

FINANCING DEMOCRACY

HANS GERSBACH
VERENA LIESSEM

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Abstract

Based on contribution patterns to parties in Germany and elsewhere, we suggest that democracies should use a mixed system where private funding can play a larger role than public funding. In Germany the high level of public funding for parties can be reduced without expecting undesirable effects if the parties are forced to increase private funding. Private contributions can be unlimited but tight transparency requirements on private funding are necessary. This can be achieved by setting up an independent commission with institutionalized publication rules. Tax deductibility of private contributions should be eliminated.

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*Hans Gersbach
Alfred-Weber-Institut
University of Heidelberg
Grabengasse 14
69117 Heidelberg
Germany
gersbach@uni-hd.de*

*Verena Liessem
Alfred-Weber-Institut
University of Heidelberg
Grabengasse 14
69117 Heidelberg
Germany*

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1 Overview

1.1 The Problem

The concern that money can buy political influence is as old as democracy itself, and as new as today's headlines. At the end of the last decade, the Christian Democratic Party in Germany came under severe pressure after revelations that the former chancellor Kohl had accepted money without declaring the fact as required by law.¹ This scandal again brought the role of money in democracies to the forefront of public discussion in Europe. In the US it has been a prominent issue over the last decade.

It is generally accepted that democracy is impossible without money. In order to exist, to campaign and to be heard, parties and individual candidates need money. Therefore, the design of a funding system for political parties is a fundamental aspect of democracy.

Any such party funding system must start from the objectives of a democratic system involving political parties. The main objectives for a funding system for political parties can be summarized as follows:

- the political outcome is close to the median voter's preferences (democratic accountability),
- uncertainty about the political outcome (i.e. volatility) is low (stability),
- there is little or no rent-seeking by interest groups or politicians (democratic accountability),
- innovative solutions to policy problems are developed and find their ways into political campaigns (innovation efficiency),
- welfare-relevant information is disclosed to voters (information efficiency).

The reasons for these objectives are quite straightforward: the median voter's preferences ensure that there is no political outcome for which a majority of voters is better off; the uncertainty about outcomes should be low, as voters are assumed to be risk-averse; and rent-seeking by interest groups or politicians usually decreases the welfare

¹ "Black" money in support of parties has continued to generate scandals in Germany and elsewhere, e.g. the recent corruption cases within Germany's Social Democratic Party, in Cologne and in other cities.

of the remaining citizens. Finally, it goes without saying that all conceivable policy designs should be brought to the attention of the public.

Many, though not all, democratic countries have the same sort of public-funding policy for parties. Usually they have a mix of private and public funding where the amount of public funds a party gets is mainly based on the share of votes achieved by the party or on the number of seats in parliament. However, both the extent and regulation of public financing and the rules pertaining to private contributors varies considerably from one country to another.

As an example of the financing pattern of parties, we present in Table 1 a rough summary of the mix between public and private funds across Europe. It will readily be seen that the pattern is very heterogenous.

Country	Importance of Direct Public Funding
Austria	20-30% (for federal party organizations)
France	40-50%
Germany	25-35%
Italy	below 40%
Netherlands	25-35%
Portugal	over 60%
Spain	over 60%
Sweden	differs strongly among parties, 1989 on average 60-70%
Switzerland	0
UK	< 15%

Table 1: Mix of Party Financing across Europe, Source: own estimations based on Nassmacher (2001)

The overview for Europe poses the following key financing questions in democracies. First, how much public funding is socially desirable? Second, if private funding is allowed, how tightly should it be regulated? The latter question refers to caps on private contributions and transparency requirements.

1.2 The Proposal

Based on our main argument as summarized in the next subsection and further considerations later in the paper, our tentative proposal how to finance parties is summarized as follows:

- Democracies should use a mixed system where private funding can play a larger role than public funding;
- in Germany the high level of public funding for parties can be reduced without expecting undesirable effects if the parties are forced to rely more heavily on private funding;
- private contributions can be unlimited but tight transparency requirements on private funding are necessary, which can be achieved by setting up an independent commission with institutionalized publication rules; this requires tighter transparency requirements than those existing in Germany today;
- tax deductibility of private contributions should be abolished.

In the next subsection we outline the main argument to support our proposal that can be based on more rigorous conceptual reasons.

1.3 The Main Argument

With regard to the objective of “convergence to the median voter’s preferences”, public funding is favorable if the funds a party obtains are related to the number of votes achieved. The assumption behind this is that a party will win over a larger share of impressionable voters if it spends more on campaigns. As campaign advertising is financed by public funds, a party has an incentive to move its platform towards the median voter’s preferences to get more votes from the informed voters. Then it has more money to campaign with and hence to sway impressionable votes (see Ortuno-Ortin and Schultz (2000)). If public money is provided as a lump sum and independently of vote-shares, it may mitigate the power of interest groups even more because their contributions become relatively less important and parties have less incentives to court the favor of more extreme lobby groups (Baron (1994)). On the negative side of public financing we have the opportunity costs, including the shadow costs of taxation.

We show in our model that private funding could also favor convergence to the median platform. Let us consider interest groups as a collection of individuals sharing a common position on public policy and deciding how much they want to contribute to which party. If these groups are symmetrically - or not very asymmetrically - distributed around the median voter, we observe a convergence of the political outcome toward the median. If one party, say the right-wing party, indulges in its own preferences and moves to more extreme positions while the other is at the median position, this will have three effects. First, interest groups located between the median position and the right-wing party platform support the left-wing party in order to draw the right-wing party toward the center. Second, the contributions of donors on the left side of the political spectrum increase. Third, the contributions of donors supporting the right-wing parties decrease. All three effects work strongly for the convergence of platforms for political parties toward the median position. Thus, private funding may also yield convergence towards the median voter's preferences.

Moreover, even if private funding is partly or fully offsetting (i.e., when both parties adopt the median position), the incentive of private contributors to donate is unimpaired. If a large interest group decided to discontinue contributions, the offsetting effect would disappear and policy would become less favorable to this group. Therefore private funding can be used to cover the costs of parties.

But even with these favorable countervailing effects under private funding, there may still be a case for public funding when large groups of the electorate cannot be organized to play the campaigning game or a large share of voters are uninformed or impressionable, i.e., their vote depends directly on campaign contributions. However, as long as the share of non-impressionable voters is sufficiently high, the offsetting effects of private contributions remain. Moreover, lack of organizational capacity would also play an adverse role under public financing.²³

The arguments in favor of private funding rest on some key modeling assumptions. In particular:

²Also whether a group of the electorate can be organized or not is an endogenous matter. As illustrated by the Green Party, the incentive to organize and raise funds increases in inverse proportion to the extent to which policies desired by certain groups are taken into account in actual policy-making.

³Obviously, differences between political systems may also affect the socially desirable design of financing of democracies. Party financing may depend for instance on whether we have a parliamentary or presidential system or whether we have proportional or majoritarian voting.

- Contributors are relatively small. No contributor has a dominating influence.
- Private funds as the sum of membership fees and private contributions are not “very” asymmetrically distributed across the political spectrum.

We have collected data for Germany illustrating that the assumptions are not really critical, at least for this country. In particular, Figure 1 indicates that the five largest contributions made in the years 1997/98 have a share of total party funds amounting to roughly 1% for CDU/CSU, 2% for FDP and less than 0.5% for the other parties.

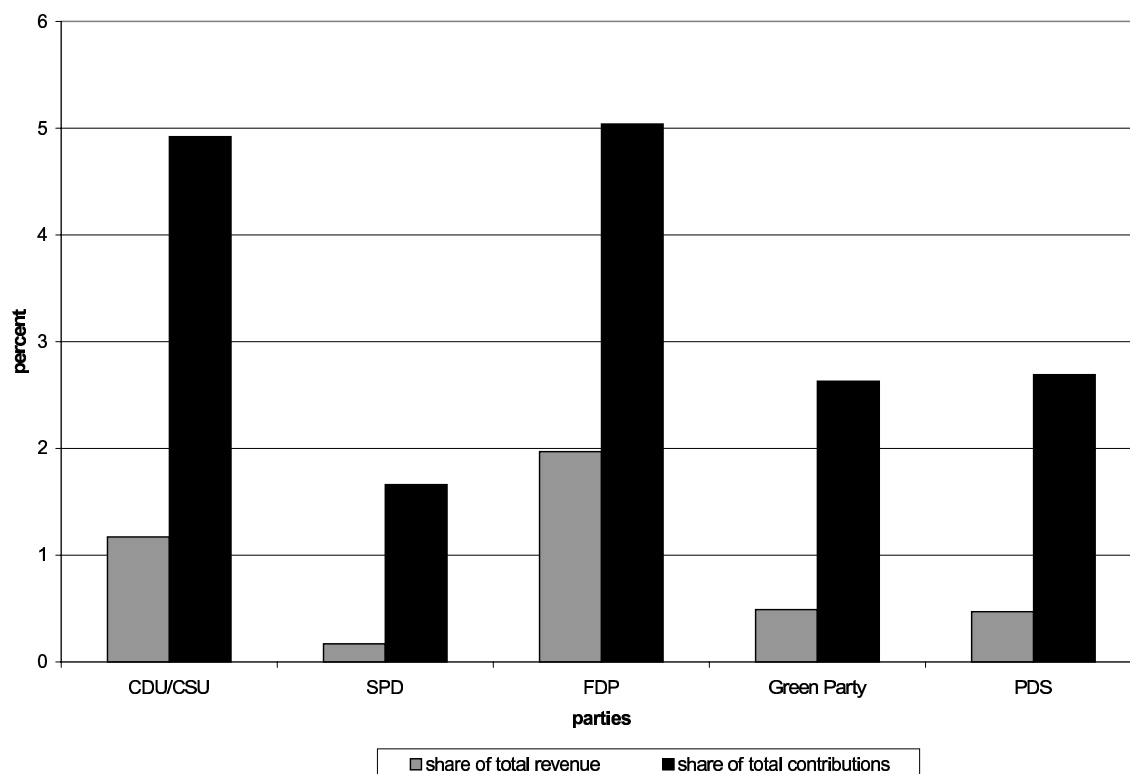


Figure 1: Average Share of the Five Largest Contributions of Total Revenue and of Total Contributions 1997-98

Although the split between membership fees and private contributions varies across parties, the two dominating parties SPD (leaning towards left) and CDU/CSU (leaning towards right) have almost the same amount of private funds, as we will discuss in detail in section 3.2.

Moreover, by calculating total revenue per member of party groups in the Bundestag (Federal Parliament), we will show in section 3.5 that these “costs for a parliamentary seat” are similar across parties, with no clear hierarchy over time.

Finally, the predictions of our model are not invalidated by the data. For instance as we will discuss in section 3.6, in Germany we observe contributions to strange

bedfellows, i.e., some contributors donate money to parties that are more distant than other parties from the position of the interest group itself. The model suggests that such contributions are attempts to affect the platform in a way that is favorable for the interest group.⁴

1.4 Literature

Though campaign finance is a hotly debated topic there are only a small number of theoretical papers on the issue.

Three types of model have been proposed. First, Austen-Smith (1987) developed a model of *directly informative advertising*. Voters observe candidates' positions with noise, and campaign expenditures reduce the variance of that noise. Contributions help candidates to get elected because risk-averse voters prefer candidates with a more precise policy position.⁵ Second, Potters, Sloof and van Winden (1997), Dharmapala (1998) and Gersbach (2000) use *non-directly informative advertising* (see also Prat (1997)). Each candidate is characterized by a nonpolicy dimension (valence), which lobbies can observe more precisely than voters. The amount of campaign money that a candidate collects signals his valence to voters. Hence, the role of campaign advertising is not to convey a direct message but to credibly "burn" campaign money.⁶ Third, Baron (1994), McKelvey and Ordeshook (1987), Grossman and Helpman (1996), and Ortuno-Ortin and Schultz (2000) distinguish between informed and "uninformed" or "impressionable" voters. The informed electorate votes according to the policies proposed by the different political parties (or candidates). Impressionable voters are, however, poorly informed about the policies of the different parties and their vote is directly influenced by campaign spending.⁷ This type of campaign is therefore *persuasive advertising*.

⁴Note that such interest groups vote for another party than the one financially supported in the election.

⁵In the model of Austen-Smith (1987) it is assumed that the share of votes equals the probability of winning which is not plausible in general.

⁶A different way of modeling campaign expenditures is found in Austen-Smith (1994) and (1995). Lobbies give contributions in exchange for access to politicians. Politicians care about the information that lobbies can provide them with. The extent of truthful information transmission is increasing in the preference congruence between a lobby and the politician (see Crawford and Sobel (1982)). Campaign contributions signal preference congruence and induce a candidate to grant access to the lobbies.

⁷This type of campaign is similar to the persuasive advertising analyzed in the economics literature, see for example Shy (1995).

We assume that the candidates use funds in order to alleviate (risk-averse) voters' uncertainty about candidates' policy positions. Although we allow for informative advertising, our model can be directly reinterpreted as a model of persuasive advertising and thus covers both types of advertising. We start from the model introduced by Enelow and Hinich (1981) and endogenize both to whom the interest groups contribute and how much. The model has three core features. First, we allow interest groups in our model to take into account the fact that they can influence candidates' platforms and hence can influence both the political position associated with each candidate and the likelihood of the preferred candidate winning. Second, we study the interaction of campaign contributions among arbitrarily many interest groups with their own policy preferences. This is necessary in order to examine the distribution of campaign contributions across the political spectrum.⁸ Third, we allow for interest groups to decide optimally to whom and how much they intend to contribute.

There is only one other model that allows for a similar perspective on campaign finance which is focused on public funding of parties. Ortuno-Ortin and Schultz (2000) consider a model where parties receive public funds depending on their vote-share. They also allow for informative and persuasive advertising and show that public funds increase policy convergence.

1.5 Outline

The paper is organized as follows: in section 2 we show a summary of the model, its key assumptions, and the main results to support our main argument. In section 3, we present the data and the empirical regularities. In section 4 we outline our reform proposal and give additional arguments for why private funding may be preferable to public funding. Section 5 concludes.

⁸Lobbying by interest groups has been addressed in a large number of other models. An interesting early discussion can be found in Bernholz (1977). Lobbying for industries has been developed in Hillman and Ursprung (1988). A recent survey of the empirical literature on interest groups is found in Potters and Sloof (1996).

2 Theory

2.1 The Campaign Game

Campaign finance is a complex phenomenon. There are three types of political actor: voters, lobbies, and candidates. The time pattern of the election game in our model is as follows:

Stage 1: Candidates receive campaign support from politically active groups.

Stage 2: Candidates choose and announce platforms. Voters are unsure about the policies candidates would pursue in office.

Stage 3: Candidates use their financial support to clarify and to reiterate their position.

Stage 4: Individuals cast their votes. The election outcome is determined by majority voting.

This sequential election procedure is observable in many countries. In our model contributors take into account the fact that parties react to donations with their platforms. Therefore contributors can influence both the platform of a candidate or party and the candidate's likelihood of winning the election.⁹

In the following, we analyze a simple version of the election procedure outlined above. Our starting point is the classical one-dimensional policy model under uncertainty introduced by Enelow and Hinich (1981) and (1982) and used for campaign games with fixed contributions by Gersbach (1998). In this paper we endogenize how much and to whom contributors give money.

We assume that voters view two candidates (or parties) a and b as being located somewhere in a one-dimensional political space X . We distinguish between three positions: a candidate's ideal point, a candidate's platform, and a policy or political outcome that may be implemented by a candidate if he wins.

⁹In this sense our model can capture both position-induced and service-induced campaign contributions. The approaches have been developed by Magee and Brock (1983), Austen-Smith (1987), Baron (1989), Baron (1994), Snyder (1990), Congleton (1989), Londregan and Romer (1995), Clark and Thomas (1995) and Anderson and Glomm (1992). Morton and Cameron (1992) provide a comprehensive survey.

We assume that candidates have policy preferences. The ideal points x_a^o and x_b^o represent the candidates' most preferred political outcomes. The more the political outcome deviates from his ideal point, the lower the utility the candidate receives. This approach views winning an election not only as a goal per se, but as a means to implement a preferred policy, e.g., Wittman (1983) or Alesina (1988). The crucial assumption is that individual candidates are motivated differently.

As is the case in most elections, we assume that one ideal point is on the left and the other ideal point is on the right side of the political spectrum, i.e., $x_a^o < x_m < x_b^o$. x_m is the ideal point of the median voter. Candidate a is the candidate on the left side, while candidate b is on the right. Hence, there is a possible trade-off for the candidates between choosing the most preferred platform and choosing the ideal point of the median voter. At the beginning of the election race, the candidates choose two platforms x_a and x_b . These platforms are common knowledge. Policies will be determined in the future, when a candidate has been elected.

Our basic assumptions are summarized as follows: Candidates choose platforms to which they remain committed when they are elected. Voters perceive the announcements of platforms by candidates as a noisy signal about the policies a winning candidate would pursue once in office. Policies are perceived by voters as random variables with a mean equal to the platform of the winning candidate. The candidates' policies, i.e., the positions they would pursue in office if elected, are denoted by w_a and w_b , and differ, from the voters' point of view, from the initially announced platforms x_a and x_b by random variables z_a and z_b , $w_a = x_a + z_a$ and $w_b = x_b + z_b$ with $E(z_a) = E(z_b) = 0$. Note that candidates may announce different platforms than x_a and x_b , but voters infer from the announcement that the policies to be expected of candidates are x_a and x_b .

There are a variety of reasons why there is uncertainty for voters about policies pursued by candidates after taking over office, given a chosen platform during campaigns: rational ignorance about the details of candidates' platforms, uncertainty about candidates' ideal points, etc. (see, e.g., Enelow and Hinich (1981)).¹⁰

¹⁰Note that such interpretations require that voters are not fully rational in the usual sense. They could infer the policies candidates would pursue if they knew, for instance, the pattern of campaign contributions or the ideal points of voters. However, we follow the literature in assuming that voters have very little incentive to make inferences from indirect signals [see e.g. Morton and Cameron (1992)].

We follow the standard assumption that contributors or interest groups are better informed than voters. For simplicity, we assume that donors are fully informed about the policies candidates will pursue in office. In short, contributors observe x_a and x_b , voters observe w_a and w_b .¹¹

The crucial assumption is that candidates can influence the expectations of voters about the policies by their platform choices. We use V^a and V^b to denote the variances of the candidates' policies for voters, i.e., the variances of the random variables z_a and z_b of the candidates a and b , if no campaigns occur. For tractability, we assume that voters have quadratic utility functions:

$$u_i(w) = c_i - (w - x_i)^2 \quad (1)$$

$c_i > 0$ represents the maximum utility obtainable by voter i , and x_i his own preferred point on X .

2.2 Equilibria Without Campaigns

We first investigate the candidates' equilibrium without campaigns, i.e., only the second and fourth stage of the election process are considered. Voters base their votes only on the a priori expectations they have of the policies. If the candidates choose platforms x_a and x_b , the corresponding expected utilities for the voter with the ideal point x_i are:

$$\begin{aligned} E[u_i(w_a)] &= c_i - (x_a - x_i)^2 - V^a \\ E[u_i(w_b)] &= c_i - (x_b - x_i)^2 - V^b \end{aligned} \quad (2)$$

Voters prefer candidate a to candidate b if $E[u_i(w_a)] > E[u_i(w_b)]$, i.e. if the expected utility from voting for candidate a is higher. For convenience, we assume two tie-breakers in the case of indifferences. First, we assume that the candidate with the lower variance wins if the election result is a tie. Second, if both candidates have the same variance, each candidate wins the election with a probability of 0.5.

Proposition 1

- (i) Suppose $0 \leq \sqrt{V^a - V^b} \leq x_b^o - x_m$. Then a unique political equilibrium exists, characterized by:

¹¹Another internally consistent interpretation of the model runs as follows: When candidate a chooses platform x_a , he commits himself to taking a position in office drawn from a distribution with mean x_a and variance V_a . Such an interpretation would yield the same qualitative results, but would require treating interest groups as being as uninformed as voters. This would only complicate the formal analysis without providing additional insights.

$$x_a^* = x_m, x_b^* = x_m + \sqrt{V^a - V^b}$$

(ii) Suppose $0 < \sqrt{V^b - V^a} \leq x_m - x_a^o$. Then a unique political equilibrium exists, characterized by:

$$x_b^* = x_m, x_a^* = x_m - \sqrt{V^b - V^a}$$

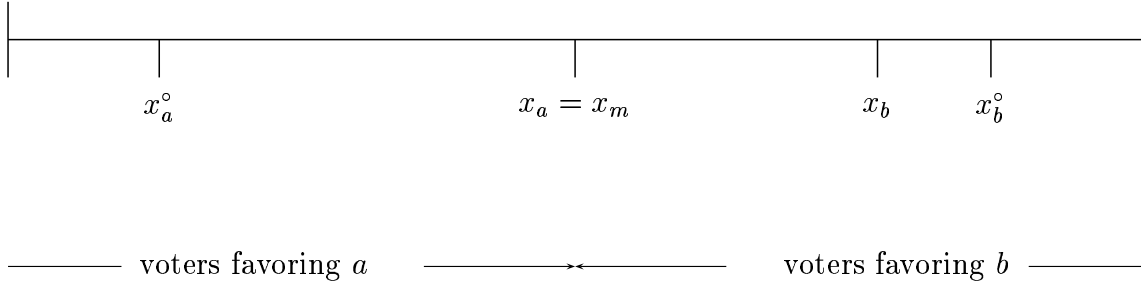
(iii) The equilibrium winning position is unique and given by:

$$x^{win} = x_m + \text{sgn}(V^a - V^b) \sqrt{\text{sgn}(V^a - V^b)(V^a - V^b)}$$

The proof follows Gersbach (1998) and is omitted here.

The equilibrium is represented by Figure 2.

Figure 2: Equilibrium in the first case



Note that only the difference in the variances is relevant for political equilibrium. $V^a > V^b$ means that candidate b can always win the election by choosing an appropriate platform.

Candidate a maximizes his votes in equilibrium, given that he loses the election. Despite the fact that the candidates are only concerned about the winning platform, the attractive feature of the equilibrium is that the losing candidate receives as many votes as possible. In equilibrium, candidate a 's position is close to the median, whereas b is able to draw the outcome toward his own ideal point.

Voters close to x_m and to the right of x_a vote for candidate b , since the difference between the variances, $V^a - V^b$, outweighs the difference between x_b and x_a . The candidates choose different positions despite the single-peaked utility function of the

voters. This result is caused by the incentive candidate b has to deviate from the median position in order to move the political outcome toward his most preferred point. Candidate b choosing the median position cannot be an equilibrium, since he can always move slightly to the right and still win the election. This would drive the political outcome toward his ideal point and thus increase his utility. If $V^a = V^b$, both candidates choose the median position, which is also the winning platform. The winner of the election is then determined by some tie-breaking rule.

Using proposition 1, analyzing the effect of changes in the variances of candidate's positions on the political equilibrium is straightforward. We will maintain the assumption that $0 < \sqrt{V^a - V^b} \leq x_b^o - x_m$, i.e., that b wins the election but cannot win by choosing his ideal point. If $x_b^o < x_m + \sqrt{V^a - V^b}$, it is obvious that the outcome of the election, b 's ideal point x_b^o , would be independent of the variances V^a and V^b .

The proposition implies

$$\frac{\partial x_b^*}{\partial(V^a - V^b)} = \frac{1}{2\sqrt{V^a - V^b}} > 0 \quad (3)$$

With an increase in spread in the variances, b is able to move his position closer to his ideal point. b still wins the election. Candidate a does not change his position. Given the positive relationship between $V^a - V^b$ and V^a and the negative relationship between $V^a - V^b$ and V^b , an increase in V^a will draw the political outcome away from a 's ideal point towards b 's. An increase in V^b will have the opposite effect.

Voters on the right side of the political spectrum gain from the reduction of V^b . The same is not true of voters on the left side, since the positive effect of variance reduction is outweighed by a more extreme political outcome. A marginal reduction of V^a will benefit all voters to the left of the winning platform, since the variance of candidate b does not change.

2.3 Financing Decision

We now turn our attention to the incentives for political donor groups. We assume that the ideal point of each donor group can be characterized by the preferred point of a typical group member. x_j denotes the corresponding ideal point. The support level provided by a donor is determined by the contributions of the number of politically active members and is represented as d_j .

We follow the standard assumptions that contributors are better informed than voters. For simplicity, we have assumed that donors are fully informed about the policies candidates will pursue in office as a function of the campaign contributions. Thus, their utility depends directly on the winning political platform, which is equal to the policy implemented by the winning candidate for the campaign contributors. We assume that the utility function of an interest group is given by

$$u_j(x^{win}, d_j) = c_j - (x^{win} - x_j)^2 - v_j(d_j).$$

$c_j > 0$ represents the maximum utility obtainable by interest group j , and x_j represents its own most preferred point on the dimension X . $v_j(d_j)$ represents the utility loss from contributions. We allow for differences in marginal utility losses from contributions across donors.¹² We assume that the marginal losses from contributions are an increasing function of the campaign contribution. This reflects the increasing opportunity costs of using funds for campaigns and hence decreasing marginal utilities from investments in other activities. Moreover, for technical reasons we assume that some \bar{d}_j exists at which marginal losses from additional spending become unlimited. \bar{d}_j represents the overall budget constraint of the interest group. Again, we allow for different budget sizes across interest groups.

In the next step we characterize the contribution decisions. The strategies of the donors consist of choosing which of the two candidates they should contribute funds to, and how much they should contribute.

We denote the campaign functions by

$$V^b \left(\sum_{j \text{ to } b} d_j \right) \quad \text{and} \quad V^a \left(\sum_{j \text{ to } a} d_j \right)$$

depending on the decisions of the contributors about who to support and how much to contribute. Thus, the candidates have the possibility to reduce the variance with campaign spending. Moreover we assume diminishing returns of campaign messages. For more detailed characteristics of the campaign functions, see appendix A. The campaign functions are common knowledge among candidates and contributors. In the

¹² $v_j(d_j)$ is assumed to fulfill the following conditions:

$$v'_j > 0, \quad v''_j < 0, \quad \lim_{d_j \rightarrow 0} v'_j(d_j) = 0, \quad \lim_{d_j \rightarrow \bar{d}_j} v'_j(d_j) = \infty.$$

following, we shall drop the index j to b wherever it is convenient.

Given the decisions of the other donors, a contributor chooses in the first stage an optimal amount of money and the candidate he will support. Since the winning platform determines his utility, a donor solves the following problem:

$$d_j^* = \arg \max_{d_j} \left\{ u_j(x^{win}(V^a, V^b), d_j) = c_j - (x^{win}(V^a, V^b) - x_j)^2 - v_j(d_j) \right\} \quad (4)$$

s.t. $d_j \geq 0$

Given the decisions of the other donors about how much and to whom they should contribute, the first-order condition amounts to¹³:

$$\frac{\partial u_j}{\partial d_j} = -2(x^{win} - x_j) \frac{\partial x^{win}}{\partial d_j} - v_j'(d_j) \leq 0 \quad (5)$$

$$\frac{\partial u_j}{\partial d_j} d_j = 0$$

Either we have a corner solution $d_j = 0$ or an interior solution $d_j > 0$. Because of our assumptions about the utility function of the donors, we obtain:

$$d_j > 0 \quad \text{only if} \quad -2(x^{win} - x_j) \frac{\partial x^{win}}{\partial d_j} > 0$$

$\frac{\partial x^{win}}{\partial d_j}$ depends on whom the donors support. For example, suppose $x^{win} > x_j$, and $V^a > V^b$ and thus $x^{win} = x_m + \sqrt{V^a - V^b}$. Then, if donor j supports candidate a , we have

$$\frac{\partial x^{win}}{\partial d_j} = \frac{1}{\sqrt{V^a - V^b}} \cdot \left(\frac{\partial V^a}{\partial d_j} \right) < 0$$

2.4 Main Results

In the following proposition we characterize the spending decisions of donors:

Proposition 2

In any subgame perfect equilibrium, the contribution decisions are given as follows:

$$x^{win} > x_j : \text{donor } j \text{ contributes to candidate } a$$

$$x^{win} < x_j : \text{donor } j \text{ contributes to candidate } b$$

$$x^{win} = x_j : d_j = 0.$$

¹³Due to our assumptions about the campaign functions, the first-order condition is sufficient. Since we take the contribution decisions of the other donors as given, x^{win} is a sufficiently smooth function of the contributions of donor j .

The proof of proposition 2 follows immediately from the first-order condition. If $x^{win} > x_j$, donor j has an incentive to give money to candidate a since $\frac{\partial x^{win}}{\partial d_j} < 0$. Similarly, if $x^{win} < x_j$, the first-order condition implies $\frac{\partial x^{win}}{\partial d_j} > 0$. Finally, if $x^{win} = x_j$, donor j does not spend any money since the winning platform coincides with his ideal point.

Proposition 2 reveals a particular contribution pattern. Donors to the left of the winning platform always contribute to candidate a , even if they are located on the right side of the median. Contributors on the right side of the winning platform give money to candidate b even if they are located on the left side of the political spectrum. The reasoning is that donors can draw the political outcome toward their own ideal points by appropriate contribution decisions.

An immediate consequence of proposition 2 is that moderate interest groups split their campaign support and their voting behavior. Suppose that $x^{win} > x_j$ and candidate b wins. If x_j is closer to the platform of candidate b than to that of candidate a , the interest group will give money to candidate a but will vote for candidate b afterwards.

Proposition 2 shows that political controversy is not necessary for campaign contributions. The incentive to contribute depends only on the winning platform and on how the winning platform changes when a candidate receives more money. Proposition 1 shows that the winning platform depends on the difference of the variances and thus on the difference of the contribution levels. Therefore, even if both candidates are located at the median, donors have an incentive to spend money in order to enable one candidate to move away from the median position.

Next we show how different contributors spend money:

Proposition 3

Suppose $v_j(d_j) = v(d_j)$ and $\bar{d}_j = \bar{d} \quad \forall j$.

In any subgame perfect equilibrium, the contributions of donors satisfy the following conditions:

If $x^{win} > x_j > x_k$ for two donors j and k , then $d_j < d_k$.

If $x^{win} < x_j < x_k$ for two donors j and k , then $d_j < d_k$.

Proposition 3 follows from the first-order condition as well as from the homogeneity assumption. Consider $x^{win} > x_j > x_k$. Since $\frac{\partial x^{win}}{\partial d_j}$ is negative and equal for all donors, the first-order condition for donors with a larger distance from the winning platform

implies that the marginal utilities from contributions are higher, thus justifying a higher donation. Similarly, if $x^{win} < x_j < x_k$ for two donors j and k , then $\frac{\partial x^{win}}{\partial d_j}$ is positive and equal for all donors, yielding the second statement. The homogeneity of donors with respect to utilities and contribution budgets is essential for this result.

Therefore, assuming that the winning platform is moderate, interest groups with extreme preferences tend to outspend contributors with moderate preferences. The marginal benefits from moving candidates toward a more extreme platform are higher for extreme interest groups than are those for moderate interest groups to move an already moderate political platform to the center. Thus, we expect a bimodal distribution of contributions.

In the following, we examine the subgame perfect equilibrium of the whole four-stage game where d_j^o are the optimal selected contribution levels. For a detailed analysis see the appendix.

Proposition 4

Case 1 Suppose $x^{win}(x_m) \geq x_m$. Then a unique equilibrium exists in which candidate b wins. In particular:

$$x_a^* = x_m \tag{6}$$

$$x_b^* = x_m + \sqrt{V^{a^*} - V^{b^*}} \tag{7}$$

$$V^{a^*} = V^a \left(\sum_{x_j < x_b^*} d_j^o \right) \quad V^{b^*} = V^b \left(\sum_{x_j > x_b^*} d_j^o \right) \tag{8}$$

Case 2 Suppose $x^{win}(x_m) \leq x_m$. Then a unique equilibrium exists in which candidate a wins. In particular:

$$\tilde{x}_b = x_m \tag{9}$$

$$\tilde{x}_a = x_m - \sqrt{\tilde{V}^b - \tilde{V}^a} \tag{10}$$

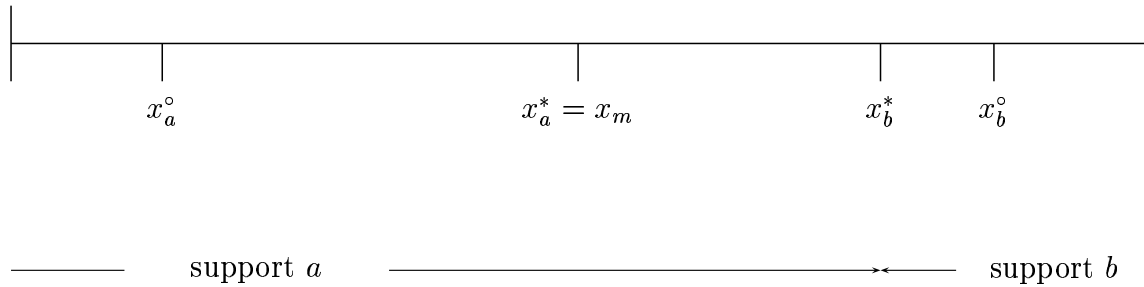
$$\tilde{V}^a = V^a \left(\sum_{x_j < \tilde{x}_a} d_j^o \right) \quad \tilde{V}^b = V^b \left(\sum_{x_j > \tilde{x}_a} d_j^o \right) \tag{11}$$

Note that the first case represents an equilibrium with $V^{a^*} \geq V^{b^*}$, whereas in the second case we have $\tilde{V}^a \leq \tilde{V}^b$.¹⁴ The case actually realized depends on parameter values, notably on the distribution of the donors and the campaign functions.

¹⁴ $V^a = V^b$ can occur in both cases. Then we obtain the median voter result.

x_b^* and x_a^* characterize a situation in which candidate b receives campaign contributions from all donors with an ideal point greater than x_b^* , whereas candidate a is supported by the rest. The situation is reversed in the second case. The equilibrium in case one is summarized in the following figure representing the donors' ideal points, the median voter and the political equilibrium, and the donors' decisions.

Figure 3: Equilibrium in the first case



2.5 Equilibrium Features and Regulatory Questions

The donor and political equilibrium thus derived has some other noteworthy features. As already demonstrated in the propositions, extreme donors always contribute to the candidate on the same side of the political spectrum. Donors located around the median, however, support the losing candidate. Their contribution behavior depends upon which candidate wins. The median donor, if he coincides with the median voter, will always contribute to the loser who is located in the median. Such a donor will support the candidate whose position is closest to him. Other donors will support a candidate whose position is not necessarily closest to their own ideal point. For instance, in case 1 with the equilibrium x_a^* and x_b^* , donors with $x_m \leq x_j < x_b^*$, support candidate a to ensure that b is close to them. Note that these donors give money to a candidate for whom they do not vote. Their support is divided.

Second, suppose that donors are homogeneous and symmetrically distributed around the median voter. The median donor's position coincides with the median voter's position. Then a majority of donors, including the median donor, support the losing candidate. Let us consider the first case in the proposition. Support for candidate b diminishes his uncertainty disadvantage. Thus, in equilibrium, he takes a more extreme position. Support of candidate a , however, draws candidate b towards the center and

makes a majority of donors better off.

Third, small differences in candidate positions do not destroy the incentives for donors to contribute. This is because the anticipated reduction of uncertainty has substantial effects on the political equilibrium. Political controversy is therefore not a necessary condition for fund raising, despite many arguments to this effect in the literature, e.g. Congleton (1989).

We next discuss equilibrium positions in which both candidates have the same marginal efficiency in campaigns, but one may enjoy an initial advantage.

Proposition 5

Suppose that $V^a(\cdot) = V(\cdot) + k$, $V^b(\cdot) = V(\cdot)$, with $k > 0$. Moreover, suppose that all contributors are identical and that their ideal points are symmetrically distributed around the median voter. Then,

- (i) Candidate b wins in equilibrium.*
- (ii) Campaigns draw the political outcome in equilibrium towards the center.*
- (iii) $\lim_{k \rightarrow 0} \{x_b^*\} = x_m$, i.e. for k approaching zero, we obtain the median voter result.*

The preceding discussion highlights the endogenous reactions of contributors to attempts by parties to indulge in their own preferences. This is the base case for allowing private funding for parties, since the convergence result with public funding can occur under private funding as well and the public finance literature indicates shadow costs of public funds to be larger than opportunity costs associated with private funds.

Moreover, caps on private contributions are detrimental for welfare because they reduce the offsetting effects of contributions. If one party moves toward a more extreme position, the level of donations per contributor for the party should and does go up in order to moderate platforms again.

2.6 Empirical Questions

To establish whether our model has some bite and the argument in it can be used for regulatory design, in principle we would need an econometric testing procedure. Due to limited data and ongoing regulatory changes we employ a more indirect approach. Specifically, we compare the assumptions and results with data to assess the plausibility of the results. Three empirical questions need to be examined:

Q1 Are the contributions relatively small and is there no dominant contributor, which is one of the assumptions of our model?

Q2 Is the distribution of contributions balanced across the parties? This is a result of the model and would indicate that the distribution of contributors across the political spectrum is not very asymmetric.

Q3 Are there contributions to parties whose ideal points are distant from the ideal points of the contributors and which the contributor under consideration does not want to be elected (contributions to strange bedfellows)?

In the next section, we provide a detailed picture of party financing in Germany to assess the empirical questions.

3 Data and Empirical Regularities

3.1 Data Description

We shall look at the revenue of the five major parties in Germany over the period 1983-98. Total revenue and expenses of parties in the national parliament are taken from Bundestag sources.¹⁵ All other data have been collected and calculated from the reports (“Rechenschaftsberichte”) of the parties.¹⁶ A number of remarks need to be made about the data. Disclosure requirements concerning the names of contributors only apply for donations of 20,000 DM or more (40,000 DM between 1989-91). Therefore, when we split contributions among subgroups, i.e. industrial organizations, companies, etc., those data only refer to contributions above the disclosure limits. This is the case in figures 10, 11, 12, 13, 18, 19, 20, 21 and 22. The data for PDS start in 1990 because the party only came into existence after German unification. Finally, of course, we cannot report on money channeled to parties without being declared (“black money”). In the appendix we provide a brief overview of the way public funds have been allocated in Germany and how private contributions have been regulated.

¹⁵<http://www.bundestag.de/datbk/finanz/index.html>.

¹⁶The “Rechenschaftsberichte” of the parties are published as Bundestagsdrucksache.

3.2 Overview of Party Financing

Before we address our empirical questions, we provide an overview of party financing in Germany. During the whole period, the country was governed by a coalition of CDU/CSU and FDP under chancellor Kohl.

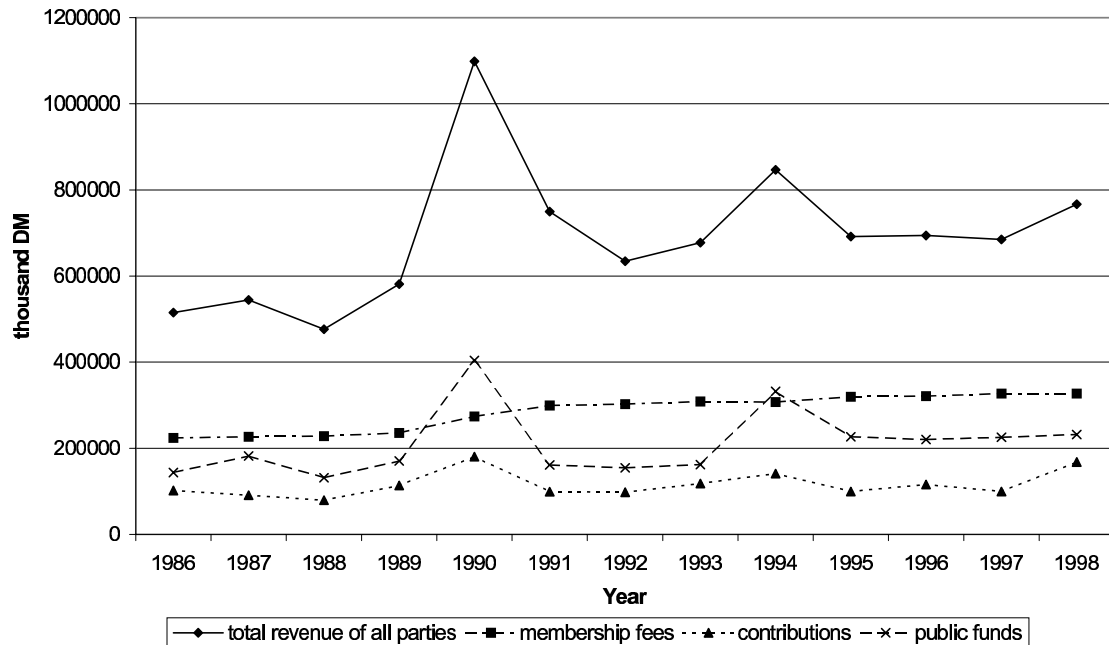


Figure 4: Breakdown of Total Revenue of All Parties

Figure 4 shows the make-up of the political parties' income over the last 12 years. The total party income is divided into the major components of membership fees, contributions and state support. Any remaining income has been left out of account. The total income of the parties between 1986 and 1989 averaged approx. 500 million DM. As of 1990, this increased to around 700 million DM. In the election years of 1987, 1990, 1994 and 1998, distinct peaks in income can be identified. The most important source of income is provided by membership fees and this is increasingly the case. State support is the second most important income source, which, like membership fees, has also continued to grow in importance. Contributions as the third largest source have remained constant at around 100 million DM per annum.

Figures 5-9 show the make-up of the income of the individual parties. Individual developments in the income of the established parties (CDU/CSU, SPD and FDP) reveal the same pattern as the overall picture. The income of the CDU/CSU before 1989 (Figure 5) totalled approximately 240 million DM, after 1990 it increased to between 260 and 300 million DM. The income of the SPD before 1989 (Figure 6)

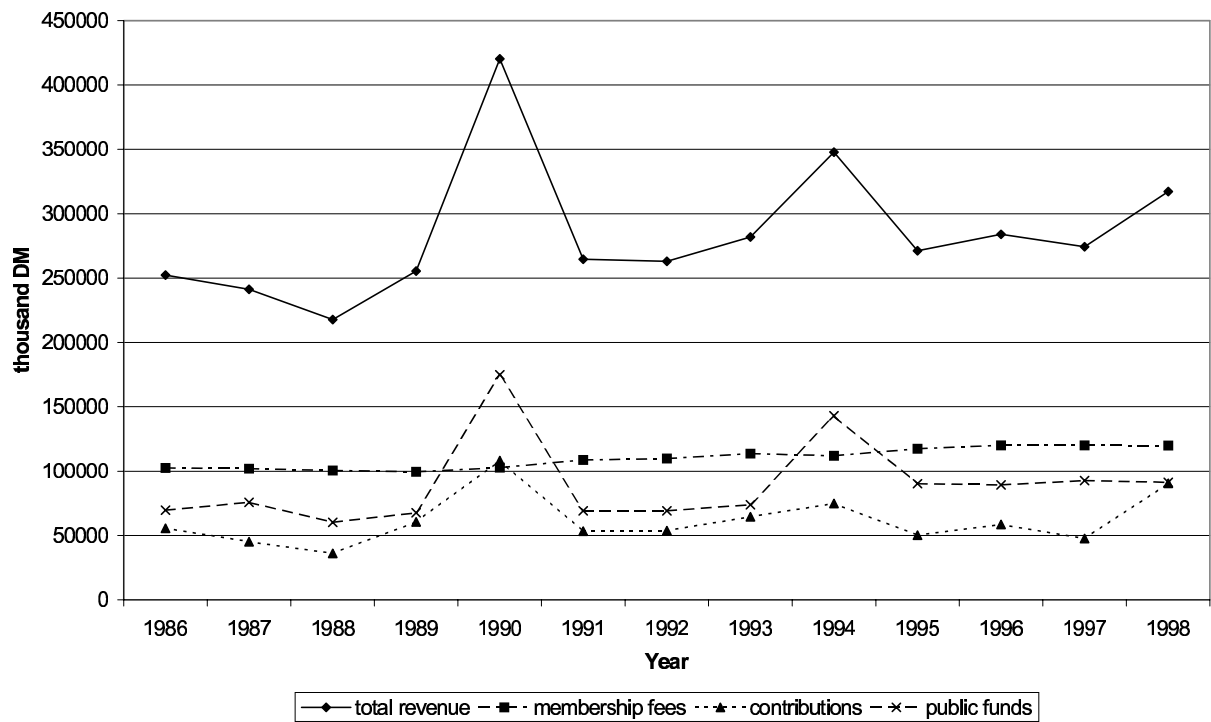


Figure 5: Breakdown of Total Revenue for the CDU/CSU

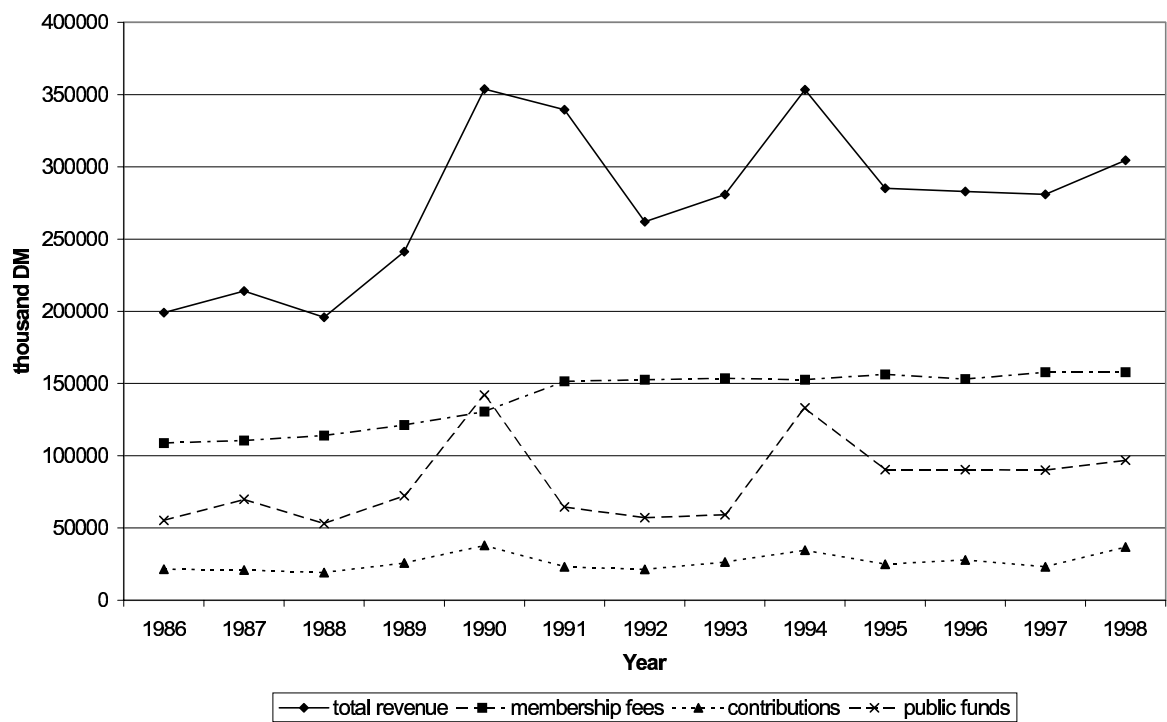


Figure 6: Breakdown of Total Revenue for the SPD

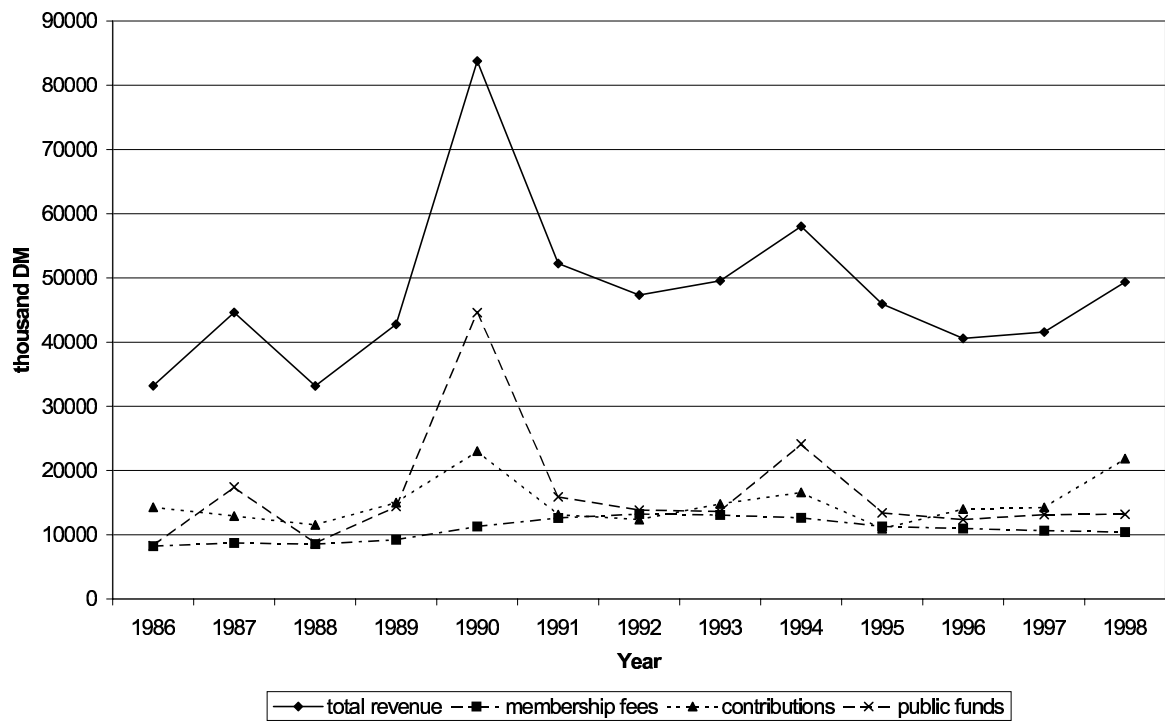


Figure 7: Breakdown of Total Revenue for the FDP

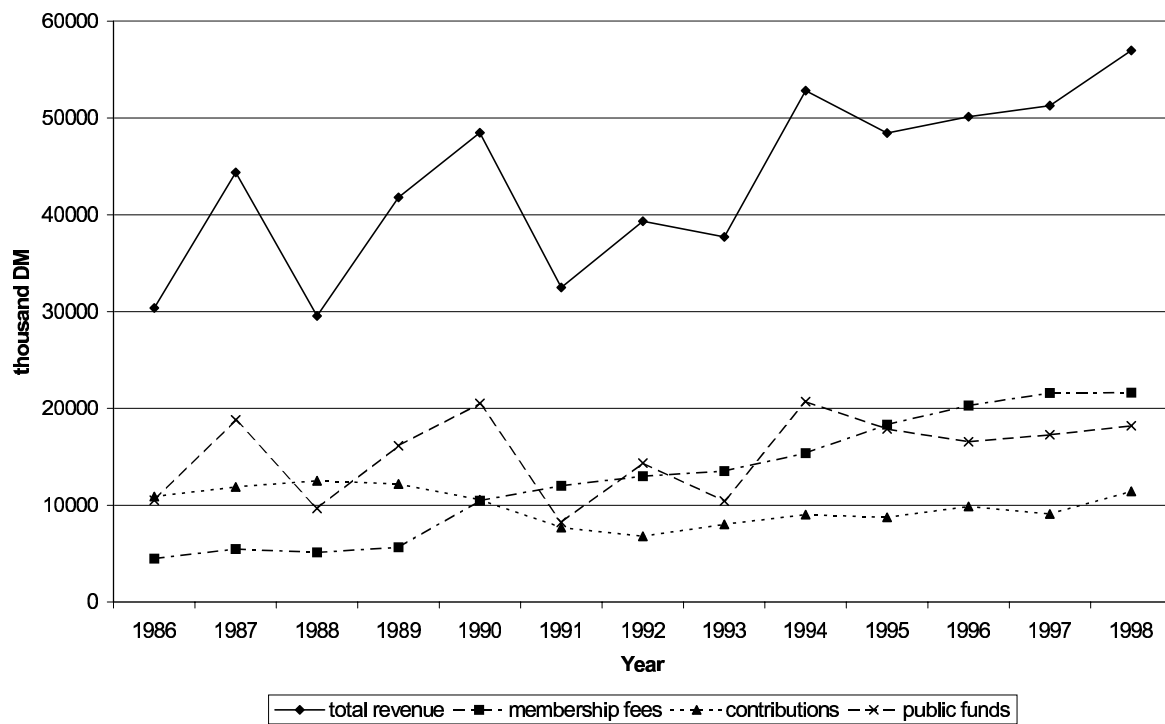


Figure 8: Breakdown of Total Revenue for the Green Party

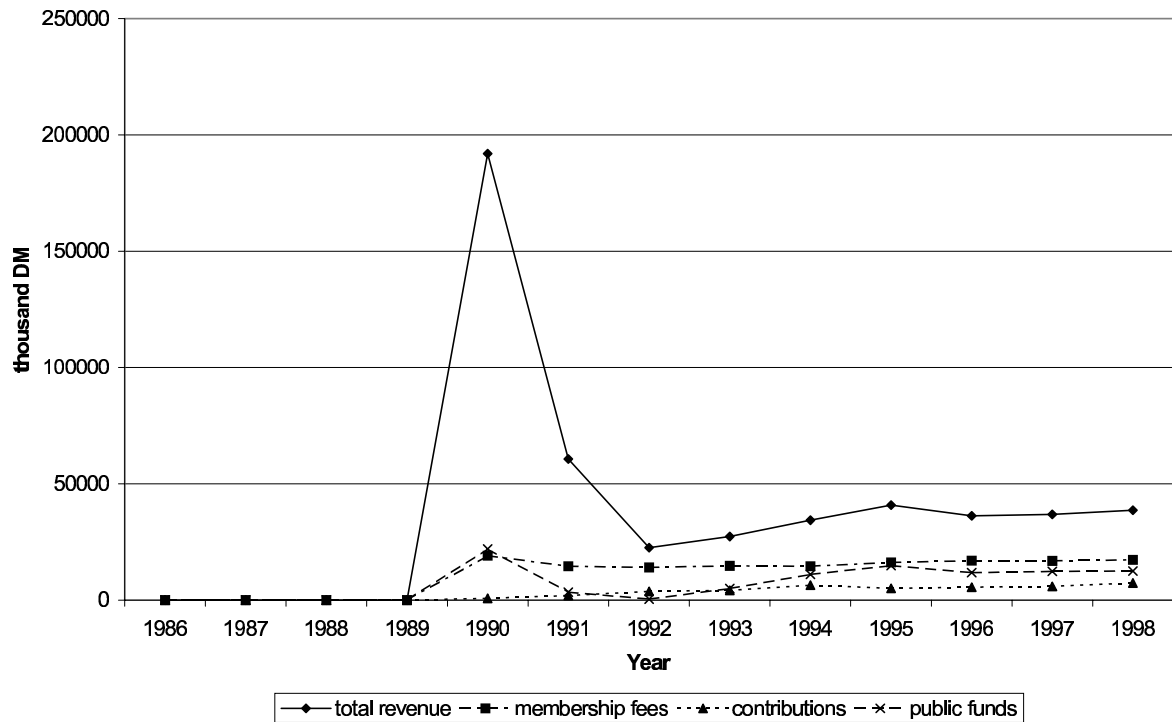


Figure 9: Breakdown of Total Revenue for the PDS

totalled approximately 200 million DM and after 1990 it increased to around 300 million DM. In contrast to the CDU/CSU, the SPD's income increased more conspicuously. The FDP (Figure 7) received between 40 and 55 million DM, whereas the Green party (Figure 8) received between 30 and 50 million DM before 1994 and regularly over 50 million DM afterwards. The PDS (Figure 9) received approximately 40 million DM annually, meaning that all the smaller parties have relatively similar incomes.

The make-up of income, however, varies significantly by party. The CDU/CSU has a similar make-up to the overall party result, while the importance of membership fees for the SPD is much higher. The income from state support is similar for both of the larger parties, whereas the contributions are a more substantial factor for the CDU/CSU. The income of the FDP consists of fairly equal parts with a slight domination of state support. The contributions are slightly higher than the membership fees. Before 1991, the Green party received the largest proportion of their income from state support, membership fees became increasingly sizeable. By 1995 they were contributing the largest single amount to total income. Contributions have remained constant at around 10 million DM per annum. The same pattern can be seen in the make-up of PDS income. A comparison of the parties shows that in the income of the conservative parties contributions play a considerable role, whereas for the more left-wing parties membership fees are more significant.

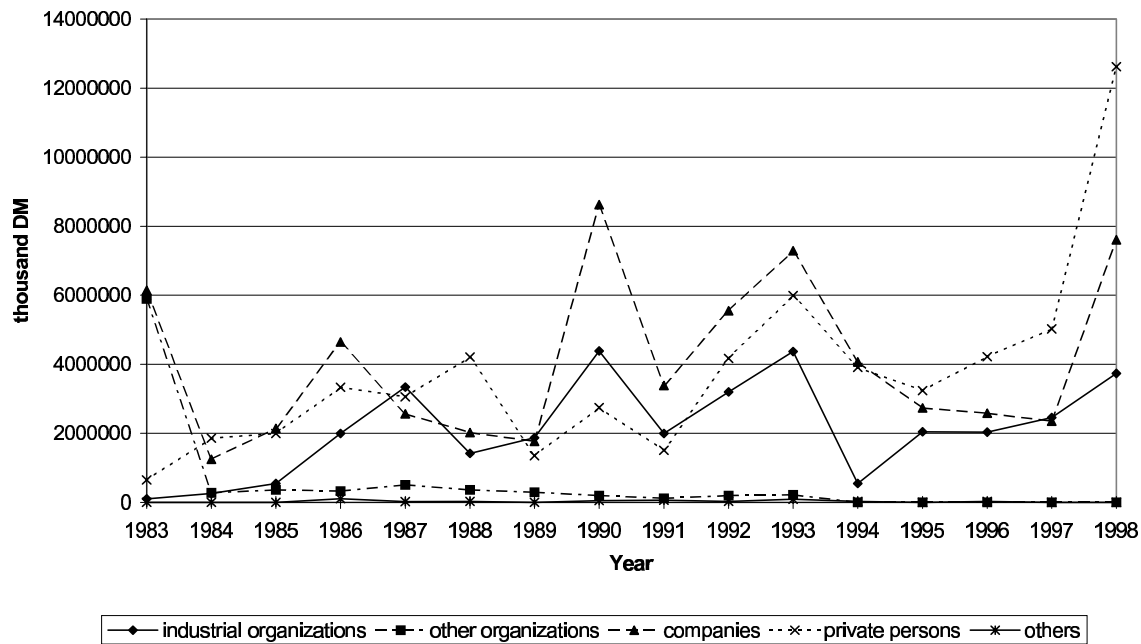


Figure 10: Breakdown of Total Contributions

Figure 10 shows the make-up of the contributions to all parties, divided by source. The sources are grouped together into industrial organizations, other organizations, companies, private persons, and others. As the reports of the parties only have to include the names of donors contributing 20,000 DM or more these are the only donors included in the analysis. In the following, we refer to these contributions as large contributions. The following observations can be made. Between 1984 and 1989, contributions from industrial organizations, companies and private persons were about equal. The only exception is in 1983, when approximately half of the contributions came from other organizations, which tended to be “Förderverbände”. Contributions of these organizations have subsequently been prohibited. As a result the amount of contributions coming from this source is minimal from 1984 on. Between 1990 and 1994, the most significant share of the contributions came from companies, followed by private persons and industrial organizations in that order. From 1994 onward, contributions from private persons made up the largest share, followed by contributions from companies and industrial organizations. In 1998, a dramatic increase in large contributions can be observed. The amount of large contributions increased from 1990 onwards. Overall, however, contributions remained constant. Peaks in large contributions can be found in 1990, 1993, 1998. Whereas the explanation for the increase in large contributions in 1990 and 1998 is that those were election years, the explanation of the peak in 1993 is to be sought in the change of tax regulations. Contributions which would normally have

been made in 1994, an election year, might have been made in 1993 to take advantage of the old tax regulations.

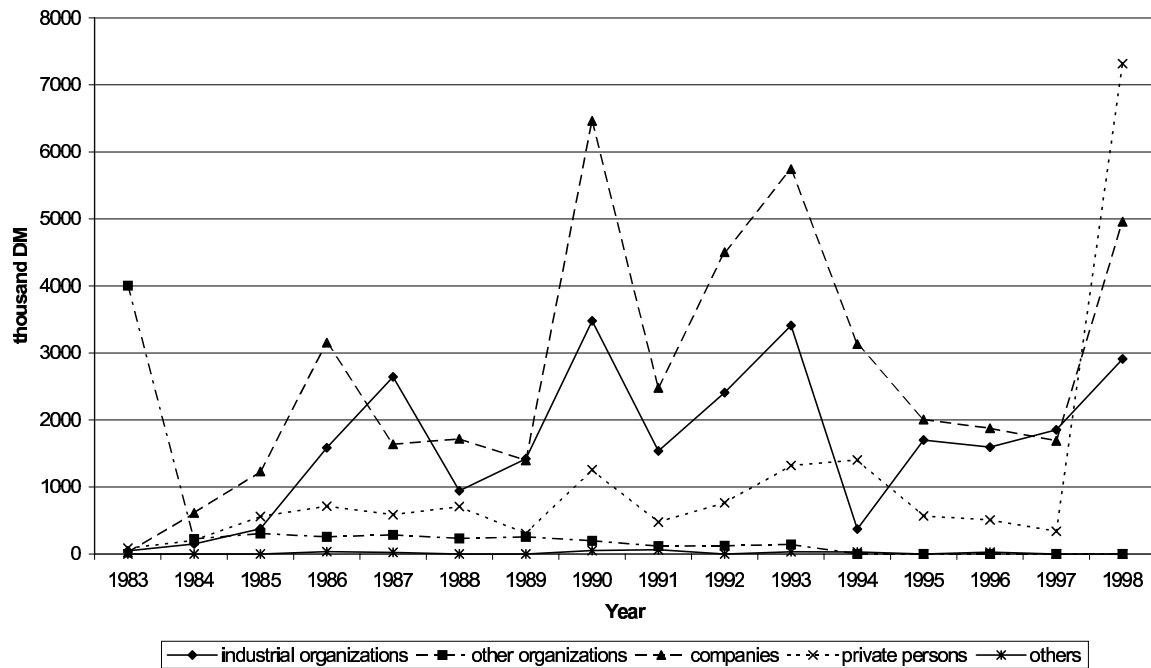


Figure 11: Breakdown of Contributions to the CDU/CSU

Figures 11 - 13 show the make-up of these large contributions for each of the political parties. Once again, they are divided into contributions from industrial organizations, other organizations, companies, private persons, and others. The major source of contributions received by the CDU/CSU (Figure 11) was companies, followed by contributions from industrial organizations. Contributions from private persons amount to an average of between 600,000 DM and 1.2 million DM, with the exception of 1998. By contrast, the majority of the contributions to the SPD (Figure 12) came from private persons. The exception was 1990, when companies, which normally make up the second largest group, made far more contributions. Average contributions from industrial organizations were regularly less than 200,000 DM and are therefore more or less negligible. Contributions to the FDP (Figure 13) are made up of almost equal shares. An exception was 1983, when company contributions totalled 6 million DM.

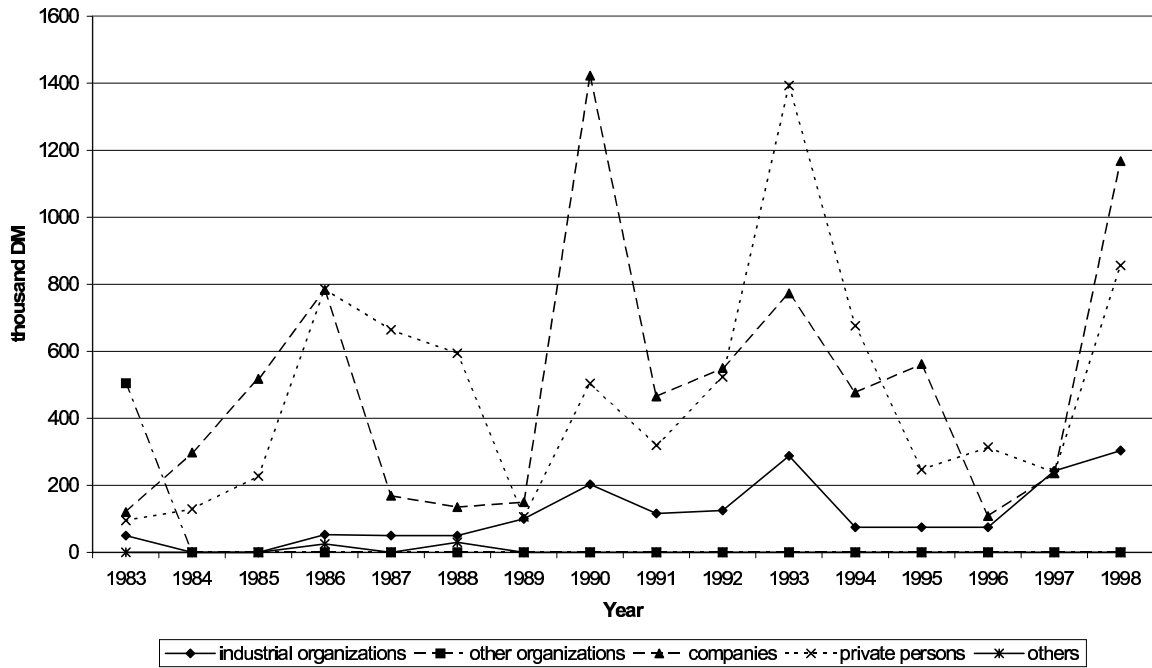


Figure 12: Breakdown of Contributions to the SPD

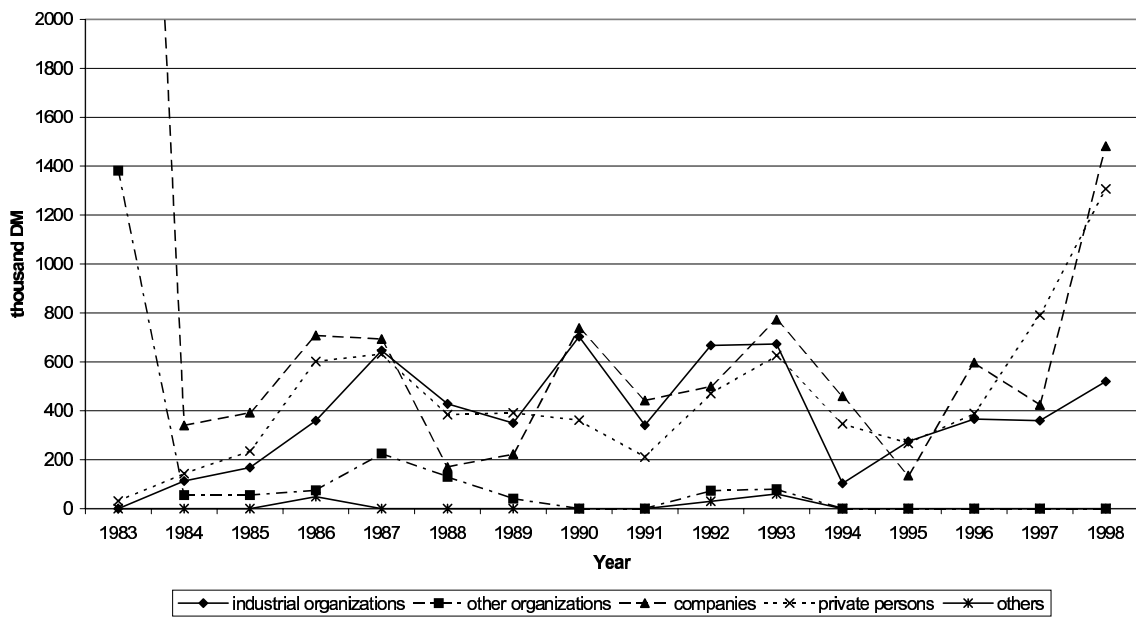


Figure 13: Breakdown of Contributions to the FDP

3.3 Overview of Party Expenses

Figure 14 shows the total expenses of parties over time. Party expenses of the CDU/CSU and the SPD are nearly the same. The expenses are about 250 million DM, with strong peaks in election years. In these years the expenses are between 350 and 400 million DM. The party expenses for the smaller parties (FDP, Green Party, PDS) are between 40 and 60 million DM, also with peaks in election years. The FDP shows a strong peak in 1994 reaching almost 100 million DM. The PDS starts with major expenses in 1990. In 1991 the expenses are about 100 million DM. In the later years, however, the party expenses were nearly the same for the smaller parties. Figure 15 shows the breakdown

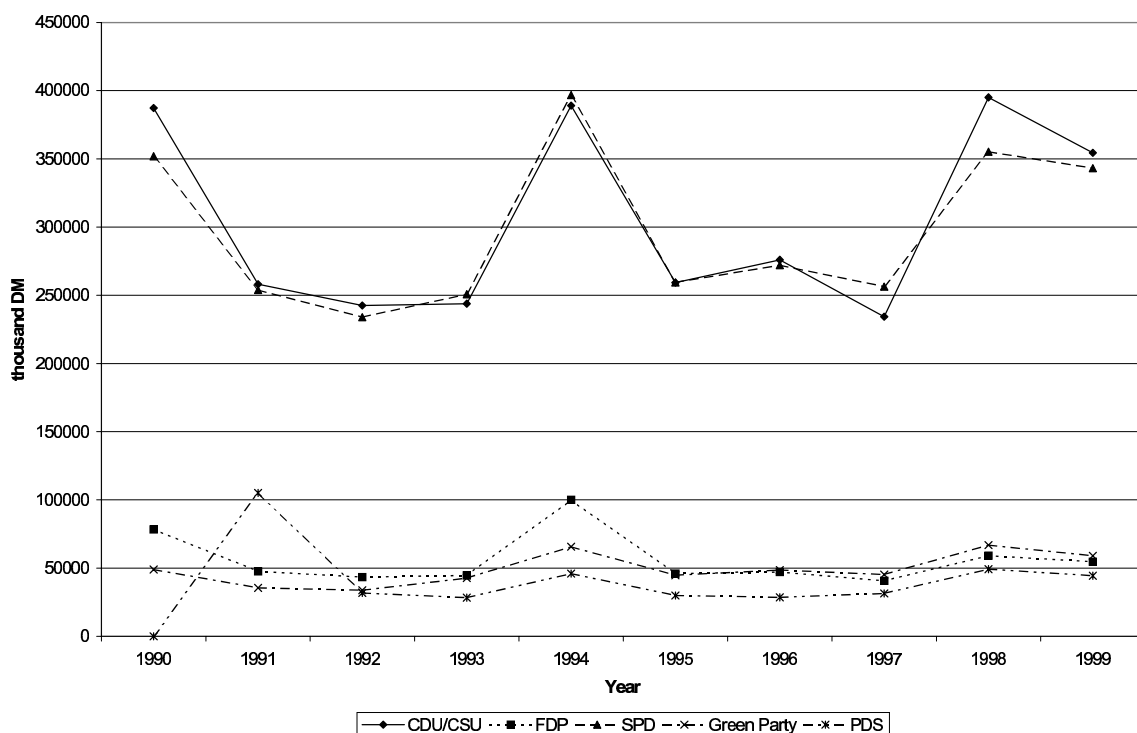


Figure 14: Total Expenses for All Parties

of accumulated total expenses for the CDU/CSU, FDP, SPD and the Green party. Major components of the party expenses are expenses for personnel, administration and political activity. The expenses for administration are about 120 to 140 million DM and increase only slightly over time. The expenses for personnel are about 180 - 220 million DM for the CDU/CSU. Again, these expenses are only slightly incremental over time. The expenses for political activity are about 200 - 280 million DM in non-election years (except for 1999 where they are about 400 million DM) and show large peaks in election years of between 460 and 560 million DM. The expenses of the single parties roughly follow this scheme.

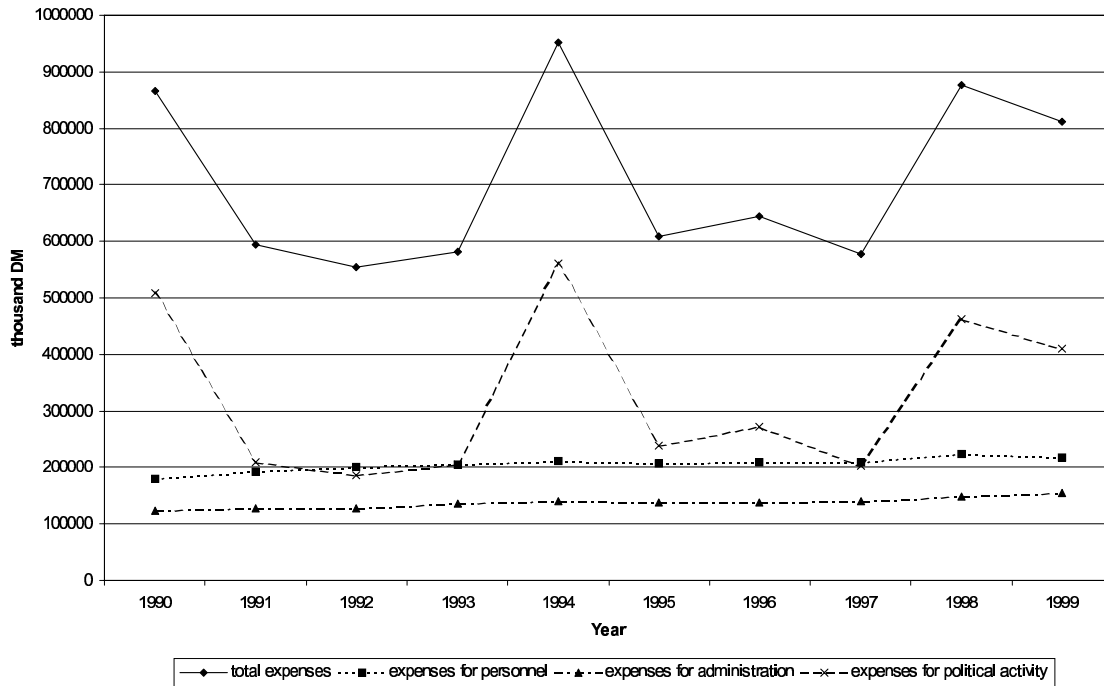


Figure 15: Breakdown of Total Expenses

In the following sections we compare the data with the assumptions and results of our model.

3.4 Significance of Contributors

According to assumption **Q1** we have to check whether the contributions to parties are small and whether there are no contributors that dominate.

Figure 16 shows the average amounts of the 5 largest contributions in proportion to both the total income and the total contribution income of a party in 1997/98. The 5 largest contributions to the CDU/CSU made up approx. 1% of the total income. For the FDP they made up almost 2%. For the SPD, the Green Party and PDS they made up between 0.2% and 0.5%. As a percentage of the total contributions, the 5 largest contributions made up 5% for the CDU/CSU and the FDP. For the SPD it was around 1.7% and for the Green party and PDS around 2.6%. This shows that the influence of the largest contributions is not overly large.¹⁷

¹⁷This argument does not apply automatically to regional politics, since contributions may have a larger share in funding at a regional level. Thus, larger policy influence through contributions may happen at the regional level.

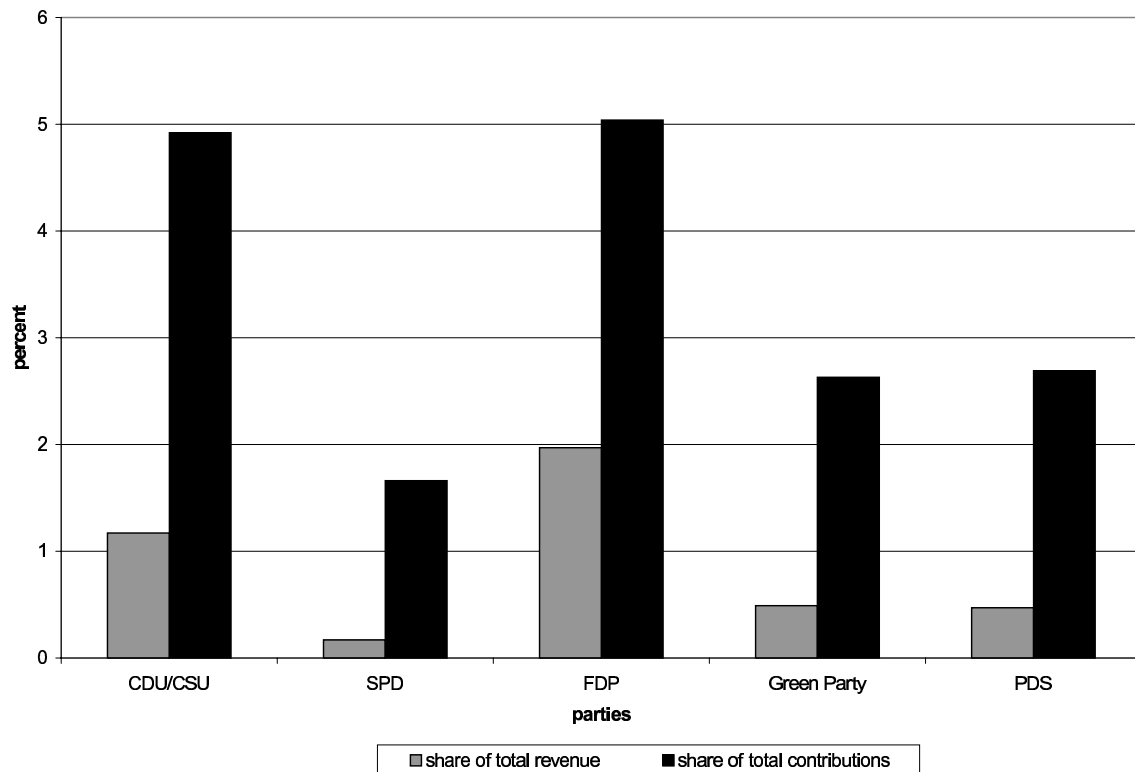


Figure 16: Average share of the Five Largest Contributions of Total Revenue and of Total Contributions 1997-98

3.5 Distribution of Contributors

The empirical question **Q2** refers to the distribution of contributors across the parties. As the ideal points of contributors cannot be observed directly, we choose indirect evidence from the contribution pattern.

Figure 17 shows the income of the parties per member of the parliamentary group in the Bundestag.¹⁸ For both the Green party and the PDS the figures are only available as of 1994. The parties received between 800,000 DM and 1.2 million DM per member of the group. The more left-wing parties have always received slightly more per member of the group than the conservative parties. However, the incomes per member of the group are similar for the individual parties. The changes in income for each member of the group depend on the development of the party's overall income and in election years it depends upon changes in the share of vote.

Figures 5 and 6 show that if both contributions and membership fees are accepted as sources of private funding, the CDU/CSU and the SPD get approximately the same amount of private funds over time.

¹⁸In election years we calculated with the newly elected members of the parliamentary group.

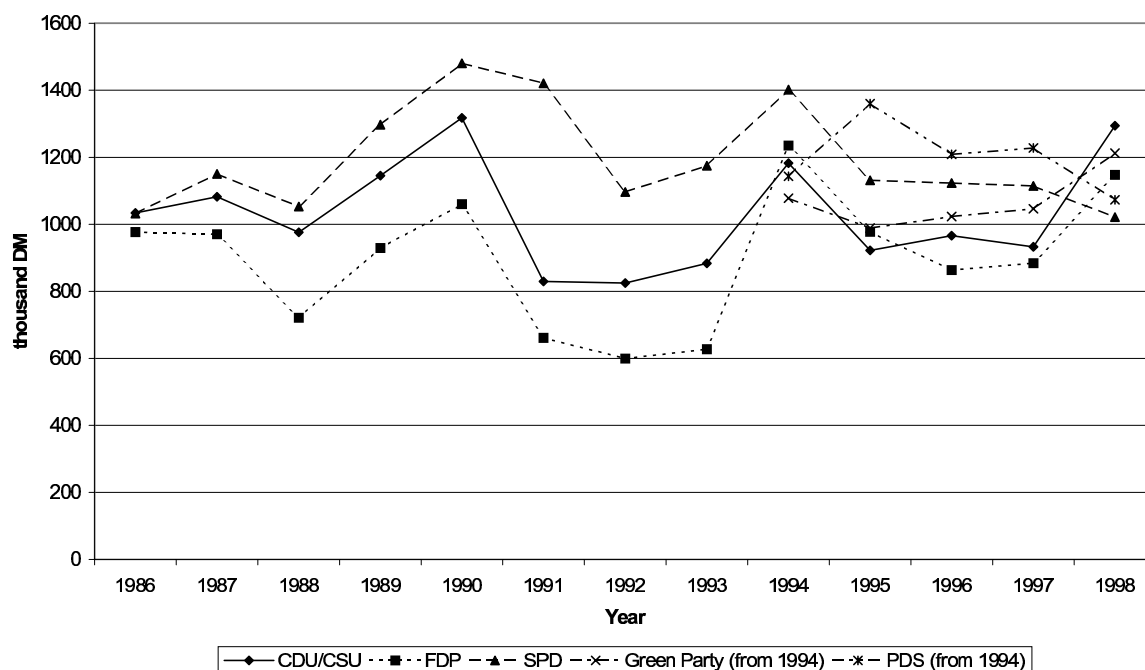


Figure 17: Breakdown of Total Revenue per Member of the Parliamentary Group in the Bundestag

Thus, the contributors cannot be distributed very asymmetrically, since otherwise we would observe more contributions for parties with leanings toward the right.

3.6 Contributions to Strange Bedfellows

The model predicts that there are contributors who give money to parties although they do not want them to be elected (**Q3**). Whereas these contributors are difficult to identify for the CDU/CSU or FDP, it seems clear that industrial organizations or companies in general gain more from electing parties leaning more toward the right or toward a liberal economic order, such as CDU/CSU or the FDP.

However, Figures 18 and 19 show that a significant share of contributions from industrial organizations and companies go to the SPD. Whereas the CDU/CSU received about 80% of these contributions, the SPD received about 5-8% of the contributions from industrial organizations and about 10% of the contributions from companies. The rest of these contributions go to the FDP. The contributions to the SPD suggest that this money is designed to balance the political competition.

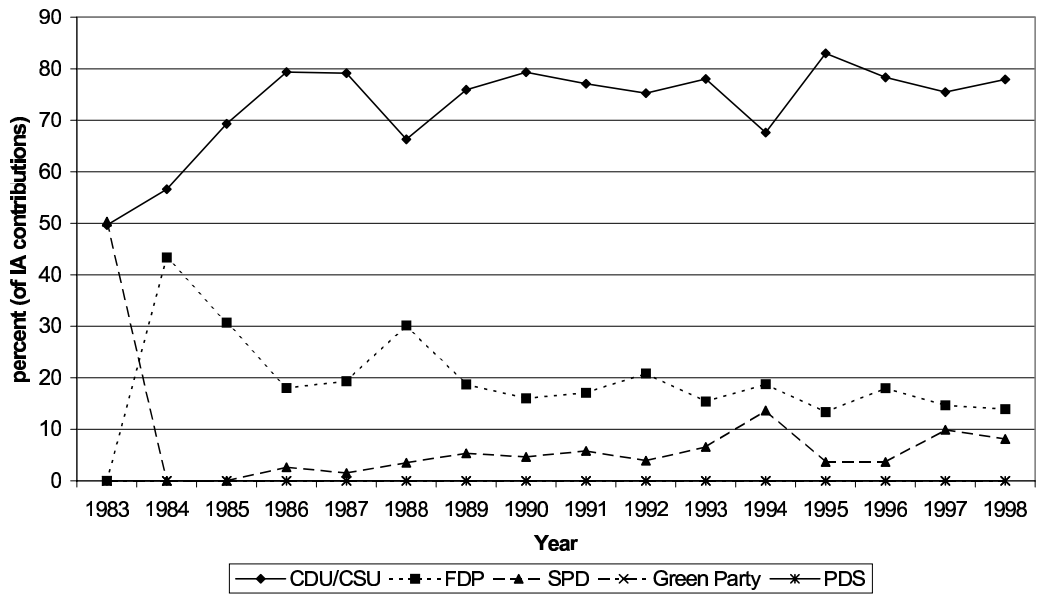


Figure 18: Breakdown of the Contributions from Industrial Organizations

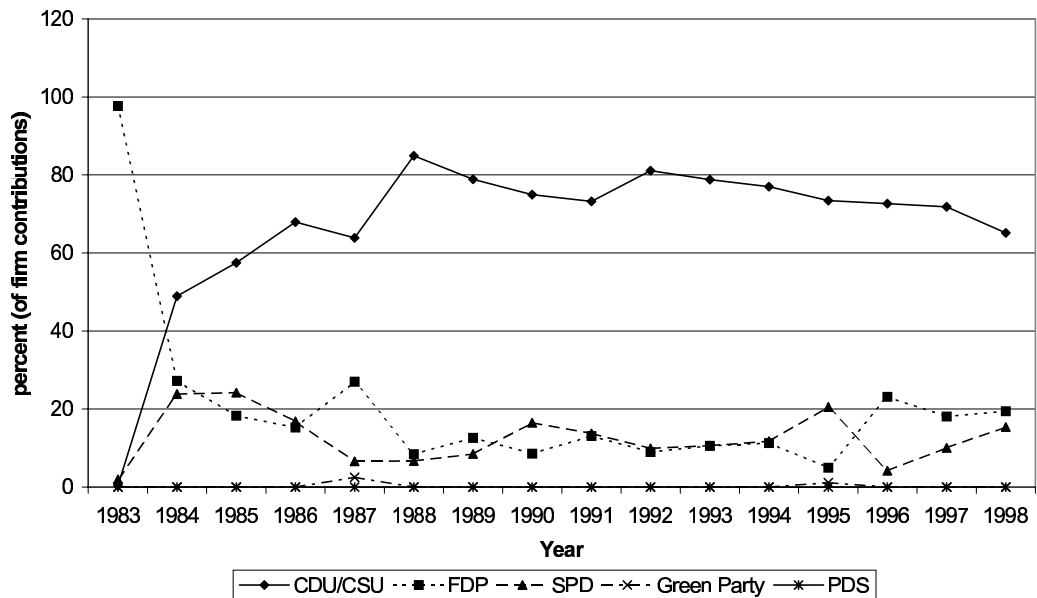


Figure 19: Breakdown of the Contributions from Companies

The hypothesis that some contributors give money to balance the race is supported by the evidence to the effect that some contributors support different parties (split contributions).

Figures 20-22 show whether the contributions to individual parties come from donors who have only donated to one party (single-party contributions), who have only donated to either coalition parties or opposition parties (multiple-party contributions: coalition only or opposition only) or from donors who have donated to one or more opposition parties and to one or more coalition parties (multiple-party contributions: coalition and opposition).

As of 1988 contributions to the CDU/CSU have tended to come from single-party donors (60-70%) (Figure 20). Multiple-party contributors (to both coalition and opposition parties) make up between 20% and 30%. Analyzing contributions to the SPD (Figure 21) reveals a slightly different picture. Single-party contributions make up 50%-65% and multiple-party contributions (coalition and opposition) about 30%-45%.

In case of the FDP (Figure 22) although the contributions tend to come from single-party donors (an average of 50%), the multiple-party contributions (coalition only or opposition only) made up 15% to 30% of the contributions as of 1988. Before this point they represented a larger proportion. Furthermore, the multiple-party contributions (coalition and opposition) are significant. As the largest type of contribution in 1990, they made up 60%.

To sum up, split contributions are ubiquitous in Germany and tend to support our hypothesis that donors with ideal points between the party platforms attempt to balance the race.¹⁹

¹⁹There might be other reasons for split contributions. In particular we cannot exclude that a donor supports simultaneously the ruling party at the national level and supports the opposition party that governs a state. However, also in this case there is a balancing tendency.

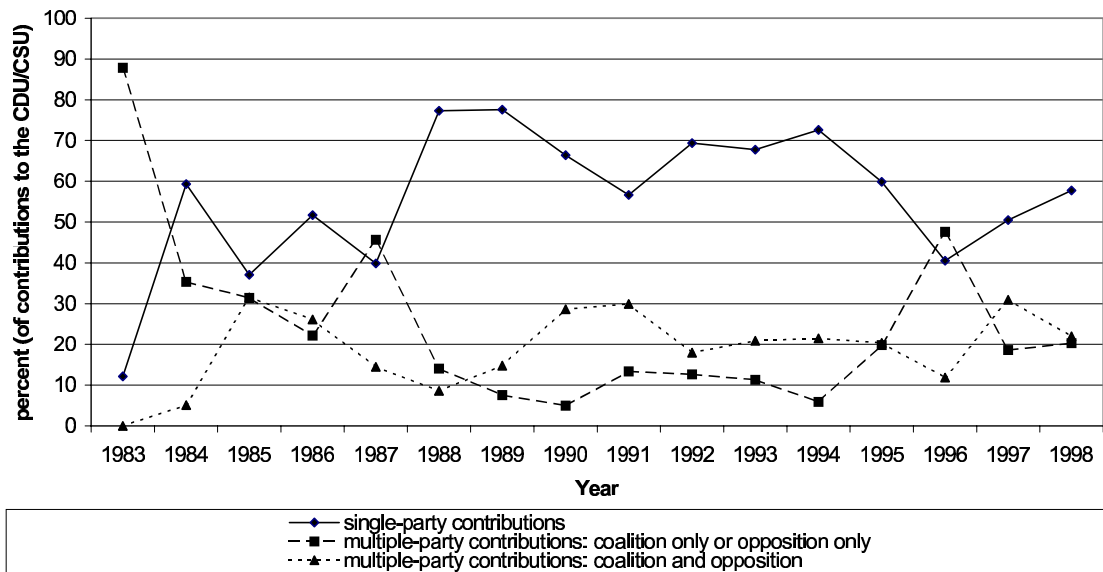


Figure 20: Splitting of the Contributions to the CDU/CSU

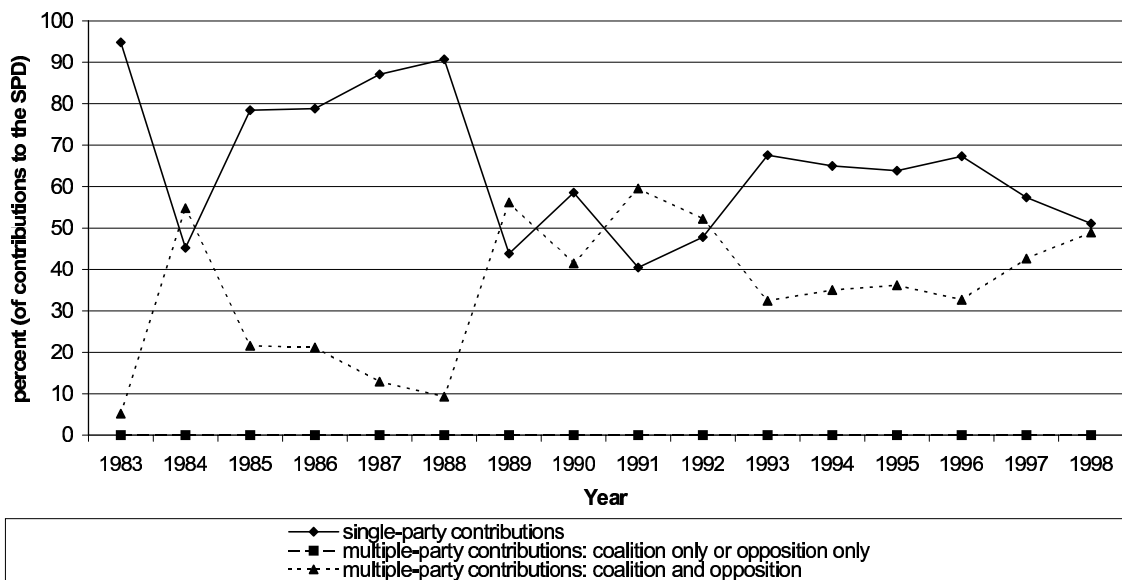


Figure 21: Splitting of the Contributions to the SPD

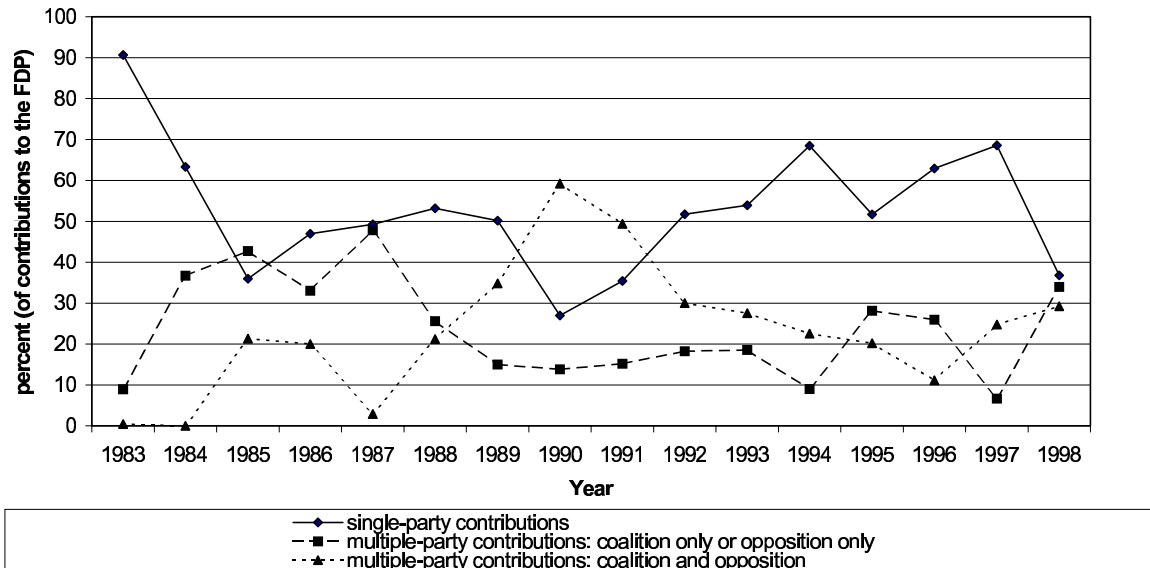


Figure 22: Splitting of the Contributions to the FDP

4 Reforms

4.1 Financing Democracies

In Table 2 we provide an overview of the different structures of party financing in European countries. Campaign finance differs widely across the countries, but three features can be found in most countries, albeit with varying importance. In contrast to the U.S., parties play a dominant role in deciding how money is spent. The state often provides rather generous public funding for electoral campaigns, which is less markedly the case in the U.S. (with the exception of Presidential campaigns). In most European countries, the amount of public funds a party gets corresponds mainly to the vote share or to the number of seats in parliament. Furthermore, many countries provide their parties with an additional basic sum. Contributions, spending, and advertising are regulated.

Accordingly, the three main issues involved in financing democracies are:

- mix public/private funding, baseline financing
- transparency requirements
- caps on private contributions (maybe depending on the type of contributor)

²⁰For a detailed description of German legislation see the appendix C.

Country	Importance of Direct Public Funding	Disclosure	Major Restrictions on Private Funding
Austria	20-30% (for federal party organizations)	disclosure of large contributors in categories (no names)	no
France	40-50%	large contributors named	no contributions from non-natural persons, caps on contributions
Germany²⁰	25-35%	large contributors named	no
Italy	below 40%	large contributors named	caps for contributions to candidates
Netherlands	25-35%	large contributors named, unless the contributor does not want to be named	no
Portugal	over 60%	large contributors named	caps, upper limit for total private contributions
Spain	over 60%	large contributors named	caps
Sweden	differs strongly from party to party, average 60-70% in 1989	large non-natural contributors named (voluntary agreement by the parties)	some parties voluntarily: only contributions from natural persons
Switzerland	0	no disclosure	no
UK	< 15%	large contributors named	no

Table 2: Party Financing Across Europe, Source: own estimations based on Nassmacher (2001)

In the next section, we combine the findings from our model with further arguments from the literature to give the direction reforms should go in.

4.2 Directions of Reforms

Our preceding discussion has suggested tentatively that private funding is preferable to public funding in achieving convergence and low volatility of political outcomes²¹ under a number of conditions which appear to hold in Germany. Moreover, caps on private contributions are undesirable since they would undermine the balancing forces when one party indulges its own preferences. The evidence suggests that the present system in Germany appears to be couched in too much public funding; therefore a reduction seems to be appropriate. However, we cannot and do not want to go so far to recommend abolition of all public financing since there is no apparent counterfactual data for this experiment. Financing the minimal infrastructure of parties, for example, can still be a means of public support lowering entry barriers for new parties. Baseline financing of parties through public funds may therefore be a necessary ingredient of democracy.

In the next step, we comment on the other objectives. Regarding new policy proposals, private funding appears to be better suited, since courting interest groups and voters at the same time increases the incentive for finding and proposing new ways of solving old problems. The very difficulty of obtaining large vote shares and attracting private money from a variety of sources with partially conflicting political preferences will create a high incentive to fly kites and to obtain opinion leadership on important issues (Gersbach (2000)).

Regarding rent-seeking through interest groups, it is clearly public funding which is most favorable. The political parties have little incentive to give favors to interest groups, because there is no money they can accept. With private funding, there probably will be favors (see e.g. Gersbach (2000)), although tight transparency rules reduce the danger. With tight transparency rules, the public would possibly be informed about favors and this would drastically reduce the reelection probability for politicians. Furthermore, the donors themselves would possibly be discouraged from using money to obtain favors for reasons of reputation (Sloof (1997)). Therefore, tight transparency requirements are a prerequisite when private funding is used.

²¹Note that in our model both results are achieved by private funding.

Regarding information efficiency, it is not clear a priori whether private or public funding dominates.²² Private funding has an informational advantage if there are interest groups with private information about the candidates and tight transparency rules. The information about where political campaign money comes from and how it is spent by the candidate may help the voter to evaluate those seeking office (Sloof (1997)). Thus, private information can be better signaled to voters when parties compete for private money. However, it may be difficult to infer the content of the information from the contribution patterns. Public funding may enhance the time and effort parties and candidates spend communicating with the public, since fund-raising activities are not needed. On balance, it is difficult to argue that one or the other funding system is better for information efficiency.

There may be concern that relying on more private funding and tightening transparency requirements at the same time would make it impossible for parties to obtain money.²³ Since there are still motives left for interest groups to give money, we do not think this concern has bite. Interest groups still have incentives to give money to moderate extreme platforms by counterbalancing other contributors. As we have seen in the model even if there is no political controversy, incentives to give money remain, for the very reason that otherwise political controversy would occur. Second, interest groups may have preferences about seeing certain politicians in power or there may be contributors intrinsically motivated to promote the democratic debate and the discussion of new ideas. As the experience in the U.S. suggests, less public funding is associated with higher private funding. Similarly, tax deductibility, which is an implicit public funding scheme, should be abolished.

Since we favor a mixed system where public and private funding are both important, there appears to be enough opportunities for parties to raise money. Even if the overall budgets of parties fell, the fear that parties would be unable lead the public debate and fulfill their campaign function cannot be substantiated.

²²One must be also concerned whether information efficiency is socially valuable. Information efficiency is desirable as a rule, although there are exceptions when large distributional uncertainties exist (see Gersbach (1992) and (1995) and Gersbach and Haller (2001)).

²³Tight transparency requirements should eliminate the most undesirable services to special interest groups. Whether they will also eliminate the “black coffer” phenomena recently detected in the CDU and in the SPD, cannot be assumed automatically.

4.3 Summary of the Proposal

We summarize our tentative findings as follows:

- Democracies should use a mixed system where private funding can play a large role.
- In Germany, the high level of public funding for parties can be reduced without expecting undesirable effects if the parties are forced to increase private funding.
- Private contributions can be unlimited but tight transparency requirements on private funding are necessary, which can be satisfied by setting up an independent commission with institutionalized publication rules.
- Tax deductibility should be done away with.

5 Conclusion

We have attempted to combine theory and data to outline a proposal for financing democracies. Since the theory of funding for parties is still in its infancy, our proposal is tentative and might not account sufficiently for differences across political systems. Nevertheless, our conclusions can be used for reconsidering how countries fund their parties.

Appendix A Detailed Description and Analysis of the Model

Campaign Functions

The campaign function $V^b(\sum d_j)$ and $V^a(\sum d_j)$ are assumed to be twice differentiable. The first derivatives of $V^b(\sum d_j)$ and $V^a(\sum d_j)$ are negative, since more support enables the candidates to further reduce uncertainty. Moreover, we assume that the second derivative is positive, i.e., we consider diminishing returns of campaign messages. We do not assume any particular functional forms. In summary, the assumptions are:

$$V^{a'} < 0; V^{a''} > 0; \lim_{\sum d_j \rightarrow \infty} V^a(\sum d_j) = 0; \lim_{\sum d_j \rightarrow \infty} V^{a'}(\sum d_j) = 0$$

The same assumptions hold for the campaign function $V^b(\sum d_j)$.

Subgame Perfect Equilibrium

The equilibrium consists of a tuple of donors' contribution strategies, candidates' location decisions, campaigns by candidates, and voting decisions after campaigns have taken place. To develop the equilibrium, we employ a two-step procedure. First, we determine the optimal contribution levels, given exogenously to whom to contribute. Second, we determine the optimal decisions whom of the candidates to support. For the first part, we consider the following system of equations in order to determine the optimal campaign contributions:

$$(S) \quad d_j^* = \arg \max_{d_j} \{u_j(x^{win}, d_j) = c_j - (x^{win} - x_j)^2 - v_j(d_j)\} \quad \forall j, d_j \geq 0 \quad \forall j, \text{ with}$$

$$V^a = V^a \left(\sum_{x_j \leq x} d_j \right), V^b = V^b \left(\sum_{x_j > x} d_j \right)$$

$$x^{win} = x_m + \operatorname{sgn}(V^a - V^b) \sqrt{\operatorname{sgn}(V^a - V^b)(V^a - V^b)}$$

System (S) describes a situation in which donors to the left of x support a , whereas the others support b . Donors choose their contribution levels optimally, given the levels of all other donors under the expectation of how x^{win} is determined and given to whom they contribute. Let us denote the solutions of (S) by $d_j^o(x)$. We first prove the existence and uniqueness of the solutions of (S). This step will help us to determine the overall nature of the subgame perfect equilibria.

Proposition 6

The system of equations (S) provides unique solutions for the contribution levels $d_j^o(x)$ generating a unique function $x^{win}(x)$.

The proof is given in the appendix B. Unfortunately, the function $x^{win}(x)$ is not continuous at every point. However, in the appendix we show that we can nevertheless apply fixed point arguments to establish the existence of subgame perfect equilibria.

Appendix B Proofs

Proof of proposition 6

We consider the system of equations (S).

$$(S) \quad d_j^* = \arg \max_{d_j} \{u_j(x^{win}, d_j) = c_j - (x^{win} - x_j)^2 - v_j(d_j)\} \quad \forall j, d_j \geq 0 \forall j, \text{ with}$$

$$V^a \left(\sum_{x_j \leq x} d_j \right), V^b \left(\sum_{x_j > x} d_j \right) \text{ and}$$

$$x^{win} = x_m + \text{sgn}(V^a - V^b) \sqrt{\text{sgn}(V^a - V^b)(V^a - V^b)}$$

Since x^{win} is itself a function of the contribution levels, we can write the payoffs for a donor solely in terms of the contribution levels, given the parameter x :

$$u_j(d_1, \dots, d_m, x) = c_j - (x^{win}(d_1, \dots, d_m, x) - x_j)^2 - v_j(d_j)$$

The payoff functions are continuous in $(d_1, \dots, d_{j-1}, d_j, d_{j+1}, \dots, d_m)$ since the variances are continuous in the contribution levels. The assumptions about the utility and variance functions imply that the payoff function is concave in d_j . Thus the solution of

$$d_j^* = \arg \max_{d_j} \{u_j(d_1, \dots, d_m, x) = c_j - (x^{win}(d_1, \dots, d_m, x) - x_j)^2 - v_j(d_j)\} \quad \text{is unique.}$$

The strategy space for each donor is a non-empty compact subset of the real line. We can apply standard fixed point arguments in order to establish the existence of optimal selected contribution levels $(d_1^o(x), \dots, d_{j-1}^o(x), d_j(x)^o, d_{j+1}^o(x), \dots, d_m(x)^o)$, given the parameter x to whom donors contribute, Debreu (1952). The fixed point argument is applied to the function

$$F : [0, \bar{d}_1] \times \dots \times [0, \bar{d}_m] \rightarrow [0, \bar{d}_1] \times \dots \times [0, \bar{d}_m], (d_1, \dots, d_m) \mapsto (d_1^*, \dots, d_m^*)$$

with

$$d_j^* = \arg \max_{d_j} \{u_j(d_1, \dots, d_m, x) = c_j - (x^{win}(d_1, \dots, d_m, x) - x_j)^2 - v_j(d_j)\}$$

F is continuous and unique since the payoff function is quasi-concave. Note that solving

$$d_j^* = \arg \max_{d_j} \{u_j(d_1, \dots, d_m, x) = c_j - (x^{win}(d_1, \dots, d_m, x) - x_j)^2 - v_j(d_j)\}$$

either leads to the boundary solution $d_j = 0$ or is given by the solution of the first-order condition:

$$\frac{du_j}{dd_j} = -2(x^{win} - x_j) \frac{\partial x^{win}}{\partial d_j} - v_j'(d_j) = 0$$

The boundary solution occurs if $x < x_j < x^{win}$ or $x^{win} < x_j < x$. For instance, in the former case donor j contributes to candidate b although the winning platform is to the right of his ideal point and supporting candidate b can only decrease his utility. In the latter case, donor j contributes to candidate a , although supporting a is not attractive. Thus, in both cases we have $d_j = 0$. Therefore, whenever we examine non-zero contributions, we can apply the first-order condition.

To establish uniqueness, we consider two potential solutions of (S), denoted by

$$(d_1^1(x), \dots, d_m^1(x)) \quad (\text{solution 1})$$

$$(d_1^2(x), \dots, d_m^2(x)) \quad (\text{solution 2})$$

with corresponding winning platforms and candidate variances.

Consider the case $x_2^{win} < x_1^{win}$. It implies that we must have $V_1^a - V_1^b > V_2^a - V_2^b$.

- (i) We first establish that $V_2^b > V_1^b$ is not possible. Suppose $V_2^b > V_1^b$. All donors who contribute a non-zero amount of money to candidate b in the first situation are characterized by ideal points $x_j > x_1^{win}$. Since $V_2^b > V_1^b$, we have

$$\frac{\partial x_2^{win}}{\partial d_j} > \frac{\partial x_1^{win}}{\partial d_j}$$

Moreover, since $|x_1^{win} - x_j| < |x_2^{win} - x_j|$ the first-order condition implies for all donors with $x_j > x_1^{win}$ that $v_j'(d_j^2) > v_j'(d_j^1)$ and hence $d_j^2 > d_j^1$ since

$$\left| -2(x_1^{win} - x_j) \frac{\partial x_1^{win}}{\partial d_j} \right| < \left| -2(x_2^{win} - x_j) \frac{\partial x_2^{win}}{\partial d_j} \right|$$

This is, however, a contradiction to $V_2^b > V_1^b$ since all donors who support candidate b in the first solution support b in the second one and spend more money in the second solution.²⁴

²⁴In addition, the number of donors who support candidate b with non-zero contributions under the second solution can be larger, which also tends to decrease V_2^b . However, this additional effect is not needed for the proof.

(ii) We next consider the other possible constellation $V_2^b < V_1^b, V_1^a > V_2^a$.

Consider the donors who contribute money to candidate a in the first solution.

They are characterized by $x_j < x_1^{win}$. $V_1^a > V_2^a$ implies

$$\frac{\partial x_1^{win}}{\partial d_j} > \frac{\partial x_2^{win}}{\partial d_j}$$

Moreover, we have $|x_1^{win} - x_j| > |x_2^{win} - x_j|$ and thus

$$\left| -2(x_1^{win} - x_j) \frac{\partial x_1^{win}}{\partial d_j} \right| > \left| -2(x_2^{win} - x_j) \frac{\partial x_2^{win}}{\partial d_j} \right|$$

which otherwise implies $d_j^1 > d_j^2$ since the first-order condition holds. This is, however, a contradiction to $V_1^a > V_2^a$ since the number of donors supporting candidate in the first equilibrium a is no larger than in the second equilibrium and because the contribution levels are smaller.

Overall, we conclude that it is impossible for two equilibria to exist with $x_2^{win} < x_1^{win}$. Since the labeling of the equilibria was arbitrary, it follows that the winning platform must be the same for all potential equilibria. However, by going through the same routine as before, but applying it now to $x_1^{win} = x_2^{win}$, it follows that the variances must be the same. Hence, the sum of contributions for $x_j < x$ and for $x_j > x$ must be the same in both cases. Since a donors' contribution decision only depends on his contribution and the sum of all other contributions the candidates receive,

$$\sum_{x_j \leq x} d_j^1 = \sum_{x_j \leq x} d_j^2 \quad \text{and} \quad \sum_{x_j > x} d_j^1 = \sum_{x_j > x} d_j^2$$

imply $d_j^1 = d_j^2$ for all j as well. Hence, the solution $(d_1^o(x), \dots, d_m^o(x))$ is unique and generates a function $x^{win}(x)$. ■

Proof of Proposition 4

Consider the function $x^{win}(x)$. The function is continuous except for the ideal points of donors. When x crosses an ideal point x_j , the candidate whom donor j supports changes and thus $x^{win}(x)$ can jump. We define the following correspondence:

$$x^{win*}(x) = \begin{cases} x^{win}(x) & \text{if } x \neq x_j \forall j \\ [x_{inf}^{win}(x), x_{sup}^{win}(x)] & \text{if } x = x_j \text{ for some } j \end{cases}$$

$x^{win*}(x)$ is built on $x^{win}(x)$ and becomes a correspondence by adding the interval $[x_{inf}^{win}(x), x_{sup}^{win}(x)]$ at the points x_j where $x^{win}(x)$ might not be continuous.

$x_{inf}^{win}(x), x_{sup}^{win}(x)$ are the winning platforms if a donor j supports candidate a or b , respectively. Thus, $x^{win*}(x)$ is a non-empty-valued, convex-valued and upperhemicontinuous correspondence on the political dimension X . Applying Kakutani's fixed point theorem, there exists a fixed point x^o such that $x^o \in x^{win*}(x^o)$. Moreover, since $x^{win}(x)$ is monotonically decreasing in x , the fixed point is unique.

To examine the nature of the fixed point we distinguish between $x^o = x_j$ for some j and $x^o \neq x_j \forall j$. In the latter case, the fixed point is a point on the original function $x^{win}(x)$ and thus no further issue arises. In the former case, we show that the function is continuous at the fixed point x^o . Suppose that the function is not continuous at x^o and hence $x_{sup}^{win}(x_j) \geq x^o = x_j \geq x_{inf}^{win}(x_j)$. $x_{sup}^{win}(x_j)$ must arise if donor j supports candidate b and occurs if donor j supports a . However, in the former case, since $x_{sup}^{win}(x_j) \geq x_j$ the contribution level of donor j must be zero, since any positive contribution level would only increase the distance between the winning platform and the ideal point of the contributor. Similarly, in the latter case $x_{inf}^{win}(x_j) \leq x_j$, donor j has no incentive to spend any money on candidate a since it would only damage him. Thus, in both cases, we have $d_j = 0$. The preceding considerations also follow directly from proposition 2. Since $x^o = x^{win} = x_j$, we have $d_j = 0$ and hence x^{win*} is continuous at x^o . The contribution decisions of the other donors are independent of whom donor j contributes to for $x = x_j$. Since the contribution levels are unique for any value of x , we must have $x_{sup}^{win}(x_j) = x^o = x_j = x_{inf}^{win}(x_j) = x^{win}(x_j)$ in this case. Thus, the fixed point is also an element of the original function $x^{win}(x)$ and the function $x^{win*}(x)$ is continuous at the fixed point.

The fixed point $x^{win}(x^o) = x^o$ is a constellation in which all donors to the right of x^o support candidate b , while the donors to the left of x^o support a . In the next part we show that the fixed point is indeed a subgame perfect equilibrium of the game and is described either by case 1 or case 2.

Clearly, the conditions in the proposition are mutually exclusive. Either case 1 or case 2 will occur. Consider, for instance, case 1, $x^{win}(x_m) > x_m$. Since $x^{win}(x)$ is monotonically decreasing, the fixed point and thus the winning platform $x^{win}(x^o) = x^o$ is greater than the median position x_m . Since $x^{win} > x_m$, we have $V^{a^*} > V^{b^*}$, and equations (8) and (9) constitute a political equilibrium in which candidate b wins.

Finally, we have to show that no donor has an incentive to deviate. Again, we con-

sider case 1, since case 2 is similar. Assume that a donor with $x_j < x_b^*$ changed his contribution and supported candidate b . This would only cause the political outcome to be greater than x_b^* , and thus farther away from his own preferred point. A donor with $x_j > x_b^*$ has no incentive to change his contribution decision either, since supporting candidate a would move the political outcome towards the center and away from his ideal point. Moreover, by construction through the system of equations (S), the level of campaign contributions by candidates is chosen optimally, given the campaign contributions of other donors.

Therefore, given the contributions of the other donors each donor would be worse off by deviating from his contribution strategy. Because of our construction, x_a^* and x_b^* also characterize a political equilibrium. Given the anticipation of V^{a^*} and V^{b^*} , candidates choose x_a^* and x_b^* . Thus, x_a^* and x_b^* constitute a donor and a political subgame-perfect equilibrium. The political outcome is x_b^* . Since the fixed point, and hence the winning policy, is unique, the subgame perfect equilibrium is unique. ■

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Year	Public Funding	Mandatory Reporting	Sanctions
Before 1984	Public pool (“Wahlkampfkostenpauschale”) funded by a flat rate of 3,50 DM per voter. Distribution to parties with over 0.5% of the second votes according to the share of second votes (“Wahlkampfkostenerstattung”).	Contributions of over 20,000 DM have to be published together with the name and address of the contributor	None
Changes in 1984 Source: Gesetz zur Änderung des Parteiengesetzes und anderer Gesetze vom 22.12.1983 BGBl I S. 1577 (mit Wirkung zum 1.1. 1984)	<ul style="list-style-type: none"> - The flat rate is raised to 5 DM per voter. - The “Wahlkampfkostenerstattung” must be less than total party income. - Additional public funds to compensate for differences in private funding per voter (“Chancenausgleich”). 	<ul style="list-style-type: none"> - The use of financial resources and property must be published. - The party report must be published as a Bundestag document. - No contributions from certain organizations (e.g. political foundations, charitable and religious organizations, trade or professional organizations that have received contributions to further on). 	If contributions are collected illegally or are not published, the party loses the right of double reimbursement of its Wahlkampfkostenerstattung and these contributions are forfeited.
Changes in 1989 Source: Fünftes Gesetz zur Änderung des Parteiengesetzes und anderer Gesetze vom 22.12.1988 BGBl I S. 2615	<ul style="list-style-type: none"> - Introduction of baseline financing: parties with over 2% of the second vote receive 6% of the Wahlkampfkostenpauschale. - Baseline financing must not be higher than 80% of the Wahlkampfkostenerstattung. In the 12th Bundestag election, the basic sum was 3%. - A new method of Chancenausgleich, - The Chancenausgleich has an upper limit of 10% of the sum of a party’s baseline financing and the Wahlkampfkostenerstattung. 	Contributions of over 40,000 DM have to be published.	As before

Table 3: Party Financing in Germany 1

Year	Public Funding	Obligatory Reporting	Sanctions
1992 Decision BVerfG Source: BVerfGE 85	Baseline financing and Chancenausgleich are unconstitutional.	Contributions over 20,000 DM have to be published.	As before
New campaign finance law in 1994 Source: Sechstes Gesetz zur Änderung des Parteiengesetzes und anderer Gesetze vom 28.01.1994 BGBl I S. 142	<ul style="list-style-type: none"> - Parties with over 0.5% of the vote in the last election (1% in Länder elections) receive 1,30 DM for each second vote gained in the Bundestag elections and European elections. Upward of 5 million votes, 1 DM will be paid. For each vote in Länder elections parties receive 1 DM. - Contributions and membership fees of natural persons up to a limit of 6,000 DM produce a further contribution of 50 Pfennig for each 1 DM from the state. - The relative limit: the total of state benefits may not exceed the party's other income. - The absolute limit of all benefits to all parties must not exceed 230 million DM. - If this limit is reached, the benefits will be reduced proportionally. - Parties only have the right to public funds if a proper report has been produced. 	Contributions of over 20,000 DM must be published (from 1992 on).	As before
Changes in 1998 Source: 7. Gesetz zur Änderung des Parteiengesetzes vom 17.02.1999 BGBl I S.146	The absolute limit is increased to 245 million DM.	As before	As before
Changes in 2002 Source: 8. Gesetz zur Änderung des Parteiengesetzes	to be written	to be written	to be written

Table 4: Party Financing in Germany 2

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