



Data, Measures and Methods

The National Front Vote and Turnout in the French Presidential Elections

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The purpose of this short paper is to build and estimate a model that explains and forecasts the vote received by the National Front at the first round of the French presidential elections (1988–2002 and 1988–2007) with local economic conditions and turnout. The model has been accurate in forecasting the elections of the past and we make *ex post* and *ex ante* forecasts taking into account the 2007 French presidential election.

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Introduction

Since the end of the 1970s, numerous econometric vote models have been developed in France to explain and forecast national and local election outcomes. For the French presidential elections, the first models (e.g. Lewis-Beck, 1991, 1995, 1997; Courbis, 1995) use national data, but as the number of presidential elections is small (only eight elections from 1965 to 2007), the construction of these models to explain and forecast the vote in the presidential elections is rather problematic except if we use only one or two independent variables or if we construct a national election model (presidential and legislative and possibly European elections).¹ It is thus profitable to use local data (per department, for example), which allows us to have a larger number of observations and to use a greater number of independent variables (See e.g. Fauvelle-Aymar *et al.* (2000);² Dubois (2002); Jérôme *et al.* (2003); Jérôme and Jérôme-Speziari (2004); Auberger (2007) for the French presidential elections).³ Dubois (2002) made forecasts for the ruling presidential majority (first round), Jérôme *et al.* (2003) and Jérôme and Jérôme-Speziari (2004) for the parliamentary majority (first round and second round), and Auberger (2007) for the left-wing candidate (second round).



It is also possible to build a vote function for a single party. Jérôme and Jérôme-Speziari (2003, 2004)⁴ built a National Front (FN) vote function (for the first round of French presidential elections) with regional and national independent variables. The construction of these two FN vote functions is questionable because for some variables the authors used election outcomes that are not known.⁵

At the first round of the 2007 French presidential election, the FN only obtained 10.69% of the vote (in metropolitan France). This outcome was distinctly lower than those obtained in the 1988 (14.61%), 1995 (15.27%) and 2002 (17.19%) presidential elections. Table 1 gives the percentage of the vote obtained by the FN and turnout at the first round in the French presidential elections (1988–2007).

We notice that the higher the turnout is, the lower the FN vote is at the first round of the French presidential elections. The correlation coefficient between these two variables is equal to -0.97 .

In the 2007 French presidential election, the FN obtained 3,787,050 votes and lost almost a million votes in comparison with the 2002 French presidential election (first round), around 750,000 votes in comparison with the 1995 presidential election and approximately 550,000 votes in comparison with the 1988 presidential election. If we suppose that the FN's voters participate more easily in the presidential vote than other voters, that is all FN's voters vote whatever the degree of turnout, we can write that with a turnout in 2007 equal to that of 2002 (70.38%), the number of votes received in 2007 would have given a percentage of the vote equal to 13.18%. With a turnout in 2007 equal to that of 1995 (77.27%), the number of votes received in 2007 would have given a percentage of the vote equal to 11.74%. We thus note that turnout is an important factor of the percentage of vote received by the FN. This result will be confirmed by our estimates.

In this paper, we have built a model that explains the vote for the FN at the first round of the French presidential elections (over the periods 1988–2002 and 1988–2007) with local economic conditions and the turnout. The purpose of this article is to show the importance of the turnout in the percentage of votes received by the FN.

Table 1 Vote (FN) and turnout

<i>Election</i>	<i>FN</i>	<i>Turnout</i>
1988	14.61	80.34
1995	15.27	77.27
2002	17.19	70.38
2007	10.69	86.77



After presenting the FN vote function for the presidential elections and the variables used, we shall analyse the estimates. We shall make *ex post* and *ex ante* forecasts for the 2007 French presidential election.

Presentation of the Vote Function

We have built a vote function that explains the percentage of vote received by the FN in the French presidential elections.

The dependent variable ($VOTE_{FN_{it}}$) is the percentage of vote received by the FN at the first round of the French presidential elections over the periods 1988–2002 or 1988–2007 in every department of metropolitan France.⁶ We suppose that the voters vote more (resp. less) for the FN if they are dissatisfied (resp. satisfied) with economic conditions (national and/or local economic conditions, past and/or future). For this vote function we have retained two independent variables. The first one is a local economic variable taking into account the influence of local economic conditions on the vote of the voters. Local economic conditions are taken into account by the annual growth rate of the number of job seekers at the departmental level, 2 months before the elections (variable UNEM).⁷ Voters have a retrospective behaviour towards local economic conditions. We are expecting a positive coefficient for this variable because a decline of local economic conditions benefits the FN and an improvement penalizes it ($\alpha_1 > 0$). The second variable is turnout (variable TURN). It takes into account the percentage of the votes cast compared to the number of registered voters. When turnout is high (resp. low), it is unfavourable (resp. favourable) for the FN. We are thus expecting a negative coefficient for this variable ($\alpha_2 < 0$).

Other independent variables are tested such as the popularity of the FN or of Jean-Marie Le Pen,⁸ a partisan variable (per department),⁹ the results of the FN in the previous national elections, national economic conditions (economic growth or unemployment rate) and a variable taking into account violence.¹⁰ The coefficients of some of these independent variables do not have the expected sign (positive for the political variables and the unemployment rate) or they are not significant (economic growth). For the partisan variable and the results in the previous national elections, this is linked to the presence of the dummy variables per department, which integrate political factors.

Estimates and Forecasts

Our study concerns the periods 1988–2002 and 1988–2007 (i.e., three or four French presidential elections). For the econometric model, we have chosen a model with fixed effects.¹¹



We estimate the following vote function:¹²

$$\text{VOTE FN}_{it} = c_i + \alpha_1 \text{UNEM}_{it} + \alpha_2 \text{TURN}_{it} + \varepsilon_{it}$$

Table 2 gives the estimates for the FN vote function at the first round of the French presidential elections.¹³

The coefficients have the expected sign and are significantly different from 0 at the 10% level (at least). The coefficient of the variable UNEM indicates that over the period 1988–2007 (resp. 1988–2002), if the growth rate of job seekers in a department increases by 5 points then the departmental vote for the FN increases by 4 points (resp. 1.5 points). The coefficient of the variable TURN suggests that over the period 1988–2007 (resp. 1988–2002), an increase of 5 points in turnout in a department leads to a decline of the FN’s vote of 1.6 points (resp. 1.45 points).

Table 3 gives, for 1981, 1988 and 1995, the national *ex post* forecasts in the vote for the FN at the first round.¹⁴

The errors are low. The average error in three elections is approximately equal to 0.21 and in four elections it is approximately equal to 0.75. These *ex post* forecasts are thus satisfactory.

Table 2 Estimates of vote (FN)

Period	1988–2002	1988–2007
UNEM _{it}	0.03 (1.80)*	0.08 (4.08)***
TURN _{it}	-0.29 (11.34)***	-0.32 (10.86)***
R ²	0.92	0.87
R _c ²	0.89	0.83
AENF	0.21	0.75
AELF	0.98	1.19

t-statistics are in parentheses..

*Significant at 10%; ***significant at 1%.

AENF: average error for national forecast (absolute value).

AELF: average error for local forecast (absolute value).

Table 3 *Ex post* forecast in vote 1988–2002 and 1988–2007 (FN, first round)

Election	Predicted value	Actual value	Error
1988	14.24/13.50	14.61	0.37/1.11
1995	15.20/14.72	15.27	0.07/0.55
2002	17.41/17.61	17.19	0.22/0.42
2007	/11.75	10.69	/1.06



Table 4 *Ex ante* forecast for 2007 (FN)

<i>Turnout</i>	<i>Predicted value</i>
70	17.05
75	15.61
80	14.17
85	12.74
90	11.3

At the local level, the average forecast error is equal to 0.98 over the period 1988–2002 and is equal to 1.12, 0.79 and 1.04 for the 1988, 1995 and 2002 French presidential elections, respectively. The average forecast error is equal to 1.19 over the period 1988–2007 and is equal to 1.31, 0.99, 0.96 and 1.49 for the 1988, 1995, 2002 and 2007 French presidential elections, respectively.

Table 4 gives *ex ante* forecasts for the FN's vote at the first round of the 2007 French presidential election by making hypotheses on turnout.

We must remind you that the FN received 10.69% of the vote in metropolitan France. A very high turnout leads to a decline in the percentage of vote obtained by the FN in comparison with the previous presidential elections. At the first round of the 2007 French presidential election, turnout was equal to 86.77% and this turnout leads to an *ex ante* forecast equal to 12.23%.

Conclusion

In this short paper we have built a FN vote function, which explains and forecasts the vote received by the FN at the first round of the French presidential elections (over the periods 1988–2002 and 1988–2007). Overall, we can say that the performances of the estimates are satisfactory. We have shown the influence of turnout on the percentage of the vote received by the FN: over the period 1988–2007 (resp. 1988–2002), an increase of 5 points in turnout in a department leads to a decline in the FN vote of 1.6 points (resp. 1.45 points). For the 2007 French presidential election, we *ex post* forecasted that the FN obtained 11.75% at the first round and *ex ante* we have highlighted the negative influence of the turnout on the percentage of vote received by the FN (forecast made in April 2007).

Notes

- 1 We find in Auberger (2004) a synthesis of the main models for the French presidential elections with national data and in Dubois (2007) a synthesis of all the works about the vote in France.
- 2 This model integrated various types of elections (presidential, legislative, European and cantonal) and contained another equation, which explained the rate of turnout at the elections simultaneously to the vote.



- 3 Dubois (2002) was the first to build a presidential vote model by department (French presidential elections); Auberger (2007) also used local data while the other quoted models used regional data.
- 4 In this article, the authors simply built a Le Pen vote function (FN).
- 5 Construction of the variables FNDRAD, FNDU_{sup} and FNGU_{sup} used election outcomes over the period 1974–2002.
- 6 A part of the electoral data come from the database of the CIDSP (Grenoble), the other electoral data come from the Constitutional council. We do not take into account overseas departments and territories because we lack information about the number of job seekers in overseas departments and territories over the whole period studied.
- 7 The data come from the DARES – Bulletin Mensuel des Statistiques du Travail (monthly data).
- 8 In the FN vote function for the French European elections (Auberger, 2005), and in a model with fixed effects, this variable is significant with the expected sign.
- 9 This variable takes into account the partisan differences between departments and was used by Auberger and Dubois (2005) for the French legislative elections and by Auberger (2005) for the French European elections.
- 10 We test violence with the SOFRES variable: the percentage of persons who think that fighting violence or crime has to be the priority of the government. Over the period 1988–2002, the estimated coefficient of this variable is positive and significantly different from 0 (it is the expected result). On the other hand, over the period 1988–2007, the estimated coefficient of this variable is negative and significantly different from 0: it is not the expected result and it shows that Sarkozy's candidature seduced an important part of the FN's voters who considered him able to fight violence.
- 11 Our study concerns all the departments of metropolitan France and the Fisher statistics indicates that a model with fixed effects is preferable to the model without effects: for the estimate over the period 1988–2002, $F(93,186) = 20.74 > 1.30$ and over the period 1988–2007, $F(93,280) = 15.20 > 1.30$.
- 12 It was intended to simultaneously estimate the FN vote and the turnout with a 2SLSDV model (two-stage least-squares dummy variable), but the Hausman test indicates that the variables TURN and UNEM are exogenous (1988–2002: $\chi^2_{0.05}(97) = 8.31 < 120.71$ and 1988–2007: $\chi^2_{0.05}(97) = 6.25 < 120.71$) and thus we show the validity of an estimate that does not use a 2SLSDV model. For the turnout equation, we have built an equation for all the departments of metropolitan France with the following variables: unemployment, the number of candidates, the turnout in the previous presidential election and a dummy variable for the 2007 presidential election.
- 13 96 values of $\hat{\epsilon}_i$ are not reproduced here. We correct the heteroscedasticity because the Breusch-Pagan test indicates that we can reject the null hypothesis of homoscedasticity (1988–2002: $NR^2 = 287.11 > \chi^2_{0.05}(97) = 120.71$ and 1988–2007: $NR^2 = 380.93 > \chi^2_{0.05}(97) = 120.71$).
- 14 We give to the left the *ex post* forecasts with respect to the estimate over the period 1988–2002 and to the right those with respect to the estimate over the period 1988–2007.

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