Aggregate party identification in Germany:
The effects of consumer confidence and government approval

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Abstract

Partisanship has been the object of extensive scholarly attention. Because individual partisanship seemed relatively stable and insensitive to short term forces, aggregate partisanship was long thought to display no meaningful variation. This view was challenged by MacKuen et al. (1989), who found that aggregate partisanship in the United States is affected by consumer confidence and presidential approval. This paper studies aggregate party identification in Germany, and how it has evolved in the past thirty years. Specifically, we analyze the impact of consumer confidence and government approval on party identification. We conclude that rises in consumer confidence and government approval do indeed lead to increases in identification with the main governing parties.

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1 Introduction

The nature of party identification (ID) has been the subject of intense debate during the past 50 years. Campbell et al. (1960) defined party ID as 'the sense of personal attachment which the individual feels towards the party of his choice'. They noticed that, compared to other political attitudes, party ID was relatively stable in the United States (US). The observed stability was often explained as a result of socio-psychologic forces, as in reference or small group theory, and brought about the concept of party ID as an unmoved mover.[1] In this view, Party ID is a non-political attitude that can nonetheless influence an individual's opinion about politics.

The concept of party ID as an unmoved mover became a matter of dispute in the 1980s. In his seminal study, Fiorina (1981) described party ID as a 'running tally' of retrospective evaluations of candidates' performance in office. Fiorina's formulation constituted a reconceptionalization of party ID, more rooted in rational choice theory than reference group theory (Thomassen and Rosema 2011). Franklin and Jackson (1983) argued that '[party] identifications are more than the results of a set of early socializing experiences, possibly reinforced by subsequent social and political activity. They are a person's accumulated evaluations from previous elections and are dependent upon the events and the actions of political leaders during these elections and during subsequent terms in office'. They concluded that changes in party ID originate in shifts in the perceived party proximities to their own preferences. Achen (2002) explained party ID as the result of a continuous Bayesian updating process with respect to expected future benefits from a party and its candidates.

The lion's share of the literature focuses on party ID at the micro level. To the extent that individual changes in party ID are rare, changes in the aggregate distribution of party ID should be minor as well. Shifts in macropartisanship, which can be considered as aggregate party ID, should then be limited and only occur in a gradual fashion.

MacKuen et al. (1989) presented evidence that is inconsistent with this view. They showed that macropartisanship fluctuates in response to changes in consumer confidence and presidential approval. Their analysis was replicated by Green et al. (1998), who found considerably less evidence of partisan fluctuation. They found that short-term effects (consumer sentiment and presidential approval) have only half of the effect that MacKuen et al. suggested. They concluded that the earlier view of realignment remained persuasive: partisanship is generally stable, except for occasional significant realignments.

The focus of this paper will be on the partisan movements of the electorate rather than the changing partisanship of individual citizens. We will study the macro-level relationship between party ID and short term forces such as consumer confidence and government approval in Germany. The next section discusses the problems one faces when studying this relationship in multi-party political systems. The data we used are described in the third section. The fourth section analyzes the dynamics of macropartisanship and the chronological order of the relationship between short term forces, such as consumer confidence and government approval, and macropartisanship. The fifth section quantifies these relationships using two different approaches. In our first approach, we focus on the partisan balance between the two main German parties. This facilitates comparison with previous studies of US partisanship, and gives us an idea about the the impact of short term forces on the partisan balance between the parties that compete for the German Chancellorship. In our second approach, we focus on the partisanship of the four parties that were members of coalition governments during the sample period. We look at each of these parties' share in the total number of party identifiers, and analyze the impact of consumer confidence and government approval. The sixth section concludes.

We find that consumer confidence and government approval do indeed have an impact on identification with the main German parties. When we look at the partisan balance between the Christlich Demokratische Union (CDU) and the Sozialdemokratische Partei Deutschlands

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(SPD), we observe that rises in consumer confidence shift the partisan balance in favor of the governing party. When we include both consumer confidence and government approval, we find that they are jointly significant. When we look at each of the parties separately, the effects of consumer confidence and government approval remain significant for the SPD and the Freie Demokratische Partei (FDP). For the CDU, only the effect of government approval is significant. Of all the voters who identify with one of the four main parties, the FDP-identifiers seem to be the most responsive to changes in consumer confidence and government approval.

2 Macropartisanship in Multiparty Systems

Most studies of individual and aggregate partisanship take place in the US context. Over the past decades, many scholars have demonstrated that these concepts may not be readily applicable to European politics. We now briefly discuss three reasons why this may not apply.

First, the importance of party ID as a determinant of political attitudes might be different in Europe. Shively (1979) develops a functional model of party ID, treating party ID as the result of the individuals' need for guidance in making political decisions. He finds weak ties between European citizens and political parties, and argues that these 'have resulted from the prevalence of strong ties to a class or religion, which have obviated the need for direct ties to any party, per se'.

Thomassen and Rosema (2011) find that 'in the Netherlands (...) party ID and party vote tend to coincide and, furthermore, to the extent that they do not, reported party ID is less stable than vote choice'. They interpret the strong correlation of party ID and actual vote choice in two different ways. On the one hand, their findings can be interpreted, in

light of Shively's model, as an indication that party ID is less important in Europe. On the other hand, they argue that 'in European parliamentary systems political parties and not individual politicians are the principal actors mediating between voters and government institutions, (...) offering few incentives for voters to deviate from their party preference in favour of a candidate from another party'. Their second interpretation implies that party ID is more powerful in Europe than in the US.

In Germany, Kaase (1976) found such strong correlation between party ID and actual vote choice that doubts arose about the conceptual independence of party ID from vote choice. Schmidt and Segatti (2011) state that this correlation has weakened, because of the bipolar political landscape and the fact that on both sides of the landscape voters can choose from among multiple parties. This allows voters to vote against their long-standing party preference without changing ideological sides.

Second, a problem related to this last point is that in a multiparty context a number of parties are likely to be similar to each other and that multiple party ID should therefore not be surprising (Weisberg 1999). To tackle this problem, Schickler and Green (1997) as well as Garry (2007) propose some refinements in the way that partisanship is measured in multiparty systems. These refinements include party-by-party measures of party ID and positive as well as negative party ID.

A third set of complications arises when we replicate US studies of macropartisanship and its relation to presidential approval and consumer confidence. In these US ' studies, macropartisanship is defined as the number of Democrat identifiers divided by the sum of Democrat and Republican identifiers. Presidential approval is defined as the percentage of respondents who approve of the way the president is handling his job. However, the conventional operationalization of these concepts might not be appropriate once we move outside the US party system. A key explanatory variable, presidential approval, as well as macropartisanship itself have to be redefined.

As multiparty systems often induce coalition governments, government approval ratings are not as clearly attributable to a specific party as they are in the US. If we want the same level of precision as in US studies that relate partisanship to presidential approval, we need approval ratings for every party (in government and in opposition). Unfortunately, these data are often not available, and they are not available in Germany, the country we focus on.

It is not obvious how to translate the specification of macropartisanship used in US studies to multiparty systems. If we define macropartisanship party-by-party (the number of party x- identifiers divided by the total number of party identifiers), we need as many analyses as there are parties. We cannot express the party ID share of all parties in a single number, contrary to US ' studies. In the US, we know that the Republicans' share is .6 if the Democrats' share is .4 and we disregard independents. Furthermore, the US approach is ill suited for countries in which the number of parties varies over time. If a party dissolves for example, the share of the remaining parties will increase (ceteris paribus).

An alternative operationalization of macropartisanship focuses on the two largest parties and discards the identifiers of other parties. This approach only makes sense if there are two parties that dominate all others.

In this paper, we define macropartisanship in two different ways. Similar to the studies of US macropartisanship discussed above, we discard the respondents who do not identify with any party in both approaches. In our first approach we focus on the two largest parties. In Germany these are the CDU and SPD.[2] In this approach, we discard all non-CDU-non-SPD identifiers, and treat the German political system as a two-party system. We define macropartisanship at time t ($MP1_t$) as the ratio of CDU-identifiers to the sum of all CDU and SPD-identifiers. As all coalitions in the period studied were led by one of these two parties, we believe that the data on government approval are closely connected to the voters' approval of the CDU or SPD members in government.

$$\text{MP1}_t = \frac{\#\ \text{CDU-identifiers}_t}{\#\ \text{CDU-identifiers}_t\ +\ \#\ \text{SPD-identifiers}_t}$$

In the second approach, we define macropartisanship at time t $(MP2_t)$ as the proportion of all party identifiers who identify with a specific party. This operationalization requires as many variables for macropartisanship as there are parties. An advantage of this method is that we can estimate the effects of short term forces on party ID for all parties separately.

$$\text{MP2}_{it} = \frac{\#\ \text{identifiers party i}}{\displaystyle\sum_{i=1}^{n} \#\ \text{identifiers party i}}, \quad \text{where n is the number of parties in the political system.}$$

Both manners of operationalizing macropartisanship in the German context have their advantages and disadvantages. The first approach, while it ignores some fundamental aspects of German politics, has the advantage that the relationship between party ID and government approval is not blurred by the fortunes of coalition partners. Furthermore, Figure 1 shows that the CDU and the SPD make up the lion's share of German party identifiers. So discarding voters who identify with another party may not be that much of a problem. In the Figure, the various lines represent the parties' shares of party identifiers. PDS stands for Partei des Demokratischen Sozialismus.

— Figure 1 about here —

If we were to study the stability of party ID as such, rather than its relationship with consumer confidence and government approval, the second approach would be the most suitable. This approach has the advantage that shifts in partisanship from the two main parties to smaller parties (and vice versa) are not overlooked. However, problems then arise when we model partisanship as a function of (consumer confidence and) government approval. Ideally, we would isolate the part of government approval that appertains to the coalition

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party in question. The rising popularity of an FDP-minister, for example, might translate into a rise in government approval as well as a decline in CDU-partisanship. Furthermore, it is far from unthinkable that we see a rise in government approval while the popularity of a minor coalition partner falls.

3 Data

We use data from monthly telephone surveys conducted by Forschungsgruppe Wahlen Mannheim over the period 1977-2005.[3] Until 1989, these surveys were conducted in the former West-Germany, excluding West-Berlin. From 1990 onwards, West-Berlin and the former East-Germany were included in the sample. Because the number of observations varied considerably over the sample period, we aggregated the monthly data into quarterly data. As a result, measurement error can be considered a secondary concern. The number of quarterly observations varied between 962 and 6414. The mean number of observations is 3224, and the standard deviation is 788.

The party ID variables are based on the following survey question: 'In Germany, a lot of people tend to lean towards a particular party for a long time, although they vote for another party now and then. Generally speaking, do you tend to lean towards a particular party? If yes, which one?'[4]

The series on government approval is based on the following survey question: 'Are you rather happy or rather unhappy with what the current government has done so far?' Respondents were asked to answer this question on a scale from +5 (very happy) to -5 (very unhappy). The variable government approval is the mean of the respondents' answers.

The series on consumer confidence is based on four different survey questions. In the surveys, the respondents were asked to evaluate Germany's current economic situation, Germany's economic situation the following year, their own current economic situation and their own economic situation the following year. All evaluations were expressed on a scale from 1 to 5. The variable consumer confidence was constructed by taking the mean of these four numbers. If some of the data were missing, we took the mean of the available values. Our specification is similar to that of the Consumer Confidence Index (CCI) and the University of Michigan Index of Consumer Sentiment (ICS). The latter index was used by MacKuen et al. (1989).[56]

4 The dynamics of macropartisanship

In this section we describe the common movements in macropartisanship, government approval and consumer confidence. We derive a prima facie chronological relationship between these variables, and assess the validity of our hypotheses using Granger causality tests. We then move on to the internal dynamics of macropartisanship, which we describe following the Box-Jenkins approach.

In this section we follow our first approach to macropartisanship only. That is, we focus on the two largest parties. The reason for this is twofold. First, this approach facilitates the

comparison with previous US ' studies (e.g. MacKuen et al. (1989), Green et al. (1998)). Second, when we want to examine the chronological relationship between government approval and macropartisanship, it is important that approval ratings are attributable to the party in question.

4.1 Movements in consumer confidence, government approval and macropartisanship

The sample period (1977-2007) covers ten coalition governments, of which four were led by the SPD and six by the CDU. Figure 2 traces the relative partisanship of the governing party (i.e. the proportion of party identifiers that support the Chancellor's party) along with consumer confidence and government approval. In the Figure, the values of consumer confidence and government approval are standardized (left scales). The shares of all identifiers who identify with the governing party (SPD under the Schmidt and Schröder governments and CDU under the Kohl and Merkel governments) can be found on the right scales. To get a clear view of the common movements, all series have been smoothed by taking a simple three-quarter moving average (MA), the average of the preceding, current and following quarter, as was done by MacKuen et al. (1989). Prima facie, the Figure above reveals that the relationship between the variables has the chronological order suggested by MacKuen et al. (1989). Movements in consumer confidence seem to precede changes in government approval, which in turn precede changes in partisanship. This relationship seems most pronounced for the Kohl governments.

— Figure 2 about here —

An external event we should take into account in our analysis is the fall of the Berlin wall and the reunification of Germany. This event might have influenced the partisan balance,

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approval ratings and consumer sentiment in the short run. Furthermore, we should consider that the structural relationship between the variables of interest may have changed at the time of reunification. For these reasons, we duplicated our analysis using the subsample of the former West Germany, which did not alter the results significantly. We also tested (using the full sample) whether there was a structural break at the time of reunification using Chow tests (Chow, 1960). A Chow test examines whether regression coefficients are significantly different in two subsamples (pre- and post-unification). All so-called Chow tests rejected the hypothesis of a structural break.

Before we analyze this apparent relationship quantitatively, we formally test whether variations in consumer confidence and government approval cause (or rather 'Granger-cause') variations in macropartisanship. Granger causality tests assess the joint significance of lagged values of a variable in a regression that includes lagged values of the dependent variable (Granger, 1969). We conduct these tests because we want to be confident that our regressors are not endogenous. As noted by van der Eijk and Franklin (2007) people's assessment of the state of the economy can be caused by rather than cause party ID. That is, people who identify with the governing (opposition) party will overestimate (underestimate) the quality of economic policy. The results are displayed in Table 1. In this Table, C, A and M stand for government approval, macropartisanship and consumer confidence, respectively. The implication mark $\Rightarrow$ means 'Granger causes'. The reported values are p-values for the F-statistics of joint significance of the lagged values of the independent variable.

— Table 1 about here —

The chronological relationship between consumer confidence and government is clear. The value in the upper left (0.0205) is smaller than 0.1, and thus indicate that the first lag of consumer confidence contains information about the current value of government approval, over and above the information contained in the lagged value of government approval. In

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the opposite chronological order, we find no evidence for such a relationship (0.5395 > 0.1). The same holds for the relationship between consumer confidence and macropartisanship.

The chronological relationship between government approval and macropartisanship is more ambiguous. The first three lags of both variables contain information about the current value of the other variable, over and above the information contained in the lagged value of this other variable. However, if we include four lags, the significance disappears in one chronological specification. The Granger tests thus indicate that changes in government approval precede changes in macropartisanship.

We conclude from the Granger tests that there is strong evidence for the order of causality suggested above. Changes in consumer confidence do indeed precede changes in government approval and macropartisanship, and that changes in government approval precede changes in macropartisanship. Before we examine whether the inclusion of control variables affects the results, we will take a look at the internal dynamics of our dependent variable.

4.2   The internal dynamics of macropartisanship

In this section, we will explore the dynamic structure of macropartisanship by examining how current values depend on past values. The objective is to statistically assess the stability of the partisan balance.

Like any other time series, macropartisanship may have an internal structure, such as autocorrelation, seasonal variation or a trend, that should be taken into account. If the dependent and (some) independent variables have a similar autoregressive structure, we may find substantial correlation even if the variables are in fact independent. Therefore, if we want to avoid biased regression coefficients in our macropartisanship models, we have

to include the lags of macropartisanship that shape its current value. We will use a Box-Jenkins approach to uncover the dynamic characteristics of macropartisanship (Box and Jenkins, 1970).

Our first step is to plot the correlations between macropartisanship at time t and t-k. This autocorrelogram of macropartisanship is presented in Figure 3. The shape of the autocorrelogram indicates which kind of autoregressive moving average (ARMA) model might be appropriate. In this case, the rapidly declining autocorrelations suggest an autoregressive model. Figure 4 presents the so-called partial autocorrellogram, which graphs the correlation of macropartisanship between time t and t-k that is not accounted for by lags 1 through k-1. Partial autocorrelatograms are useful in identifying the order of an autoregressive model. The partial autocorrelation of an AR(p) process is zero at lag p+1 and greater. In the Figures below, (partial) autocorrelations are significant if they are not in the shaded area. The lack of significant partial autocorrelations at lags 2 and higher indicates that the order of the autoregressive component does not exceed one.

— Figure 3 about here —

— Figure 4 about here —

Next, we examine whether the AR(1) model we identified above outperforms other ARMA models. Although there is no waterproof procedure to identify the best model, a frequently used test consists of comparing the values of 'information criteria' of several models. Information criteria are statistics that express which model fits the data best, taking the risk of overfitting into account. Lower values indicate better measures. We will use two common criteria, the Akaike Information Criterion (AIC) (Akaike 1974) and the Bayesian Information Criterion (BIC) (Schwarz 1978). Both criteria are relative measures of the information lost when a given model is used to describe reality. The AIC penalizes including additional

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variables less strongly than the BIC, and has theoretical advantages over the BIC (Burnham and Anderson 2002, Yang 2005). Both criteria indicate that the AR(1) model is better than alternative ARMA models.

— Table 2 about here —

The regression results of the AR(1) model are presented in Table 3. The parameter of interest in this model is the coefficient on lagged macropartisanship. We find this coefficient to be 0.739 (the standard error is 0.067), which means that macropartisanship is mean-reverting in a gradual manner.[7] If macropartisanship is one unit above its long term mean today, it will be $.73^4 = .28$ units above its long-term mean next year. When we compare our estimates with those of US ' macropartisanship, we see that the ARMA structure is similar, as could be expected. However, the rate at which macropartisanship reverts to its mean is (a lot) higher in Germany. Green et al.(1998) estimate an AR(1) coefficient of .95, using quarterly data. This means that if macropartisanship is one unit above its mean today, it will be $.95^4 = .81$ units above its long-term mean next year.

— Table 3 about here —

5 The effects of short-term forces on macropartisanship

In this section, we quantify the relations between government approval, consumer confidence and macropartisanship. We start by assessing the impact of these short term forces on the balance between CDU and SPD-identifiers. This is our first approach. We then replicate

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this analysis on a party-by-party basis. This second approach allows us to investigate which parties are most affected by movements in short-term variables such as consumer confidence and government approval. In the appendix, we present impulse functions that allow us to examine how long it takes for the impact of a shock in consumer confidence or government approval on macropartisanship to die out.

5.1   First approach: Germany as a two-party system

MacKuen et al. (1989) model macropartisanship as a function of consumer confidence and presidential approval. They include an extensive set of control variables in their regressions, such as administration dummies, inauguration dummies and event (e.g. Watergate) dummies. Green et al. (1998) criticize the inclusion of this extensive set, arguing that it 'risks overfitting the model and undercutting the apparent autoregressive character of macropartisanship'. In our analysis, we will restrict control variables to Chancellor dummies and inauguration dummies.[8]

Another remarkable feature of MacKuen et al.'s analysis is the way in which they operationalize presidential approval. They first model presidential approval as a function of consumer confidence, historical events and administration dummies. They then use these estimates to 'purge approval of the variance attributable to consumer sentiment', i.e. they construct a new variable 'political approval' that equals presidential approval minus 0.29 (the coefficient of consumer confidence in their presidential approval model) times consumer confidence. For the sake of comparability, we will also consider a political approval variable.

Specifically, we estimate the effect of consumer confidence at time t-1 ($Con.Conf._{t-1}$) on government approval at time t($Gov.App._t$) as follows:

$$Gov.App._t = \beta_0 + \beta_1 Gov.App._{t-1} + \beta_2 Con.Conf_{t-1} + \gamma X_t + \varepsilon_t,$$

where X_t is a vector of control dummies, the $\beta's$ and $\gamma's$ are regression coefficients, and ε_t is the error term. The control dummies are the aforementioned coalition and inauguration dummies.

The results of this regression are summarized in Table 4. Lagged consumer confidence and lagged approval are both highly significant. Following MacKuen et al. (1989), we generate a new variable 'political approval' ($Pol.App._t$) based on these estimates. This variable is identified as follows:

$$Pol.App._t = Gov.App._t - \beta_2 Con.Conf._{t-1}$$

— Table 4 about here —

Following Green et al. (1998), we estimate three different models of macropartisanship.[9] The results of these models can be found in Table 5. At times when the CDU was part of the opposition, the values of consumer confidence and government approval were multiplied by -1. Our first model of macropartisanship regresses macropartisanship on its lagged value, lagged consumer confidence and control variables. Similar to the US studies, lagged consumer confidence has a positive and significant effect on macropartisanship.

— Table 5 about here —

The second model adds lagged government approval. This variable has no significant effect on macropartisanship. Furthermore, consumer confidence is no longer individually significant. Both lagged variables remain jointly significant at the 5 percent level however.[10]

The third model replaces government approval by political approval. The latter has no significant effect on macropartisanship. Consumer confidence remains significant and its effect is of similar magnitude as in the first model.

In general, we can conclude that the German data are consistent with the thesis of MacKuen et al. (1989) that macropartisanship is partially determined by short term forces such as consumer confidence and government approval. The coefficient of consumer confidence is individually significant in the first and third model. This significance disappears when we add government approval, even though the coefficients are jointly significant.

5.2   Second approach: party-by-party macropartisanship

In this section, we re-examine the effects of short term forces on the partisan balance on a party-by-party basis. We focus on those parties that were part of a coalition government during the sample period. These are CDU, SPD, FDP and Bündnis 90/Die Grünen (Grünen). For each party, we examine whether their shares of party identifiers are influenced by government approval and consumer confidence. For each of the regressions below, the values of government approval and consumer confidence have been multiplied by -1 whenever the party in question was not part of the coalition government. For each party, we regress the party's share of the party identifiers on lagged government approval (model 1), lagged consumer confidence (model 2), and both lagged government approval and lagged consumer confidence (model 3). In all models, we include the lagged value of the dependent variable as a regressor.[11]

Table 6 contains the results for the SPD. As expected, government approval has a positive effect on SPD-partisanship when the SPD is part of the governing coalition, and a negative effect otherwise (model 1). The same applies when we examine the effects of consumer confidence (model 2). When both independent variables are included in the regression, only

the effect of consumer confidence remains significant. This could indicate that in the short term, SPD-identification is only affected by those policies that affect the economic climate.

— Table 6 about here —

The results of our three models of CDU-macropartisanship are displayed in Table 7. Government approval seems to have a highly significant and rather strong effect on the relative number of CDU-identifiers. Consumer confidence however, has no significant effect. This could indicate that CDU-identifiers respond to the performance of current political leaders in general, regardless of the economic climate.

— Table 7 about here —

In Table 8, the results of the models of FDP-macropartisanship are presented. As in the models of SPD-macropartisanship, both independent variables are highly significant when we include them separately (models 1 and 2), and only consumer confidence remains individually significant in model 3. The coefficients are smaller than those in our SPD-models. However, taking into account that the mean FDP-share of all identifiers is almost ten times smaller than the mean SPD-share, we can say that FDP-identifiers are more responsive to changes in government approval and consumer confidence. This is in line with the findings of Lohmann, Brady and Rivers (1997), who study the effects of German GNP growth rates on vote shares in the period 1961-1989. They find that of all parties, the FDP's vote share is most affected by retrospective voting.

— Table 8 about here —

Finally, the results of our models for the Grünen are presented in Table 9. None of the models produce significant coefficients for lagged consumer confidence or lagged government

approval. This indicates that citizens do not identify with the Grünen because of the current economic and political climate, as we would expect for an environmental party.

— Table 9 about here —

6 Conclusions

In this paper, we studied party identification in Germany, and how it has evolved in the past thirty years. Specifically, we analyzed the impact of consumer confidence and government approval on party identification. We conclude that in general, rises in consumer confidence and government approval do indeed lead to increases in identification with the main governing party. Our results thus confirm MacKuen et al.'s (1989) thesis that aggregate party ID is not stable, but changes in response to movements in consumer confidence and government approval.

Since coalition governments cloud the relationship between government approval ratings and the partisan balance, we specified macropartisanship in two different ways. In our first approach, we defined macropartisanship as the partisan balance between the two main German parties. In our second approach, we specified macropartisanship party-by-party. When we look at the partisan balance between CDU and SPD, we observe that rises in consumer confidence shift the partisan balance in favor of the governing party. The same holds for government approval. When we include both variables in our model, their coefficients are individually insignificant, even though they remain jointly significant at the 5% level. When we look at each of the parties separately, the effects of consumer confidence and government approval remain significant for the SPD and the Freie Demokratische Partei (FDP). For the CDU, only the effect of government approval is significant. Of all the citizens who identify

with one of the four main parties, the FDP-identifiers seem to be the most responsive to changes in consumer confidence and government approval.

7   Appendix: Impulse Response Functions

The impulse response functions presented below describe how partisanship of a particular party reacts over time to an exogenous shock. The impact of a shock in consumer confidence or government approval on partisanship might be distributed over time. The impulse response functions are constructed from the estimates of a vector autoregression (VAR) model that relates consumer confidence and government approval to macropartisanship. The models include two lags of macropartisanship and two lags of either consumer confidence or government approval.

We assume that all variables are on their long-term mean prior to period 0. In period 0, an exogenous shock results in a one standard deviation increase in consumer confidence or government approval. The impact of this shock on the values of macropartisanship in periods 1 to 10 is illustrated in Figures 5 through 7. We will only discuss the variables of which we found significant results in the models we estimated.

Figure 5 presents the impact of a shock in government approval on the partisan share of the CDU. We can see that this impact is largest in period 1 and that the effects of the shock die out slowly.

— Figure 5 about here —

The effects of a shock in consumer confidence or government approval on SPD partisanship is depicted in Figure 6. We see that consumer confidence has a small negative impact in period 1 and a positive impact thereafter. The effect of a shock in government approval is reaches its maximum in period 7.

— Figure 6 about here —

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The impulse response functions of consumer confidence and government approval on FDP-partisanship are presented in Figure 7. Government approval has a small negative effect in period 1, and a positive impact thereafter. The effects of a shock in consumer confidence are positive and die out slowly.

— Figure 7 about here —

Notes

[1] see Campbell et al. (1960), and Miller (1991).

[2] In this paper, we treat the Christlich Demokratische Union (CDU) and the Christlich Soziale Union (CSU) as a single party. We refer to this party as CDU.

[3] The data are available at the Zentralarchiv für Empirische Sozialforschung of the University of Köln, or via zacat.gesis.org.

[4] In German: "In der Bundesrepublik/Deutschland neigen viele Leute längere Zeit einer bestimmten politischen Partei zu, obwohl sie auch ab und zu eine andere Partei wählen. Wie ist das bei Ihnen: Neigen Sie - ganz allgemein gesprochen - einer bestimmten Partei zu? Wenn ja, welcher?"

[5] The CCI is based on the data from a monthly survey of 5000 US households. The survey consists of five questions on the following topics: i) current business conditions, ii) business conditions for the next six months, iii) current employment conditions, iv) employment conditions for the next six months, v) total family income for the next six months. After all surveys are collected, each question's positive responses are divided by the sum of its positive and negative responses.

[6] The ICS is based on a monthly telephone survey of US households. The Index is aggregated from five questions on the following topics: i) personal financial situation now and a year ago, ii) personal financial situation one year from now, iii) overall financial condition of business for the next twelve months, iv) overall financial condition of business for the next five years, v) current attitude toward buying major household items.

[7] Macropartisanship is mean-reverting because the coefficient on its first lag is smaller than one. If this coefficient were (close to) one it would be a random walk. Coefficients larger than one induce "exploding series". In our model, the latter two cases do not occur, as macropartisanship is bound between 0 and 1.

[8]In all regressions below, we discarded the observations of the dependent variable in the first quarter a Chancellor takes office. The reason for this is that we would otherwise regress the partisan share of a new Chancellor's party on government approval of the previous Chancellor's government.

[9]The exact form of these models is as follows:

Model 1: $MP1_t = \beta_0 + \beta_1 MP1_{t-1} + \beta_2 Cons.Con_{t-1} + \beta_3 Kohl + \beta_4 Schröder + \beta_5 Merkel + \varepsilon$

Model 2: $MP1_t = \beta_0 + \beta_1 MP1_{t-1} + \beta_2 Cons.Con_{t-1} + \beta_3 Gov.Appr_{t-1}. + \beta_4 Kohl + \beta_5 Schröder + \beta_6 Merkel + \varepsilon$

Model 3: $MP1_t = \beta_0 + \beta_1 MP1_{t-1} + \beta_2 Cons.Con_{t-1} + \beta_3 Pol.Appr_{t-1}. + \beta_4 Kohl + \beta_5 Schröder + \beta_6 Merkel + \varepsilon$

[10]The $F_{(2,86)}$-value is 3.73. The corresponding p-value is 0.0280.

[11]We also ran the regressions including political approval as an independent variable. The results of these regressions were similar.

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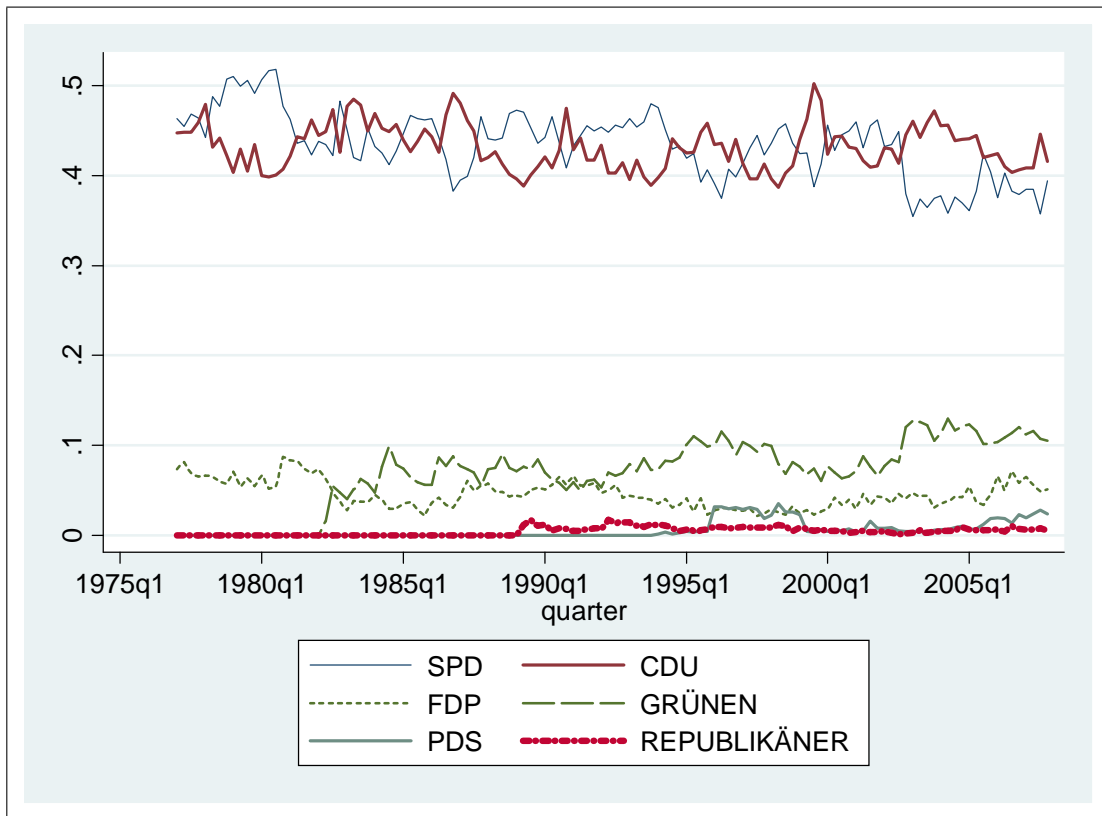Figure 1: The evolution of party ID in Germany.

Figure 2: Movements in Consumer Confidence, Government Approval and Macropartisan-ship.
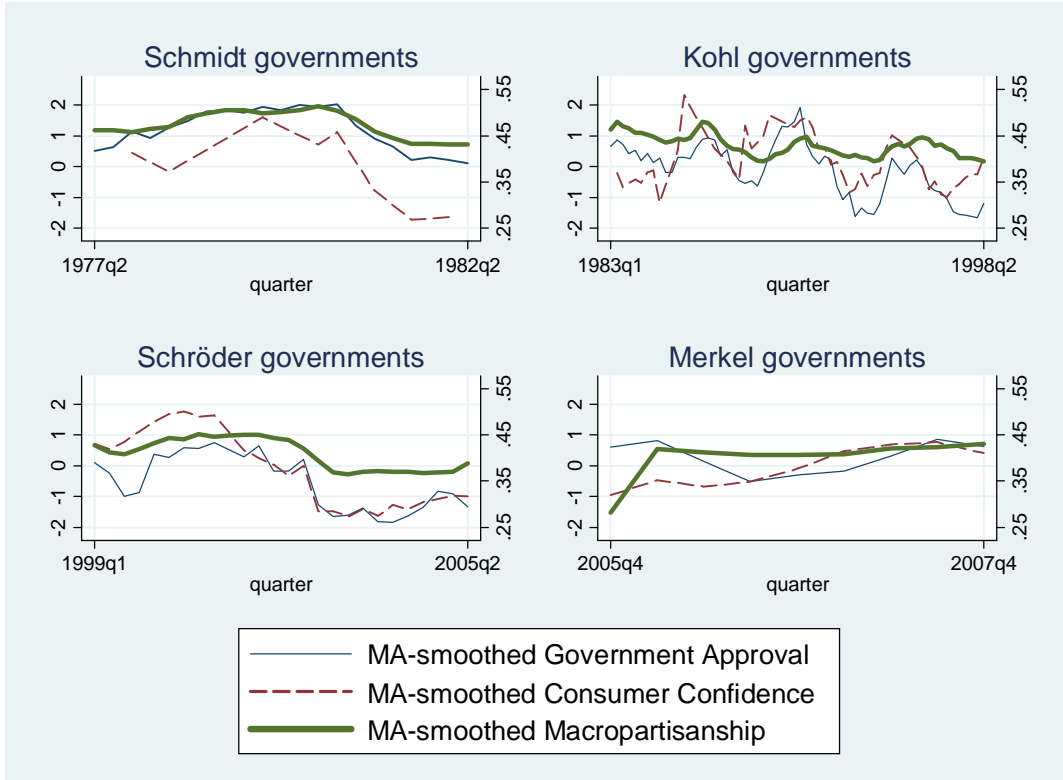

Table 1: Granger causality tests.

	$C \Rightarrow A$	$A \Rightarrow C$	$C \Rightarrow M$	$M \Rightarrow C$	$A \Rightarrow M$	$M \Rightarrow A$
1 lag	0.0205	0.5395	0.0934	0.2972	0.0019	0.0315
2 lags	0.1177	0.4268	0.2436	0.4723	0.0101	0.0326
3 lags	0.2908	0.6585	0.3655	0.7535	0.0038	0.0306
4 lags	0.3990	0.7268	0.3184	0.9137	0.0114	0.1018

Table 2: Akaike and Bayes Information Criteria.

	AIC	BIC
ARMA(1,0)	-606.27	-597.81
ARMA(1,1)	-604.83	-593.55
ARMA(2,0)	-604.74	-593.46
ARMA(2,1)	-602.87	-588.77

Figure 3: Autocorrellogram of Macropartisanship.

Bartlett's formula for MA(q) 95% confidence bands
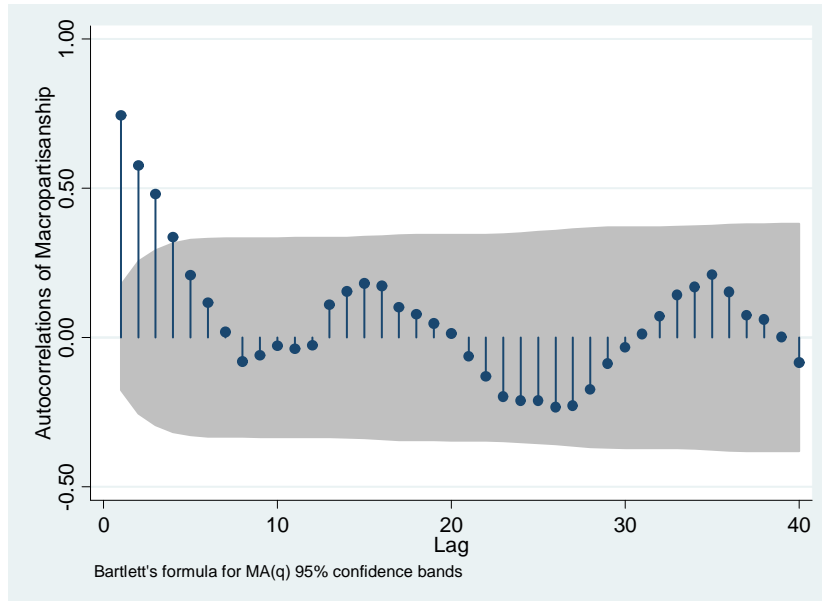
Figure 4: Partial Autocorrellogram of Macropartisanship.

95% Confidence bands [se = 1/sqrt(n)]
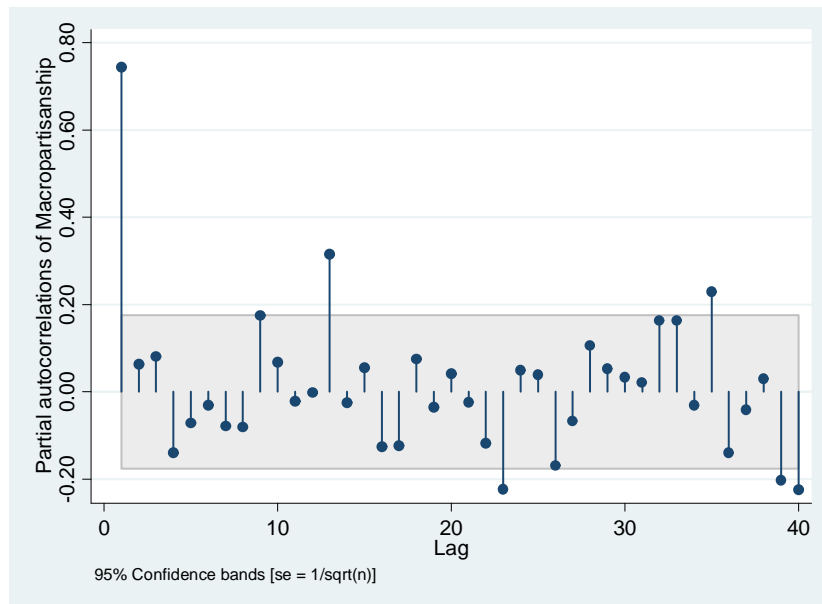
Figure 5: Impulse response function CDU.

Graphs by irfname, impulse variable, and response variable
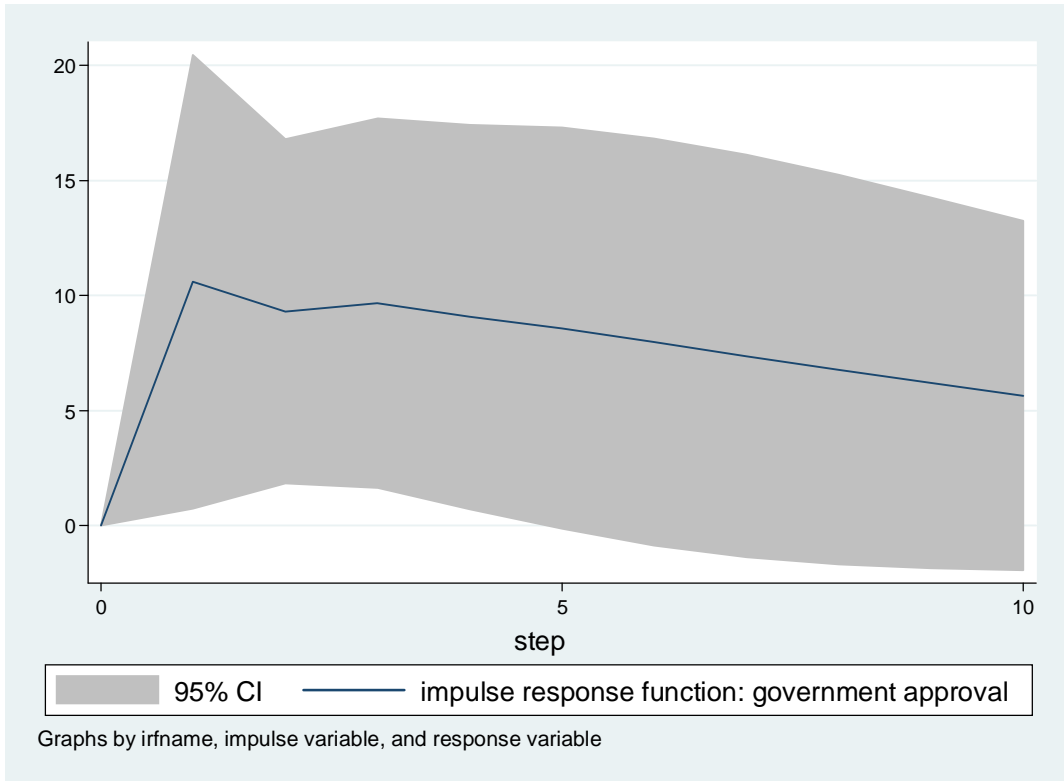
Figure 6: Impulse response functions SPD.

30
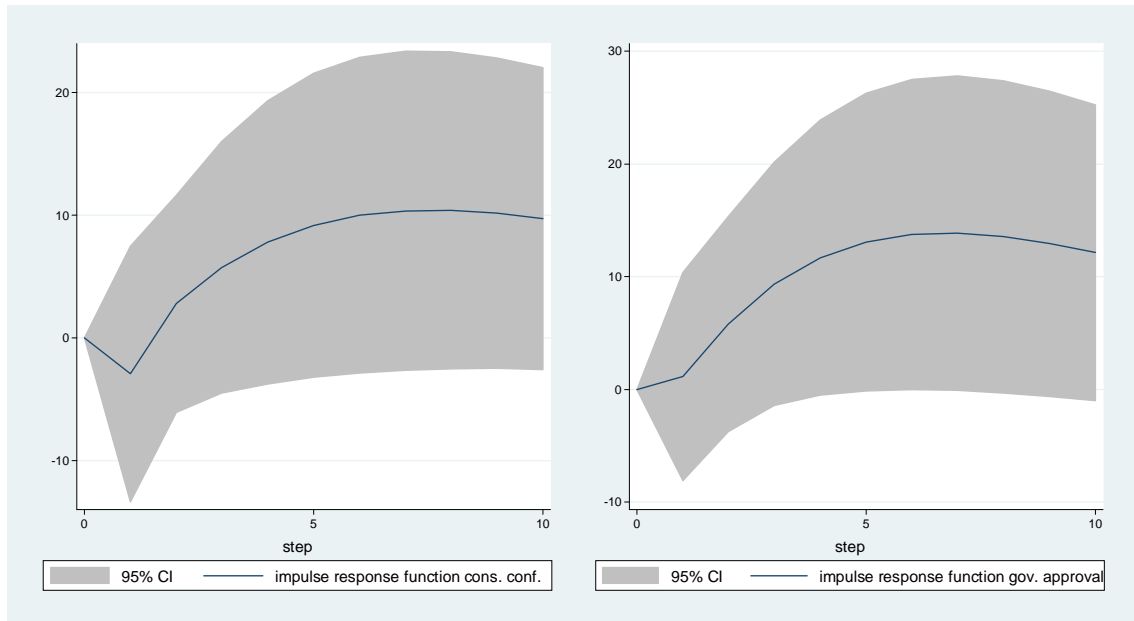
Figure 7: Impulse response functions FDP.
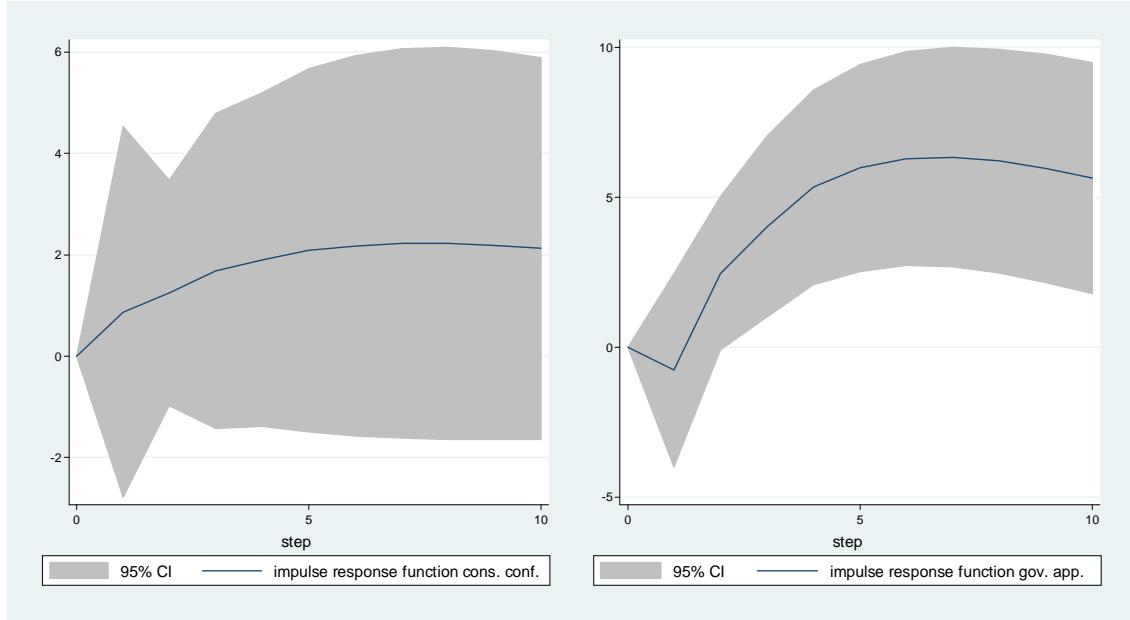
Table 3: AR(1) model of Macropartisanship.

	Coeff.	p-value
Constant	0.499***	0.000
ARMA		
Lagged Macropartisanship	0.739***	0.000
sigma		
Constant	0.020***	0.000
Observations	124	

Table 4: Government Approval.

	Coeff.	p-value
L.Government Approval	0.668***	0.000
L.Consumer Confidence	0.196***	0.001
Merkel	0.000**	0.009
Schroeder	-0.000	0.613
Schmidt	0.000*	0.015
Constant	-0.000**	0.005
Observations	93	
R^2	0.815	
Adjusted R^2	0.804	

Table 5: Macropartisanship models: First approach.

	model 1		model 2		model 3	
	coeff.	p-value	coeff.	p-value	coeff.	p-value
L.Macropartisanship	0.633***	0.000	0.545***	0.000	0.590***	0.000
L.Consumer Conf.	5.049**	0.024	2.842	0.288	5.077**	0.039
L.Gov. Approval			5.583	0.152		
L.Political Approval					0.016	0.996
Merkel	0.002	0.824	-0.002	0.846	0.005	0.799
Schroeder	0.003	0.723	-0.002	0.829	0.006	0.767
Kohl	-0.010	0.201	-0.013	0.104	-0.011	0.602
Constant	0.189***	0.000	0.238***	0.000	0.208***	0.000
Observations	93		93		76	
R^2	0.624		0.632		0.649	
Adjusted R^2	0.602		0.607		0.619	

Table 6: Macropartisanship models: SPD.

	model 1		model 2		model 3	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
L.Rel. Pship SPD	0.665***	0.000	0.668***	0.000	0.654***	0.000
L.Gov. Approval	5.716**	0.020			1.675	0.595
Merkel	-0.024***	0.009	-0.016	0.147	-0.016	0.164
Schroeder	-0.012*	0.080	-0.008	0.344	-0.007	0.494
Kohl	-0.005	0.392	0.003	0.681	0.004	0.603
L.Consumer Conf.			6.039***	0.006	5.257**	0.047
Constant	0.150***	0.000	0.143***	0.000	0.147***	0.000
Observations	120		93		93	
R^2	0.758		0.744		0.745	
Adjusted R^2	0.747		0.729		0.727	

Table 7: Macropartisanship models: CDU.

	model 1		model 2		model 3	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
L.Rel. Pship CDU	0.479***	0.000	0.645***	0.000	0.416***	0.001
L.Gov. Approval	8.681***	0.001			10.605**	0.017
Merkel	-0.023***	0.009	-0.018**	0.041	-0.036***	0.002
Schroeder	-0.009	0.162	-0.007	0.341	-0.021**	0.024
Kohl	-0.012**	0.021	-0.015**	0.024	-0.025***	0.002
L.Consumer Conf.			2.462	0.205	-2.378	0.387
Constant	0.236***	0.000	0.165***	0.000	0.276***	0.000
Observations	120		93		93	
R^2	0.537		0.532		0.563	
Adjusted R^2	0.517		0.506		0.532	

Table 8: Macropartisanship models: FDP.

	model 1		model 2		model 3	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
L.Rel. Pship FDP	0.578***	0.000	0.549***	0.000	0.542***	0.000
L.Gov. Approval	2.750***	0.003			0.739	0.561
Merkel	0.001	0.725	-0.005	0.248	-0.004	0.408
Schroeder	-0.009***	0.004	-0.014***	0.001	-0.013***	0.001
Kohl	-0.007**	0.016	-0.014***	0.000	-0.013***	0.002
L.Consumer Conf.			2.292***	0.009	1.894*	0.087
Constant	0.024***	0.000	0.031***	0.000	0.030***	0.000
Observations	120		93		93	
R^2	0.728		0.698		0.699	
Adjusted R^2	0.716		0.681		0.678	

Table 9: Macropartisanship models: Grünen.

	model 1		model 2		model 3	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
L.Rel. Pship GRÜNE	0.834***	0.000	0.785***	0.000	0.781***	0.000
L.Gov. Approval	0.727	0.543			0.380	0.834
Merkel	0.015**	0.045	0.022**	0.013	0.022**	0.013
Schroeder	0.013**	0.029	0.019***	0.010	0.019***	0.010
Kohl	0.009*	0.074	0.016**	0.012	0.016**	0.017
L.Consumer Conf.			-1.488	0.218	-1.720	0.296
Constant	0.003	0.197	0.002	0.588	0.003	0.568
Observations	120		93		93	
R^2	0.922		0.892		0.892	
Adjusted R^2	0.919		0.885		0.884	