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Explaining consumer confidence in Portugal

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ABSTRACT

Confidence in general and consumer confidence in particular are subject to increasing interest by many agents, including central banks and governments at the national level, and supranational entities, such as the European Commission of the European Union. Although the academic community shares this interest, the extant literature focuses on the use of consumer confidence to predict variables that describe aspects of the business cycle, such as consumption. Unlike this body of work, the objective of our paper is to analyse the evolution of consumer confidence in Portugal and examine the factors that underpin its formation. Using monthly and quarterly data over the period January 1987 to December 2009, we find that consumer confidence in Portugal is essentially explained by the economic performance, the entrance in the Euro zone and electoral circumstances.

1. Introduction and motivation

Confidence in general and consumer confidence in particular are subject to increasing interest by many agents, including central banks and governments at the national level, and supranational entities, such as the European Commission of the European Union (EU). The academic community and the (specialized) media share this interest. The severity of the current economic crisis, characterized as it is by the lowest level of confidence seen in several countries for many decades, has increased the attention paid to (consumer) confidence. Portugal no exception.

In fact, even before the current economic crisis, the importance of confidence was already acknowledged at several levels. To illustrate, one could consider the so-called Lisbon Strategy launched in March 2000 by the European Commission of the EU. With this strategy, the EU adopted a package of measures to promote growth and employment and set ambitious targets to positioning the EU economy to make it "the most dynamic and competitive knowledge-based economy in the world" by 2010. However, quite recently, many EU politicians have admitted that the Lisbon Strategy has been revealed to be excessively ambitious and have called for a new start with an emphasis on the reduction of long-term unemployment. In its

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supporting arguments, the European Commission stressed the role of the confidence of economic agents in the EU. It was then argued that structural labour market reforms were beneficial because they would significantly contribute to "an increase in growth and in employment *through a positive impact on confidence*"; see European Commission (2004, p. 19 [italics added]). Moreover, business surveys on economic sentiment and consumer confidence conducted by the European Commission are said to have become "an indispensable tool for monitoring the evolution of the EU and the Euro area economies, as well as monitoring developments in the applicant countries".[1]

The recognition of the importance of the economic climate for the business cycle comprises one strand of the literature that explores the influence of confidence on economic variables (Acemoglu & Scott, 1994; Dion, 2006; Harrison, 2005; Kwan & Cotsomitis, 2006; Matsusaka & Sbordone, 1995; Mourougane & Roma, 2003; Santero & Westerlund, 1996; Taylor & McNabb, 2007; Utaka, 2003). However, to give just one example, when acknowledging the relevance of consumer confidence for output growth (European Commission, 2000) it clearly becomes important to analyse the factors explaining confidence. Plainly, given that confidence relates to the real economy, whose manipulation to obtain a certain growth level remains the responsibility of each EU member-state, a crucial question to be asked when considering those EU objectives is to understand how confidence is explained in each member-state of the EU.

The increasing interest in the trajectory of confidence and in the factors that determine the formation of subjective evaluations of the economy, as reflected by confidence indexes, has been the subject of recent work in this area. Most of these papers investigate whether economic variables, like inflation, unemployment, and interest rates, and important events, like the Gulf War or September 11, influence the formation of economic expectations; see Garner (2002), Golinelli and Parigi, 2003, and Vuchelen (2004). On the other hand, De Boef and Kellstedt (2004) and Vuchelen (1995) also include political circumstances among the determinants of confidence. The former, along with Alsem, Brakman, Hoogduin, and Kuper (2008), also consider the impact of the economic and political information supplied by the media. In contrast, a recent approach by Van Oest and Frances, 2008 focuses on the identification of changes in consumer confidence that are significantly different from zero.

In this paper, we analyse consumer confidence in Portugal over 1987–2009. Until now, only Caleiro (2006) analysed this particular index for Portugal, using a fuzzy logic perspective to establish a relationship between confidence and unemployment in the country instead of an econometric model. Our empirical application provides two major contributions to the literature on the formation of consumer confidence. First, we present an objective analysis of the trajectory of the consumer confidence index, which identifies the significant structural changes in the series. Second, given the subjective nature of the variable of interest, we present regression results based on a wide set of explanatory variables, considering both monthly and quarterly data. These include economic performance, electoral circumstances, and nationally and internationally relevant events.

The remainder of the paper is structured as follows: Section 2 analyses the evolution of consumer confidence in Portugal. Section 3 describes some potential explanatory factors for confidence and analyses some of the regression results. Finally, Section 4 presents some concluding remarks.

2. Consumer confidence in Portugal

Our variable of interest is the consumer confidence index for Portugal, which is published by Eurostat and covers the period from January 1987 until December 2009. This indicator is the arithmetic average of the balances (in percentage points) of the responses to questions given to consumers about their expectations for the next 12 months regarding the financial situation of their household, the general economic situation, unemployment expectations (with an inverted sign), and household savings (European Commission, 2003). This time series, designated as *ConsConf*, is displayed in Fig. 1.

Roughly speaking, the consumer confidence indicator exhibits some stability at the beginning of the period, followed by an abrupt decline around 1992 until 1993, where an inverted U-shaped trajectory holds until 2003, followed by a tentative recovery that stopped around the end of 2006 when another sudden decline could be observed. At almost the end of the period, consumer confidence in Portugal attained its lowest level since 1987, although during the first 9 months of 2009 this indicator displays a continuous rise, followed by a clear decline.

The variability of the consumer confidence index is a well-known feature of this kind of time series. In particular, the occurrence of sharp declines appears to be common. In the case of Portugal, one can notice sharp declines at the end of 1991 and again at the beginning of 2002, identified in Fig. 1 by the full vertical lines, representing significant structural breaks.[2]

To examine the statistical existence of the structural breaks, we performed CUSUM and CUSUM-Q tests.[3] CUSUM tests require an econometric specification, as they are performed on the residuals of the adopted model. Naturally, they can be applied to OLS residuals; see, for example, Ploberger and Kramer (1992). We tested the stability of our time series by regressing it on a nonsignificant constant: $ConsConf_t = \beta_0 + \mu_t, t = 1, \ldots, T$. This model gave rise to residuals similar to the original series, to which CUSUM tests were applied. The null hypothesis of parameter constancy is rejected if the cumulated sums of the residuals

[1] See http://ec.europa.eu/economy_finance/db_indicators/surveys/index_en.htm (accessed 31.03.10).

[2] In Fig. 1, the dotted lines represent the occurence of elections, for which the dates are described in the next section.

[3] These results, along with other results discussed later that, to simplify the exposition, were not included in the paper are available from the authors upon request.

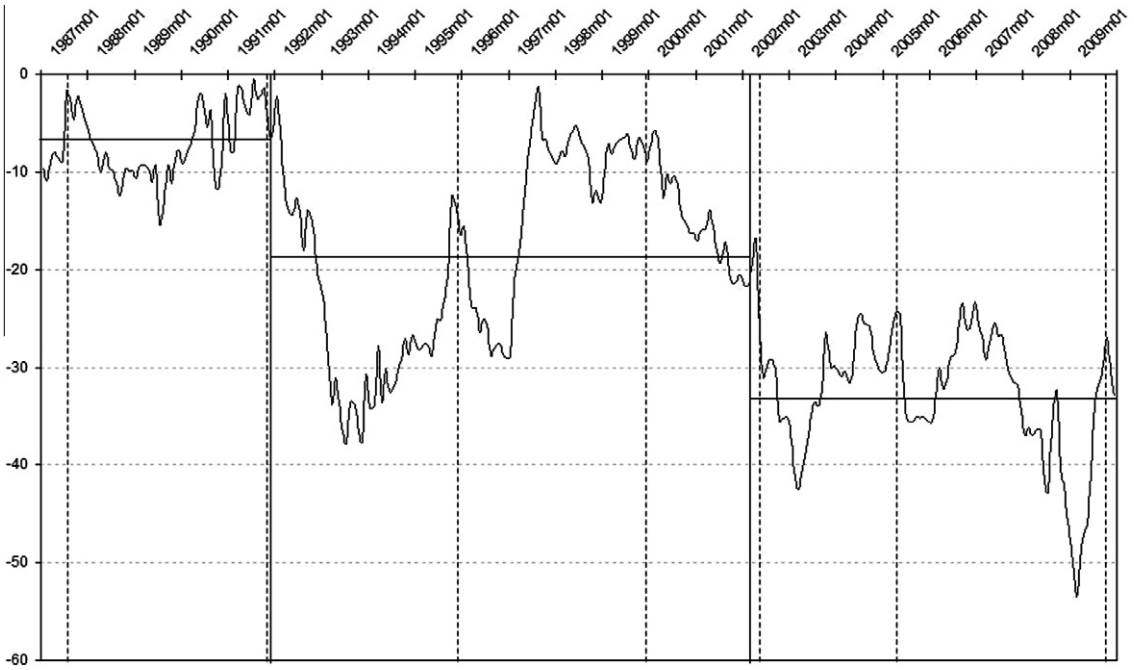

Fig. 1. Consumer confidence and election dates.

$\widehat{\mu}_t$ cross either of the critical lines $a \pm 2az$, where the constant a depends on the size of the test and $0 \leqslant z \leqslant 1$. We use the extension of Ploberger and Kramer (1992) where the cumulated sums are given by $B^{(T)}(z) := \frac{1}{\hat{\sigma}\sqrt{T}} \sum_{t=1}^{Tz} \widehat{\mu}_t$.

We also used Clemente, Montanes, and Reyes (1998) unit root tests that have the ability to capture and identify the existence of structural breaks. The results indicate the existence of two structural breaks in *ConsConf*, more specifically in November/December 1991 and February/March 2002. It is worth mentioning that the sharp declines in confidence leading to an apparent shift in the mean that took place at the beginning of 1992 and 2002, could be from a conjugation of effects: both external, including the respective implementation of the European Monetary System and the technology bubble crisis and internal, including, respectively, an unyielding policy associated with a political majority and a political crisis.

Additionally, we tested the equality of the means for the three subperiods. We computed the ANOVA table and the results obtained point to the rejection of the null hypothesis of equality between the three means. Consequently, there is strong statistical evidence of differences between the *ConsConf* means during the period under analysis. In fact, the horizontal lines in Fig. 1, representing the mean of the confidence index for each of the three subperiods in the analysis, suggest that when comparing each of these subperiods with the previous subperiod, the mean of the confidence index fell in about 50%.

Although our aim is to analyse the determinants of consumer confidence in general, we also briefly analysed the behaviour of the four subindexes mentioned at the beginning of this section for which the unweighted average gives rise to the consumer confidence index. We observe a synchronized behaviour (unemployment expectations behave as a mirror for the other three sub-indexes) in these four indexes. This synchronization is especially evident for expectations concerning the financial and general economic situation, which showed a correlation with the aggregate index greater than 90% (note that a similar behaviour was observed by Bechtel, Vanden Abeele, & DeMeyer (1993) for other EU member-states).

We have also performed a factor analysis (principal components extraction method) on the four subindexes. The Bartlett test of sphericity provided statistical significance of the correlation matrix among the variables. The measure of sampling adequacy obtained is 0.680, which indicates a middling adequacy. We used the latent root criterion and the scree test criterion to select the number of factors to extract, and the results indicate the existence of only one factor. This factor was analysed and compared with the consumer confidence index, and we verified that both present a similar behaviour through time, although these series have different scales. Therefore, the high degree of synchronization between the different dimensions of the consumer confidence index was confirmed.

3. Explaining consumer confidence in Portugal

In this section, we investigate the factors affecting the consumers' perceptions of current and expected economic conditions in Portugal. Previous studies on the formation of consumer confidence indicate that economic expectations are determined not only by economic performance, but also by other factors, like the political context and relevant events; see De Boef and Kellstedt (2004), Garner (2002), Golinelli and Parigi (2003), and Vuchelen (1995, 2004). However, most of these

papers focus on the analysis of the impact of one or two of these classes of factors. Further, while several alternative regression models have generally been estimated, no specification tests documenting the suitability of the models obtained are presented.

The subjective nature of consumer confidence suggests that this variable may be affected by a variety of conditions that cannot be fully evaluated. In fact, Vuchelen (2004) suggests that this index reflects the 'mood' of consumers, which may have unobserved determinants such as expected income or uncertainty. As the omission of relevant explanatory variables may lead to unreliable results in econometric analyses, in this paper we follow a different approach from the previous work in this area. Our strategy consists of including in the analysis all possible determinants of confidence and then assessing the models using well-known specification tests.

The previous empirical literature focussed on the explanation of consumer confidence indexes is mainly based on monthly data, although authors like Vuchelen (1995, 2004) use quarterly data. In the construction of a regression model to describe consumer confidence in Portugal we are faced with a trade off problem when choosing the data for our analysis. On the one hand, for the long period in analysis, the available consumer confidence index is monthly, and the use of monthly data allow us to define explanatory variables that incorporate electoral and other events in the regression analysis in a much more precise way than in cases where the data presents larger time intervals. On the other hand, quarterly analysis allows the incorporation of additional explanatory variables that are not available in monthly terms (for example the index of real gross domestic product (GDP)), and allows the use of a more reliable measure of unemployment, a variable for which the monthly estimates of Eurostat for Portugal appear to be subject to a substantial amount of noise; see Santos Silva (2006). This trade off had not been addressed previously by the literature dealing with consumer confidence. In order to explore this issue and to attempt to obtain a statistically and economically suitable model for explaining consumer confidence in Portugal, in this paper we present results based on both monthly and quarterly data.[4]

3.1. Potential explanatory variables

Given that consumer confidence reflects a prospective economic evaluation at the individual level, the most considered measures of economic performance in these matters appear to be important determinants of the consumer sentiment. Therefore, in our regression models, we incorporate unemployment, inflation, interest rate and a business cycle indicator, either the industrial production index in monthly analysis or the index of real GDP in quarterly analysis. These variables are denoted, respectively, as *Unemp*, *Infl*, *Interest*, *IPI* and *GDP*. Unemployment is the seasonally adjusted value of the total unemployment rate. Inflation corresponds to the growth rate of the consumer price index. Interest rate is the 10-year government bond yield. *IPI* is the seasonally adjusted index (2000 = 100) of industrial output and *GDP* is the index (2000 = 100) of seasonally adjusted GDP at market prices. While *Infl*, *Interest* and *IPI* are available monthly, for *Unemp*, as mentioned before, we have both a monthly and a quarterly measure and *GDP* is only available quarterly. In our quarterly analysis we used the last two covariates along with the mean for 3 months of *Infl* and *Interest*.

The second group of explanatory factors includes electoral variables essentially describing the type of elections held in Portugal during the period under analysis. Namely, we consider: (i) normal elections, which we define as those taking place in the normal electoral cycle in Portugal: October 1991, 1995, 1999, and September 2009 and (ii) early elections, including those that took place in July 1987, March 2002, and February 2005. Each of these classes of elections is included in the model with a dummy variable, respectively, designated as *Election* and *EarlyElection*. *Election* takes a value 1 for the 10 months or the three quarters before the occurrence of unanticipated elections as well as for the month and the quarter after these elections to capture the so-called honeymoon effect (this approach is similar to De Boef & Kellstedt (2004)). *EarlyElection* = 1 for all months/quarters preceding the three elections where it was perceptible that they could be called, and 1 month/quarter after the election to reflect the post-election political and economic sentiment. More specifically, for the July 1987 election, the political crisis around March 1987 is the relevant event; for the March 2002 election we consider the dissolution of Parliament in December 2001; and for the February 2005 election, the relevant event is the nomination of Prime Minister Durão Barroso as president of the European Commission in November 2004. Therefore, in monthly and quarterly data, *EarlyElection* = 1 for, respectively, March 1987–August 1987, November 2001–April 2002, and October 2004–March 2005 and 1987.Q2–1987.Q3, 2001.Q1–2001.Q2, and 2004.Q4–2005.Q1. In the analysis based on quarterly data, as *EarlyElection* was not significant, we merged the information with that of *Election* in such a way to form a variable that incorporates all the elections occured in Portugal in the model; see the dotted vertical lines of Fig. 1. In addition, as we suspect that consumer confidence could be also affected by absolute majorities in the elections of July 1987, October 1991, and February 2005, we also considered the dummy variable *Majority* = 1 for 10 months and three quarters before and after these elections. In this case, the variable not only reflects perceptions of the economic measures taken before the elections, but also consumers' reactions to the policies implemented by the governments supported by a majority in the parliament. The inclusion of these types of variables is inspired by Vuchelen (1995), though their construction closely follows the approach in De Boef and Kellstedt (2004).

We also incorporated two variables of context in the regression model that describe the occurrence of serious crisis, such as those in 1993, 2003, 2008, and 2009 where output did not grow in Portugal, and reflect the sentiment of the Portuguese

[4] We are grateful to the Editor and a Referee for this suggestion.

concerning entrance into the Euro area in January 2002. The former dummy variable, designated as *Crisis*, takes a value of 1 each month/quarter of the years mentioned before, while the latter, designated *Euro*, takes a value of 1 for the 6 months/two quarters before and after January 2002. The idea in the definition of this last variable is to capture the sentiment of the Portuguese during the period when their entrance into the Euro zone was prepared and their adaptation to the new currency with the substitution of the Euro for the escudo (a process subject to some negative perspectives).

Obviously, there are many other potential determinants of *ConsConf*. In exploratory analysis, we considered these other factors, some of which were used in previous work, such as De Boef and Kellstedt (2004) and Vuchelen (1995). In particular, we considered the inclusion of variables to capture the ideology of the party in power, the change in the party in power, the influence of particular events held in Portugal (such as Expo 1998 and the final tournament of UEFA Euro 2004), and the influence of important events in the international context (like the Gulf and Iraq wars and September 11). However, as none of these variables were significant in the models estimated, we do not present the results. Conversely, there are yet other variables that we would have liked to include in the model, such as an indicator of the media coverage of economic and political conditions which we were unable to construct for such a long period of analysis; see Alsem et al. (2008) and De Boef and Kellstedt (2004).

3.2. Regression results

The first step is to examine the order of integration of all economic variables (*Unemp*, *Infl*, *Interest*, *IPI*, and *GDP*) and *ConsConf* using the well-known Augmented Dickey–Fuller (ADF) test and the tests in Clemente et al. (1998) which are appropriate for assessing the presence of unit roots in cases where the series display one or more structural breaks. In fact, the results of ADF tests are strongly criticized in the literature, as they tend to be biased toward the nonrejection of the null hypothesis of the existence of unit roots in the presence of structural breaks. The Clemente et al. (1998) tests are derived under the assumption of innovational or additional outliers and are an extension of the Perron and Vogelsang (1992) tests for more than one structural change in the mean of the variable. Although these tests are not yet widely used, they are very attractive as, besides testing unit roots, they are able to identify structural breaks, as mentioned in Section 2. The results of the unit root tests indicate that all of the series are integrated of order one, I(1).

Given that *ConsConf*, *Unemp*, *Infl*, *Interest*, *IPI*, and *GDP* are I(1), we considered the possibility of estimating a long-run relationship between all these variables.[5] To test for cointegration between those series, we used the Phillips tests suggested by Gregory and Hansen, 1996 because the power of the Johansen's test may be reduced substantially when the series exhibits structural breaks.[6] Using the Gauss code provided by Bruce Hansen, our results indicate no cointegration between *ConsConf*, *Unemp*, *Infl*, *Interest*, and *IPI*/*GDP*, which leads us to conclude that no long-run relationship exists between *ConsConf* and the economic variables in our database. This type of approach, to the best of our knowledge, had never been followed in the literature in consumer confidence before. The absence of a long-run relationship between confidence and the performance of the economy is certainly a strong conclusion, which is supported by the fact that it was achieved for both monthly and quarterly data, using robust cointegration tests and in a framework where the simultaneous influence of several economic variables is taken into account.

For a short-run perspective, we work with the first differences of all the economic variables designated as $\Delta ConsConf$, $\Delta Unemp$, $\Delta Infl$, $\Delta Interest$, ΔIPI and ΔGDP. For both monthly and quarterly data, we first considered baseline models that incorporate all of the explanatory variables for confidence described in the previous subsection, including up to four lags for all the economic variables. Note that these baseline models do not incorporate the structural breaks observed for *ConsConf* because the variable of interest in the short run, $\Delta ConsConf$, according to the results of CUSUM tests, does not display statistically significant changes. Table 1 presents the estimates of the coefficients and the standard errors, along with some diagnostic measures and *F* tests of the joint significance of the lags of $\Delta ConsConf$, $\Delta Unemp$, $\Delta Infl$, $\Delta Interest$, ΔIPI and ΔGDP and the variables describing the electoral cycle and the economic context, and specification tests.

Although the *F* test for the null hypothesis that all slope coefficients are zero (F^{All}) exhibits a *p*-value of 0.014 and 0.000 with monthly and quarterly data, respectively, the *F* tests for the joint significance of the blocks of variables indicate that even when considering a significance level of 10%, only four blocks are relevant. This suggests that many of the factors we considered as potential determinants for $\Delta ConsConf$ are statistically irrelevant. In fact, in Portugal, consumers appear to overlook some economic variables, namely, unemployment, inflation and interest rates, in their prospective evaluation of the global performance of the economy. The blocks of variables that appear to be determinants are those concerning the past values of $\Delta ConsConf$, the indicators of the business cycle, the electoral variables and the context (even though in the last block, only *Euro* is individually significant). In these baseline models there is no statistical evidence of misspecification. The Reset test suggests that the functional form adopted is correct, although the null hypotheses of correct specification is not rejected only marginally with monthly data; Breusch–Godfrey's test suggests that serial correlation is not present; and, finally, the null hypotheses of homoscedasticity is not rejected by White's test, and the presence of autoregressive conditional heteroscedasticity of order four is also ruled out. However, given the amount of variables that are not significant, we will focus on reduced versions of these models, which appear to be statistically more appropriate to describe the data.

[5] Particularly, cointegration was tested for *ConsConf*, *Unemp*, *Infl*, *Interest* and *IPI*, and *ConsConf*, *Unemp*, *Infl*, *Interest* and *GDP*, for respectively, monthly and quarterly data.

[6] We are grateful to Paulo M.M. Rodrigues for his suggestions about the cointegration tests.

Table 1
Models including all the covariates.

Variables	Lag	Monthly data		Quarterly data	
		Coefficient	Stand. dev.	Coefficient	Stand. dev.
Δ*ConsConf*	1	0.010	0.064	0.329***	0.117
	2	−0.148**	0.062	−0.412***	0.123
	3	0.095	0.063	0.032	0.130
	4	0.024	0.063	0.210*	0.120
Δ*Unemp*	–	−0.125	2.143	−3.517*	1.942
	1	−3.560	2.423	−1.040	1.924
	2	0.165	2.421	3.350*	1.940
	3	1.568	2.450	−1.249	1.927
	4	−1.479	2.089	0.940	1.913
Δ*Infl*	–	−0.629	0.409	−1.065	0.642
	1	−0.491	0.439	0.255	0.909
	2	−0.373	0.530	0.179	0.886
	3	−0.194	0.541	0.112	0.890
	4	−0.288	0.367	0.208	0.633
Δ*Interest*	–	0.573	0.566	0.208	0.703
	1	0.093	0.581	−0.370	0.692
	2	0.013	0.581	0.545	0.722
	3	−0.068	0.567	0.054	0.730
	4	0.449	0.553	−0.622	0.709
Δ*IPI*	–	0.272***	0.088	–	–
	1	0.241**	0.107	–	–
	2	0.224*	0.116	–	–
	3	0.169	0.111	–	–
	4	−0.023	0.092	–	–
Δ*GDP*	–	–	–	2.350***	0.621
	1	–	–	0.205	0.718
	2	–	–	−0.014	0.773
	3	–	–	−1.247*	0.666
	4	–	–	−0.742	0.669
Election		1.285***	0.455	3.685***	1.028
EarlyElection		3.646**	1.719	–	–
Majority		−0.715	0.629	−2.197	1.450
Crisis		0.667	0.511	−0.820	1.633
Euro		−3.597**	1.664	−3.790**	1.764
Constant		−0.311	0.316	−0.984	1.418
R^2, $\hat{\sigma}$		0.173, 2.732		0.621, 3.078	
F tests for blocks of variables		*All* = 0.014, *ConsConf* = 0.087, *Unemp* = 0.511, *Infl* = 0.788, *Interest* = 0.898, *IPI* = 0.029, *ElectCycle* = 0.007, *Context* = 0.035		*All* = 0.000, *ConsConf* = 0.002, *Unemp* = 0.218, *Infl* = 0.235, *Interest* = 0.907, *GDP* = 0.002, *ElectCycle* = 0.002, *Context* = 0.106	
Specification tests		Reset = 0.057, BGodfrey = 0.279 White = 0.694, Arch = 0.759		Reset = 0.834, BGodfrey = 0.943 White = 0.509, Arch = 0.595	

Note: For hypothesis tests, we present *p*-values. In these models, given the large number of covariates, White tests were computed using the simplified version described in Wooldridge (2009, p. 275).
* Significance at the 10% level.
** Significance at the 5% level.
*** Significance at the 1% level.

The reduced models were obtained by retaining the covariates that, at the 10% level, were included in a significant block or were individually significant in the baseline models. Then, at the same significance level, the individually irrelevant variables were discarded and the variables that describe normal and early elections for monthly data were merged in one, simply designated as *Election*, since although their magnitude appear different in the baseline model, it was not statistically different. The final results are presented in Table 2.

In these models, the null hypothesis of no significance of all of the covariates is rejected at the 1% level and all of the covariates included in each model are individually significant at the 5% level, except the covariate *Majority* that only is significant at the 10% level. *F* tests of the comparison of these models with those including all possible covariates, F^{Comp}, clearly indicate that these models are more appropriate for describing the data than the baseline models. Moreover, as none of the specification tests in Table 2 is significant at the 5% level, there is no evidence of misspecification. However, with monthly data, again the Reset test does not reject the null hypotheses of correct specification marginally. This may be a consequence of using a error-prone measure of unemployment in this setup, which also may be responsible by the absence of explanatory power of both unemployment and inflation.

Table 2
Final models.

Variables	Lag	Monthly data		Quarterly data	
		Coefficient	Stand. dev.	Coefficient	Stand. dev.
$\Delta ConsConf$	1	–	–	0.337***	0.083
	2	−0.146**	0.059	−0.366***	0.090
	4	–	–	−0.235**	0.092
$\Delta Unemp$	–	–	–	−4.080***	1.517
	2	–	–	2.830**	1.418
ΔInfl	–	–	–	−0.526**	0.242
ΔIPI	–	0.307***	0.082	–	–
	1	0.275***	0.094	–	–
	2	0.247***	0.096	–	–
	3	0.218***	0.082	–	–
ΔGDP	–	–	–	2.425***	0.479
	3	–	–	−0.936*	0.502
Election		1.270***	0.392	3.572***	0.784
Majority		–	–	−2.618**	1.206
Euro		−1.810**	0.832	−3.928**	1.558
Constant		−0.436	0.192	−1.592	0.532
R^2 $\widehat{\sigma}$		0.117, 2.698		0.567, 2.893	
F tests for blocks		*All* = 0.000, *Comp* = 0.869		*All* = 0.000, *Comp* = 0.950	
Specification tests		Reset = 0.066, BGodfrey = 0.733		Reset = 0.8329, BGodfrey = 0.887	
		White = 0.519, Arch = 0.349		White = 0.207, Arch = 0.093	

Note: For hypothesis tests, we present *p*-values.
* Significance at the 10% level.
** Significance at the 5% level.
*** Significance at the 1% level.

It is also important to mention the consequences of omitting relevant explanatory factors in regression models for consumer confidence. In a previous version of this paper, where the analysis was only based on monthly data and did not include an indicator of the business cycle (*IPI*) among the regressors, the short run conclusions were completely different, suggesting an absence of explanatory power of the economic performance (measured in terms of unemployment and inflation) on the prospective evaluation of economic conditions, which was undoubtedly surprising both in terms of economic intuition and when compared with the conclusions that other studies had revealed for other countries.

The results of Table 2 clearly indicate that besides being explained by its past values and economic performance, consumer confidence in Portugal is also determined by electoral circumstances and the event of the entrance of Portugal in the Euro zone. The direction of all the marginal effects of the covariates on $\Delta ConsConf$ is the expected in all cases (note also that in cases where the covariates are simultaneously present in the models for monthly and quarterly data, the sign of the coefficients coincides).

The economic performance of the economy appears to increase $\Delta ConsConf$ in cases where $\Delta Unemp$ and $\Delta Infl$ decrease and in cases where the business cycle indicator ΔGDP points out to economic prosperity. Moreover, the entrance of Portugal in the Euro zone had a negative influence on consumer confidence. Therefore, Portuguese consumers showed a pessimistic attitude toward the process of substituting the Euro for the escudo. This could partly result from suggestions that circulated in Portugal at that time that prices would increase (due to inappropriate rounding off) with the conversion to the Euro.

On the other hand, the announcement of elections, either those included in the normal electoral cycle or those called unexpectedly, appear to have a significant positive impact on the formation of consumer confidence. This is illustrated in Fig. 1 where, in general, we observe high levels of consumer confidence before all elections; see the dotted vertical lines representing the elections. Finally, the negative sign of the coefficient associated to majority suggests that consumers, instead of displaying an optimistic sentiment due to the presumably political security, appear to anticipate that majority governments may be more likely to implement non-popular policies, given its autonomy.

4. Concluding remarks

In this paper we analysed the consumer confidence index for Portugal over the period 1987–2009. We found that this index displayed a decreasing trajectory in which, as a consequence of two significant structural breaks occurred near the date of two elections, during the implementation of the European Monetary System and the technology bubble crisis, the mean exhibited a decay of about 50%.

In terms of regression analysis, we found that there is no long-run relationship between consumer confidence and the major indicators of economic performance. In contrast, in a short-run perspective, these indicators appear to be relevant determinants of consumer confidence along with the electoral circumstances and the event of the entrance in the euro zone.

The absence of a long-run relationship between consumer confidence and the economic indicators was an intuitively unexpected result, although we could not find reliable references to compare our results, where cointegration had been tested using both tests robust to structural breaks and the set of economic indicators we employed in this paper. On the other hand, the short run results could have been partially anticipated. At least at the first sight, they agree with the findings of Vuchelen (1995, 2004) for Belgium, who in the two papers showed that, respectively, political circumstances and macroeconomic conditions are explanatory factors of confidence. However, in our analysis, by considering all those explanatory variables along with national and international events, suggests more detailed, and qualitatively different conclusions, since after controlling for the economic performance, the electoral cycle and an event, appear as relevant determinants of confidence.

Our results show that, apart from the economic performance, the major determinants of the economic evaluation performed by Portuguese consumers are electoral circumstances. In fact, electoral cycles, being the result of the manipulation of voters' welfare, are an apparent source of variations in confidence, as high levels of confidence around the election day are favorable to reelection. This generally accords with the results in Vuchelen (1995) that, by recognizing that consumer confidence is essentially prospective, may react to elections given the news content of the electoral results. As well known, from a partisan viewpoint, the uncertainty associated with the electoral results may turn these into news (Alesina, 1987) that prospective variables, such as expected inflation (as well as consumer confidence), do necessarily reflect. Moreover, these results call our attention to the novelty at the electoral cycles approach, as it is generally recognised that the macro variables used traditionally to win elections, such as inflation and unemployment, are becoming less controllable, especially in a small open economy operating in a monetary union, as for Portugal. Having said that, it is relevant to attest that the economy, namely the business cycle, also matters for confidence, even after controlling for electoral circumstances. From this point of view, confidence reveals to be a variable of special interest (also for further analyses) as it appears to distinguish two generally associated issues: the electoral and the business cycles.

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