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# The Effect of Elections on Consumer Confidence in Europe

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# The Effect of Elections on Consumer Confidence in Europe

Bertrand Marc and Andreas Reuter

## Abstract

In line with the growing prominence of consumer confidence as a leading indicator of economic activity, a body of literature has built up which aims to explain its drivers. While all studies seem to agree that consumer confidence can be partially explained by variables reflecting economic fundamentals, there is less agreement on the role played by potentially relevant, non-economic events. This paper focusses on the effect of elections. Considering that they occur regularly they pose a repetitive challenge to analysts and forecasters eager to distil the right signals from the data.

In this article, we analyse the impact of elections on consumer confidence in a selection of EU Member States, using error correction models, which control for a variety of relevant background variables. Proxying consumer confidence by data from the Joint Harmonised EU Programme of Business and Consumer Surveys, our analysis allows for a high degree of cross-country comparability.

The presented results show elections in Austria, France and Germany to have a significant, positive effect on consumers' expectations regarding the general economic situation. The estimated cumulative effect on the level of the indicator from the beginning of the election period to the actual election (or month thereafter) is far from negligible, close to 1.0 standard deviation of the level of the dependent variable. The time it takes for the effect to build up differs across countries, with results ranging between four and nine months. In Belgium, by contrast, the results of our analysis do not provide indications of any kind of election effect on consumer expectations.

**JEL Classification:** E71, E32, C22.

**Keywords:** Effect of elections, consumer confidence, Europe, Marc, Reuter, expectations, Business and consumer surveys.

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# CONTENTS

- 1. Introduction and motivation ..... 5
  - 1.1. The available literature on election effects ..... 5
  - 1.2. The contribution of the present article ..... 6
- 2. The Empirical Framework ..... 7
  - 2.1. The dependent variable ..... 7
  - 2.2. The model ..... 9
  - 2.3. Long-run drivers of consumers' expectations ..... 9
  - 2.4. Short-run drivers of consumers' expectations ..... 10
  - 2.5. The construction of election dummies ..... 11
- 3. Results ..... 13
  - 3.1. The long-run drivers of consumer expectations ..... 13
  - 3.2. The effect of elections on expectations ..... 15
  - 3.3. Testing the robustness of the results ..... 17
- 4. Conclusion ..... 18

## LIST OF TABLES

- Table 3.1. Results of error-correction models by country ..... 14
- Table 3.2. Placebo test on election dates ..... 17
- Table A.1. Election dates by country ..... 20
- Table A.2. Results of regressions explaining consumer expectations in levels ..... 22

## LIST OF GRAPHS

- Graph 2.1. Election dummies (Austria) ..... 13
- Graph 3.1. Fitted and actual values in France ..... 16
- Graph 3.2. Fitted and actual values in Germany ..... 17

Graph A.1. Election dummies (Austria).....	23
Graph A.2. Consumer survey questions in Germany.....	24
Graph A.3. Consumer survey questions in France .....	24
Graph A.4. Consumer survey questions in Austria.....	25
Graph A.5. Consumer survey questions in Belgium .....	25
Graph A.6. Consumer survey questions in the Netherlands.....	26
Graph A.7. Consumer survey questions in Spain.....	26
Graph A.8. Consumer survey questions in Italy .....	27
Graph A.9. Consumer survey questions in the United-Kingdom.....	27
Graph A.10. Cumulated election effect in Germany.....	28
Graph A.11. Cumulated election effect in France.....	28
Graph A.12. Cumulated election effect in Austria .....	29
Graph A.13. Cumulated election effect in Spain .....	29
Graph A.14. Cumulated election effect in the Netherlands .....	30
REFERENCES.....	19
ANNEX I .....	20
ANNEX II .....	22
ANNEX III.....	24
ANNEX IV.....	28

# 1. INTRODUCTION AND MOTIVATION

Consumer confidence indicators receive close attention from economic/financial analysts, as well as policy-makers eager to get early indications of the future development of private consumption. Although there is no scarcity of other variables influencing consumption (e.g. income or wealth), consumer confidence <sup>(1)</sup> has come to be accepted as an additional, complementary element <sup>(2)</sup>, which is evidenced not least by the increasing number of consumer surveys conducted all over the world.

In line with the growing prominence of consumer confidence as a leading indicator of economic activity, a body of literature has built up which aims to explain its drivers. While all studies seem to agree that consumer confidence can be partially explained by variables reflecting economic fundamentals <sup>(3)</sup>, such as GDP growth, purchasing power growth or inflation rates, there is less agreement on the role played by potentially relevant, non-economic events, such as terror attacks <sup>(4)</sup> or elections. We argue that users of survey data stand to gain most from a better understanding of the link between survey data and elections. After all, the latter occur regularly and thus pose a repeated challenge to analysts and forecasters eager to distil the right signals from the data.

There are two main conceivable types of election effects: first of all, with the run-up to elections usually characterised by abundant media coverage of the election campaigns and their promises of a better future, elections have the potential to trigger hopes and optimism among citizens, which translate into (at least temporarily) more upbeat confidence levels. On the other hand, the ex-ante unknown outcome of elections and/or the intricacies involved in the subsequent government formation might also create uncertainties with possible negative effects on opinion survey data both prior to and after the election day.

## 1.1. THE AVAILABLE LITERATURE ON ELECTION EFFECTS

The available research on the effect of elections on consumer surveys is rather limited. Most of the few existing studies have in common that they try to empirically explain consumer confidence (in simple regression or error correction models) by a mix of variables capturing economic fundamentals, as well as dummy variables representing the occurrence of elections. Overall, the results are ambiguous.

On the one hand, there are a number of studies identifying a significant positive effect of elections on confidence. The French National Institute of Statistics and Economic Studies (INSEE, 2017) provides evidence of growing consumer confidence among Frenchmen in the month of, as well as the month following presidential/legislative elections. The effect seems to be short-lived though, with the two following months producing commensurate losses in confidence. Also Caleiro et al. (2011) report a

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<sup>(1)</sup> The terms consumer confidence and uncertainty are frequently confounded. While the former refers to the degree of optimism sensed by consumers in respect of future economic developments, the latter captures how certain economic actors are about such guesses. The present paper focusses clearly on consumer confidence.

<sup>(2)</sup> See, for instance, Acemoglu and Scott (1994) who show that consumer confidence is a powerful coincident indicator of private consumption over and above variables reflecting economic fundamentals because they (partially) reflect consumers' income expectations, or Angeletos and La'O (2013), who illustrate how changes in sentiment which are unrelated to economic fundamentals can have a causal effect on the business cycle.

<sup>(3)</sup> See, for instance, Fuhrer (1998) or Praet and Vuchelen (1988).

<sup>(4)</sup> Kollias and Papadamou (2014) identify an effect of domestic terrorism in France and Germany, but fail to do so in Spain and the United Kingdom. Also Garner (2002) and Becker and Rubinstein (2011) cannot distil any clear-cut effect of the 9/11 terror attacks and the 2<sup>nd</sup> Intifada on US and Israel consumer sentiment respectively.

positive effect of elections on the growth rate of consumer confidence, notably in Portugal. The effect is identified in a setting where the relevant election period is defined as stretching from ten months before to one month after the elections.<sup>(5)</sup> Adam (2014) takes a cross-country perspective, analysing the impact of elections by means of a panel analysis on fourteen EU Member States. The results show consumer expectations to grow at increased rates in the month in which elections take place, as well as the following one. The magnitude of the effect is far from negligible, comparable to the impact of a 1.5pp decrease in the unemployment rate. Focussing on the case of Belgium, Vuchelen (1995) draws a distinction between the effect of regular and of snap elections. Furthermore, he does not assume that the prospect of elections alters growth in consumer confidence over a period of several months leading up to the elections, but only at specific points, namely the month where elections are announced, the month where the results get known and the month where a new government is formed. His empirical results suggest that the announcement of elections only has a significant effect on confidence if it comes unexpected. The communication of the election results seems to have no bearing on consumer confidence, while the government formation seems to matter in the sense that changes of government are associated with fading confidence.<sup>(6)</sup> Outside Europe, Suzuki (1992) offers insights into the relation between elections and consumer sentiment in the US. Departing from the political business cycle theory, which assumes that incumbent governments manipulate the economy such that they maximise their chance of re-election, the study inquires whether there is also an election-induced business cycle in consumers' economic expectations. Given the ambition to detect a genuine expectation cycle, the centrepiece of the regressions run by the author is a polynomial, distributed lag of a dummy variable flagging election quarters. The analysis shows that consumers' expectations in respect of their own financial situation and future levels of unemployment, as well as consumer confidence follow a cycle which is strongly influenced by elections, with expectations and confidence peaking in election quarters, while troughing<sup>(7)</sup> in the middle of the electoral period.

The described evidence contrasts with the findings of other probes into the link between consumer confidence and elections, such as the one by de Boef and Kellstedt (2004), which focusses on the US. Departing from an error-correction model using only standard economic variables to explain US confidence, the authors add variables controlling for a multitude of political circumstances (wars, elections, party of the president, approval rates of the president, media coverage of the economy, etc.). In this sophisticated setting, the effect of elections, which is accounted for by a counter rising from 1 to 10 in the months preceding elections and receding to 1 in the following months, is found to be insignificant. Inspired by de Boef and Kellstedt (2004), Bittencourt et al. (2017) apply a similar model to Brazilian consumer confidence. Although testing a number of different election dummies, flagging, respectively, the three/six months before an election, after an election or the first six months of a presidential term, which are hypothesised to be characterised by some sort of a "honeymoon" effect, also they find none of the election dummies to be significant.

## 1.2. THE CONTRIBUTION OF THE PRESENT ARTICLE

The present article aims to complement the existing literature on the effect of elections on consumer confidence by analysing that link for a selection of eight EU Member States. Rather than taking a panel approach (see Adam, 2014) which only allows identifying average effects across Member States, the chosen approach analyses the link between elections and confidence at individual country level. By

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<sup>(5)</sup> In the case of snap elections, the election period considered starts in the first month in which elections were looming.

<sup>(6)</sup> The author hypothesises the finding to be a reflection of the sample considered, which found Belgium in an economically weak condition and new governments forced to continue austerity policies, which voters probably had hoped to be abandoned by new governments.

<sup>(7)</sup> In the case of unemployment expectations the reverse is true, i.e. the fitted values trough in the election quarter and peak in between two elections.



applying the same modelling strategy across all countries and using data gathered by the Joint Harmonised EU Programme of Business and Consumer Surveys, the results allow for a high degree of cross-country comparability. The selection of countries focusses on cases which have, to the authors' best knowledge, never been analysed before in terms of a possible election-confidence nexus (Germany, Italy, Spain, UK, Netherlands, Austria), while it also includes cases where the available analyses are somewhat outdated and could arguably profit from an update (Belgium) or a more refined empirical strategy (France). Finally, a specificity of the present analysis is that it systematically tests for the statistical significance of election effects of varying lengths, thus allowing to complement any finding of elections increasing confidence by some indication of the time it takes for the effect to build up.

In concrete terms, our empirical strategy follows de Boef and Kellstedt (2004), modelling consumer confidence in an error-correction model, which allows controlling for both long-run, as well as short-run drivers of confidence. The pool of variables representing the potential drivers draws from de Boef and Kellstedt (2004), as well as Caleiro et al. (2011) and INSEE (2017). The effect of elections is distilled by means of dummy variables which flag the run-up to, as well as the election month itself.

The rest of the paper is organised as follows: Section 2 provides an overview of the empirical framework used to address the research question, explaining in some detail the rationale underlying the choice of the dependent variable, the model, the set of potential explanatory variables, as well as the type of elections considered throughout the analysis and how the dummy variables flagging the occurrence of elections are constructed. The results are presented in Section 3 and followed by concluding remarks in Section 4.

## 2. THE EMPIRICAL FRAMEWORK

### 2.1. THE DEPENDENT VARIABLE

For our analysis of the effect of elections on consumer confidence, we tap the wealth of data generated by the Joint Harmonised EU Programme of Business and Consumer Surveys (BCS), which provides monthly business and consumer survey data for each EU Member State, according to a common methodology. The most obvious choice for a dependent variable would be the consumer confidence indicator (CCI) of the respective country under examination. The measure is constructed as the weighted average of the balance series<sup>(8)</sup> of four different survey questions inquiring how consumers assess the development, over the next 12 months, of (i) their households' financial situation, (ii) the general economic situation in the country, (iii) the number of people unemployed in the country and (iv) the likelihood of saving any money. Deviating from the majority of studies on the election-confidence nexus, we prefer to focus on an individual survey question as dependent variable<sup>(9)</sup>. After all, every survey question might be differently affected by the occurrence of elections so that any diagnosed effect of elections on the CCI would inevitably lead to the question which of its underlying components actually drives the results.

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<sup>(8)</sup> The share of positive answers *minus* the share of negative answers.

<sup>(9)</sup> INSEE (2017) conducts the analysis not only on the CCI, but also on three individual survey questions inquiring consumers' assessment of the future standard of living in France, their future personal financial situation and their unemployment expectations. Suzuki (1992) focusses on US consumers' economic expectations, rather than on the CCI.

From among the twelve available monthly survey questions <sup>(10)</sup>, we choose question 4 which reads: "How do you expect the general economic situation in this country to develop over the next 12 months?" and provides five different answering categories ranging from "it will get a lot better" to "it will get a lot worse". The choice is motivated by two considerations: firstly, since the election effect is hypothesised to either constitute a feeling of optimism triggered by parties' election campaigns or one of uncertainty due to the unknown outcome of the elections, it can be expected to mainly manifest itself in consumers' expectations. Survey questions inquiring past developments or focussing on the present are rather inappropriate for the present analysis and therefore discarded. Secondly, the forward-looking question to be studied should trigger answers which involve, to the highest degree possible, respondents' gut-feeling, rather than being based on facts. We argue that survey questions inquiring macro-economic developments will be answered with less expert-knowledge (hence, more gut-feeling) than the competing class of available questions focussing on households' private financial situation (their saving expectations, etc.). Looking at the concepts queried by the available macro-questions, the "general economic situation" has been considered the fuzziest and thus most appropriate one for the purpose of the study (see Annex III for a graphical comparison of various survey questions, either fact-based or involving more gut-feeling, together with election dates in all analysed countries).

The selection of an appropriate empirical strategy to examine the effect of elections on consumer confidence warrants, first of all, a closer look at the dependent variable. The latter takes the form of a balance series, which indicates the percentage of positive replies to the survey question at hand *minus* the percentage of negative answers. The variable is thus bounded between  $-100$  and  $+100$ , which is a hint that it might be stationary. To arrive at a more informed judgment, we subject the balance series for all eight countries under analysis to standard unit root tests, namely the Augmented Dickey-Fuller, as well as Kwiatkowski-Philips-Schmidt-Shin tests, both with and without a time-trend. The results are inconclusive across the board, with series usually not categorised by both tests as having a unit root, being stationary or trend-stationary. <sup>(11)</sup> Furthermore, in the cases where one of the tests diagnoses stationarity, that observation usually goes coupled with an almost-unit-root leading to a strong persistence of the series over time. Against that backdrop, we follow the available studies on the election-confidence nexus (see Section 1), all of which express consumer confidence in first differences so as to avoid the well-known spurious regression problem.

The chosen approach does not come without a downside, namely the risk of over-differencing, i.e. the creation of differenced series which are overly volatile since the underlying variables are actually stationary. In combination with the explanatory variable of interest taking the form of a dummy flagging the rather limited occurrence of national elections, it creates a danger of identifying election effects where there are none. We are able to substantially mitigate that risk in two ways: (i) by making sure that the election dummies do not take the value 1 in individual months, but over time-periods of several months (e.g. throughout entire election campaigns); (ii) by carefully checking that any significant coefficient of an election dummy has a magnitude which clearly exceeds the average magnitude of peaks or troughs in the target series. Furthermore, to additionally bolster the validity of the evidence generated by our analysis, we conduct a robustness check, which shows all results of the study to remain valid when the target variables are expressed in levels, which would be appropriate under the assumption of stationarity (see Annex II).

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<sup>(10)</sup> See the EU BCS user manual, pp. 36-38, for all survey questions, including the different answering categories: [https://ec.europa.eu/info/sites/info/files/bcs\\_user\\_guide\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/bcs_user_guide_en_0.pdf)

<sup>(11)</sup> For space constraints, the detailed results of the tests are not reported here, but can be obtained from the authors upon request.

## 2.2. THE MODEL

Having defined the transformation of the dependent variable, we can turn to the actual model. In keeping with the bulk of the available literature on the topic, we apply an error correction model (ECM). The reason is that, from the very onset of our analysis, the pool of variables potentially explaining consumers' expectations about the future general economic situation comprises both variables which are likely to mainly affect expectations in the long-run (macro-economic variables such as GDP growth or unemployment rates), as well as a variable which hitherto research has clearly shown to only matter in the short-run (elections). In such a situation, an ECM framework which allows to explicitly model long- and short-run effects is likely to achieve more explanatory power than a simple, multi-variate regression.

We develop for every country under analysis a tailored ECM. Applying the Engle and Granger 2-step approach, we first determine the long-run drivers of consumers' expectations, by regressing the latter (in levels) on a set of potentially useful long-run drivers and applying a general-to-specific testing methodology to come to a parsimonious representation.

In a second step, the first differences of consumers' expectations are regressed on the lagged residuals from the long-run relationship<sup>(12)</sup>, as well as the first differences of a set of variables (coincident<sup>(13)</sup> and lagged by a month) with a likely bearing on the short-term evolution of consumers' expectations. That set also includes the explanatory variables which have been tested for the long-run equation. In a final step, a general-to-specific testing strategy is again applied so as to discard any non-significant variables.

Having developed a convincing ECM, the last step of the analysis is to include the election dummies (whose construction is described in section 2.5) in the model and assess whether they are significantly adding to the explanatory power of the model.

## 2.3. LONG-RUN DRIVERS OF CONSUMERS' EXPECTATIONS

Our development of the ECM models can draw from a rich set of potential explanatory variables. As regards the long-run drivers of consumers' expectations about the general economic situation, our variable set features, for each country, the gross-domestic product (GDP), industrial production (IP)<sup>(14)</sup>, unemployment rate, harmonised index of consumer prices (HICP)<sup>(15)</sup>, total employment, some measure of purchasing power per capita<sup>(16)</sup>, as well as the national stock market index<sup>(17) (18)</sup>. With the exception of the unemployment rate, all variables are expressed in terms of

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<sup>(12)</sup> The coefficient of the residuals is the error correction term. When consumer confidence is too high / too low considering the level of its long-run drivers, the error correction term indicates the rate at which consumers' expectations will decrease / increase to re-establish equilibrium.

<sup>(13)</sup> The correlation between consumers' expectations and the various hard data series deployed (private consumption, GDP, etc.) tends to be highest in a contemporaneous setting.

<sup>(14)</sup> The two variables feature in Caleiro et al. (2011).

<sup>(15)</sup> The two variables feature in Fuhrer (1993).

<sup>(16)</sup> Such variable is used in Insee (2017).

<sup>(17)</sup> The variable is a proxy of financial wealth, as used in Acemoglu and Scott (1994).

year-on-year growth rates, the latter showing substantially higher correlations with the rather smooth consumer expectation series than quarter-on-quarter growth rates.<sup>(19)</sup>

Our selection of the six long-run variables is motivated by two considerations: first of all, since consumers' expectations about the future course of the economy are likely to be influenced by their perception of the present (and recent) economic situation<sup>(20)</sup>, it is not conceivable that their macro-economic expectations could stray away for too long and ultimately decouple from the evolution of some major macro-economic gauges. Secondly, while there are many more macro-economic indicators that could have been chosen for the analysis, the above ones can be argued to be the variables consumers are most likely to be aware of because they have a direct impact on their financial situation (inflation, purchasing power, stock market indices, (un)employment) and/or are frequently reported about in the media (GDP, inflation, (un)employment, stock market indices).

Based on the latter argument of salience in the media, we extend the data-set of three countries even further, by including a measure of the economic prospects prevailing in relevant, neighbouring countries. In the case of the Netherlands and Austria, we include the economic expectations of German consumers, which can be assumed to reverberate in the Dutch/Austrian media, given both countries' close trade links to Germany and the shared/similar language. Based on the same grounds, the Belgian long-run data-set is expanded by a variable measuring the average economic expectations in France, Germany and the Netherlands.

For precautionary reasons, we do not replicate that approach in the ECMs of larger countries such as Germany or France. With economic expectations in those countries likely to have a significant bearing on foreign expectations, including the latter in the ECMs would lead to a structural endogeneity problem. In the case of smaller economies, by contrast, local confidence is unlikely to have an effect on foreign expectations and potential problems are mainly stemming from episodes in which both the small and the large economy are hit by the same economic shock. Considering that we use foreign confidence only as a control variable, i.e. without actually interpreting the coefficient, the choice appears defensible even though the coefficients associated with foreign expectations might be biased upwards.

## 2.4. SHORT-RUN DRIVERS OF CONSUMERS' EXPECTATIONS

With a view to avoiding biased results, it is vital that the short-run part of our ECM adequately controls for variables which might potentially be influenced by the occurrence of elections, while having an impact on consumer expectations. The most obvious candidate is (y-o-y growth of) private consumption, considering political business cycle theory which assumes that governments resort to fiscal stimuli in the run-up to elections to increase their chances of re-election (Nordhaus, 1975), as well as Pigou (1927), who maintains that optimism about future economic developments (which, we argue, is likely to be triggered in the presence of electoral campaigns with their usual promises of a better future) can stimulate household spending and ultimately create economic booms. In addition to

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<sup>(18)</sup> We ensure that the long-run equations include neither more than one variable capturing economic activity (GDP or IP), nor more than a single variable on labour market developments (unemployment rate or total employment).

<sup>(19)</sup> Quarterly variables have been rendered monthly by linear interpolation, notably GDP, purchasing power per capita and, depending on the country, the unemployment rate and total employment. Furthermore, stock market indices are expressed in terms of monthly averages of their daily valuations.

<sup>(20)</sup> The fact that the correlation between consumers' expectations about the general economic situation and their perception of the latter over the past 12 months is between 0.65 and 0.87 in the eight countries analysed provides some anecdotal evidence of the point.

private consumption, we also include (y-o-y growth of) industrial production as an alternative, rapid gauge of economic activity. <sup>(21)</sup>

As further control variables we also deploy (y-o-y growth of) house prices <sup>(22)</sup> and total lending to households, as well as (the level-representation of) interest rates on housing loans <sup>(23)</sup> and the real effective exchange rate <sup>(24)</sup>. In the case of comparatively small and open economies (the Netherlands, Belgium), we additionally include (y-o-y growth in) world trade, while, in the case of the UK, which has its own currency, the data-set also features the exchange rate of the British pound vis-à-vis the US dollar and the euro. Finally, given the crucial importance of the construction sector over a substantial sub-period of the sample, the Spanish data-set also includes the national construction index. <sup>(25)</sup>

## 2.5. THE CONSTRUCTION OF ELECTION DUMMIES

Having defined the dependent variable, the next choice concerns the type of elections whose effect shall be gauged. In keeping with the existing literature, we focus only on national, parliamentary elections, i.e. deliberately exclude presidential, local, regional or European elections, which arguably receive less attention in the media and public debates and are thus less likely to exert a measureable impact on consumer confidence. In the case of France, where the president enjoys particularly far-reaching competencies, we deviate from that rule and follow INSEE (2017), who consider, first and foremost, presidential elections and - only when they do not occur in the immediate aftermath of presidential elections - also parliamentary elections. We thus capture all elections having the potential to change the country's government and major policy orientations. Generally, both regular, as well as snap elections are taken into account. Annex I provides a list by country of all election dates which have been retrieved based on our approach.

Having identified all relevant elections, we can turn to the actual centrepiece of our analysis, namely the dummy variables which flag the occurrence of national elections and thus allow us to filter out any effect of elections on consumer confidence. Our dummy construction approach follows the available literature in respect of three widely shared principles.

First of all, the bulk of the studies defines the election dummies such that they do not simply highlight the election month itself, but entire election periods which stretch from several months before to the actual election month (or shortly after). The obvious reason is that the optimism or uncertainty associated with impending elections is assumed to gradually build up over time, as election campaigns unfold, rather than erupting only at the ballot box.

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<sup>(21)</sup> The variable is used in Caleiro et al. (2011).

<sup>(22)</sup> The variable represents the concept of housing wealth, as used in Acemoglu and Scott (1994).

<sup>(23)</sup> While standard interest rates (policy rates or treasury bill rates) are used in several related studies (e.g. Fuhrer (1993), Acemoglu and Scott (1994)), we find interest rates on housing loans to provide the highest value added in our models.

<sup>(24)</sup> Exchange rates are deployed by Praet and Vuchelen (1988).

<sup>(25)</sup> Quarterly variables have been rendered monthly by linear interpolation. Depending on the country, that concerns house prices, total lending to households and private consumption.

Secondly, most studies do not explicitly model the phasing-out of the election effect, but they rather let the error correction term correct for any election-induced deviation of consumer confidence from its long-term trend. <sup>(26)</sup>

Third of all, the bulk of studies implicitly assume that the election-induced growth of consumer confidence is *linear*, with confidence peaking in the last month of the election period. That is because, in the presence of a differenced dependent variable, (i) all months belonging to election periods are captured by a *single* dummy variable and (ii) flagged by the same value (=1). INSEE (2017) and Adam (2014) deviate from characteristic (i) by defining a string of dummy variables which identify different months relative to the election month  $t$  ( $month_{t-2}$ ,  $month_{t-1}$ ,  $month_t$ ,  $month_{t+1}$ ,  $month_{t+2}$ ). <sup>(27)</sup> We discard that approach, considering that the dependent variable in our error correction model is expressed in month-on-month changes, which naturally display a high degree of volatility so that dummy variables marking particular months, rather than sequences of months stand a too high probability of being significant simply by chance. De Boef and Kellstedt's (2004) approach differs in respect of characteristic (ii), since it accounts for election periods by means of a counter running from 1 to 10 in the months preceding elections (and receding to 1 in the following months). We do not see any compelling reason for the underlying assumption of consumer confidence growing exponentially in the run-up to elections and therefore also disregard that alternative construction approach.

Since we do not have strong a-priori assumptions on the typical length of the election effect, we translate the above three construction principles into a series of dummy variables for each country. Those dummies take the value 1 respectively in a twelve-months, eleven-months, ..., two-months period which always finishes in the election month <sup>(28)</sup>. Considering the evidence in INSEE (2017), as well as Caleiro et al. (2011), which hints at the election effect persisting also in the month following elections <sup>(29)</sup>, we furthermore duplicate our set of dummy variables with each electoral period extended by one additional month. In the subsequent, country-specific analyses, all 22 dummy variables are individually tested for their explanatory power in the above-described error correction models and the most significant one interpreted as best characterising the strength and longevity of the effect of elections on confidence.

Graph 2.1 provides an illustration of the dummy construction approach, plotting the Austrian 4-months and 12-months election dummies. As is readily apparent, the only difference between the two is that the latter starts signalling elections already eight months earlier. Worth highlighting, the graph also shows that some of the election periods are shorter than four months (see 1995, 2002 and 2008). That goes for unexpected (i.e. snap) elections, in which case the dummy is coded so as to only take the value 1 from the date of the announcement of elections onwards.

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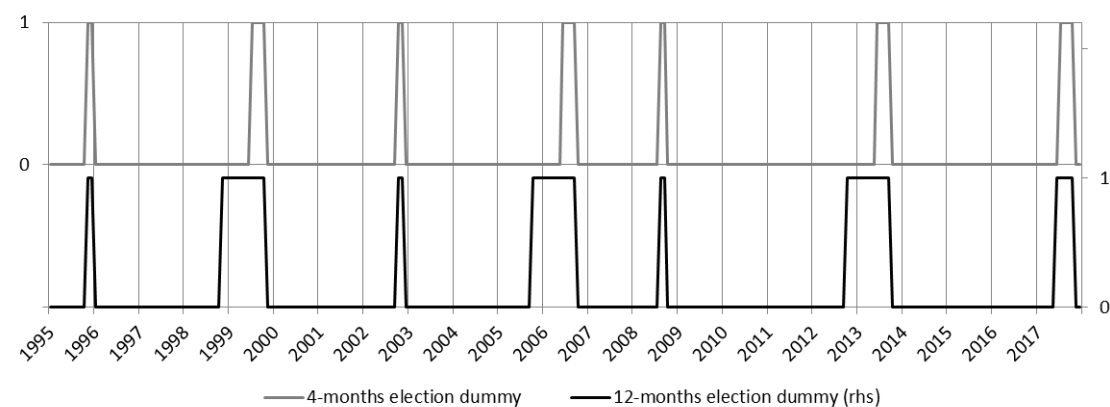
<sup>(26)</sup> This does not go for INSEE (2017), Adam (2014), as well as de Boef and Kellstedt (2004).

<sup>(27)</sup> Adam (2014) also considers months  $t-3$  and  $t+3$ .

<sup>(28)</sup> The longest pre-election period considered (12 months, including the election month itself) is thus slightly more extensive than the longest pre-election period considered in the literature (10 months before an election - Caleiro et al., 2011) so as to make sure we do not miss any relevant time-spans.

<sup>(29)</sup> The month following elections is, indeed, a crucial one in the sense that it is the first time all consumer survey participants give their replies in full knowledge of the election results. This point is also highlighted in INSEE (2017).

Graph 2.1. Election dummies (Austria)



### 3. RESULTS

This section presents our results for six of the countries analysed in this paper, namely Austria, Belgium, France, Germany, the Netherlands and Spain. The results for Italy and the United-Kingdom, by contrast, are not reported, since the underlying ECMs were of insufficient quality. In both cases, the basket of variables to explain long-run developments in consumer expectations proved rather ineffective, with R-squareds significantly lower (around 0.30) than in the case of the other countries (0.54-0.76). What is more, the residuals showed a number of multi-annual periods in which the models persistently over- or persistently under-estimated the actual values. In combination with the election dummies taking the value 1 only in a limited number of cases (as elections take place infrequently), the residual structure was assessed as implying a too high risk of producing significant election dummies simply by chance.

#### 3.1. THE LONG-RUN DRIVERS OF CONSUMER EXPECTATIONS

Table 3.1 shows the regression results of the error correction models for the six countries aforementioned. A look at the long-run drivers of consumer expectations (left column of each country-section) shows a number of commonalities. First of all, in almost all models, the long run equation includes an activity variable (GDP in Austria, France, Germany and the Netherlands; IP in Spain), which is always associated with a positive coefficient, as theory would suggest. Inflation (measured as year-on-year changes in consumer prices) is another important long-run driver of consumer expectations in respect of the general economic situation, only failing to be significant in the case of Austria. In line with expectations, it always has a depressing effect on consumer confidence. Similarly, an increase in the unemployment rate has a statistically significant, negative effect on consumers' expectations in Belgium, France and Germany, while, by analogy, a rise in total employment is found to have a positive impact in Spain. Purchasing power, by contrast, does not appear to be a significant long-run driver of consumer expectations, with the exception of France. Considering that the variable certainly features less prominently in news coverage of the economy than concepts like GDP or inflation, the observation might testify to the significant role of the media in shaping consumers' macro-economic expectations. Other than classical macro-economic variables, also the evolution of national stock market indices appears to have a bearing on consumer expectations, namely in Austria and the Netherlands. Finally, for the three smallest economies among the six countries analysed, the consumer expectations from the largest neighbouring countries appear to be long run drivers, too.

Turning to the short-run equations (right column of each country-section), the use of an error correction model turns out to be justified for all six countries. Based on the test described in Ericsson

and MacKinnon (2002), cointegration of the long run drivers is highly significant, with all p-values below 1%. Moreover, the models show a forceful monthly correction of 13 to 22% implied by the coefficients of the lagged residuals from the long-run equation.

Table 3.1. Results of error-correction models by country

Variables	Austria		Belgium		France		Germany		Netherlands		Spain	
	long-run	short-run (t-stat.)	long-run	short-run (t-stat.)	long-run	short-run (t-stat.)	long-run	short-run (t-stat.)	long-run	short-run (t-stat.)	long-run	short-run (t-stat.)
GDP <sup>yoy</sup>	1.13				4.32		5.13		1.69			
IP <sup>yoy</sup>											1.16	
HICP <sup>yoy</sup>			-2.67		-4.55		-3.90		-8.51		-3.80	
Unemployment rate			-5.39		-2.16		-2.12					
Employment <sup>yoy</sup>											1.83	
Purchasing power <sup>yoy</sup>					1.18							
Stocks prices <sup>yoy</sup>	0.17								0.28			
consumer expectations	0.43		0.75						0.37			
long-run residuals <sub>t-1</sub>		-0.14 (-4.43)		-0.17 (-5.05)		-0.22 (-6.97)		-0.13 (-4.96)		-0.16 (-5.22)		-0.17 (-4.92)
ΔGDP <sup>yoy</sup>		1.96** (2.25)				3.67*** (3.59)		1.81*** (3.33)				
ΔIP <sup>yoy</sup>								0.23** (2.16)				0.40*** (3.68)
ΔHICP <sup>yoy</sup>		-2.02** (-2.58)		-1.27* (-1.96)		-1.89** (-2.22)				-2.69** (-2.25)		-2.50*** (-3.78)
ΔStocks prices <sup>yoy</sup> <sub>t</sub>		0.10*** (3.18)				0.10*** (3.53)				0.16*** (3.60)		0.04 (1.25)
ΔStocks prices <sup>yoy</sup> <sub>t-1</sub>												0.07** (2.39)
ΔUnemployment rate <sub>t</sub>								-2.30 (-1.17)				-2.14*** (-2.63)
ΔUnemployment rate <sub>t-1</sub>								-3.14 (-1.6)				
Δ(foreign consumer expectations)		0.41*** (6.43)		0.67*** (8.28)						0.34*** (4.00)		
election dummy		2.72*** (3.48)		no effect		3.94*** (5.01)		2.55*** (4.92)		1.69** (2.00)		1.59* (1.89)
-period captured by dummy:		5 months up to (incl.) election				4 months up to (incl.) month after election		9 months up to (incl.) month after election		8 months up to (incl.) month after election		3 months up to (incl.) election
R <sup>2</sup>		0.27		0.22		0.20		0.19		0.14		0.15
Durbin-Watson		2.12		2.24		2.07		1.65		2.07		2.17

Note:

- The dependent variable is Δ(consumer expectations).
- The sample range of the regressions is 1995M11-2017M09 (Austria), 1992M02-2017M10 (Belgium), 1986M02-2017M07 (France), 1992M04-2017M06 (Germany), 1988M02-2017M10 (Netherlands), 1993M02-2017M09 (Spain).
- The constant term is not reported in the table.
- \* denotes significance at the 10% threshold, \*\* at the 5% threshold and \*\*\* at the 1% threshold.
- According to Ericsson and MacKinnon (2002), the t-statistic for the error correction terms imply cointegration for all models at the 1% threshold.

The R<sup>2</sup> of the models range between 0.14 (for the Netherlands) and 0.27 (for Austria). Considering the volatility of the target series, this is in line with our expectations and, furthermore, comparable to the performance of similar models in the available literature: The R<sup>2</sup> are significantly higher than in Adam (2013) (<0.06) and just slightly lower than the best model in De Boef and Kellstedt (2004) (0.33), in spite of the fact that the latter includes a number of additional policy-related dummies with a potential bearing on consumer expectations (extraordinary political events such as wars, media coverage of the economy, etc.). In fact, de Boef and Kellstedt's base model, which excludes political dummies, has a significantly lower R<sup>2</sup> (0.12). Finally, the R<sup>2</sup> of our model for Belgium (0.22) is also in line with those from Vuchelen (1995), which range between 0.15 and 0.27.



### 3.2. THE EFFECT OF ELECTIONS ON EXPECTATIONS

Having established the appropriateness of the chosen models, we can look at the election effects they identify. There are clearly significant effects in Austria, France and Germany. In all three countries, the effect on consumers' expectations regarding the general economic situation is positive. Moreover, the effect is of similar magnitude across countries: between +2.5 and +3.9 points per month. Considering the length of the effect (which differs across countries), as well as the mitigating effect of the error correction term, the estimated cumulative effect on the level of the indicator from the beginning of the election period to the actual election (or month thereafter) is between +10 (Austria) and +14 points (Germany). The effect is thus far from negligible, amounting to roughly 1.0 standard deviation of the level of the dependent variable (see Annex IV). This is in line with the results of previous studies, where the identified election effects were in the range of 0.9 (INSEE, 2017) to 1.2 (Caleiro et al., 2011) standard deviations.<sup>(30)</sup>

Turning to the time dimension, the results hint at substantial differences in how the election-induced optimism builds up. In Germany, citizens' expectations get altered as of the seventh month preceding ballot day and optimism peaks in the month following the elections, before gradually phasing out.<sup>(31)</sup> In France and Austria, by contrast, the time-span during which the prospect of elections spurs optimism is substantially shorter, starting only in the second / fourth pre-election month, with optimism reaching its summit in the election month (Austria) or immediately thereafter (France).

The (few) comparable studies in the available literature bolster the validity of our findings: On the one hand, Insee (2017) confirms French citizens to get optimistic only in the latest phase of the electoral campaigns (the month before, as well as the actual election month). On the other hand, Caleiro et al. (2011), focussing on the case of Portugal, find confidence boosts building up in the ten months before until the month following elections, thus lending support to the rather long time-span identified for Germany.

Graphs 3.1 and 3.2 provide an illustration of our findings, plotting the level-transformed fitted and actual values of the two countries with the largest cumulative election effect (France and Germany). The actual indicator is presented as a dashed, blue line, while the fitted values of the error-correction model including an election dummy are presented in green and the ones resulting from an error-correction model barring election dummies in red.

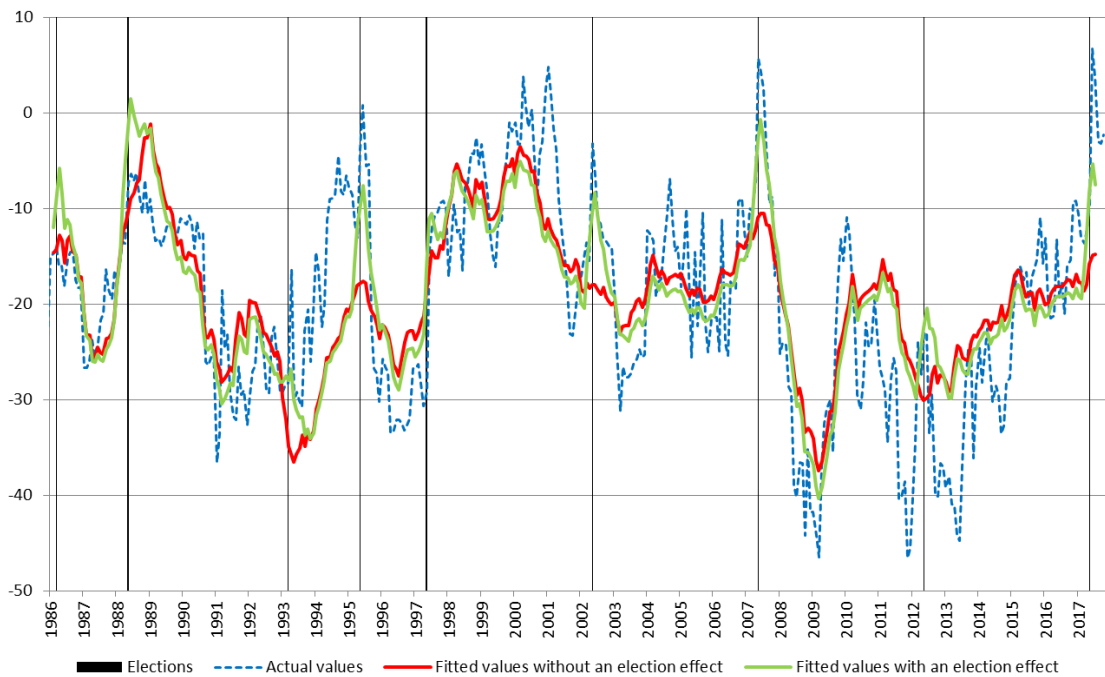
In the case of both countries, the models show a generally good fit, with most long-run developments closely tracked by the fitted values. Turning to France, the graph illustrates that virtually all general elections come with a temporary peak in the actual values, the only exception being the very short campaign of the 1997-election. When comparing the fitted values of the two error correction models, the addition of an election dummy seems to clearly improve the model. Throughout the entire sample, it either renders expectation peaks captured by the base model sharper and thus more in line with the actual values (see elections in 1995, 2007, 2017) or it inserts peaks which have gone unnoticed by the base model (see elections in 1993, 2002, 2012). It is only around the 1986- and 1988-elections that the inclusion of an election dummy deteriorates the fit of the model.

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<sup>(30)</sup> The expression of the election effects identified in the two studies in terms of standard deviations is based on own calculations.

<sup>(31)</sup> The phasing-out of the election effect has not been explicitly modelled in our approach, but is captured by the error-correction term.

Graph 3.1. Fitted and actual values in France

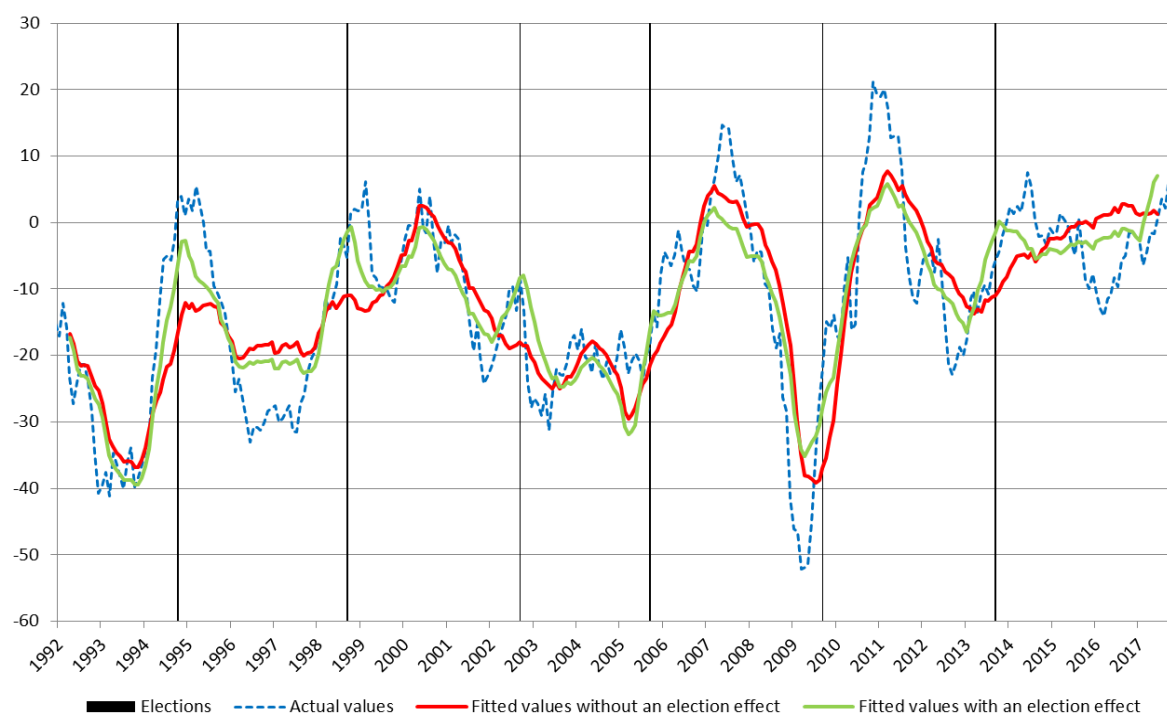


Also in Germany, most general elections come with a temporary peak in consumers' expectations on the general economic situation (1995, 1999, 2002, 2017), whereby those peaks tend to build up more gradually than in France. In all those cases, the addition of the dummy variable clearly helps improving the fit both in terms of reducing residuals and better capturing the profile of the actual values. In the case of the elections of 2005, 2009 and 2013, which fell into a prolonged period of growing optimism among consumers, an election effect is naturally more difficult to identify. Still the model controlling for elections produces fitted values following the actual ones more closely.

While in Austria, France and Germany the effect of general elections on consumer expectations on the general economic situation appears quite convincing, this goes to a lesser extent for the Netherlands and Spain. As shown in Table 3.1, the magnitude of the monthly effect, as well as the cumulated effect (ranging between 0.3 and 0.4 standard deviations) is smaller and the statistical significance of the estimated coefficients inferior. Moreover, contrary to Austria, France and Germany, the results do not hold for many different election dummies (flagging election periods of varying lengths), indicating that the effect is less robust. In line with those findings, a graphical analysis shows that many elections in the two countries did not coincide with actual peaks in consumers' expectations. All in all, the present analysis can be qualified as inconclusive in respect of the effect of general elections on consumers' expectations in the Netherlands and Spain.

This contrasts with the analysis conducted on Belgian data which clearly showed none of the election dummies tested to be associated with a significant effect. It can therefore be concluded that general elections in Belgium do not affect consumers' expectations on the general economic situation. While contradicting the evidence by Vuchelen (1995) on first glance, it should be noted that the latter is gathered from a sample ending in 1993Q1. The combined reading of the two studies could thus be that consumers' macro-economic expectations used to be influenced by elections but this effect has faded over time.

Graph 3.2. Fitted and actual values in Germany



### 3.3. TESTING THE ROBUSTNESS OF THE RESULTS

To insure the results for the six models presented above are meaningful, several robustness checks were conducted. First, the pertinence of our findings can be further corroborated when considering that Table 3.1 only features the election dummies which yielded the highest t-statistic. As explained in Section 2 on the empirical set-up, we tested for every country a battery of dummies covering election periods of varying lengths (2-13 months). Indeed, in the cases of Austria, France and Germany, the election dummies reported in the table are not the only significant ones. In Austria, for instance, all 22 election dummies tested on the model proved significant. This observation underscores that the results are clearly not obtained by chance. On the other hand, no election effect was reported if its significance was limited to a specific duration of the election period underlying the coding of the election dummy. Second, all models were also run with quarterly variables. This exercise gave consistent results for all the six countries. Third, as a placebo test, the election dates were switched across countries. This way, the elections dates can be considered more or less random, even though the cyclical and the frequency of the elections can be similar across countries. The results of the exercise are presented in Table 3.2.

Table 3.2. Placebo test on election dates

	Austria	France	Germany	Netherlands	Spain
Austria		✓	✓	✗	✓
Belgium	✓	✓	✓	✓	✗
France	✓		✓	✓	✓
Germany	✓	✓		✓	✗
Netherlands	✓	✓	✓		✗
Spain	✗	✓	✗	✗	

Note: a green checked case means that the election effect was not significant in the column country, with the election dates from the row country. On the other hand, a red cross means that a significant effect was found.

In Austria, France and Germany, most of the wrongly attributed elections had no significant effect on consumers' expectations. Spanish elections are an exception, having some (statistical) effect on German and Austrian consumers' expectations, given some similarities of their true elections with the Spanish ones in terms of patterns and cyclicity.

As a last robustness check, the models were also estimated directly in levels, since some of the unit-root tests applied hinted at the dependent variables being stationary, albeit with roots close to one (see Section 2 on the empirical framework). These models, presented in Annex II, show that even if one considered the variables stationary, the results of the analysis would be quite consistent with the error-correction models both in terms of the magnitude and the significance of the diagnosed election effects. This refutes the possibility that the significant results could have been obtained by a potential over-differencing of the dependent variables.

## 4. CONCLUSION

This paper extends the literature on the effect of elections on consumer surveys. In addition to updating analyses that are somewhat outdated (Belgium) or refining the empirical strategy applied (France), it focusses on countries that have, to the authors' best knowledge, never been analysed before in terms of a possible election-confidence nexus. With all models based on the same empirical framework and using data gathered by the Joint Harmonised EU Programme of Business and Consumer Surveys, the results stand out in terms of their high degree of cross-country comparability.

Overall, the results presented are in line with the existing literature, in the sense that an election effect on consumers' expectations is identified only in some of the analysed countries. Furthermore, whenever elections are found to matter, their effect on consumers' expectations is positive, which is also in line with the existing literature.

The presented results are conclusive for four of the eight countries analysed. In Austria, France and Germany, elections have a significant, positive effect on consumers' expectations regarding the general economic situation (between +2.5 and +3.9 points per month). Considering the length of the effect (four to nine months, depending on the country), the estimated cumulative effect on the level of the indicator from the beginning of the election period to the actual election (or month thereafter) is thus far from negligible, amounting to roughly 1.0 standard deviation of the level of the dependent variable. The results of our analysis are also conclusive in the case of Belgium, where none of the analytical steps conducted hints at any effect of elections on consumer expectations.

The clarity of those results contrasts with the evidence in respect of the Netherlands and Spain, where the significance and order of magnitude of the election effect is comparatively low, casting some doubts on the validity of the results. Finally, the analyses focussing on the United-Kingdom and Italy failed to produce a convincing baseline model of consumer expectations which would have allowed testing for the value-added of a variable capturing the occurrence of elections.

Overall, the present article opens up a number of avenues for future research. First of all, the results could be attempted to be further refined. After all, they refer to the average effect of elections on confidence, not taking into account that the context of an election might have a significant bearing on the magnitude of the effect. Elections likely to result in a change of government, for instance, arguably have the potential to trigger more pronounced confidence surges than elections confirming the incumbent government. Secondly, the finding of elevated confidence in the run-up to national elections invokes the question whether, and to which degree, it alters private households' consumption decisions and thus has a direct impact on the real economy. A useful, intermediate step in such an analysis could be to investigate whether the diagnosed positive effect of elections on consumer confidence (as proxied by their expectations regarding the future general economic situation in the country) can also be observed when they are inquired about their own finances (expected savings, expected major purchases, etc.).

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## ANNEX I

### Election dates by country

Table A.1. Election dates by country

	election dates <sup>(32)</sup>	announcement of elections (for <i>snap</i> elections) <sup>(33)</sup>
Austria	17 December 1995	October 1995
	3 October 1999	
	24 November 2002	September 2002
	1 October 2006	
	28 September 2008	July 2008
	29 September 2013	
	15 October 2017	May 2017
Belgium	21 May 1995	
	13 June 1999	
	18 May 2003	
	10 June 2007	
	13 June 2010	April 2010
	25 May 2014	
France	16 March 1986	
	8 May 1988	
	28 March 1993	
	7 May 1995	
	1 June 1997	April 1997
	5 May 2002	
	6 May 2007	
	6 May 2012	
7 May 2017		
Germany	16 October 1994	
	27 September 1998	
	22 September 2002	
	18 September 2005	May 2005
	27 September 2009	
	22 September 2013	

<sup>(32)</sup> The table only reports elections which fall into the sample period considered for the country-specific error correction models.

<sup>(33)</sup> In the case of snap elections, there are often several dates which could be interpreted as setting the course for new elections (the day on which a government falls, the day on which negotiations for a new government formation fail, the day on which new elections are formally announced, etc.). We therefore prefer to report announcement *months* rather than exact dates. When the different, potentially relevant events are spread over more than one month, we rely on our judgment to filter out the month which saw the most decisive step towards new elections.

	6 September 1989	May 1989
	3 May 1994	
	6 May 1998	
	15 May 2002	
Netherlands	22 January 2003	October 2002
	22 November 2006	June 2006
	9 June 2010	February 2010
	12 September 2012	April 2012
	15 March 2017	
	6 June 1993	April 1993
	3 March 1996	December 1995
	12 March 2000	
	14 March 2004	
Spain	9 March 2008	
	20 November 2011	July 2011
	20 December 2015	
	26 June 2016	May 2016

## ANNEX II

### Additional Robustness Checks

Table A.2. Results of regressions explaining consumer expectations in levels

Variables	Austria	France	Germany
GDP <sup>yo</sup>	0.95 (1.15)	4.42*** (6.63)	5.55*** (13.99)
HICP <sup>yo</sup>		-4.71*** (-6.34)	-3.20*** (-5.62)
Unemployment rate		-2.31** (-2.37)	-2.37*** (-5.33)
Purchasing power <sup>yo</sup>		1.09* (1.70)	
Stocks prices <sup>yo</sup>	0.17*** (4.99)		
foreign consumer expectations	0.45*** (6.57)		
election dummy	7.15** (2.24)	11.64*** (4.95)	12.91*** (5.15)
-period captured by dummy:	5 months up to (incl.) election	4 months up to (incl.) month after elections	9 months up to (incl.) month after elections
R <sup>2</sup>	0.61	0.60	0.73
Durbin-Watson	0.29	0.45	0.30

Note:

- The dependent variable is consumer expectations.
- The sample range of the regressions is 1995M10-2017M09 (Austria), 1986M01-2017M06 (France), 1992M03-2017M06 (Germany).
- The constant term is not reported in the table.
- \* denotes significance at the 10% threshold, \*\* at the 5% threshold and \*\*\* at the 1% threshold.
- Standard errors were computed using the heteroskedasticity and autocorrelation consistent Newey–west estimator.

### CONSTRUCTION OF ELECTION VARIABLES FOR THE ROBUSTNESS CHECK

For each of the three countries analysed, the election variables used for the robustness check correspond, in principle, to the dummies featuring in the final specification of the respective country's error correction model. Still, in practice, they must be constructed somewhat differently so as to ensure that the results yielded by the two analyses are comparable.

First of all, the error correction models assume that elections lead to a linear increase in consumer confidence. Since our robustness check focusses on the *level* of consumer confidence as a target



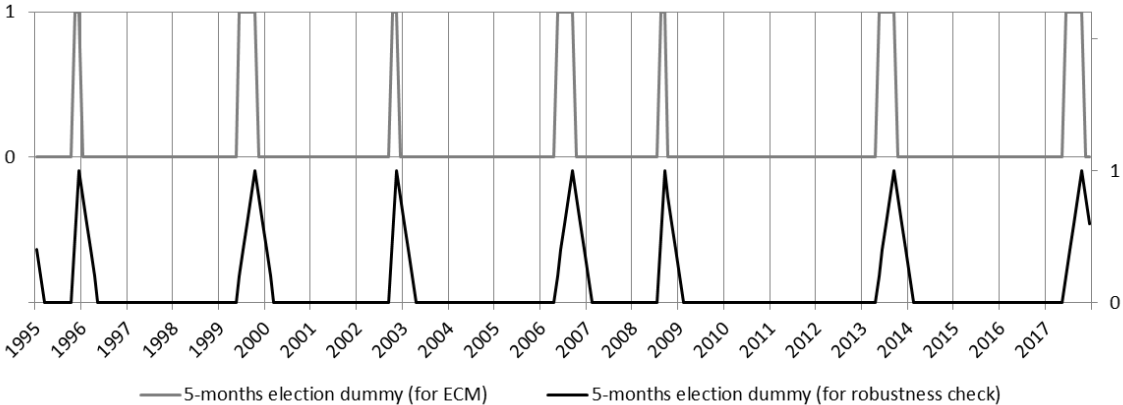
variable, a linear increase can only be captured if the election variables take the form of counters running from 1 in month  $t-x$  to a value of  $x$  in the election month/the month following the elections.

Secondly, in the error correction model, the phasing-out of the election effect is not explicitly modelled. Instead, the model simply lets the error correction term correct for any election-induced deviation of consumer confidence from its long-term trend. Given the absence of an error-correction term in our robustness check, we have to make an explicit assumption about how the election effect fades out. Concretely, we assume that it phases out linearly and at the same pace as it built up. This means, we extend each election variable by a counter which starts in the month following the peak of the election effect (at value  $x$ ) and then counts down to 0 in the subsequent months.

In a final step, to render the election variables comparable across countries, they are standardised so that they peak at value 1 <sup>(34)</sup>.

Graph A.1 provides an illustration of the dummy construction approach, plotting the Austrian election dummy used in the error-correction model and the corresponding one applied in the robustness check.

Graph A.1. Election dummies (Austria)

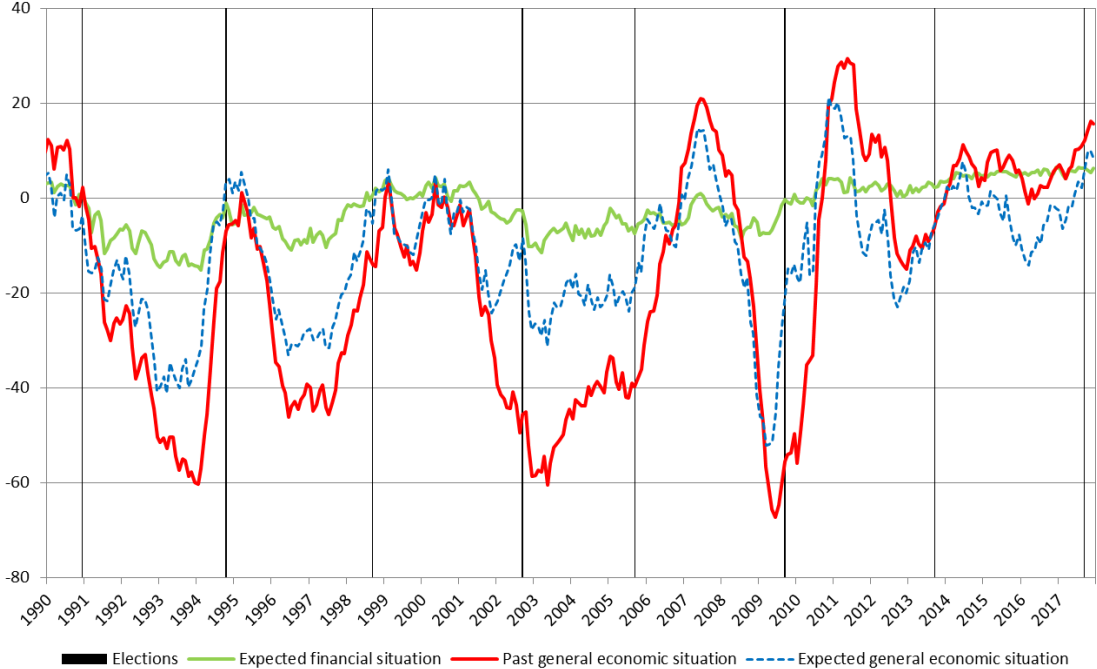


<sup>(34)</sup> In the special case of snap elections, the election variable takes the same shape as during other election periods covered by the sample, just that the slope in the pre-election period is steeper (since the pre-election period is shorter than in the case of regular elections).

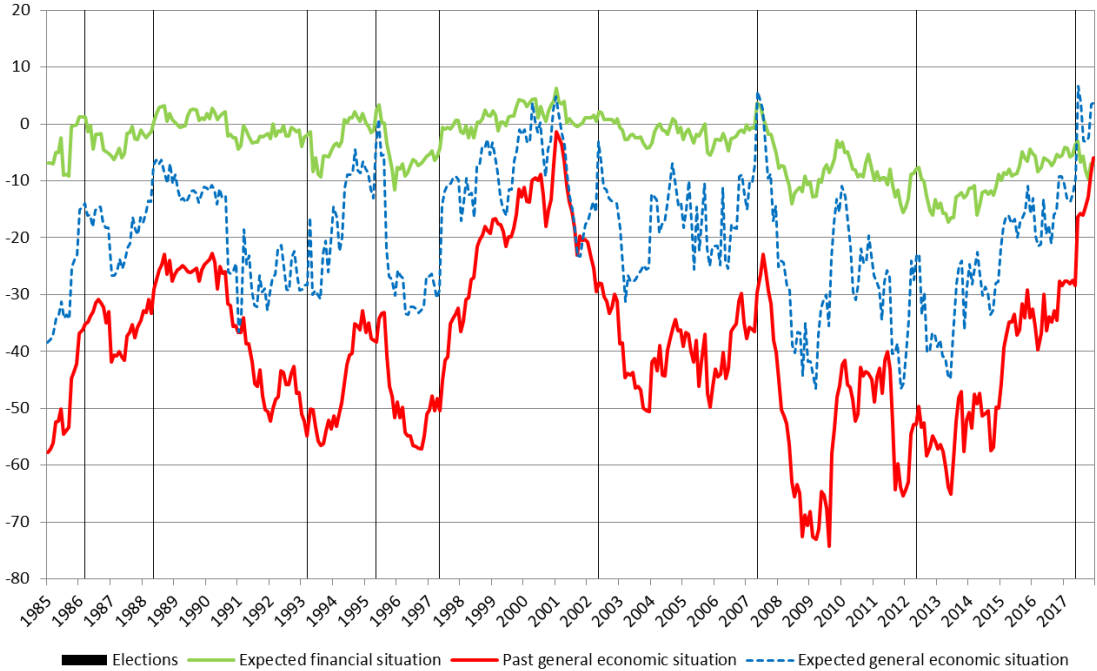
ANNEX III

Consumer survey questions relying on facts vs. gut-feeling

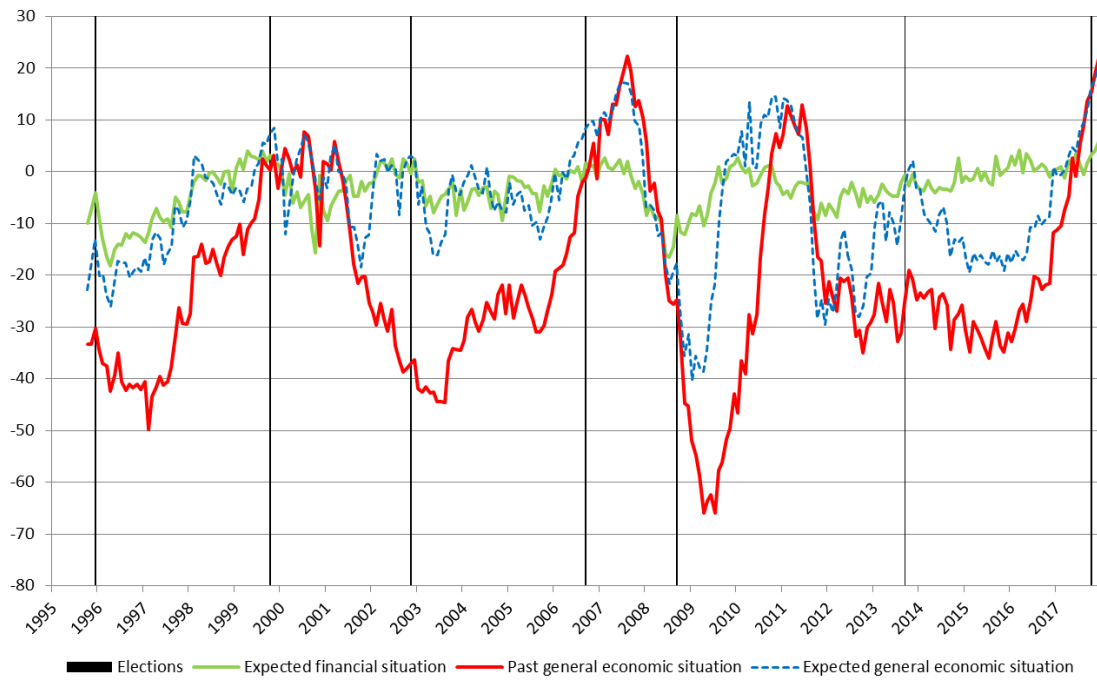
Graph A.2. Consumer survey questions in Germany



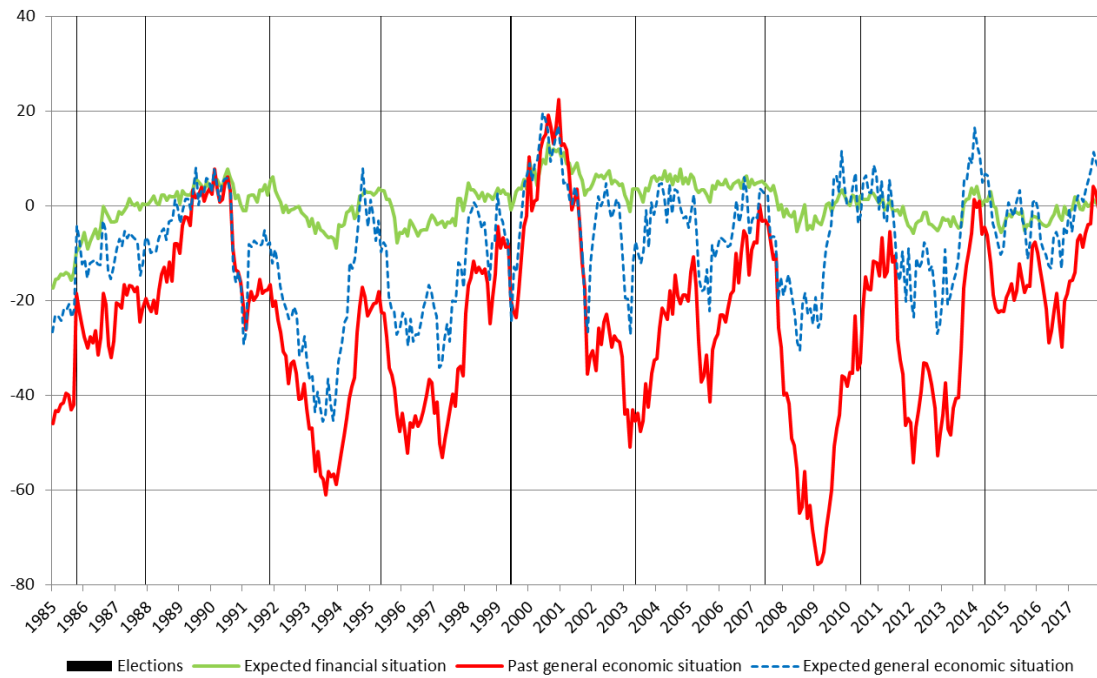
Graph A.3. Consumer survey questions in France



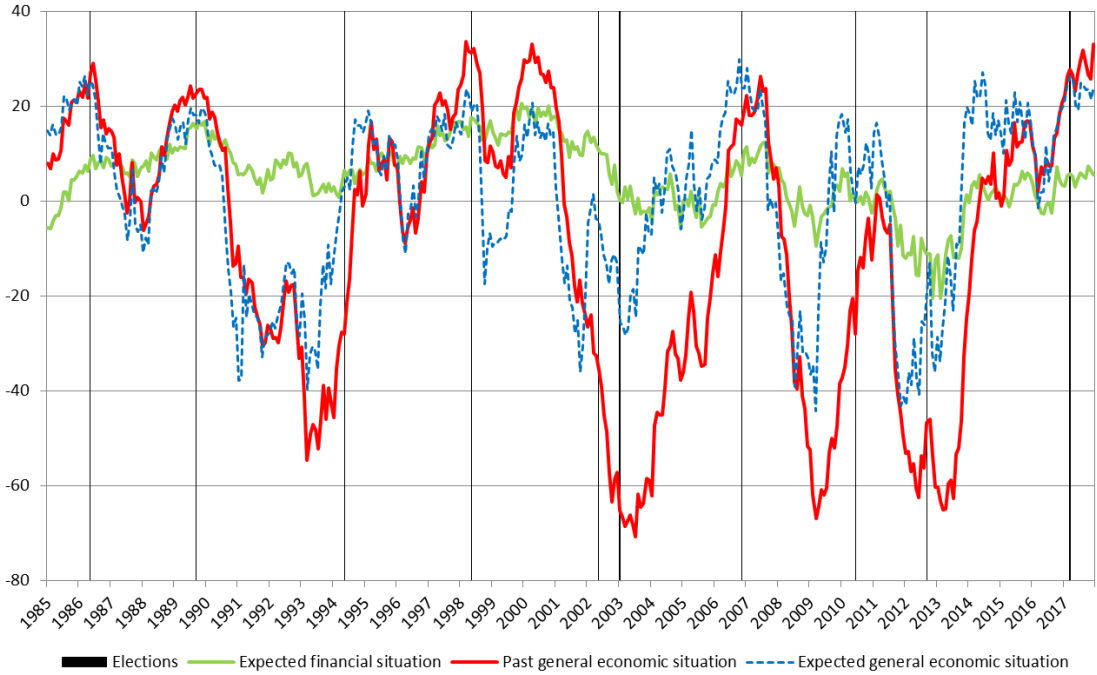
Graph A.4. Consumer survey questions in Austria



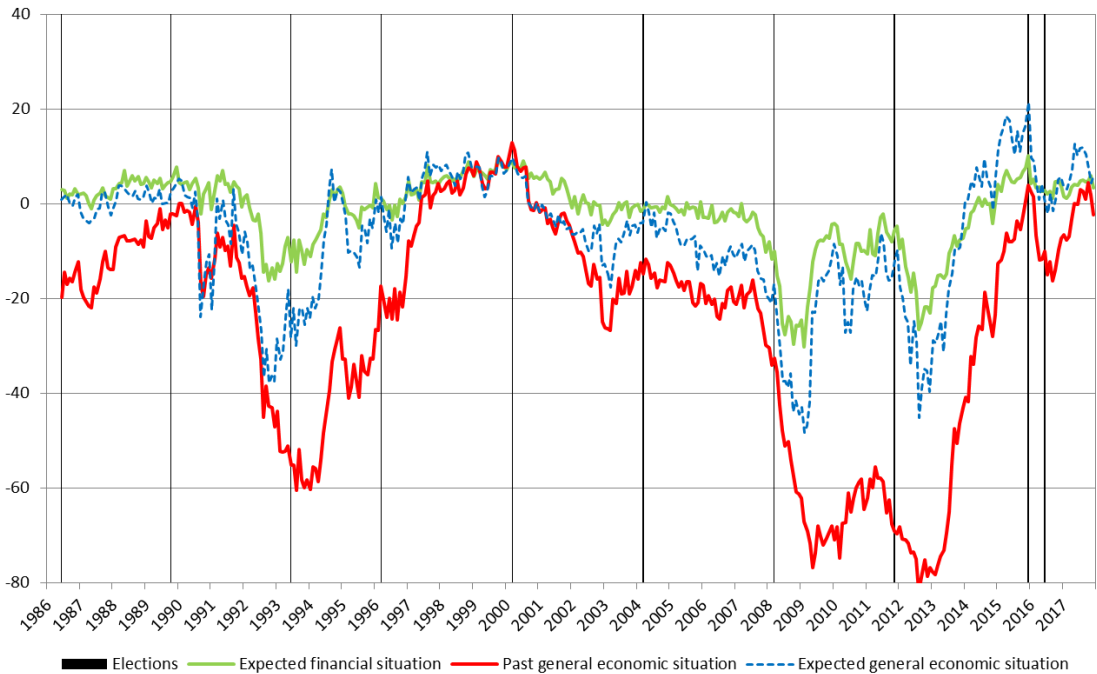
Graph A.5. Consumer survey questions in Belgium



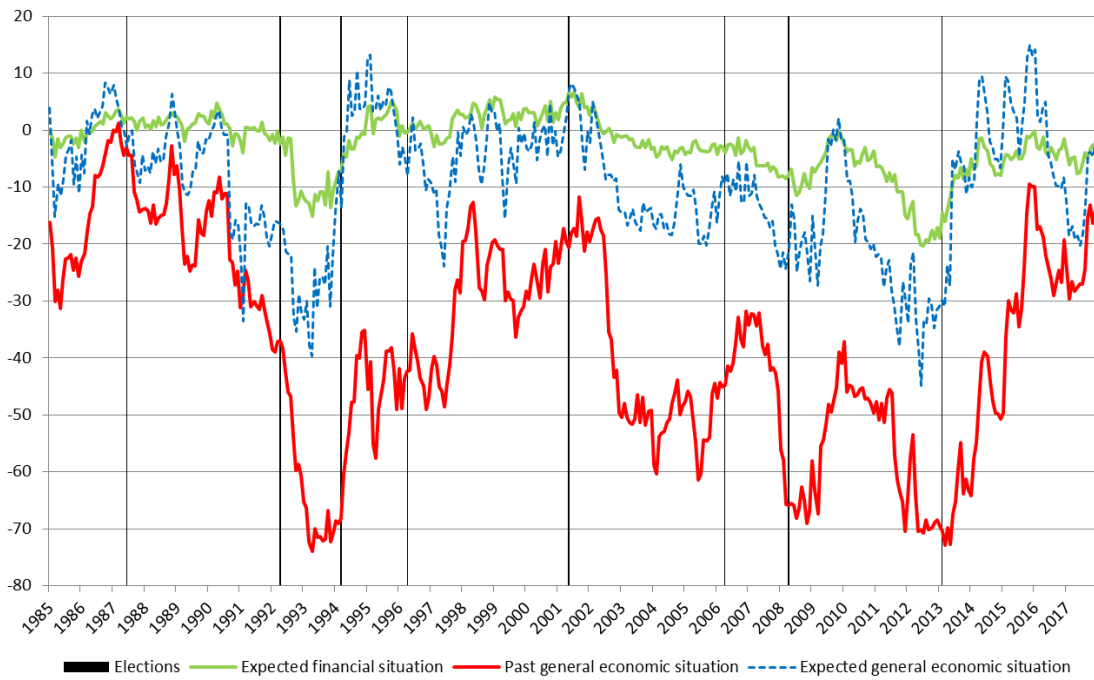
Graph A.6. Consumer survey questions in the Netherlands



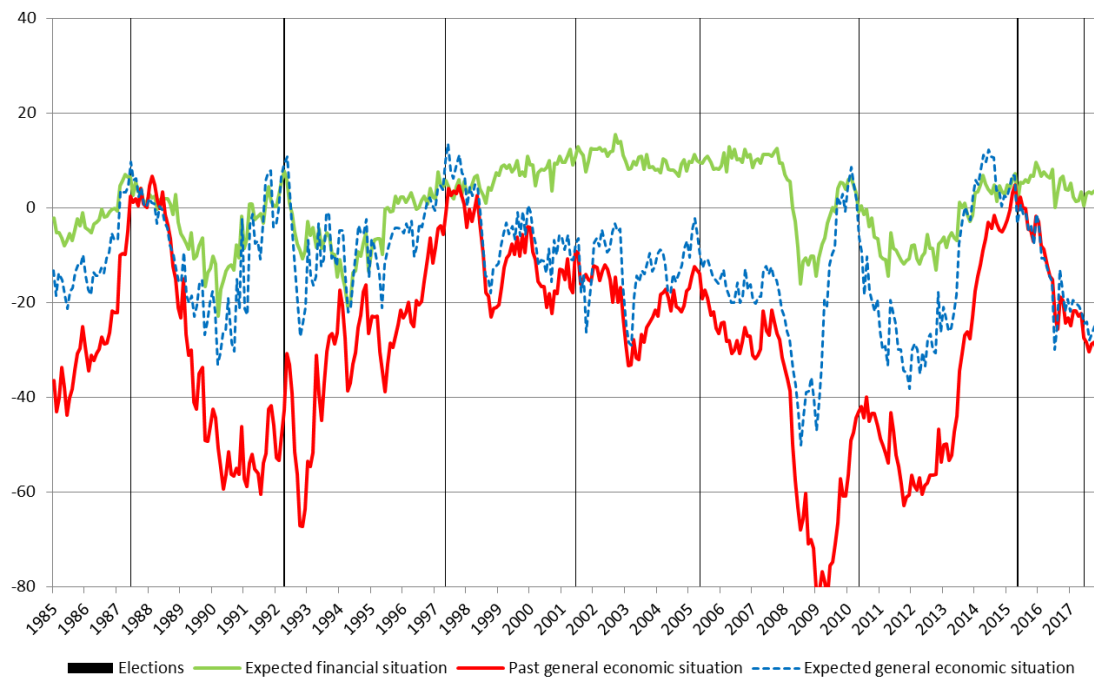
Graph A.7. Consumer survey questions in Spain



Graph A.8. Consumer survey questions in Italy



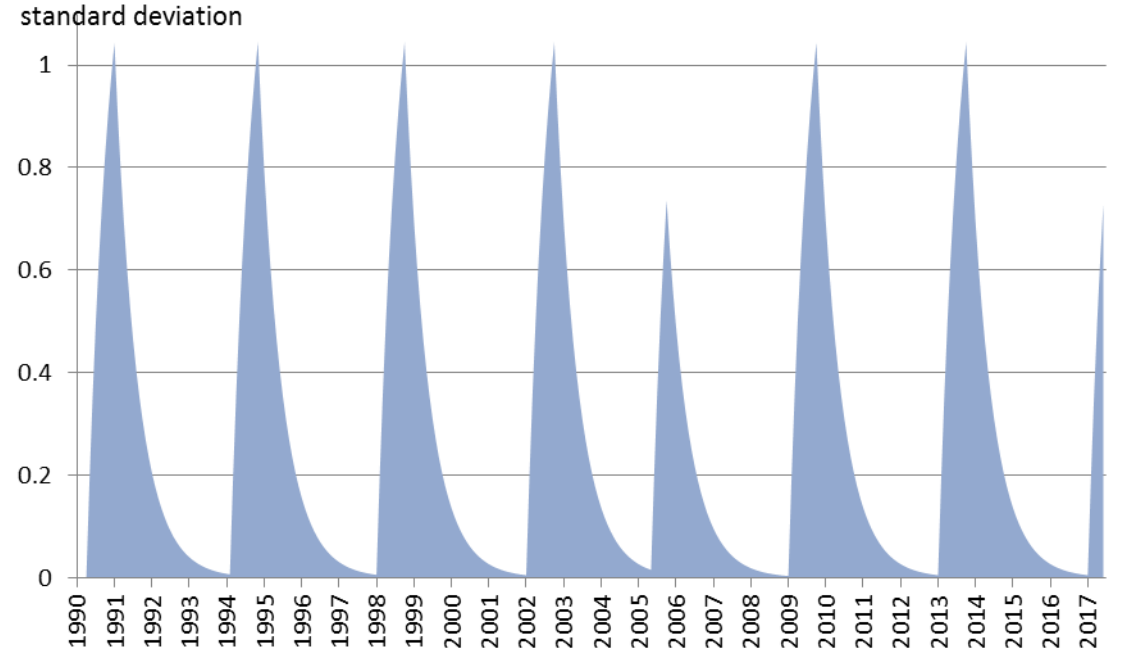
Graph A.9. Consumer survey questions in the United-Kingdom



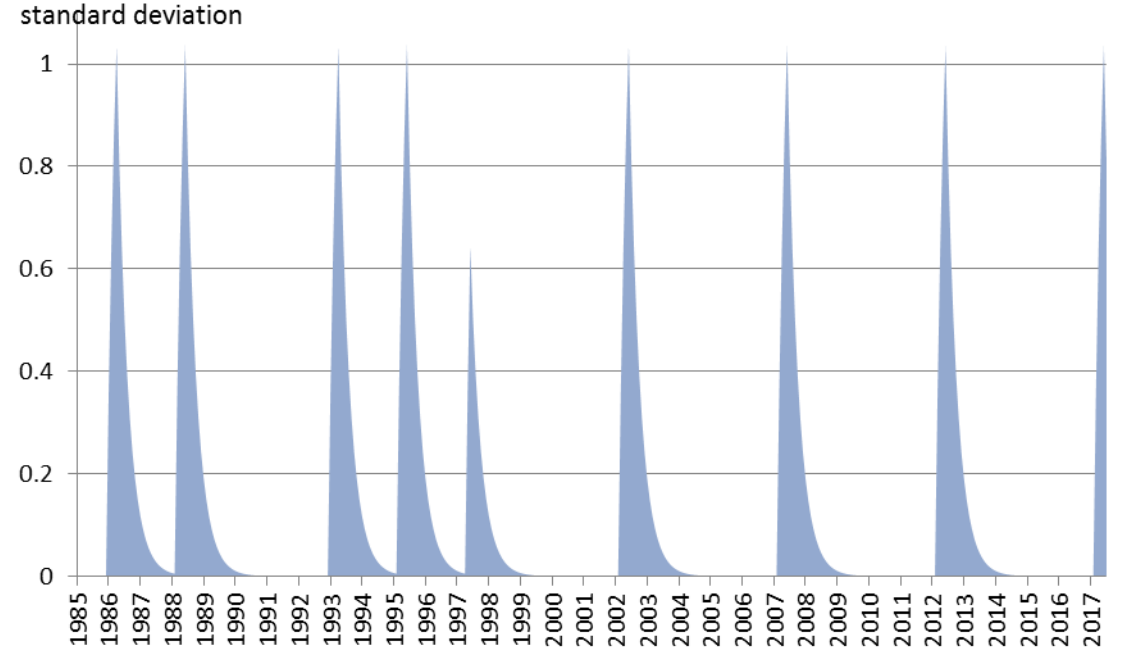
ANNEX IV

Cumulated election effects adjusted for the error-correction term

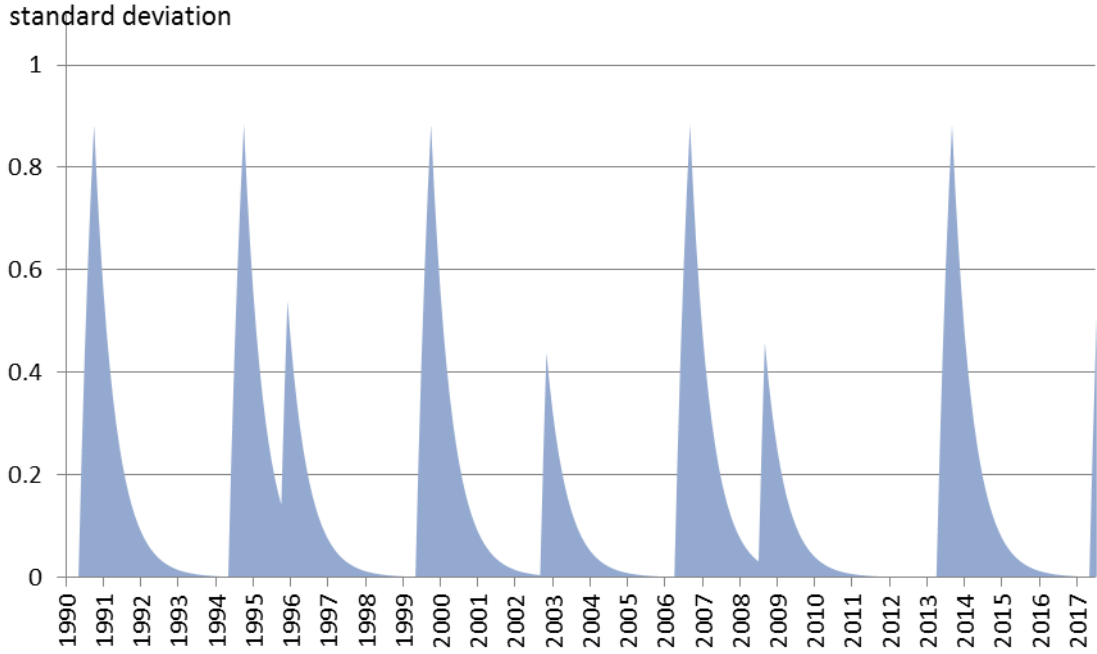
Graph A.10. Cumulated election effect in Germany



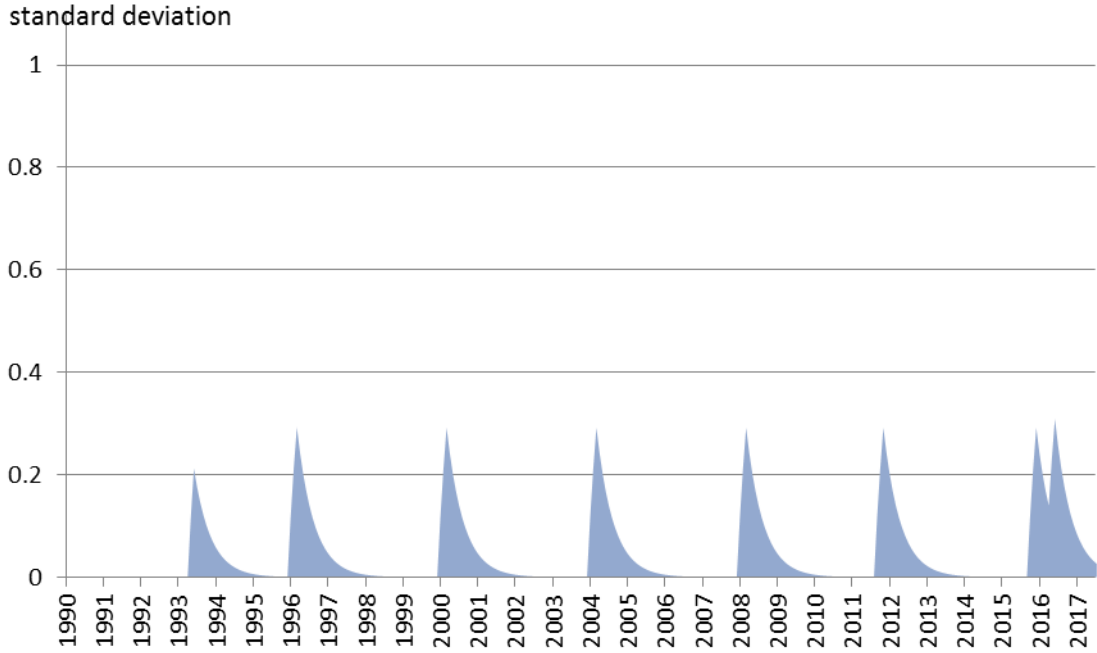
Graph A.11. Cumulated election effect in France



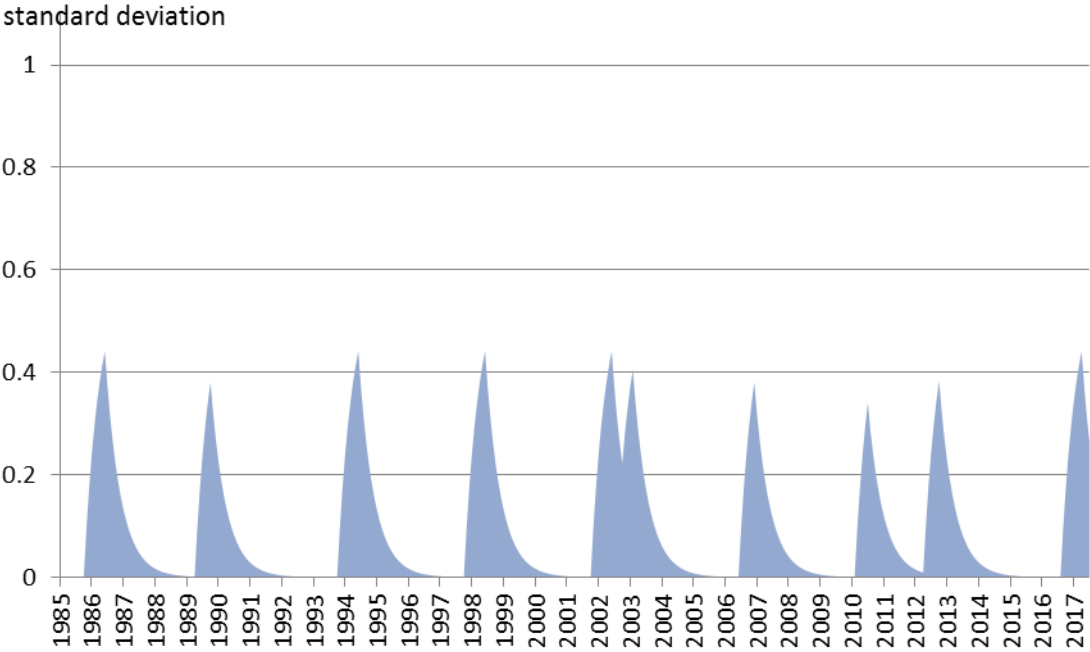
Graph A.12. Cumulated election effect in Austria



Graph A.13. Cumulated election effect in Spain



Graph A.14. Cumulated election effect in the Netherlands





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