbent candidates participating in CE scheme in a primary election per district. For the Democratic Party estimates, only non-incumbent candidates who participated in CE are included; for Republican estimates, only non-incumbent candidates participating in the program who ran in their party's primaries are included.

Open Seat: This variable is coded as "1" for primary elections when no incumbent is running and "0" for all other elections.

III. Operationalization of the Index: Primaries in Maine and Arizona.

We provide summary statistics of the dataset in Table 1. Of specific interest to our study are the variables that measure Intra-Party Volatility for the Democrat and Republican parties. For the Democrats, intra-party volatility is greater in Arizona (an average of 18.3 percentage point variation in lower house races and 24.8 in upper house races) when compared to Maine (an average of 8.8 percentage point variation in lower house races and 9.5 in upper house races). Republican primaries tend to be less volatile than Democratic primaries, except in lower house races in Maine.

The implementation of Clean Elections funding has significantly reduced average intra-party volatility for the Democrats in upper house races in Maine—a decrease of 2.9 percentage point in volatility with a pooled standard error of 0.1—and in upper house races in Arizona—5.7 percentage point drop with a pooled standard error of 2.0—as well as in lower house races in Maine—a decrease of 3.9 percentage points with a pooled standard error of 0.1.[10] For Republican primaries, we find a similar trend where the implementation of public campaign funding reduced intra-party volatility in all cases except for upper house races in Arizona.

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[10] For upper house contests in Maine, based on a t-value of 3.0 p<.05 level. For upper house races in Arizona, a t value of 3.0 p<.05 level. For lower house races in Maine, a t-value of 7.9 p<.05 level.

For upper house Republican primaries in Maine there is a significant difference of a 1.9 percentage point decrease with a pooled standard error of 0.1; for Republican primaries in lower house races in Maine, a significant 6.4 percentage point decrease with a pooled standard error of 0.1; and for Republican primaries in lower house races in Arizona a significant decrease of 3.0 with a pooled standard error of 1.4.[11]

Table 1: Sample Means and Standard Deviation: Arizona, and Maine State-Level Primary Legislative Elections 1990-2010

	Arizona		Maine	
Variables	Lower House	Upper House	Lower House	Upper House
Intra-Party Volatility-Democrats	18.3 (13.5)	24.8 (16.6)	8.8 (8.4)	9.5 (9.4)
Intra-Party Volatility-Republicans	13.0 (11.4)	22.3 (17.4)	13.4 (12.5)	6.8 (6.9)
Non-Incumbent(s) Selecting Clean Election Funding	1.1 (1.4)	0.4 (0.7)	0.6 (0.8)	0.8 (0.9)
Democratic District Control	0.3 (0.5)	0.3 (0.5)	0.4 (0.5)	0.4 (0.5)
Republican District Control	0.5 (0.5)	0.4 (0.5)	0.3 (0.5)	0.4 (0.5)
Open Seat	0.2 (0.4)	0.3 (0.5)	0.3 (0.5)	0.5 (0.5)
n	210	210	1154	279

Mean values reported
Standard deviation in parentheses

Estimating Intra-Party Volatility: Tables 2 and 3 summarize the variance weighted least squares estimates of intra-party volatility separately for Democratic and Republican primaries, by state, and by chamber. The overall model fit reaches the critical value for all estimates. This includes the following for the Democratic primary estimates: the model explains approximately 38 percent of the variance in the dependent variable in Arizona lower house races prior to Clean Elections and 16 percent after its implementation; 26 percent of the variation explained in Maine lower house races before and 19 percent after; 19 percent in upper house races in Arizona before and 15 percent after, and 11 percent of variance explained in upper house primaries in Maine before and 17 percent after. For Republican primaries, 25 percent of the variance in the dependent variable is explained before the implementation of Clean Elections in lower house races in Arizona and 16 percent after. In lower house races in Maine, 26 percent of the variance explained in the intra-party volatility variable before implementation of public funding and 12 percent after. In upper house races in Arizona and Maine before and after Clean Elections, we found 17 percent and 24 percent of the variance explained in the former and 53 percent and 33 percent in the latter case. Overall, the results for all estimates indicate that the implementation of Clean Elections has had a significant effect on the baseline primary vote as reported by changes in the model's constant. These changes indicate a drop in the baseline intra-party volatility for the Democratic and Republican parties indicating that, on the whole, primary elections have become less volatile than was the case before the introduction of public funding.

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[11] For upper house races in Maine, a t value of 2.3 p<.05 level, and for lower house races, a t value of 9.9 p<.05 level and for lower house races in Arizona a t value of 2.1 p<.05 level.

Table 2: Summary of Variance Least Squares Estimates of Electoral Volatility in Democratic Primaries in State-Legislative Districts Before (1992-1998) and After (2000-2010) the Implementation of Clean Election Funding in Maine and Arizona (Lower House Districts)

Variables	Arizona Lower House Before CE	After CE	Diff.	Maine Lower House Before CE	After CE	Diff.	Arizona Upper House Before CE	After CE	Diff.	Maine Upper House Before CE	After CE	Diff.
Non-Incumbent(s) Selecting Clean Election Funding		0.14 (0.0)**			0 (0)			0 (0.1)			0.6 (0.3)**	
District Party Control	-3.9 (0.6)**	-1.5 (0.7)**	2.4**	-3.5 (0.1)**	-0.1 (0.1)**	3.4**	-3.0 (0.6)**	-1.1 (0.8)**	1.2**	-3.4 (0.3)**	-1.1 (0.5)**	2.2**
Open Seat	0.2 (0.1)*	0.0 (0.4)	-0.2	0.1 (0.1)	0.8 (0.1)**	7.0**	1.8 (0.4)**	3.9 (0.4)**	2.1**	2.2 (0.6)**	2.2 (0.7)	0.00
Constant	23.1 (0.6)**	19.3 (0.7)**	-3.8**	11.4 (0)**	6.1 (0.1)**	-5.3**	25.6 (0.3)**	22.4 (0.3)**	-3.2**	11.8 (0.6)**	8.2 (0.8)**	-3.6**
Model Fit												
X^2	73.1**	25.4**		64.45**	57.6**		28.3**	58.7**		48.1**	31.2**	
n	90	150		453	755		90	150		105	175	
Pseudo-R sq.	0.38	0.16		0.26	0.19		0.19	0.15		0.11	0.17	

Standard errors in parentheses

* $p<.05$ ** $p<.01$

Table 3: Summary of Variance Least Squares Estimates of Electoral Volatility of Republican Primaries in State-Legislative Districts Before (1992-1998) and After (2000-2010) the Implementation of Clean Election Funding in Maine and Arizona

Variables	Arizona Lower House Before CE	After CE	Diff.	Maine Lower House Before CE	After CE	Diff.	Arizona Upper House Before CE	After CE	Diff.	Maine Upper House Before CE	After CE	Diff.
Non-Incumbent(s) Selecting Clean Election Funding		2.7 (0.1)**			3.1 (0)**			3.2 (0.2)**			2.9 (0.1)**	
District Party Control	-8.5 (0.7)**	-3.8 (0.9)**	4.6**	-7 (0.1)**	-2.5 (0.2)**	4.4**	-8.5 (0.9)**	-2.7 (0.9)**	5.7**	-6.1 (0.7)**	-1.9 (0.8)**	4.2**
Open Seat	1.5 (0.5)*	6.5 (0.7)**	5.0**	0.9 (0.2)*	3.2 (0.2)	1.8 (0.9)*	-2.7 (0.9)**	-0.9	5.1**	1.2 (0.4)**	4 (0.5)**	2.8**
Constant	25.1 (0.5)**	20.9 (0.7)**	-4.22**	16.7 (0.2)**	14.5 (0.2)**	-2.2**	24.7 (1)**	20.2 (1)**	-4.5**	13.9 (0.7)**	11.7 (0.8)**	-2.22**
Model Fit												
X^2	54.9**	33.2**		71.2**	104.1**		42.5**	45.6**		62.1**	25.3**	
n	90	120		453	755		90	150		105	175	
Pseudo-R sq.	0.25	0.16		0.26	0.12		0.17	0,24		0.53	0.33	

Irrespective of the decrease in overall systemic volatility due to Clean Elections funding, the results yield an important finding regarding the effects of public funding the district or localized level. When examining the change in the parameter size of intra-party volatility in districts either party already controls, there is a pooled average increase of 2.3 percentage points in volatility across all states and chambers in Democratic primaries held in districts that the party already controlled, other things being equal. In Republican controlled districts, the change in the implementation of public funding has led to a pooled average increase of 4.7 percentage points in volatility, other things being equal. The impact of these changes point to a causal relationship between Clean Elections funding and intra-party dynamics. The findings suggest that public funding has not only made it easier for candidates to challenge incumbents and party-backed candidates, but also influenced overall party cohesion entering into the general election. A likely consequence of Clean Elections implied in these numbers is the erosion of party cohesion and the reduced centralization of the process of selecting candidates for general elections.

Intra-party volatility occurs when there is an increase in non-incumbent candidates competing in primaries. The pooled average net effects—all of the parameters used to estimate intra-party volatility for Democratic and Republican primaries were significant—the pooled average for Democratic primaries results in .97 percentage point percent increase in volatility and a 3 percentage point increase in Republican primaries.
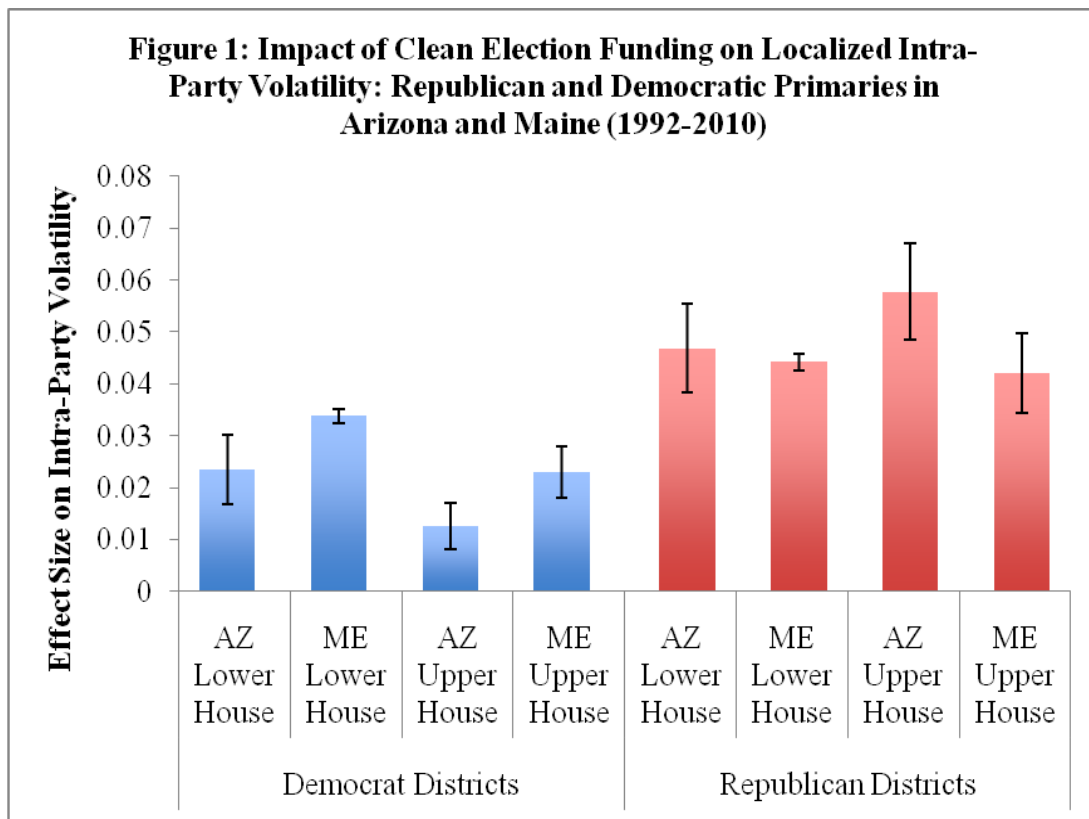
IV. Discussion

The application of the Intra-party Volatility index to the primaries conducted in Maine and Arizona between 1990 -2010 corroborates the claim that full campaign funding promotes party volatility in intraparty competitions in districts controlled by the Democrats and Republican parties by providing access to candidates who wish to run for public office and are not the party establishment's choice. It should be noted, however, that the program does not alter the overall outcomes of general elections. The existing ruling party structure remains, and traditional factors—such as incumbency—continue to play a significant role in explaining overall outcomes. Clean Elections, therefore, tends to reinforce traditional electoral factors by tightening already competitive elections and volatile districts. Evidence from primary elections to date confirms this conclusion.

By 2008, 96 percent of all state legislative candidates in Maine participated in public funding as did 82 percent of all candidates in Arizona (GAO 2010). These increases are noted in both contested and uncontested primaries. Fifty-three percent of Republican candidates in contested primary elections accepted Clean Elections funding in 2008, up from 14percent in 2000, and among the Democrats the respective numbers were 66 percent (down from its high in 2006 of 73percent) and 37 percent. However, uncontested primaries themselves remain the norm in both states. By 2008, Arizona and Maine witnessed virtually no change from 2000 in the number of uncontested races. In 2000, roughly 85 percent of primary elections for both Democrats and Republicans were uncontested, and by 2008 the number grew to roughly 88 percent. The decrease in the number of contested primaries is significant.   Before the implementation of Clean Elections, roughly 21 percent of Democratic primaries were competitive, whereas following it the number fell to approximately 13 percent[12]. Republican primaries exhibit a similar trend: from 21 to 16 percent[13]. Such numbers suggest that Clean Elections have not enticed candidates to enter races in which outcomes appear to be a foregone conclusion, or, to put it differently, that full campaign funding tends to tighten already contested races but has little effect on non-contested ones.
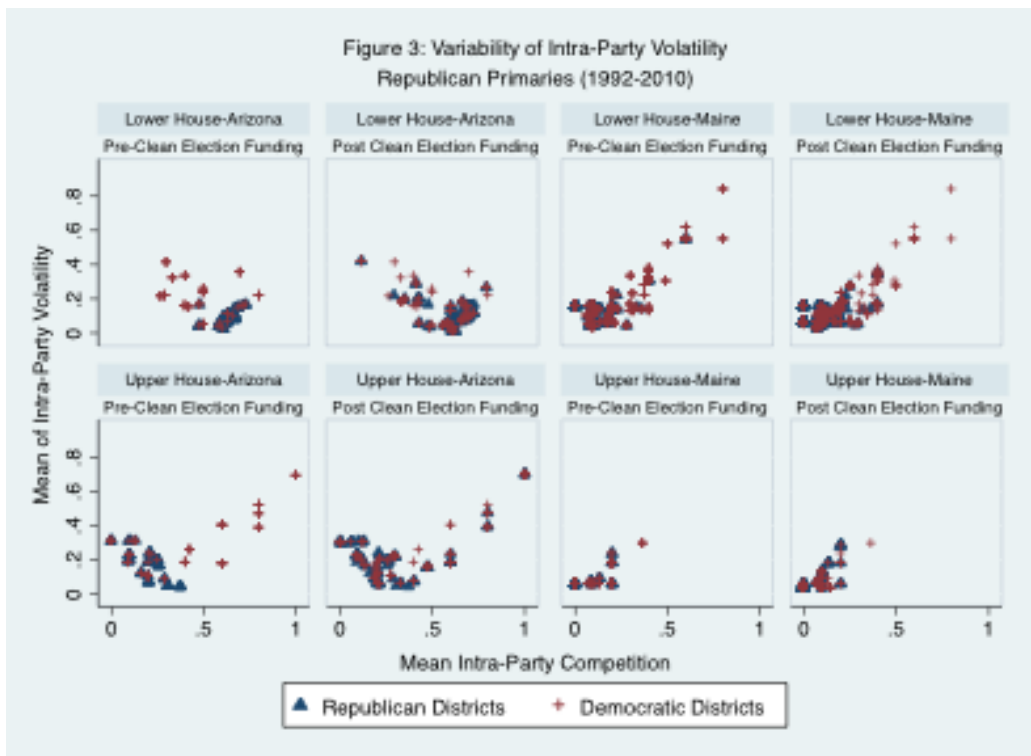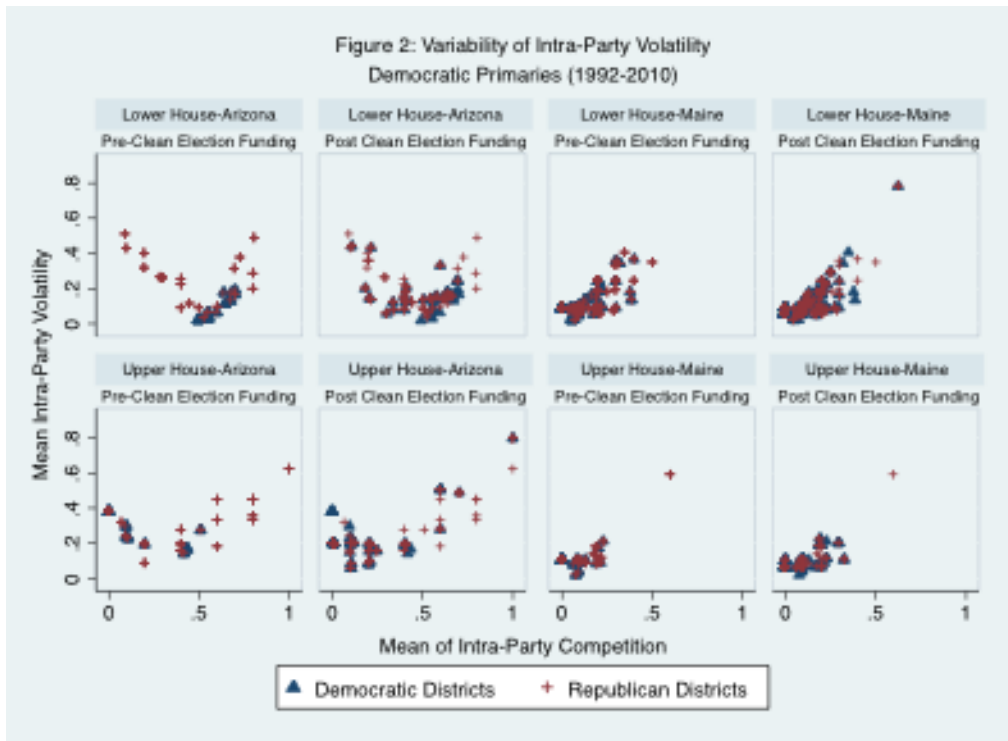
At the same time, intra-party volatility and competition may bring about changes in the candidate selection process, ensuring it is no longer determined solely by party leadership. The procedure is also shaped by variations in internal party conflict from election to election. Candidates who once needed only to secure endorsements of the party elite now need to secure the backing of various factions of their parties. This reduces the likelihood that general election candidates would be political moderates. Pressures from ideological extremes, regional cleavages, or differing candidate factions are redefining what types of candidates are selected to run in general elections, and public campaign funding tends to intensify such forces.   We can view this from yet another vantage point. Clean Elections has not directly rendered general elections more competitive, nor has it made candidates more accountable to the electorate. But party leaders must adjust to the changes in the candidate selection process, and will find it more challenging to maintain party unity when going from primary into general elections. The program clearly incites internal changes within the two major parties. These changes will likely redefine intra-party dynamics, the extent of which will have to wait until more data become available to test these hypotheses.

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[12] T-test 4.88; p<.05 sig. level
[13] T-test 2.01 p<.05 sig. level.

Figure 1: Impact of Clean Election Funding on Localized Intra-Party Volatility: Republican and Democratic Primaries in Arizona and Maine (1992-2010)

In terms of intra-party volatility at the systemic and localized levels, our findings suggest that Clean Elections has had a significant impact on party dynamics. Figure 1 illustrates the impact the implementation of Clean Elections has had on increasing localized intra-party volatility in districts controlled by either the Republican or Democratic parties. Within Democratically controlled districts, volatility increased by approximately 3.3 percentage points in lower house races in Maine and by 2.2 percentage points in the state's upper house races. In Democrat primaries in Arizona lower house races, the implementation of Clean Elections has caused an increase of 2.4 percentage points in intra-party volatility while upper house races have been impacted by an increase of 1.2 percentage points. In Republican districts in Maine, there has been an increase of 4.7 percentage points in lower house , and a 4.2 percentage point increase in upper house races. In Republican districts in Arizona, the net impact of Clean Elections has caused a 4.7 percentage point increase in intra-party volatility in lower house races and a 5.7 percentage point increase in upper house races. We suspect that the cause for increased intra-party volatility in districts that either party already controls is part of a larger process of democratic representation. Since these districts are less likely to change parties in the upcoming general election, challenging candidates would have more of an incentive to run against incumbents and party-establishment candidates as a protest to the status quo. In districts that are controlled by the other party, intra-party volatility is not likely to change the outcome of inter-party contests. Therefore, in a Republican district increased volatility in a Democratic primary does not improve the probability of a Democratic electoral victory. However, this is only half of the story. Our findings also suggest a causal link between intra-party cohesion and competition.

Figure 2: Variability of Intra-Party Volatility Democratic Primaries (1992-2010)

Figure 3: Variability of Intra-Party Volatility Republican Primaries (1992-2010)

The implementation of Clean Elections funding appears to also cause a slight increase in intra-party competition. Figures 2 and 3 plot the distribution of variability in intra-party volatility and intra-party competition for Democratic and Republican primaries. The correlation between these two variables implies not only a significant shift towards an increase in intra-party volatility across all primaries, but also a rise in levels of intra-party competition across all districts.   In any event, further research into the relationship between these two factors is warranted, as well as the effect of this linkage on inter-party contests. Namely, how have changes in intra-party cohesion and competition shaped general election contests?

In conclusion, our findings do not supply a firm positive or negative answer to the question whether Clean Elections encourages electoral competitiveness. Rather, they suggest a "depends" answer while helping to unravel some of the difficulties in trying to understand how a reform like Clean Elections impacts the system. This leaves us to consider the politics surrounding public campaign financing and the debate over its contribution to systematic electoral change. Our results suggest that arguments for and against public/private campaign financing rely too much on positions that can be best described as dogmatic. Public campaign funding has in fact resulted in the maintenance of the two party system with only limited effects on making elections more competitive. But the modest electoral effects should not be downplayed. Rather than changing the electoral landscape, Clean Elections has embedded itself with the evolutionary patterns of the major parties in the participation and selection of candidates for general elections. This may not be what reformers envisioned in pushing for the program; nonetheless, public campaign funding has altered the status quo in intra-party dynamics in Maine and Arizona. Questions for future research should focus on the broader question of whether the results of a program funded by public money justify the costs. In light of recent national and local financial collapse this question is not only timely, but vital to how we conceptualize, design, and fund the election process.

References

Abramowitz, Alan. 1991. "Incumbency, Campaign Spending, and the Decline of Competition in U.S. House Elections" the *Journal of Politics*. Vol. 53, No. 1 pp 34-55

Alexander, Herbert. 1991. *Reform and Reality: The Financing of State and Local Campaigns.* N.Y: The Twentieth Century Fund Press.

Alexander, Herbert. 1989. "American Presidential Elections Since Public Funding, 1976-1984", in Alexander, Herbert (ed.), *Comparative Political Finance in the 1980's.* N.Y: Cambridge University Press, pp. 95-123.

Ascher, William and Sidney Tarrow. 1975 "The Stability of Communist Electorates: Evidence from a Longitudinal Analysis of French and Italian Aggregate Data." *American Journal of Political Science,* Vol. 19, No. 3 (1975) pp 475-499

Bartolini, Stefano, and Peter Mair. 1990. *Identity, Competition, and Electoral Availability: The Stabilization of European Electorates 1885-1985*. Cambridge: Cambridge University Press.

Bashman, Patrick and Dennis Polhill. 2005. Uncompetitive Elections and the American Political System. Washington, D.C. : Cato Institute .

Brickner, Benjamin T. and Mueller, Naomi. 2008. *Clean Elections Public Funding in Six States Including New Jersey's Pilot Programs.* New Brunswick: the Eagleton Institute of Politics.

Cantor, Joseph E. 2005. "The Presidential Election Campaign Fund and Tax Checkoff: Background and Current Issues" Paper prepared for the *Congressional Research Service Report for Congress*.

Carey, John M., Richard G. Niemi, and Lynda W. Powell. 2000. "Incumbency and the Probability of Reelection in State Legislative Elections." *Journal of Politics*, Vol. 62. pp. 671-700

GAO . 2003. *Campaign Finance Reform: Early Experiences of Two States That Offer Full Public Funding for Political Candidates (GAO-03-453)*. Washington, DC: U.S. General Accountability Office.

GAO. 2010. *Campaign Finance Reform: Experiences of Two States That Offered Full Public Funding for Political Candidates.* Washington, D.C: US General Accountability Office.

Gelman, Andrew, and Gary King. 1990. "Estimating Incumbency Advantage without Bias." *American Journal of Political Science*, Vol. 34. pp. 1142–64.

Gittell, Seth. 2003. "'The Democratic Party Suicide Bill.'" *The Atlantic Monthly*, Vol.292 ,No 1, pp. 106-113.

Goidel, Robert K. and Donald A. Gross. 1996. "Reconsidering the 'Myths and Realities' of Campaign Finance Reform" *Legislative Studies Quarterly*, Vol. 21, No. 1, pp. 129-149

Greene, William H. 2001. "Fixed and Random Effects in Nonlinear Models". *NYU Working Paper NO, EC -01-01.*

Hermson, Paul S., and James G. Gimpel. 1995. "District Conditions and Primary

Divisiveness in Elections." *Political Research Quarterly*, Vol 48 pp. 101-16.

Hogan, Robert E. 2003. "Competition in State Legislative Primary Elections" *Legislative Studies Quarterly*, Vol. 28, No. 1 pp. 103-126.

Jacobson, Gary. 2009. *The Politics of Congressional Elections: 5th Edition*. New Jersey: Longman.

Jacobson, Garry. 1978. "The Effects of Campaign Spending in Congressional Elections," *The American Political Science Review*, Vol. 72, No. 2, pp. 469-491.

Jones, Ruth S. 1981. "State Public Campaign Finance: Implications for Partisan Politics" . *American Journal of Political Science,* Vol. 25, No. 2, pp. 342-361.

Katz, Richard S, and Peter Mair. 2009. "The Cartel Party Thesis: A Restatement" *Perspectives on Politics*, Vol 7, No 4, pp. 753-66.

Katz, Richard S, and Peter Mair . 1995. "Changing Models of Party Organization and Party Democracy: The Emergence of the Cartel Party." *Party Politics*, Vol .1, No.1, pp.5-28.

Koole, Ruud, 1996. "Cadre, Catch –all or Cartel? A Comment on the Notion of the Cartel Party". *Party Politics*, Vol 2, No. 4, pp.507-524

Kousser, Thad and Raymond J. LaRja. 2002. "The Effect of Campaign Finance Laws on Electoral Competition: Evidence From the States." *Policy Analysis*, Vol. 426: 1-10

Malbin, Michael, J. and Thomas L. Gais . 1998. *The Day After Reform :Sobering Campaign Finance Lessons From the American States* . Albany, N.Y: Rockefeller Institute press.

Malhotra, Neil. 2008. "The Impact of Public Financing on Electoral Competition: Evidence from Arizona and Maine" *State Politics and Policy Quarterly,* Vol. 8, No. 3, pp. 263–281

Mayer , Kenneth R., Werner, Timothy, and Williams, Amanda. 2004. *"Do Public Funding Programs Enhance Electoral Competition?"* Paper presented at the Fourth Annual Conference on State Politics and Policy Laboratories of Democracy: Public Policy in the American States, Kent State University, April 30-May 1.

Mayer, Kenneth R. and John M. Wood. 1995. "The Impact of Public Financing on Electoral Competitiveness Evidence from Wisconsin, 1964-1990" in *Legislative Studies Quarterly* Vol . 20, No 1, pp. 69-88.

Mendilow , Jonathan.1996. "Public Party Funding and the Schemes of Mice and Men". *Party Politics* ,Vol.2, No. 3, pp.329-354.

Mendilow, Jonathan. 1992. "Public Party Funding and Party Transformation in Multiparty Systems," *Comparative Political Studies.* Vol. 25, No.1, pp. 90-117.

Mendilow , Jonathan and Michael Brogan. 2012. "The MSG Effects of Public Campaign Funding". In Jonathan Mendilow (ed.), *Money, Corruption, and Political Competition in Established and Emerging Democracies*. Lanham, Md: Lexington Books, pp. 91-116.

Milyo, Jeff, David Primo, and Tim Groseclose. 2002. "The Effects of State Campaign Finance Regulation on Turnout, Electoral Competition, and Partisan Advantage in Gubernatorial Elections, 1949-1998*." Paper presented at the American Political Science Association Annual Meeting*, Boston, Massachusetts.

Nassmacher, Hiltrud and Karl-Heinz Nassmacher . 2001. "Major Impacts of Political Finance Regimes" .In Karl – Heintz Nassmacher (ed.), *Foundations for Democracy Approaches to Comparative Political Finance.* Baden-Baden: Nomos Verlagsgesellschaft , pp. 181-196.

Nassmacher , Karl –Heinz . 1989. "Structure and Impact of Public Subsidies to Political Parties in Europe: The Example of Austria, Italy, Sweden and West Germany". In Herbert Alexander (ed.) *Political finance in the 1980s*. Cambridge: Cambridge University Press, pp. 236-267.

Niemi, Richard G. Jackman, Simon and Winsky, Laura R. 1991. "Candidacies and Competitiveness in Multimember Districts," *Legislative Studies Quarterly*, Vol. 16, No. 1, pp. 91-109.

Paltiel, Khyyam.1980. "Public Financing Abroad: Contrasts and Effects." Michael J. Malbin (ed.), *Parties, Interest Groups and Campaign Finance Laws.* Washington, DC: American Enterprise Institute. pp. 138-172.

Paltiel, Khyyam.1979. "The Impact of Election Expenses Legislation in Canada, Western Europe, and Israel." In Herbert Alexander (ed.), *Political Finance.* Beverly Hills, California: Sage. pp. 15-39.

Phelps, Douglas H. 2004. "Leveling the Playing Field". *National Civil Review*, Vol. 93, NO.3, pp.60-63.

Przeworski, Adam. 1975. "Institutionalization of Voting Patterns, or is Mobilization the Source

of Decay," *American Political Science Review*, Vol. 69 No. 1. pp 49-67.

Scarrow, Susan. 2006. "Party Subsidies and the Freezing of Party Competition: Do Cartels Work?" *West European Politics*. Vol 29, No 4, pp. 619-639.

Supreme Court of the United States. 2010. Citizens United Vs Federal Elections Commission 08-205/558.

Supreme Court of the United States . 2011. "Arizona Free Enterprise Club's Freedom Club Pac et al. V.Bennett, Secretary of State of Arizona et al. No 10-238" www.supremecourt.gov/opinions/10 pdf /10-238.pdf (accessed July 10, 2011).

Stuart, Alan and Keith Ord, 1998. Kendall's Advanced Theory of Statistics: Volume 1 Distribution Theory, 6th edition. New York: Oxford University Press.

Walker, Adrian. 2003. "Clean Break from the Law" . *Boston Globe*, June 2.

Werner, Timothy and Mayer, Kenneth. 2007. "Public Election Funding, Competition, and Candidate Gender", PS*: Political Science and Politics,* pp. 661-667.