8-1-2004

Xenophobia and Distribution in France: A Politico-economic Analysis

John E. Roemer

Karine Van der Straeten

XENOPHOBIA AND DISTRIBUTION IN FRANCE:
A POLITICO-ECONOMIC ANALYSIS

By

John E. Roemer and Karen Van der Straeten

August 2004

COWLES FOUNDATION DISCUSSION PAPER NO. 1478

COWLES FOUNDATION FOR RESEARCH IN ECONOMICS

YALE UNIVERSITY

Box 208281

New Haven, Connecticut 06520-8281

http://cowles.econ.yale.edu/

June 9, 2004

"Xenophobia and distribution in France: A politico-economic analysis[*]"

by

John E. Roemer
Yale University
and
Karine Van der Straeten
CNRS, Ecole Polytechnique Paris

Contents

---

[*] This project has been financed by the Russell Sage Foundation, to whom we are grateful. We thank Denis Cogneau and Woojin Lee for their advice on econometric issues, Nonna Mayer and other participants at a seminar in CEVIPOF for helpful suggestions at an early stage of this project, including alerting us to the existence of data sets that we employed, and Thomas Piketty for providing survey data on which an earlier draft of this paper was based. The project originated while Van der Straeten was visiting Yale University; financial support for her stay from the Department of Economics and the Cowles Foundation is gratefully acknowledged.

Abstract

Anti-immigrant feeling (xenophobia) among voters has been proposed as a key factor explaining why, in the 2002 French national election, Jean Le Pen's National Front Party won second place. Here, we study the effect of anti-immigrant sentiments among voters on the equilibrium position of political parties on the *economic* issue, which we take to be the size of the public sector. We model political competition among three parties (Left, Right, and Extreme Right) on a two-dimensional policy space (public sector size, immigration issue) using the PUNE model. We calibrate the model to French data for the election years 1988 and 2002, and show that politics have changed significantly over this period, from being centered primarily on economic issues to being centered on non-economic issues such as the immigration and security / law and order. We estimate that in 2002, the effect of voter xenophobia was to reduce the voters' choice of public-sector size between 7% and 51% of one standard deviation of the population's distribution of public-sector size ideal points, from what it would have been, absent xenophobia.

Key words: xenophobia, racism, distribution, political equilibrium

JEL categories:

June 9, 2004

1. Politics and the immigration issue in France

The 2002 French presidential election[1] led to an expected (and, to many, appalling) run-off election between Jacques Chirac – conservative incumbent – and Jean-Marie Le Pen, leader of the "Front National", a nationalistic and xenophobic law-and-order movement. Lionel Jospin , socialist and former prime minister, came in third place on the first round and so could not take part in the run-off election.

Many explanations were offered ex post to account for the presence of an Extreme-Right candidate on the second round of the French presidential election. Some referred to the very high number of candidates -- sixteen were vying for the presidency – that made coordination among voters (which might have prevented the Le Pen debacle) more difficult. Most commentators advanced the traditional parties' failure to respond adequately to the increasing anti-immigrant sentiment among the native citizenry, and to their expectations in terms of law and order policies, together with a general mistrust towards older traditional parties.

Most of these explanations, however, miss that Le Pen's 2002 electoral triumph had been long in the making. While Le Pen's second-place finish certainly shocked the nation, the xenophobic leader polled less than two percentage points higher than in the previous presidential election seven years earlier. Indeed, the Front National and its charismatic boss have been a potent electoral force since the early 1980s. As the Front's

[1] The French presidential election is a two-round vote. If a candidate gets at least 50% of the votes in the first round, she gets elected. If no candidate gets at least 50% of the score, the first two candidates meet in a second round. Who gets the majority of the votes in this run-off is elected.

emphasis on fighting immigration and restoring national unity has remained popular among sizable shares of the French electorate, the party has shed its image of a fleeting protest movement and has secured for itself a firm position in France's political landscape.

Our concern in this article is with the effect that increasing French anti-immigrant sentiment among voters will have on the size of the welfare state, as the latter is determined through political competition. For the purposes of this article, we will often describe anti-immigrant feeling as xenophobia. Ours is not a sociological or psychological investigation; we observe the distribution of xenophobic views based on voter survey data, and do not inquire into their causes or possible justifications. We will argue that the size of the welfare state and the government's position on immigration are among the most important issues in contemporary French politics. Political parties put forward positions on both these issues, and voters choose among parties based on their preferences on the two issues. We will model the political game among these parties, and then ask: How would the equilibrium values of the parties' positions on the size of the public sector change, were voters less xenophobic? We will attempt to answer the question by computing what the equilibrium in political competition would deliver, with regard to the size of the public sector, were the distribution of voter xenophobic attitudes different from what it is.

It is conceptually useful to distinguish between two ways in which anti-immigrant voter sentiment can alter the equilibrium party platforms on the issue of public-sector size. First, there is a direct effect which we call the *anti-solidarity effect* (ASE)*:* to the

extent that voters dislike immigrants, and believe that immigrants exploit the welfare state, they may desire to decrease the generosity of state benefits.

The second effect is indirect. Suppose that a voter is very xenophobic, although quite moderate on the issue of public sector size: she may vote for a xenophobic party if the immigration issue is sufficiently important for her, even if that party is more right-wing on the size of the public sector than she is. If there are many voters of this kind, then parties that want large cuts in the size of the public sector may gain large support. We call this the *policy-bundle effect* (PBE). It is a political portfolio effect, a consequence of the bundling of issues.

Our analysis will enable us to decompose the total effect of xenophobia on equilibrium values of party policy on public-sector size into these two effects.

Before turning to a description of our data and of the major political issues in the campaigns, we briefly present below the various political parties competing in the presidential elections, together with their vote shares. The tables A1, A2 and A3 in the Appendix present a full description of the results of the French presidential elections for years 1988, 1995, and 2002. We will describe French politics in terms of broader coalitions : Left, Right and Extreme Right. The composition of the coalitions is given in the Appendix tables referred to above. We compute the broader parties' vote shares by summing the vote shares on the parties forming the coalition; see Table 1.

[Insert table 1 about here]

The Extreme Right movement, whose main leader is Jean-Marie Le Pen, increased its vote share by almost 6 percentage points between 1988 and 2002, whereas the Left coalition lost about 6 percentage points.

Our data consist of micro-data from the Post-Electoral Survey 1988, the Post-Electoral Survey 1995, and French Electoral Panel 2002[2]. These surveys include

- demographic questions: age, sex,…,
- questions about social and financial position: marital status, income, labor status,
- questions about voting behavior, party preferences, determinants of the vote, …

[2] The CEVIPOF post electoral survey 1988 was produced by the CEVIPOF, and carried out by SOFRES. It took place just after the 1988 presidential election, between May 9th and May 20th, and includes 4,032 respondents representative of the French population above 18 (non-registered voters were excluded). The CEVIPOF post electoral survey 1995 was produced by the CEVIPOF, and carried out by SOFRES. It took place just after the 1995 presidential election, between May 8th and May 23rd, and includes 4,078 respondents representative of the French population above 18 and registered on electoral lists. The data of the French electoral panel 2002 (PEF2002) were produced by the CEVIPOF, the CIDSP, the CECOP with the support of the ministry of Interior, the FNSP, and the University of Montreal. This electoral study took place in three waves between April and June 2002 carried out by TN-SOFRES. It includes 10,138 interviews, 4107 in the first wave carried out before the first round of the presidential election between April 8th and April 20th, 4017 interviews after the second round between May 15th and May 31st, and 2013 after the legislative elections between June 20th and 28th. All these data are available at the Socio-Political Data Archive (CIDSP). The results and interpretation in the current chapter / paper are the sole responsibility of the authors.

- questions about economic or social issue: taxation, economic policies, law and order, immigration...

In order to asses the relative importance of the various issues in explaining voters' choice of a party on election day, we first present a brief overview of the 1995 and 2002 electoral campaigns, focusing on the issues perceived as the most important by the voters.[3]

For the year 1995, we rely on the following question:

Question : Here are a number of problems that France has to face nowadays. On a scale from 0 to 10, could you give a score to each of these problems, according to the importance it had in deciding your vote in the first round of the presidential election? The place of France in the world, security of persons, social protection, immigration, purchasing power and wages, education of the youth, unemployment, sharing of working time, European construction, environment, AIDS, corruption, exclusion.

[Insert table 2 about here]

Table 2 reports the answers. The first column reports the percentage of respondents who give each mentioned issue one of the two highest values on the 0-10 scale; the second column reports the percentage of respondents who give one of the lowest three values.

[3] Unfortunately, no such questions are available in the 1988 survey.

The third column gives the average score, and column 4 the standard deviation. Problems are ranked by average score.

Unemployment appears to be the most important issue, with an average score of 8.9; almost three quarters of the respondents give it a score of 9 or 10. Education of youth, social protection, and exclusion come next. Immigration appears only in the bottom half of the table.

For year 2002, we use the following question.

Question: Among the following problems, which will be the most important when you decide how to vote? Pollution, unemployment, immigration, social inequalities, political scandals, delinquency, conditions in schools, pensions, European construction, fight against terrorism, sovereignty of France, tax cuts. Which is the second most important problem, third most important problem?

[Insert table 3 about here]

Table 3 shows that the single most important problem is unemployment: one third of the respondents rank it as the most important problem, and almost two thirds of the respondents rank it as one of the three most important problems. The second most often cited problem is delinquency, the third is social inequalities. Immigration appears fourth; it is mentioned by 18% of the respondents as one of the three most important problems.

Thus, as in 1995, unemployment is still the most important issue; however, law and order and immigration issues have become more salient to voters over the period.

Assuming that unemployment, education and social inequalities are mainly questions about the size of the public sector, modeling political competition as focusing upon the two issues of public- sector size and immigration / law and order issues appears to be an acceptable abstraction.

2. Political equilibrium: Theory

We propose that the spectrum of political parties can be captured, for our purposes, with a model that postulates three parties: a Left, a Right, and an Extreme Right. The Left party of the model will correspond to the union of four or six parties; the Right will correspond to the union of three parties; the Extreme Right will correspond to either one or two parties (See tables A1,A2, and A3.) We propose in this section a model of political equilibrium in which three parties compete on a two- dimensional policy space, which, in our application will be the *size of the public sector* and the *policy towards immigrants*.

The model is an extension of *party unanimity Nash equilibrium with endogenous parties* (PUNEEP) as defined in Roemer (2001, Chapter 13).

The data of the model consist of the information (H,F,T,v,n) where:

- H is a space of *voter types* equipped with a probability distribution F;
- $v(\cdot,h)$ is the utility function of a voter type defined on the policy space T, and
- n is the number of parties.

The equilibrium will consist in: a tuple $(L,R,ER,\tau^L,\tau^R,\tau^{ER})$ where:

- (*L*,*R*,*ER)* is a partition of the set of voter types into *party memberships* or *constituencies:*

- $L \cup R \cup ER = H, \quad L \cap R = \varnothing, L \cap ER = \varnothing, R \cap ER = \varnothing$

- $\tau^J \in T$ is the equilibrium platform of party *J*, for *J=L,R,ER.*

There will be no confusion if we refer to a *party* and its *constituency* by the same variable: e.g, ER for Extreme Right.

For our application, a voter's type will be an ordered pair (π,ρ) where π is the voter's ideal public sector size (which we sometimes call, for short, her 'tax rate') and ρ is her position on the immigration issue. The policy space *T* is a set of ordered pairs (*t*,*r*), which we may take to be the real plane, where *t* is a party's policy on the size of the public sector and *r* is its policy on immigration. The utility function of the polity is a function $v : T \times H \to \circ$ given by

$$v(t,r;\pi,\rho) = -(t-\pi)^2 - \gamma(r-\rho)^2 \qquad . \qquad (2.1)$$

We refer to γ as the *relative salience of the immigration issue,* and assume it is the same for all voters.

Given three policies $(\tau^L, \tau^R, \tau^{ER})$ proposed by the parties, we define $\varphi^J(\tau^L, \tau^R, \tau^{ER})$, for *J=L,R,ER,* as the fraction of the polity who prefer the policy of party *J* to the other two policies. In our model, if the policies are distinct, then the set of voters indifferent between two policies will always have *F*-measure zero, and so, in the case of distinct policies, these three fractions sum to unity.

Unlike the model of Downs, in our model, parties will generically propose distinct policies in equilibrium.

We briefly review the concept of party unanimity Nash equilibrium (PUNE). A party possesses *entrepreneurs* or *organizers,* and *members* or *constituents.* The members of a party are citizens who, in equilibrium, prefer that party's policy to the policies of the other parties. The party will also *represent* its members, as we describe below. The entrepreneurs are professional politicians who make policy in the party. Think of them as a very small group of individuals, who are not identified with citizens characterized by a type. (Their type is irrelevant.) We will assume that the organizers of the Left and Right parties are each divided into two factions – an Opportunist faction and a Militant faction. The Opportunist faction wishes, in the party competition game, to propose a policy that will maximize the party's vote share. The Militant faction wishes to propose a policy that will maximize the average welfare of the party's constituency.

The proposal that parties consist of bargaining factions captures the view that parties have conflicting goals: to represent constituencies, and to win office, or, more generally, to maximize vote share. Mathematically, the virtue of the factional model of parties is that it engenders the existence of political equilibria when policy spaces are multi-dimensional.

We will assume that the Extreme Right party is a passive member of the party – competition game: it proposes a fixed policy, which could be viewed as the ideal policy of its organizers. Modeling the Extreme Right in this way is less than ideal: we would have preferred to model it as a party with factions that behave in the manner of the other two parties. Doing so, however, immensely complicates the computation of equilibrium –already a time-consuming task—and so we have elected to treat the policy it proposes as exogenously given. Its *membership,* however, will be endogenous.

Without loss of generality, we could postulate a third faction in each of the L and R parties – a Reformist faction, whose members desire to maximize the average *expected* welfare of the party's constituency. (The expectation comes about because there is uncertainty concerning which party will win the election. Of course, in a three-party model, there is also uncertainty concerning the government coalition.) As is shown in Roemer (2001), the set of equilibria will not change with this additional faction: in an appropriate sense, the Reformists are a 'convex combination' of the other two factions. Therefore we have dispensed with it, and also with having to define the probability of victory, which would be essential, were we have to discuss expected utility of voters, something of concern to Reformists.

We mention the Reformists because postulating their existence adds an important element of realism to the model, although, it turns out, it does not alter the model's equilibria. Thus, from the formal viewpoint, we may ignore Reformists[4].

The idea of PUNE is that parties compete against each other *strategically*, as in Nash equlibrium, and factions *bargain* with each other, inside parties. At an equilibrium, each party's platform is a best response to the other parties' platforms in the sense that it is a *bargaining solution* between the party's factions, given the platforms proposed by the other parties. In our application, this will be the case for the L and R parties.

[4] The reader may be puzzled that adding the Reformist faction does not change the equilibrium set. Adding them does change something, however: the interpretation of the bargaining powers of the factions associated with particular equilibria. Thus, we do not say that Reformists don't matter: it is just that they do not matter for the present analysis.

Suppose the members of a party consist in all citizens whose types lie in the set $J \subset H$. We define the *average welfare function* for this party as a function mapping T into the real numbers defined by :

$$V^J(\tau) = \int_{h \in J} v(\tau; h) dF(h) \qquad . \qquad (2.2)$$

That is, $V^J(\tau)$ is just (a constant times) the average utility of the coalition *J* at the policy τ. For (2.2) to make sense, we must assume that the utility functions *v* are unit-comparable.

Definition A *party unanimity Nash equilibrium* (PUNE) *for the model* (*H,F,T,v,3*) *at the exogenous* ER *policy* τ^{ER} is :

(a) a partition of the set of types $H = L \cup R \cup ER,$ possibly ignoring a set of measure zero;

(b) a pair of policies (τ^L, τ^R)

such that:

(1a) Given (τ^L, τ^{ER}) there is no policy $\tau \in T$ such that:

$$V^R(\tau) \geq V^R(\tau^R) \text{ and } \varphi^R(\tau^L, \tau, \tau^{ER}) \geq \varphi^R(\tau^L, \tau^R, \tau^{ER})$$

with at least one of these inequalities strict;

(1b) Given (τ^R, τ^{ER}) there is no policy $\tau \in T$ such that:

$$V^L(\tau) \geq V^L(\tau^L) \text{ and } \varphi^L(\tau, \tau^R, \tau^{ER}) \geq \varphi^L(\tau^L, \tau^R, \tau^{ER})$$

with at least one of these inequalities strict;

(2) for *J=L,R,ER,* every member of coalition *J* prefers policy τ^J to the other two policies, that is $h \in J \Rightarrow v(\tau^J, h) > v(\tau^{J'}, h)$ for $J' \neq J$.

Condition (1a) states that, when facing the policies τ^{ER} and τ^{L}, there is no feasible policy that would increase both the average welfare of party *R*'s constituents and the vote fraction of party *R*. Thus, we may view policy τ^{R} as being a *bargaining solution* between party *R*'s two factions when facing the oppositions' policies, as the Militants' desire to maximize the average welfare of constituents, and the Opportunists desire to maximize vote share. All we employ here is the assumption that a bargain must be Pareto efficient for the two players in the bargaining game. Condition (1b) similarly states that policy τ^{L} is a bargaining solution for party *L*'s factions when facing the policies τ^{ER} and τ^{R}. Condition (2) states that the endogenous party memberships are stable: each party member prefers her party's policy to the other parties' policies.

There are two 'free' parameters in this equilibrium concept: one might think that the relative strength of the Militants with respect to the Opportunists in a party is an important variable, in determining where on the mini-Pareto frontier of the factions the bargaining solution lies. There is one such parameter for each party L and R. Thus, we can expect that, if there an equilibrium, there will be a two-parameter manifold of equilibria, where the elements in this manifold are associated with different pairs of relative bargaining strengths of the pairs of factions in L and R. This indeed turns out to be the case, as we will see below.

With differentiability, we can characterize a PUNE as the solution of a system of simultaneous equations. Denote by $\nabla_J \varphi^J(\tau^L, \tau^R, \tau^{ER})$ the gradient of the function φ^J with respect to the policy τ^J. Denote by ∇V^J the gradient of V^J. Then, we can write the necessary conditions for a PUNE where τ^{L} and τ^{R} are interior points in *T* as:

(1a) there is a non-negative number *x* such that $-\nabla_L \varphi^L(\tau^L, \tau^R, \tau^{ER}) = x\nabla V^L(\tau^L)$ (FOC)

(1b) there is a non-negative number *y* such that $-\nabla_R \varphi^R(\tau^L, \tau^R, \tau^{ER}) = y\nabla V^R(\tau^R)$.

Condition (1a) says that the gradients of the vote share function and the average welfare function for party *L* point in opposite directions at the solution, and so, assuming local convexity, there is no direction in which the policy of the party can be altered so as to increase both the party's vote share and the average welfare of the party's constituents. Thus conditions (1a) and (1b) correspond exactly to the conditions (1a) and (1b) in the definition of PUNE. (All policies are interior in our application, since *T* is an open set.)

Our next task is to characterize PUNE as a system of equations, which requires us to formulate precisely the party constituencies. Denote the set of types who prefer a policy $\tau^a = (t^a, r^a)$ to policy $\tau^b = (t^b, r^b)$ by $\Omega(\tau^a, \tau^b)$, and compute that

$$\Omega(\tau^a, \tau^b) = \begin{cases} \{(\pi, \rho) \mid \rho < \psi(\tau^a, \tau^b, \pi) \text{ if } r^a < r^b \\ \{(\pi, \rho) \mid \rho > \psi(\tau^a, \tau^b, \pi) \text{ if } r^a > r^b \end{cases} \tag{2.3}$$

where $\psi(\tau^a, \tau^b, \pi) = \dfrac{t^{b2} - t^{a2} + 2\pi(t^a - t^b) + \gamma(r^{b2} - r^{a2})}{2(r^b - r^a)}$. (2.4)

We will specify the value of the policy *r* so that larger *r* means more xenophobic (anti-immigrant). Thus, at equilibrium, we will expect that $r^L < r^R < r^{ER}$. For an equilibrium with this characteristic, it follows from (2.3) that the constituency *L* will be precisely:

$$L = \{(\pi, \rho) \in H \mid \rho < \min[\psi(\tau^L, \tau^R, \pi), \psi(\tau^L, \tau^{ER}, \pi)]\},$$

for these are the types who will prefer policy τ^L to both other policies. In like manner, we have:

$$ER = \{(\pi,\rho) \mid \rho > \max[\psi(\tau^{ER},\tau^{R},\pi),\psi(\tau^{ER},\tau^{L},\pi)]$$

and R , of course, comprises the remaining types (except for a set of measure zero). In short-hand, if we define:

$$m(\tau^{L},\tau^{R},\tau^{ER},\pi) = \min[\psi(\tau^{L},\tau^{R},\pi),\psi(\tau^{L},\tau^{ER},\pi)]$$
$$M(\tau^{L},\tau^{R},\tau^{ER},\pi) = \max[\psi(\tau^{ER},\tau^{R},\pi),\psi(\tau^{ER},\tau^{L},\pi)]$$

and we denote the vector consisting of all three policies as τ, then we have:

$$L = \{(\pi,\rho) \mid \rho < m(\tau,\pi)\},\ R = \{(\pi,\rho) \mid m(\tau,\pi) < \rho < M(\tau,\pi)\},\ ER = \{(\pi,\rho) \mid \rho > M(\tau,\rho)\}.$$

(2.4a)

Assuming the support of the distribution F is the real plane, we can therefore write:

$$\varphi^{L}(\tau) = \int_{-\infty}^{\infty}\int_{-\infty}^{m(\tau,\pi)} dF(\pi,\rho), \qquad (2.5a)$$

where the inside integral is over ρ and the outside integral is over π, and in like manner:

$$\varphi^{R}(\tau) = \int_{-\infty}^{\infty}\int_{m(\tau,\pi)}^{M(\tau,\pi)} dF(\pi,\rho), \quad \varphi^{ER}(\tau) = \int_{-\infty}^{\infty}\int_{M(\tau,\pi)}^{\infty} dF(\pi,\tau) \quad . \qquad (2.5b)$$

Similarly, we can write:

$$V^{L}(\tau^{L}) = \int_{-\infty}^{\infty}\int_{-\infty}^{m(\tau,\pi)} v(\tau^{L};\pi,\rho)dF(\pi,\rho), \quad V^{R}(\tau^{R}) = \int_{-\infty}^{\infty}\int_{m(\tau,\pi)}^{M(\tau,\pi)} v(\tau^{R};\pi,\rho)dF(\pi,\rho). \quad (2.6)$$

The corresponding average-welfare function for the ER is irrelevant, because the ER plays a fixed policy.

Now we substitute these expressions into the first-order conditions (FOC), and we have fully modeled PUNE – that is, condition (2) of the definition of PUNE holds by construction.

The first-order conditions now comprise four equations in six unknowns – the four policy unknowns of the Left and Right parties, and the two Lagrangian multipliers *x* and *y*. If there is a solution, there will (generically) be, therefore, a two- parameter family of solutions. As we described above, the points in this family or manifold can be viewed as corresponding to equilibria associated with different relative bargaining strengths of the pairs of factions in the parties L and R.

Indeed, we now construct an internal bargaining game between party factions and show how to compute the relative bargaining powers of the factions at a PUNE. Denote a PUNE by $(L, R, ER, \tau^L, \tau^R, \tau^{ER}, x, y)$, where, recall, (*x*,*y*) are the Lagrange multipliers displayed in eqns. (1a,1b) above. We construct a Nash bargaining game. Suppose that the impasse situation for party *L* (should its factions fail to come to an agreement concerning the policy *L* announces) is that party *R* wins for sure and *L* does not participate in the election. Then party *L* wins a zero vote share and and the constituents of party *L* endure an average welfare of $V^L(\tau^R)$. Then the Nash bargaining game of the opportunist and militant factions in *L* involves choosing a policy τ to maximize the Nash product

$$(\varphi^L(\tau, \tau^R, \tau^{ER}) - 0)^{\alpha}(V^L(\tau) - V^L(\tau^R))^{1-\alpha},$$

where α and 1-α are the bargaining powers of the Opportunists and Militants in Left, respectively. The first-order conditions for this maximization at its solution τ^L can be written:

$$\frac{\alpha\nabla_L\varphi^L(\tau^L,\tau^R,\tau^{ER})}{\varphi^L(\tau^L,\tau^R,\tau^{ER})}+\frac{(1-\alpha)\nabla V^L(\tau^L)}{V^L(\tau^L)-V^L(\tau^R)}=0\,.$$

But condition (1a) in the definition of PUNE says that $-\nabla_L\varphi^L(\tau^L,\tau^R,\tau^{ER})=x\nabla V^L(\tau^L)$; substituting, we solve for α:

$$\alpha=\frac{\varphi^L(\tau^L,\tau^R,\tau^{ER})}{x(V^L(\tau^L)-V^L(\tau^R))+\varphi^L(\tau^L,\tau^R,\tau^{ER})}\,. \qquad (2.7)$$

In like manner, the bargaining power for the Opportunists in Right at a PUNE is given by:

$$\beta=\frac{\varphi^R(\tau^L,\tau^R,\tau^{ER})}{y(V^R(\tau^R)-V^R(\tau^L))+\varphi^R(\tau^L,\tau^R,\tau^{ER})}\,. \qquad (2.8)$$

We shall use these formulae below.

3. The policy bundle and anti-solidarity effects: Theory

Our strategy to compute the two effects of voter xenophobia on the size of the public sector will be to estimate the above PUNE model, and then to run two counterfactual experiments, which we now describe. The reader may ask: How can we use a model which only specifies a two dimensional manifold of equilibria to predict the result in a world with a single observed equilibrium? The answer is that, fortunately, the equilibrium manifold turns out to be highly concentrated in the policy space, so that little precision is lost by the fact that there is a continuum of equilibria. We will illustrate this below.

We will summarize the values of the 'tax policy' *t* that parties propose in equilibrium by one *average expected policy,* that we will define later, which we will

denote t^{exp}. Our concern is with the effect of xenophobia on the size of public sector (tax policy).

In the first counterfactual experiment, we assume that *immigration policy(r) is not an issue* in the election. Parties compete, that is, over the single issue of public-sector size, *t.* Voters, however, continue to possess exactly the distribution of preferences on public sector size as described by (the marginal distribution of) *F*. Since those preferences are influenced by their views on immigration, it continues to be the case, in this counterfactual contest, that voters' views on immigration will *indirectly* affect the political equilibrium, via their effect on preferences over size of the public sector. We summarize the tax-policy equilibria of the set of PUNEs for this counterfactual election by one policy, $t_I^{\exp}$.

To compute these equilibria, we exogenously specify a fixed value for the *r* issue. (It does not matter what that value is.) This counterfactual election is equivalent to an election in which voter preferences are altered by setting γ equal to zero. Thus the difference $t_I^{\exp} - t^{\exp}$ is exactly a measure of the policy-bundle effect: for in this election, there is no portfolio problem for the voter, as immigration policy is not an issue. Nevertheless, a voter's xenophobia will still cause her to vote for a lower size of the public sector than otherwise, if she does not wish to support immigrants with public funds. So the anti-solidarity effect is still active.

Next, we estimate (to be described below in section 4) a distribution of *racism-free demands for the public sector* That is, we estimate what the distribution of preferences over public-sector size would be, were all voters non-xenophobic, or not anti-immigrant. Call this distribution *G.* We next run a second unidimensional election, on

public-sector size, where we assume the distribution of voter preferences on the tax issue is given by *G*. The results of this election will be sterilized of both the policy-bundle and the anti-solidarity effects. If we summarize the policy of the PUNEs here calculated by $t_{II}^{\exp}$ then we say that the total effect of xenophobic is $t_{II}^{\exp} - t^{\exp}$, and the anti-solidarity effect is $t_{II}^{\exp} - t_{I}^{\exp}$.

4. Estimation of model parameters

a. Distribution of voter traits

a(i). *Description of the questions and distribution of answers*

In the equilibrium model, parties propose platforms consisting of an economic issue (amount of social expenditures) and an immigration policy. We must select some questions allowing us to estimate voters' preferences on these two types of issue. Ideally, we would like to use identical questions for all three years to see how voters' opinions on these issues have evolved. Unfortunately, very few questions are asked all three years.

The economic issue:

Question: Can you tell me if the word "privatization" has a rather positive or negative connotation for you?

Figure 1 presents the distribution of answers.

[Insert figure 1 about here]

Respondents are quite evenly split into two groups : those with a (quite or very) positive opinion about privatization, and those with a negative opinion, the former being slightly more numerous. The distribution is quite stable through time, with only a small shift towards more negative feelings.

This question is an indicator of general economic liberalism. Now, to construct an index of voters' preferences on the economic issue, we also want to integrate some more specific questions about welfare programs and social security. Unfortunately, the surveys are designed in such a way that no such questions are available for all three years.

For 1988, we use the following question:

Do you agree with the following statement? The State should guarantee a minimum revenue to all households.

For 1995 and 2002, we use the following question:

Can you tell me if the word Solidarity has a rather positive or negative connotation for you?

The distribution of answers is displayed in figure 2.

[Insert figure 2 about here]

In all three years, the distributions of answers is very similar. One might be concerned that the questions used for the year 1988 on the one hand (support for a minimum income for all) and 1995 and 2002 on the other hand (connotation of the word solidarity) describe quite different feelings. In particular, the scope of the latter question seems

much broader, as solidarity need not mean economic solidarity. Yet, it turns out that we probably do not err when we take the answers to these two questions as describing the same kind of opinions, as we will argue below. For the time being, we assume that the answer to these questions are a satisfactory proxy for support for state welfare programs.

We define voters' preferences on the economic issue as being some aggregate of general economic anti-liberalism and support for welfare programs, as characterized by the questions mentioned above. More precisely, we choose to give each answer a score on the 0-3 scale (on the anti-privatization scale, the value 0 means a very positive connotation of the word privatization, and the value 3 means a very negative connotation ; on the pro welfare scale, 0 means the lowest possible support, and 3 mean the highest possible support). Then, we take the economic view as being the sum of these two scores. Neglecting respondents who do not answer either question that is used to construct the index, we summarize the results in figure 3.

[Insert figure 3 about here]

The distribution of views is quite stable through time, with a slight shift in favor of more public sector. See appendix tables A4, A5, A6, and A7 for all statistics on the economic variables.

The immigration issue:

Question: There are too many immigrants in France.

The distribution of answers is shown in figure 4.

[Insert figure 4 about here]

A large majority of respondents think that there are too many immigrants in France. The distribution of views is quite stable through time, with a peak of anti-immigrant feeling in 1995.

Question: Nowadays we do not feel at home as we used to.

The distribution of answers is shown in figure 5.

[Insert figure 5 about here]

We use these two questions to define voters' preferences on the immigration issue. More precisely, here again we choose to give each answer a score on the 0-3 scale (on both the 'Too many immigrants' scale and the 'Do not feel at home' scales, the value 0 means that the respondent strongly disagrees with the statement, and the value 3 means that he/she strongly agrees). We take the immigration view as being the sum of these two scores. Neglecting respondents who do not answer either question, the distribution of this index is given in figure 6.

[Insert figure 6 about here]

The distribution of views is quite stable through time, with a peak of anti-immigration feeling in 1995. See appendix tables A8, A9, A10, and A11 for all statistics on the anti-immigrant variables.

The correlation between the views on the size of the public sector and the immigration issue will play an important part in our analysis. The graphs below depict for years 1988 and 2002 the distribution of Pro Public Sector views, partitioned by answers to the immigration question. The percentage of respondents in the first three categories of the pro Public Sector index are small, and so we merge these three categories on the graphs. See figures 7 and 8.

[Insert figures 7 and 8 about here]

It appears that there is globally a U-shaped relationship between pro-public sector opinions and anti-immigration views. People with extreme views on the immigration issue (either very negative or very positive) also tend to support higher level of public spending. When we consider the first five types of immigration view (from 0 to 4), we observe a negative relationship between anti-immigrants feelings and pro public sector views. Then the relationship goes the other way. Yet, some striking differences are to be noted between 1988 and 2002. In 2002 the negative relationship appears to be much more important than in 1988. This is confirmed by the observation of average economic view by immigration type for both years. See figure 9.

[Insert figure 9 about here]

When we consider the evolution of the joint distribution of economic opinions and immigration related feelings, the main findings are the following:

1. The marginal distributions are quite stable through time. One can note a peak in anti-immigration feeling in 1995, and a slight increase in the support for more public sector, yet these shifts over time are quite small.

2. The correlation between these two opinions has changed a lot. In 2002, the globally negative relationship is much stronger than in 1988.

a(ii). *Interpretation of the variables*

To construct voters' preferences we rely on a small number of questions only, whereas in the survey more questions are available regarding individuals' opinions on economic policy or immigration policy (recall our choice was constrained, because, to the extent possible, we tried to select questions available for all three years). To understand better exactly what these variables mean, we check the correlation of our selected variables with other related variables.

In particular, one might be concerned about the changes reported between 1988 and 2002 in the correlation between the economic views and the immigration views. One could argue that this relationship is spurious, and mainly caused by the change in the definition of the economic index. Indeed, recall that in 1988, we used a question about minimum income for all households, and in 1995 and 2002 we used a question about the connotation of the word solidarity. As we said, it is possible that the word solidarity has

a broader sense than just economic solidarity, and that people who resent the presence of two many immigrants will tend to have negative feelings towards the word solidarity if it is understood as a feeling of fraternity for all people living in France. Yet, as we shall now show, other questions in the survey provide further evidence for the strong negative correlation in 2002 between anti- immigration feelings and support for welfare programs. Indeed, in the 2002 survey, the following question about welfare programs is available:

Question: As far as the "Revenu Minimum d'Insertion" is concerned (the RMI is the main welfare program in France), would you rather say that
(1) People may tend to be happy with it and not look for work
(2) It helps people get through hard times.

57% of the respondents (who indeed answered the question) selected the first answer. A majority of people tend to think that welfare programs create strong disincentives to work, and that people living on welfare do not try hard to re-enter the labor market. Now the correlation between answers to this question and opinions on the immigration issue is very large, as shown in figure 10.

[Insert figure 10 about here]

Among people with the most negative feelings towards immigrants, about 75% tend to have a low opinion of people living on welfare, whereas this percentage drops down to

less than 45% in the most three immigrants-friendly groups. This is to be compared with the distribution in 1988 as shown in figure 11.

[Insert figure 11 about here]

In 1988 on the contrary, there is rather a positive – although weak -- relationship between anti -immigrant feelings and support for welfare programs.

Appendix tables A12 and A13 present the correlations between the *ProPublicSector* and *AntiImmigrants* variables and several other opinions on economic, social or cultural issues. The numbers reported in these tables add further evidence to the increasing correlation through time between economic views and opinions on the immigration issue.

a(iii). *Construction of a continuous joint distribution*

Confident that the two variables selected in the first sub-section are good indicators of the preferences we want to estimate, we now proceed to construct a joint distribution of voters' traits. We approximate the joint distribution by a bivariate normal density with parameters reported in the table 4. Figures 3 and 6 suggest that a normal approximation is adequate for the distribution of economic views; for the distribution of immigration views, the normal fit is not so good for 1995.

[Insert table 4 about here]

b. Average position by constituency

In the survey, respondents are also asked which party they voted for in the various elections. This allows us to compute the average views on both issues by constituency, as defined by the broad coalitions presented above. These average values, which can be interpreted as the equilibrium ideal position of the Militants in each party, are reported in table 5, for years 1988 and 2002.

[Insert table 5 about here]

The Extreme Right voters are the most extreme on the immigration issue, but they have moderate views on the economic issue, although they are closer to Right voters than to Left voters on that issue. The main differences between 2002 and 1988 are that the L and R electorates tend to be closer to one another on the economic issue in 2002, and that the ER and the L electorates tend to be further apart on the immigration issue in 2002.

c. Estimation of counterfactual preferences

As we described in section 3, we want to construct counter-factual xenophobia-free economic preferences, that is, view points on the size of the public sector that would be observed if the hostility towards immigrants and refugees did not reduce the feeling of solidarity. There is no obvious procedure for constructing these preferences. Our approach depends upon how we interpret the large correlation between opinions on the

size of the public sector and on the immigration issue, on which evidence has been provided (see figures 7 and 8).

We cannot expect, given the available data, to provide definitive evidence that the correlation is indeed a causality -- that is, that xenophobia indeed *causes* a decrease in the support for the public sector -- or to give any final answer as to the exact size of this effect. Our goal in this section is less ambitious: it is to provide some weak evidence that this correlation remains even when we control for demographic factors, and to provide a range of values for the effect.

As a first approach to computing the potential magnitude of this effect, we begin with the most obvious analysis, which is to consider the distribution of economic preferences by *AntiImmigration* view. Table 6 presents the mean and standard deviation for various distributions among those whom we class as not xenophobic.

[Insert table 6 about here]

Using *AntiImmigration=0* as the reference non-racist group is probably too extreme. The choice of *AntiImmigration=1* or *AntiImmigration* $\leq$ 2 seems more reasonable.

Table 6 only reports correlations. It might be argued that this correlation is the indirect result of the existence of common determinants of immigration views and economic views. For example, in 2002, age is negatively correlated with anti-immigrant feelings and (slightly) positively correlated with support for a larger public sector; see figure 12.

[Insert figure 12 about here]

It might be argued that young people tend to be more educated and more open-minded, hence less subject to negative stereotypes, which would explain the strong positive relationship between age and xenophobia. As to economic views, young people – who are severely hurt by unemployment – support a slightly higher level of the public sector than older people. On the other hand, some other variables are negatively (or positively) correlated with both anti-immigrant views and pro public sector views --for example, household income. See figure 13.

[Insert figure 13 about here]

There is a very strong negative relationship between income and xenophobia. Several explanations have been put forward to account for this relationship. First, poor individuals potentially suffer more from the competition on the job market with low skilled immigrants (or at least they so perceive) and live in the same urban neighborhoods. Second, poor individuals have lower education, and higher levels of education tend to diminish negative stereotypes about foreigners or immigrants. As far as the income variable is concerned, note there is only a small negative correlation between income and economic views : richer individuals tend to be less favorable to a large public sector, but the relation is weak. Views on the size of the public sector depend much more on values and opinions about justice than on economic variables.

To check whether the negative correlation between anti- immigrant feeling and support for public sector still obtains when we control for demographics variables, we run multivariate regression analysis. See table 7, columns (1) and (3).

[Insert table 7 about here]

In columns (1) and (3), the *AntiImmigration* variable is significant and attracts the expected negative sign. The coefficient is much larger (in absolute value) in 2002 than in 1988. Young, female respondents tend to support a larger public sector. Note that, somewhat surprisingly, in 2002, opinions about the size of the public sector do not depend on income, once all other variables are taken into account.

So far, we have only controlled for demographic variables such as gender and age. But subjective opinions might also be important to determine economic views, in particular opinions that people are lazy and do not try hard enough, or that money incentives are important. In columns (2) and (4) of table 7, we also control for these opinions. Unsurprisingly, respondents who think that people are lazy and that monetary incentives are important tend to favor lower tax rates.

There is no clear-cut decision as to the exact set of the variables that should appear on the right-hand side of the regression. For instance, should we add the variable measuring views on " people are lazy / people on welfare do not try hard enough", which is highly correlated with anti- immigrant views? The answer depends on how we interpret the correlation between *AntiImmigration* and this variable. If we believe that hostility towards immigrants and a negative opinion of people who live on welfare are both

determined by the same psychological or social traits (e.g., some intrinsic general distrust), then the variable should be added. On the other hand, it might be argued that people who have a rather low opinion of those who live on welfare do so precisely because ethnic minorities are over-represented among the unemployed and the poor. In that case, including this variable on the right-hand side of the equation is likely to induce some under-estimation of the direct influence of *AntiImmigration* on support for a larger public sector. The question does not have any straightforward answer and is hard to settle.

The figures in table 7 suggest that an increase of 1 point (on the 0 to 6 scale) in the level of xenophobia reduces the *ProPublicSector* by a constant between 0.03 and 0.08 in 1988 and by a constant between 0.10 and 0.15 in 2002. We use this estimator to construct what we will define as 'racism-free demands for public sector'. We next describe our procedure.

1. We select a critical level of *AntiImmigration* ρ_{ref} that will be considered as the non-xenophobic threshold.

2. For all individuals with *AntiImmigration* less than or equal to this critical level ρ_{ref}, we assume that there is no ASE at play, and consider that their observed preferences for the public sector are also the ASE-free economic preferences.

3. For all individuals with *AntiImmigration* greater than this critical level ρ_{ref}, we assume that there is some ASE at play, and define their ASE-free economic preferences as those that they would have, were their *AntiImmigration* preferences the critical value specified.

More specifically, consider an individual with observed ideal policy π_i and ρ_i. We define his racism- free demand for public sector by :

π_i if $\rho_i \leq \rho_{ref}$,

$\pi_i + \delta(\rho_i - \rho_{ref})$ if $\rho_i \geq \rho_{ref}$

where δ is the decrease in the support for public sector generated by an increase of one point on the xenophobia scale.

We will consider two different values for ρ_{ref} : $\rho_{ref} = 1$ (option 1), $\rho_{ref} = 2$ (option 2). For each option we present the estimate for two values of δ.

Table 8 presents the mean and standard deviation of the racism free economic preferences for the three options defined above, and the two years under study. The last line also presents the figures for observed preferences.

[Insert table 8 about here]

As observed earlier, the ASE effect is much stronger in 2002 than in 1988. Note that the values obtained are similar to those obtained with the simpler analysis summarized in table 6.

The conclusion of this section is that a reasonable set of distributions of the 'racism-free demand for the size of the public sector' for both years are normal distributions with characteristics presented in table 9[5].

[5] We chose the standard deviations in table 9 to be slightly smaller than observed values because we are suppressing some heterogeneity in immigration views by combining the three lowest categories.

[Insert table 9 about here]

5. Political equilibrium: Observation and prediction

We computed PUNEs for both 1988 and 2002 for many values of γ. We report the results for γ=0.35 in 1988, and γ=0.40 in 2002: these values gave us a very good fit of the model to the data. We chose the distribution of types (π,ρ) to be a bivariate normal distribution whose parameters are given in section 4. Almost the entire support (.998) of the distribution lies in the square $[-2,10]\times[-2,10]$. Figure 14 plots the density function for 2002. (The horizontal axis in the figure is π.)

We describe the computation of equilibrium PUNEs. We set the ER policy at the average value, for each dimension, of voters who identified with the ER party. For each value of γ, we computed many (approximately twenty) PUNEs[6]. Recall that to compute a PUNE, we must solve four simultaneous equations in six unknowns, such that two of the unknowns, the Lagrangian multipliers, are non-negative. We indeed find many PUNEs, as predicted by the theory.

In Figures 15 and 16, we graph these PUNEs for 1988 and 2002. The space of the figure is (*t*,*r*); consult the legend of figure 15. Recall, we fix the ER PUNE policy at its observed value. Note that the figures display the *weighted average PUNE* for each of

[6] We do not compute more PUNEs because even this computation requires about twelve hours of computer time, for each value of γ. And we tried many more variations of the model than we report here.

Right and Left, as well as the average ideal policy of the constituencies of the three parties. (We describe the weights below.)

We note that the weighted average PUNEs of the L and R parties are quite close in the policy space to the observed ideal policies of the constituencies of those parties. This suggests that the model is fitting the data well. If the Militants had all the bargaining power in their expected parties, then we would predict that the L and R parties propose in equilibrium exactly the average ideal policies of their constituencies.

Nevertheless, the fits are imperfect. In 1988, note that in PUNEs, Left is more extreme on the public-sector policy than its membership – this cannot be accounted for by the influence of Opportunists, who would push the party towards a less extreme view than its membership's. On the immigration issue, the Left in the average PUNE has the same policy as its membership. Right is less extreme on the immigration issue than its membership (which could be accounted for by Opportunists in Right trying to take votes away from Left); it plays the same policy on the economic issue as its membership's.

In 2002, the observed average policy positions of the L and R memberships are so close to the weighted average PUNE values that we hesitate to attribute any significance to the differences. The parties seem to be very close to their members' views in this year.

We remind the reader that our utility function has only one degree of freedom, γ; thus, it seems quite remarkable that the model appears to fit the data as well as figures 15 and 16 show.

The set of PUNEs computed for these values of γ are presented in Tables 10 and 11. The second and third columns, labeled 'α' and 'β', present the relative bargaining power of the Opportunists at the PUNE, in the L and R parties, respectively,

as computed from equations (2.7) and (2.8). A relative bargaining power of 0.5 means the factions are equally strong in the bargaining game. When the relative bargaining power is greater (less) than 0.5, then the Opportunists (Militants) are more powerful in the party in question.

The observed vote shares in the 1988 election were (0.49, 0.365, 0.144) respectively for *L,R,ER*. The average shares of the parties in the PUNEs in the above table are (0.39, 0.35, 0.26). Thus, we predict that the Left should receive fewer votes, and the Extreme Right more votes, than they did in reality.

In 2002, the observed vote shares were for L, R, and ER were (0.429, 0.379, 0.192). Compared with 1998, the Left lost substantially and the Extreme Right gained substantially. The average shares in the PUNEs reported in Table 11 for L, R, and ER are (0.42, 0.27, 0.31). This time, we correctly predict Left's share, but we predict that ER should have more, and R fewer votes than they did in reality. The common factor of these two election years is that we predict the ER should have had a larger vote share than it did, and the two major parties in total should have a smaller vote share.

We now describe how we computed the average PUNE policies of the parties L and R from the computed part of the PUNE manifold. We did not simply average the observed PUNEs. Rather, we view the PUNE manifold as being parameterized by the ordered pairs (α, β), that is, the relative bargaining powers of the Opportunists in L and R at the PUNE. This parameterization corresponds to our view that the *missing data,* which, if we knew it, would fix a particular PUNE, are these relative bargaining powers.

Thus, our first step was to estimate a density function of the two relative bargaining powers from the computed bargaining powers that we found. We used kernel

density estimation. Figure 17 shows the kernel density function derived from the observed bargaining powers of the Opportunists in Left in the 1988 PUNEs, and Figure 18 shows the analogous kernel density for Right. The modes of these density functions are 0.56 and 0.34 for Left and Right, respectively, indicating that the Opportunists are 'usually' more powerful in Left than in Right. (We do not know whether this corresponds to real perceptions.) We next weighted each PUNE tax rate (for Left and Right) by a factor proportional to the estimated frequency of that PUNE, as measured by the kernel density of its bargaining power. It is the weighted average of the tax rates, so computed, that determines what we call the *weighted average PUNE*, and the corresponding large black points, plotted in Figures 15 and 16. The average vote shares for the three parties are also computed using this weighting technique.[7]

We present these weighted average policies in Table 12.

We next display the predicted partition of the space of voter types into the three party memberships at the average of the PUNEs in Tables 10 and 11. Note from equations (2.3) and (2.4) that the set of types that prefer one policy to another is the set of types below or above a piece-wise linear graph in (π,ρ) space. In figures 19 and 20 we present the partition of voter types into the three party memberships for the average of the PUNEs of Tables 10 and 11. The figures present three regions drawn over a density plot

[7] We not that our technique is imperfect. Ideally, we should compute a kernel density function over the two-dimension manifold of ordered pairs of bargaining powers (α,β). This would have required computing many more PUNEs. Our technique computes the unidimensional kernel density function for each bargaining power separately, which is conceptually incorrect. Nevertheless, we believe this method of weighting is superior to taking a simple numerical average of PUNE values.

of the distribution of voter types: in the density plot, light color means high density. The space is (π, ρ). All types to the right of the light (green) line comprise Left; all types to the Left of the green line comprise Right; all types in the upper region of the figures comprise Extreme Right.

We remark upon these two figures. In 1988, for voters whose value of ρ is less than 3.5, we observe *class politics*: these voters choose between the L and R parties, and their choice is determined very sharply by their position on the size of the public sector (those for whom $\pi < 4$ choose Right and those for whom $\pi > 4$ choose Left. On the other hand, those who are xenophobic ($\rho > 3.5$) choose either between Right and Extreme Right or between Left and Extreme Right, depending on their view on the economic issue. Interestingly, the most xenophobically moderate voters who belong to Extreme Right are those whose positions on the size of the public sector are *moderate*: this is because Le Pen proposes a moderate position on the size of the public sector. Thus, as a voter's position becomes more extreme on public-sector size (either more Right or more Left) he has to have more incentive to vote for ER. That incentive must be an increasingly radical xenophobic position.

In 2002, however, we observe a quite different equilibrium structure of party constituencies. First we no longer have such clear class politics for those who are moderate on the immigration issue. For voters for whom $2.5 < \pi < 5$, we must know both their position on immigration and on the public sector to predict whether they identify with Left or Right, where the Right attracts the more xenophobic voters. (That is, the green line has a significantly positive slope in Figure 20.) Second, we observe *immigration politics* in the sense that whether a voter chooses ER, on the one hand, or

one of the moderate parties, on the other, is quite precisely predicted by his view on immigration: if and only if $\rho > 4$, the voter chooses Extreme Right.

Thus, the important change that we observe, between 1988 and 2002, is the increasing salience of the non-economic issue in French politics, and in particular of the immigration issue. Our model probably captures a broader change to a concern with non-economic issues such as security or law -and -order, as well as immigration. Indeed, voters' views on the immigration issue and on the law –and- order issue are strongly correlated. Recall from the introduction that the law-and-order and immigration issues became prominent in the 2002 election campaign; compare the ranking of the 'security' and 'immigration' issues in table 2 (for 1995) and table 3 (for 2002).

Next, we decompose the vote share going to the three parties, as a function of the voters' view on the economic question, from the observed data, and from the model. In 1988, Figure 21 decomposes the share of the vote going to L, R, and ER for five values of the public-sector question: $\pi \in \{0,1,2\}, \pi = 3, \pi = 4, \pi = 5,$ and $\pi = 6$. Table 13 shows the predicted vote shares computed from the average PUNE according to the same partition of public-sector views.

[Insert figure 21 and table 13 about here]

The predicted and observed shares show a decrease in the R share and increase in the L share as π increases, although predicted changes are more extreme than they are in the data. The predicted table also shows a decrease in the share of the ER as π increases, something which is not perfectly true in the observed data.

Figure 22 and Table 14 present the same information for 2002.

[Insert figure 22 and table 14 about here]

In 2002, we predict an increase in the Left vote and a decrease in the Right and Extreme Right vote as π increases, patterns which also appear in the observed data.

Overall, we believe the model performs well, especially given the fact that there is only one parameter, γ, which we can choose to achieve a good fit. The main error the model makes is its prediction of too large a vote share for the ER party. This, however, is not surprising, for two reasons. First, many voters are strategic[8], and hence voters who actually prefer the policy of ER may vote for either R or L so that their vote will count (in the sense that ER will surely be the third party). Second, many voters follow family tradition in their party identification, and the Le Pen party is a relatively new phenomenon. On this count, our predicted vote shares may be closer to what vote shares will be as time passes, and family traditions change.

It should also be pointed out that our choice of a two-dimensional space of types, *H*, is a limitation. Ideally, we would like to differentiate voters as well according to the salience they assign to the immigration issue; this would require a three-dimensional type space, where a voter's type would be (π, ρ, γ). While the theory of PUNEs on such a type space is no more complicated than on the two-dimensional type space, the

[8] Our PUNE analysis assumes voters are sincere. We chose not to try to model strategic voting at this stage of the work.

computational problems become forbidding, because the equation-solving required for computing PUNEs would involve computing three-dimensional numerical integrals, instead of two-dimensional integrals. Given the existing *Mathematica* software, this is, for all practical purposes, infeasible. We estimate that computing solutions with this specification would increase our computation time by an order of magnitude. As well, we would need reliable data to estimate voters' saliences, which we do not at this time possess.

6. The policy bundle and anti-solidarity effects: Computation

As we described earlier, to compute the ASE and PBE, we perform two counterfactual computations.

In the first counterfactual, we compute PUNEs for a model with *two parties,* in which the policy space is unidimensional , as described in section 3. We restrict to PUNEs in the counterfactual for which the vote share of the L party is between 30% and 70%. This can be justified by saying that the Opportunists in either the L or the R party would be sufficiently strong to veto any policy which would give their party less than 30% of the vote.

We chose a two-party model for the counterfactual, because, first, it would be computationally difficult to find equilibria for three *endogenous parties* (in the counterfactual model, we have no way to set the policy of the ER party exogenously). Secondly, were politics indeed unidimensional, it is questionable that an ER party would receive an appreciable vote share, so a two-party model is a reasonable counterfactual.

Recall from section 3 that, in the first counterfactual, we use the *actual distribution* of voter types, *F*. This counterfactual is equivalent to holding an election where the government's position on the immigration issue is fixed, and all voters take it to be so. We again take as the summary statistic the average of weighted tax policies found in all PUNEs (for which the shares of both parties are at least 30%). The weights are again computed by estimating a kernel density function for each set of computed equilibrium bargaining powers. Denote this value $t_I^{\exp}$.

For the *second counterfactual,* which computes the anti-solidarity effect, we changed the distribution of voter types to the estimated racism-free distribution, *G,* described in section 4. In 1988, we took the racism -free distribution to be a normal distribution on π with standard deviation 1.25 and mean in the set $\mu^* \in \{3.90, 4.0, 4.10\}$. In 2002, we took the standard deviation to be .90, and the mean to lie in the set $\mu^* \in \{4.15, 4.30, 4.45, 4.60\}$. Thus, we ran three versions of the second counterfactual for 1988 and four versions for 2002.

For each counterfactual, we again compute kernel density functions of the bargaining powers and take the summary statistic for expected policy on the size of the public sector as the appropriate weighted average over all PUNEs found. Denote this value by $t_{II}^{\exp}(\mu^*)$.

In the unidimensional models, it remains the case that there is a two-manifold of PUNEs. The policy equilibria live, now, in a two-dimensional space (one dimension for each party), and so the PUNEs pave a region in the plane. We computed approximately 200 PUNEs for each version of the counterfactual models.

We will not present details of the PUNEs computed in these models, except for Figure 23, which presents the kernel density function of Left tax rates, computed in the second counterfactual model for 2002 with the hypothetical mean of μ*=4.30. This kernel density function is typical. As the figure shows, there is a distribution of tax rates with a significant variance (as we should expect from the previous paragraph), whose mode is located at approximately 4.6.

We now define the PBE and the ASE:

$$PBE = t_I^{\exp} - t^{\exp}$$
$$ASE(\mu^*) = t_{II}^{\exp}(\mu^*) - t_I^{\exp}.$$

Clearly the total effect of xenophobia on the size of the public sector is:

$$TOT(\mu^*) = PBE + ASE(\mu^*) = t_{II}^{\exp}(\mu^*) - t^{\exp}.$$

Tables 15 and 16 report the results.

The appropriate way to think of the size of these effects is in comparison to the standard deviation of the distribution of ideal public–sector values (π), which is 1.31 in 1988 and 1.01 in 2002. By definition, the PBE is invariant with respect to changes in μ*. In both years, it appears to be of negligible size, although it is larger in absolute value and negative in 1988. Evidently this (the small absolute value) is due to the fact that Le Pen puts forth a moderate position on the economic issue, so a vote for the ER is not a vote for a small public sector. The ASE, however, is significant. In 1988, depending on the value of μ*, it ranges between 4% and 18% of one standard deviation of the distribution of ideal points on the size of the public sector. In 2002, however, depending upon the value of μ*, it ranges from 7% to 51% of one standard deviation of the distribution of ideal points on the size of the public sector. Evidently, the anti-

solidarity effect has increased substantially in this period, a result which seems consistent with our earlier observation that French politics have manifested a significant increase of the salience of non-economic issues – and of the immigration issue in particular -- over this period, and with the data analysis of section 4.

7. Conclusion

Our model of party unanimity Nash equilibrium conceptualizes party competition in a fashion that produces political equilibria when the policy space is multi-dimensional, and, moreover, predicts that parties propose different policies in equilibrium. By virtue of these features, it is superior to the Downsian model of purely opportunist politics, in which equilibria rarely exist if the policy space is multi-dimensional, and to other models of political equilibrium with multi-dimensional policy spaces (e.g., the models of Coughlin(1992) and Lindbeck and Weibull (1987)), which predict that parties propose the same policy in equilibrium. The PUNE model conceptualizes the decision makers in parties as having varied interests, concerning winning versus representation, and that the factions organizing these disparate interests bargain with each other when facing the opposition parties' platforms.

Like all equilibrium models, ours is best viewed as one that describes a political system in which preferences of voters are stable. In periods when voter preferences are in flux, we cannot expect the PUNE model to give perfect predictions. With stable constituencies, party entrepreneurs will come to know their constituencies' interests well, and we can expect that those entrepreneurs who wish to represent constituents will do so with more precision than when voter preferences are unstable and constituencies are

shifting. The evolutionary mechanism by which this occurs may well be that those Militants who rise within the party structure *are* ones who best represent the constituents' interests. Once ensconced, however, a particular Militant will have a career within the party that may last for years or decades. Thus, in periods of voter-preference flux, the established Militants in a party may cease to represent its evolving constituency.

We believe this may be the case in France, and so our calculations concerning the effect of voter xenophobia on the size of the public sector are ones we would expect to hold in the future, if voter preferences remain as they are now, and parties adjust to them over time. We note that, nevertheless, the PUNEs calculated are on average quite close, for each party grouping Left and Right, to the average policies of voters who identify with these groups. What is not so well replicated by the model are the vote shares accruing to the three party groupings: we predict that the Extreme Right should receive more votes, based upon reported voter types. We conjecture that this discrepancy is due to strategic voting and to traditional family identification with the two well-established 'parties' of Left and Right.

Our *policy space* is only two dimensional. In actual politics, the policy space has many more dimensions. In particular, it is possible, in reality, to differentiate public-sector policy towards immigrants from policy towards natives: for example, immigrants may receive less favorable treatment with regard to transfer payments than natives, a policy advocated by Le Pen. To represent this possibility in our model would require a third policy dimension. With such a third dimension, both the anti-solidarity and policy-bundle effects should decrease, because presumably parties could then propose to retain

high public-sector benefits for natives, while reducing them for immigrants[9]. We cannot, therefore, predict that the *total* size of the welfare state will radically fall in France[10].

Indeed, this point illustrates the necessity for political economists to model political competition as occurring over multi-dimensional policy spaces. Our work begins this task, although, as we have just noted, it still falls short of what is desirable. The binding constraints, at this point, are the difficulty of computing equilibria in real time, when the dimension of the type space and/or policy space is larger than two, and the availability of data sets that measure voter opinion in a sufficiently refined way.

Given these limitations, our main conclusions are tentative. They are that:

- the immigration issue influences equilibrium on the economic issue (public sector size) in a significant way;
- French politics have manifested a significant increase of the salience of non-economic issues – and of the immigration issue in particular -- in the period 1988 – 2002;

---

[9] We commented earlier on the computational and data problems associated with increasing the dimension of the *type* space. Both kinds of problem also exist with respect to increasing the dimension of the *policy* space. Moving from our present 2 x 2 model to a 3 x 3 would require both better opinion data than we have, and faster computers.

[10] We contrast this with the United States, where voter racism is directed primarily towards African-Americans, who, as citizens, cannot be legally discriminated against, as can aliens. Thus, we would expect the size of the welfare state to be more affected by voter racism in the US than by voter xenophobia in France. See Lee and Roemer (2004) for further analysis.

- due to Le Pen's moderate position on the economic issue, there is at present an insignificant policy bundle effect in France;
- while the anti-solidarity effect reduced the equilibrium 'expected tax rate' (that is, public sector size) by a small amount in 1988 (between 4% and 18% of one standard deviation of the distribution of voter views on public sector size), by 2002, it reduced the equilibrium size of the public sector by between 7% and 51% of one standard deviation on the distribution of public-sector size ideal points;
- however, these effects will be reduced by the possibility of differentiating benefits provided by the state to immigrants and to citizens.

References

Coughlin, P. 1992. *Probabilistic Voting Theory,* New York: Cambridge University Press

Lee,W. and J.E. Roemer, 2004. "Racism and distribution in the United States: A solution to the problem of Amercian exceptionalism," Cowles Foundation Discussion Paper, Yale University

Lindbeck. A. and J. Weibull, 1987. "Balanced budget redistribution as the outcome of political competition," *Public Choice* 52, 273-297

Roemer, J.E. 2001. *Political Competition*, Cambridge: Harvard University Press

	1988	1995	2002
L	49.0	40.6	42.9
R	36.5	44.2	37.9
ER	14.4	15.3	19.2

Table 1. Coalitions' vote shares

	Score 9-10	Score 0-2	Mean	Std. Dev.	Obs.
Unemployment	72.9	2.5	8.9	2.0	3897
Education of the youth	56.8	2.9	8.3	2.2	3881
Social protection	49.1	3.0	8.0	2.2	3892
Exclusion	49.3	4.2	7.9	2.4	3853
Purchasing power and wages	46.1	3.8	7.8	2.3	3883
AIDS	48.3	9.1	7.5	2.9	3848
Corruption	46.1	7.5	7.5	2.7	3843
Security of persons	37.3	7.3	7.2	2.7	3885
Environment	26.9	6.2	6.8	2.5	3865
Sharing of working time	29.1	9.2	6.7	2.7	3829
Immigration	30.6	13.0	6.5	3.0	3864
Place of France in the world	21.5	9.7	6.4	2.7	8600
European construction	20.1	11.5	6.2	2.7	3827

Table 2. The most important problems, year 1995

	#1	#2	#3	All
Unemployment	33.4	16.8	10.8	61.0
Delinquency	19.6	22.3	14.8	56.7
Social inequalities	14.0	14.7	9.9	38.6
Immigration	6.5	6.2	5.7	18.4
Pensions	5.5	8.8	12.7	27.0
Pollution	5.4	5.5	7.1	18.0
Schools	3.4	6.0	6.6	16.0
Tax cuts	3.1	5.6	9.5	18.2
Fight against terrorism	2.8	4.6	7.5	14.9
Political scandals	2.1	3.3	4.4	9.8
European construction	2.0	3.0	5.1	10.1
Sovereignty of France	1.1	1.2	2.0	4.3
Do not answer	1.3	2.0	3.9	7.2

Note: Problems are ranked by number people who rank this specific problem as the single most important problem.

Total number of observations: 4,107

Table 3. The most important problems, year 2002

	1988		1995		2002	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
AntiImmigrant	3.48	1.87	3.79	1.93	3.36	1.84
ProPubSector	3.86	1.31	3.91	1.10	4.06	1.01
Correlation	-0.05		-0.25		-0.25	

Table 4. Parameters of the joint distribution of voters' views

1988	L voters	R voters	ER voters	All
Mean *ProPublicSector*	4.30	3.16	3.62	3.86
Mean *AntiImmigrants*	2.93	3.75	4.99	3.48

2002	L voters	R voters	ER voters	All
Mean *ProPublicSector*	4.48	3.66	3.84	4.06
Mean *AntiImmigrants*	2.25	3.28	5.04	3.36

Table 5. Voters' average views by constituency

	1988			2001		
ProPublicSector	Mean	St dev	Obs.	Mean	St dev	Obs.
AntiImmigration=0	4.35	1.25	291	4.68	0.96	308
AntiImmigration=1	3.90	1.26	267	4.43	0.90	360
AntiImmigration=2	3.86	1.22	395	4.18	0.91	541
AntiImmigr=0,1,2	4.02	1.26	953	4.38	0.93	1209
All	3.86	1.31	3156	4.06	1.01	3602

Table 6. Parameters of the distribution of economic views for different levels of xenophobia

	1988			2002		
	(1)	(2)	(3)	(4)	(5)	(6)
Anti Immigrants	-0.032** (0.013)	-0.079*** (0.014)	-0.034*** (0.014)	-0.138*** (0.009)	-0.151*** (0.010)	-0.103*** (0.012)
Household income		-0.142*** (0.016)	-0.123*** (0.016)		-0.010 (0.009)	-0.010 (0.009)
Female		+0.112** (0.049)	+0.101** (0.049)		+0.060* (0.033)	+0.051 (0.035)
Education		-0.060*** (0.011)	-0.057*** (0.011)		-0.019*** (0.007)	-0.017** (0.008)
Age		-0.005*** (0.0015)	-0.004*** (0.001)		-0.010* (0.006)	-0.013** (0.006)
Age squared					+0.00010* (0.00006)	+0.00013** (0.00006)
French people are lazy (1988) / People on welfare do not try to work (2002)			-0.273*** (0.025)			-0.259*** (0.038)
Money incentives are important to make people work (1988) / Financial helps should be withdrawn from families where children are delinquent (2002)			-.137*** (0.023)			-0.0891*** (0.018)
Constant	3.970*** (0.049)	5.150*** (0.151)	5.941*** (0.161)	4.514*** (0.034)	4.839*** (0.146)	4.763*** (0.156)
Obs.	2971	2715	2569	3475	3475	3182
R-squared	0.0022	0.0661	0.1271	0.0621	0.0674	0.0889

Table 7. Dependent variable: *ProPublicSector*, OLS estimation

	1988		2002	
	Mean	Std. Dev.	Mean	Std. Dev.
Option 1, δ =0.03 in 1988 / δ =0.10 in 2002	3.91	1.30	4.22	1.00
Option 1, δ =0.08 in 1988 / δ =0.15 in 2002	3.99	1.31	4.30	0.99
Option 2, δ =0.03 in 1988 / δ =0.10 in 2002	3.93	1.30	4.25	0.99
Option 2, δ =0.08 in 1988 / δ =0.15 in 2002	4.06	1.30	4.42	0.98
Observed preferences	3.86	1.31	4.06	1.01

Table 8. Parameters of the distributions of counterfactual xenophobia-free economic preferences, based on multivariate regression analysis

	1988		2002	
ProPubSector	Mean	St Dev	Mean	St Dev
observed	3.86	1.31	4.06	1.01
counterfactual	3.90	1.25	4.15	0.90
	4.00	1.25	4.30	0.90
	4.10	1.25	4.45	0.90

Table 9. Parameters of the distributions of counterfactual xenophobia-free economic preferences

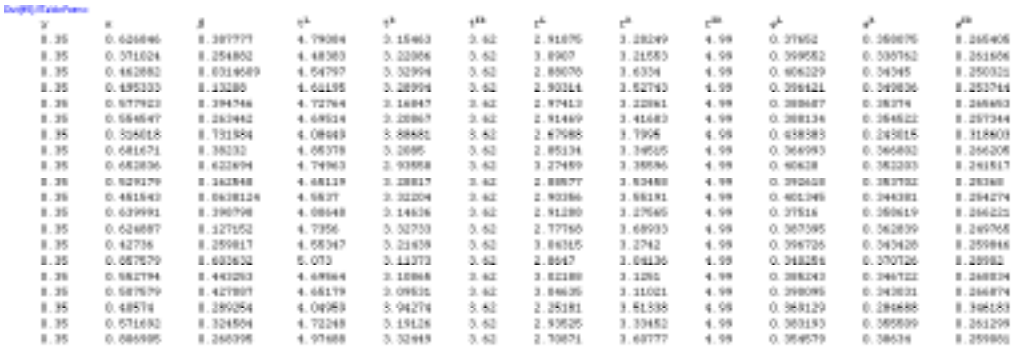

Table 10. PUNEs computed for 1988

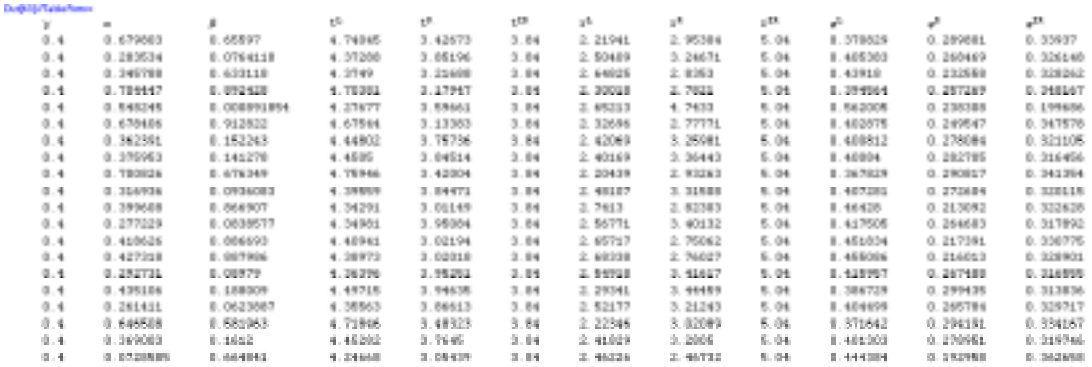

Table 11. PUNEs computed for 2002

(*t*,*r*)	1988	2002
L	(4.69, 2.95)	(4.40, 2.53)
R	(3.20, 3.32)	(3.78, 3.39)
ER	(3.62, 4.99)	(3.84, 5.04)

Table 12. Weighted average policies of L and R, and observed average policies of ER, 1988 and 2002

ideal t	Left	Right	Ext Right
0+1+2	-0.00130378	0.811742	0.189562
3	-0.00141619	0.682287	0.319129
4	0.392168	0.219349	0.388483
5	0.819256	0.	0.180744
6	0.955244	0.	0.0447565

Table 13. Distribution of vote share according to public-sector view, predicted from

PUNE, Year 1988

ideal t	Left	Right	Ext Right
0+1+2	0.00468154	0.522186	0.473133
3	0.0796293	0.527036	0.393335
4	0.381704	0.293586	0.32471
5	0.749344	0.0138493	0.236806
6	0.889189	0.	0.110811

Table 14. Party vote shares by economic view, predicted from PUNE, Year 2002

μ*	ASE	PBE	Total effect
3.9	.057	-.051	.006
4.0	.128	-.051	.077
4.1	.228	-.051	.177

Table 15. The ASE and PBE, 1988

μ*	ASE	PBE	Total effect
4.15	.0719	.0075	.0794
4.30	.2163	.0075	.2238
4.45	.3742	.0075	.3817
4.60	.5169	.0075	.5244

Table 16. The ASE and PBE, 2002

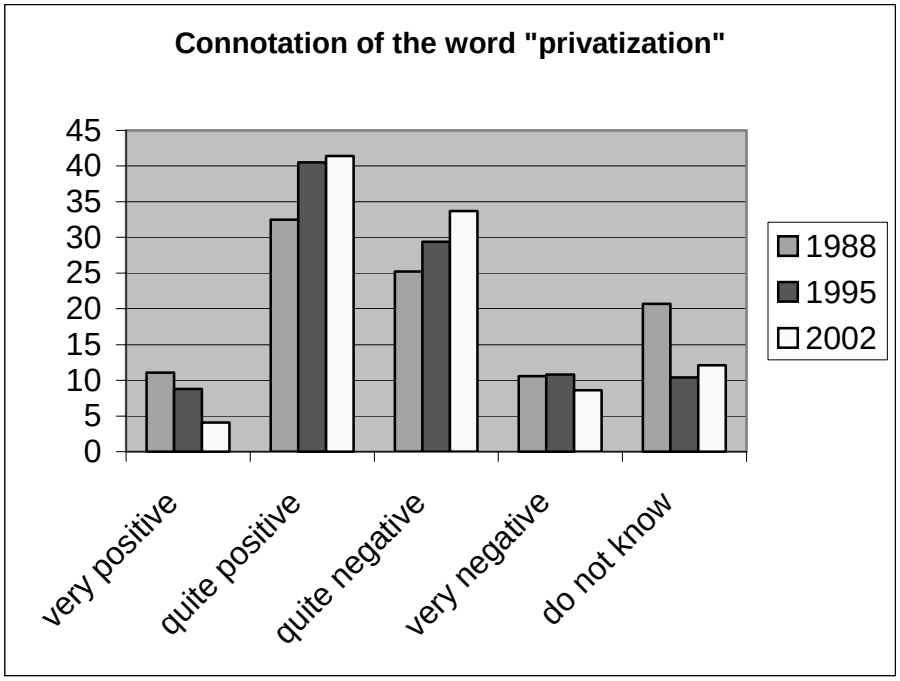

Figure 1. Connotation of the word “privatization”, Distribution of answers

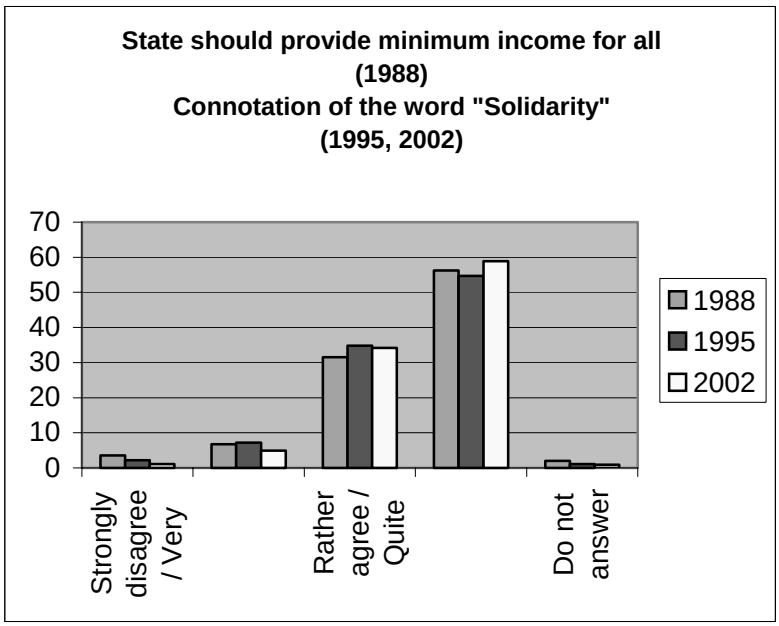

Figure 2. The State should provide minimum income for all (1988) / Connotation of the word “solidarity” (1995, 2002), Distribution of answers

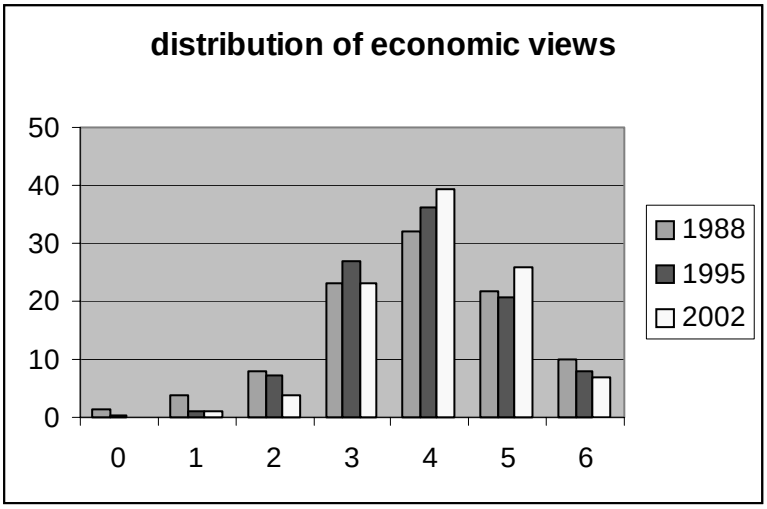

Figure 3. Distribution of economic views

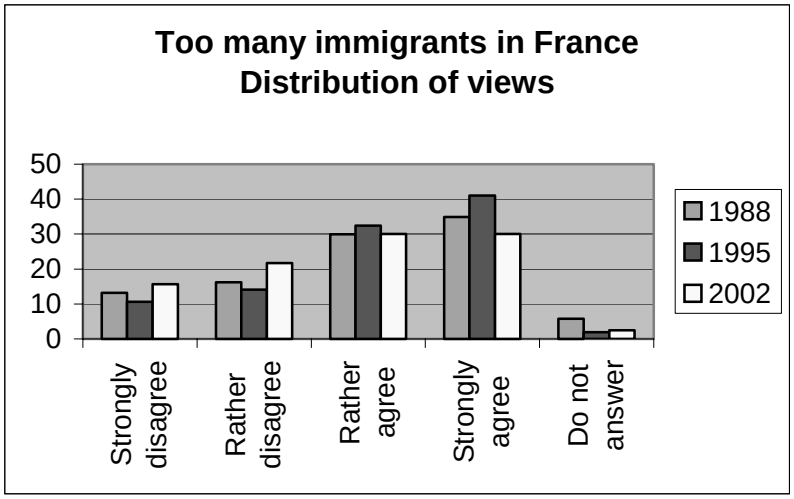

Figure 4. There are too many immigrants in France, distribution of answers

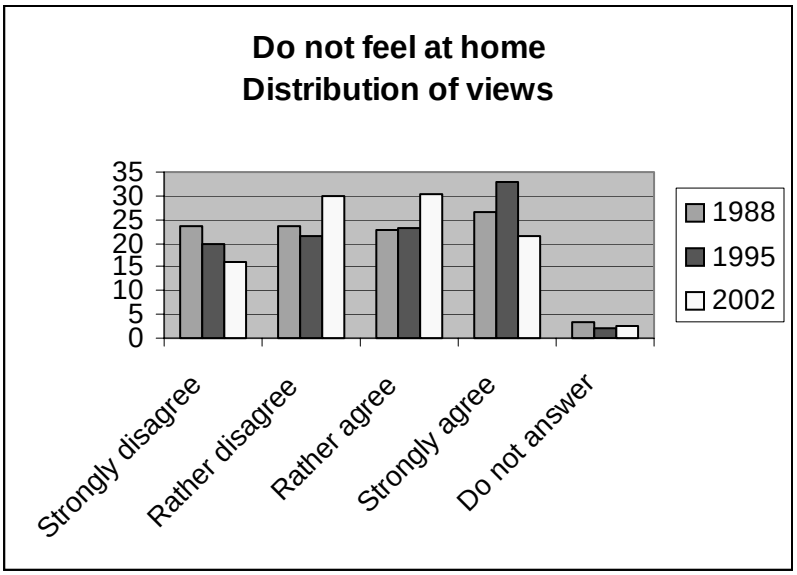

Figure 5. We do not feel at home as we used to, Distribution of answers

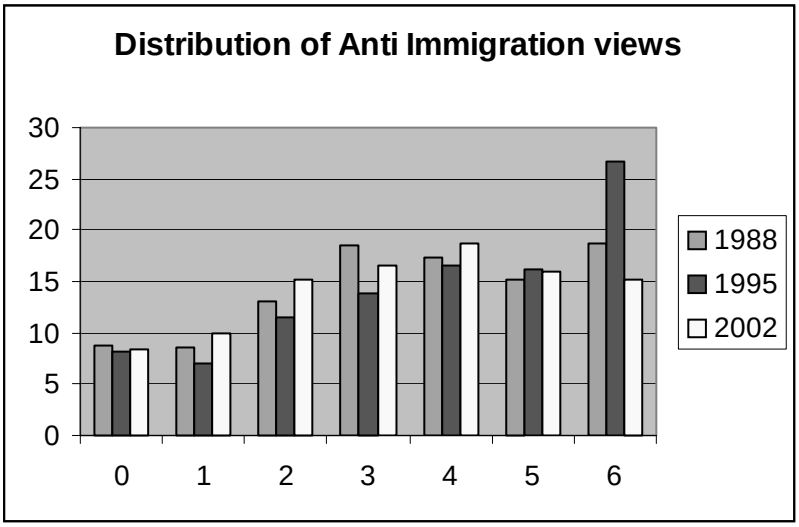

Figure 6. Distribution of anti-immigration views

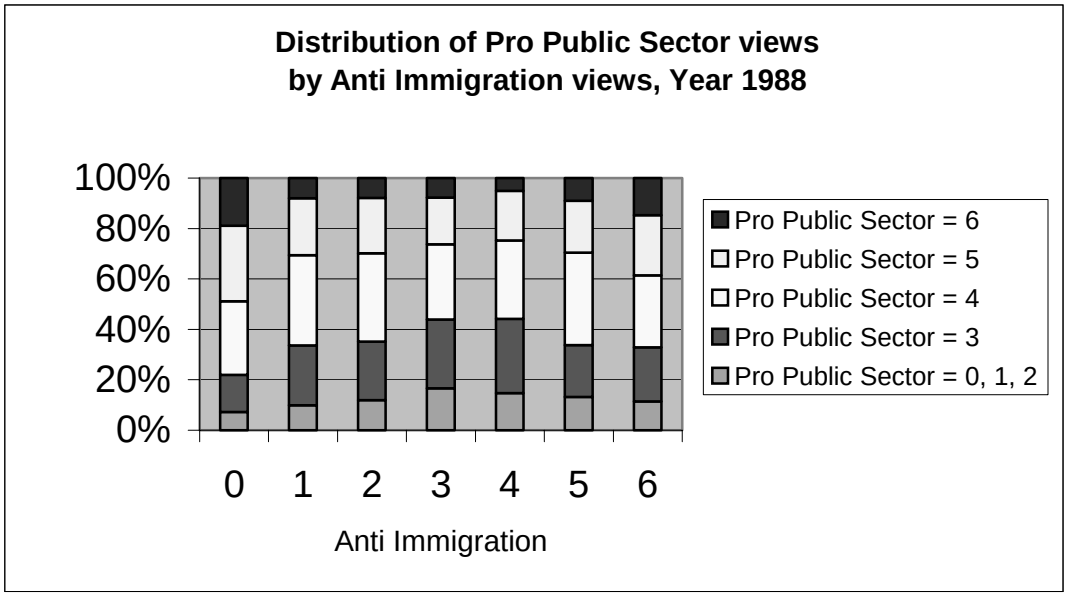

Figure 7. Distribution of Pro Public Sector views by Anti Immigration views, Year 1988

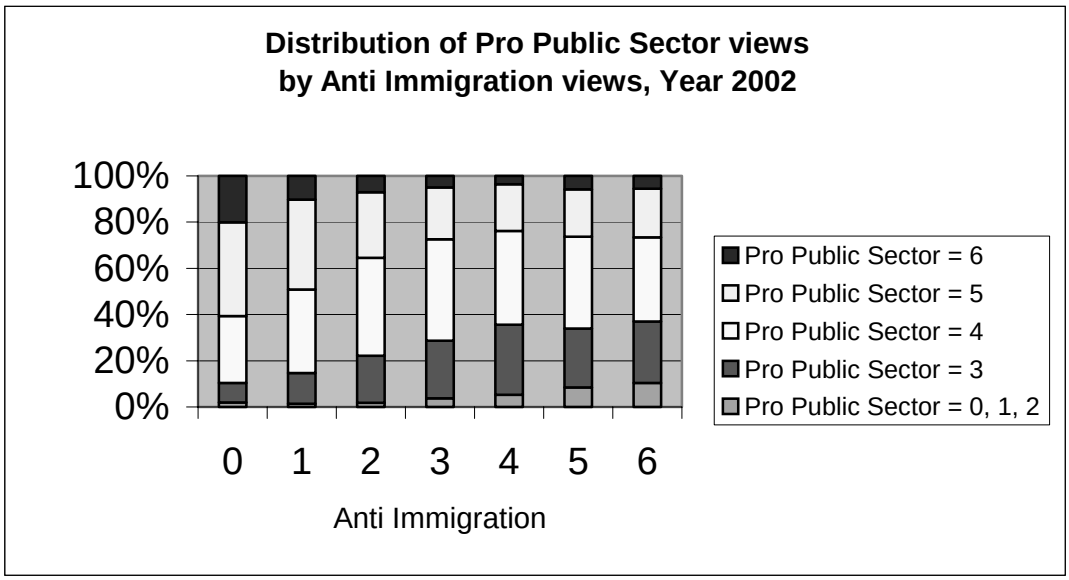

Figure 8. Distribution of Pro Public Sector views by Anti Immigration views, Year 2002

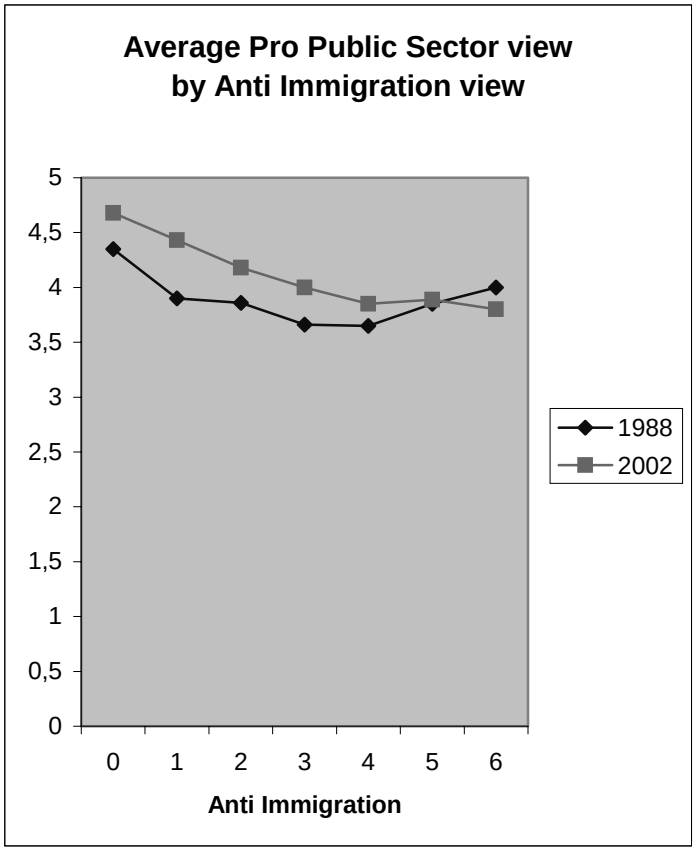

Figure 9. Average Pro Public Sector view by Anti Immigration view

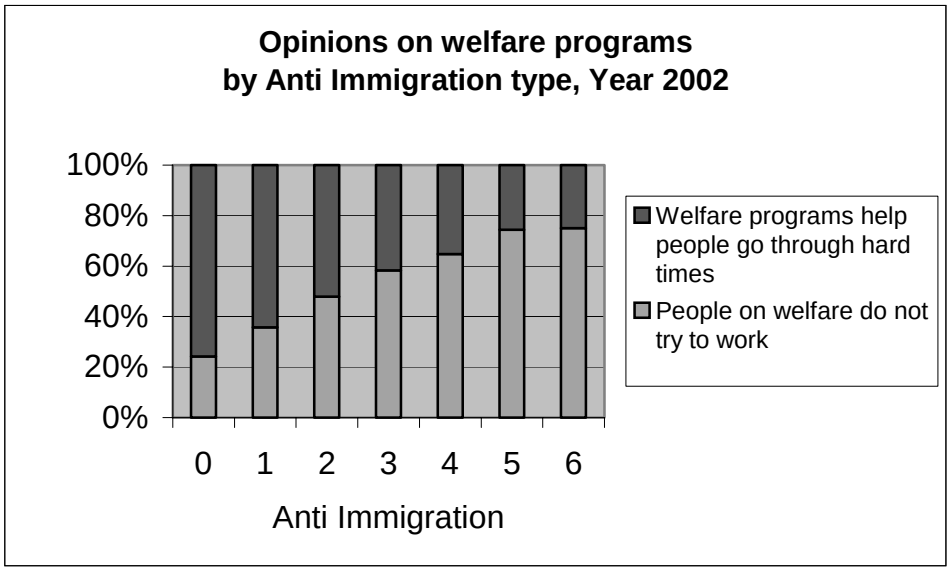

Figure 10. Opinions on welfare programs by Anti Immigration type, Year 2002

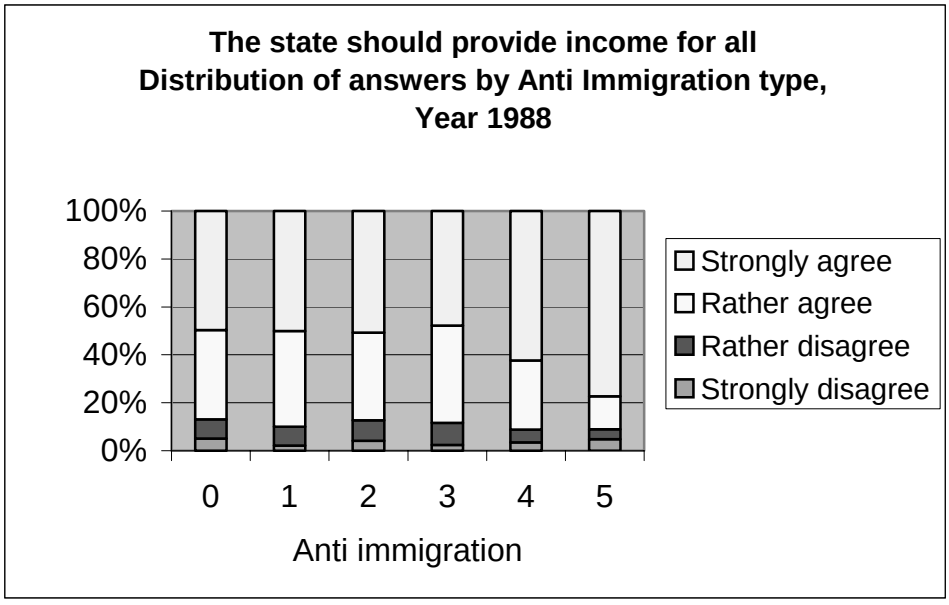

Figure 11. The State should provide income for all, Distribution of answers by anti immigration type, Year 1988

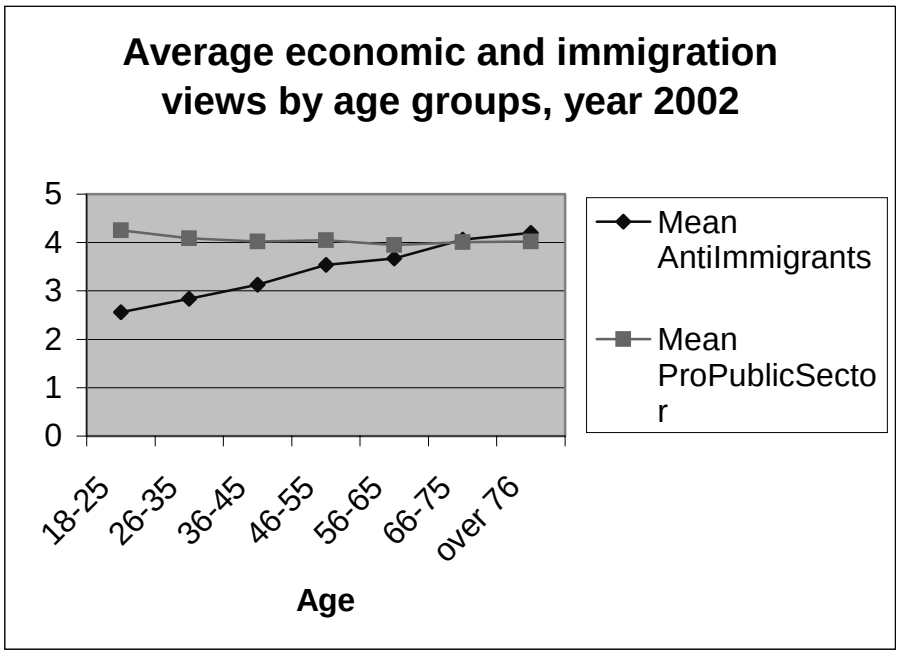

Figure 12. Average economic and immigration views by age groups, year 2002

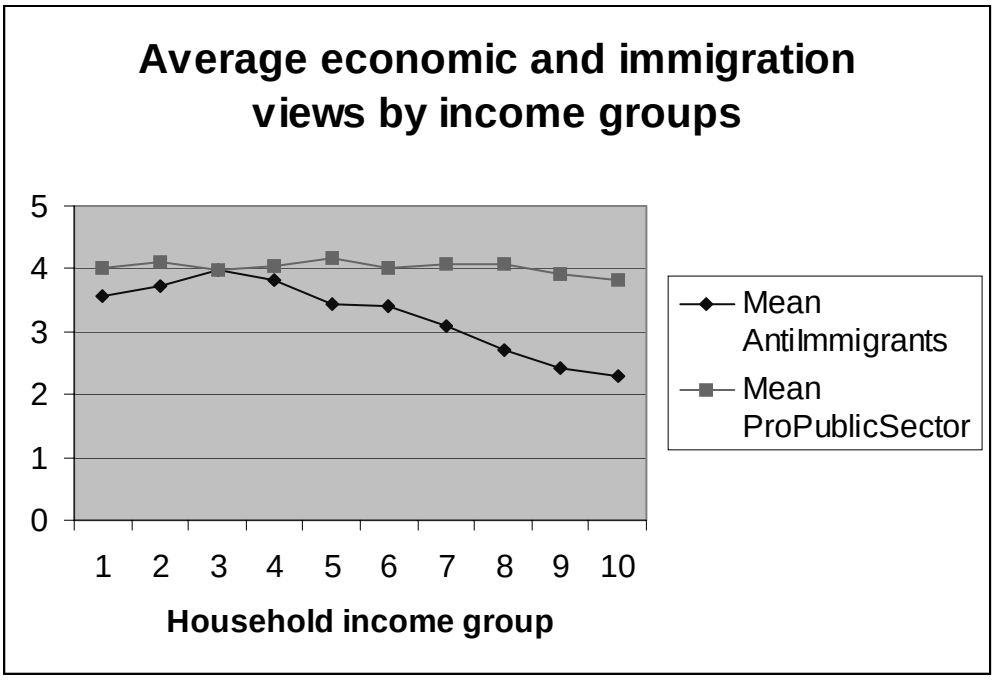

Figure 13. Average economic and immigration views by income groups, year 2002

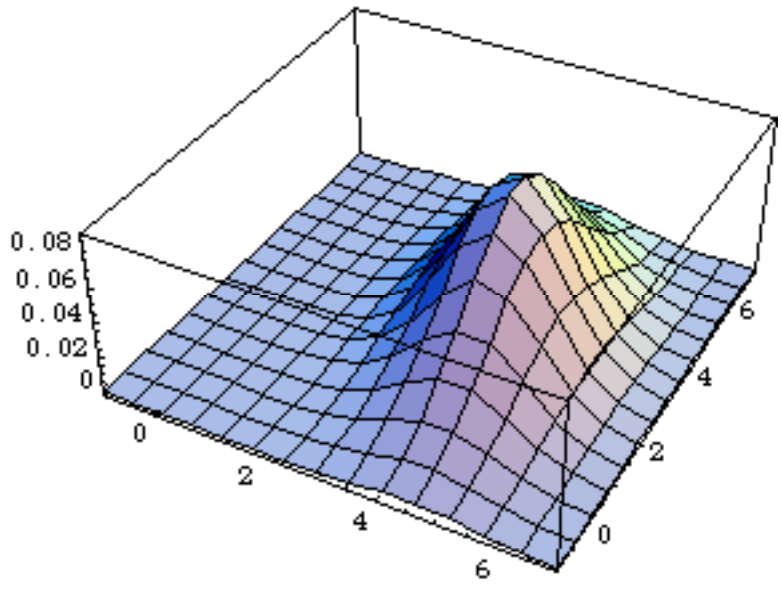

Figure 14. Bivariate-normal density of voter types, 2002, on the square [-1,7] x [-1,7]

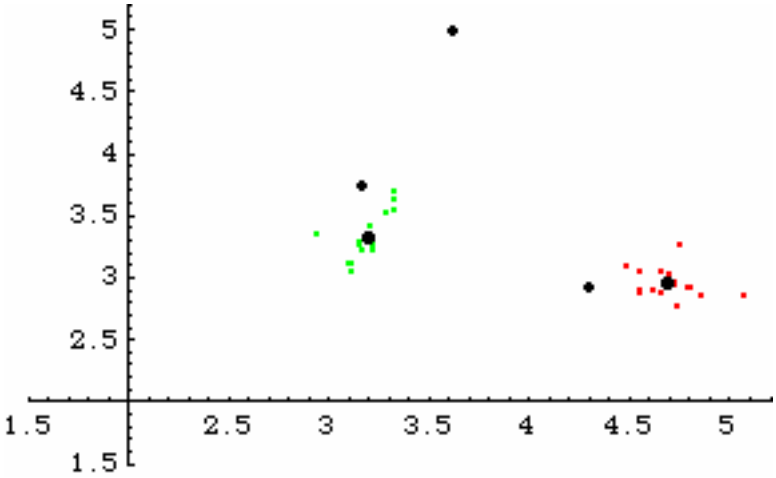

Figure 15. 1988 PUNEs. The green dots are Right, the red dots are Left, the three small black dots are the average policies of the observed party constituencies, and the two larger black dots are the weighted average values of the PUNEs of Right and Left.

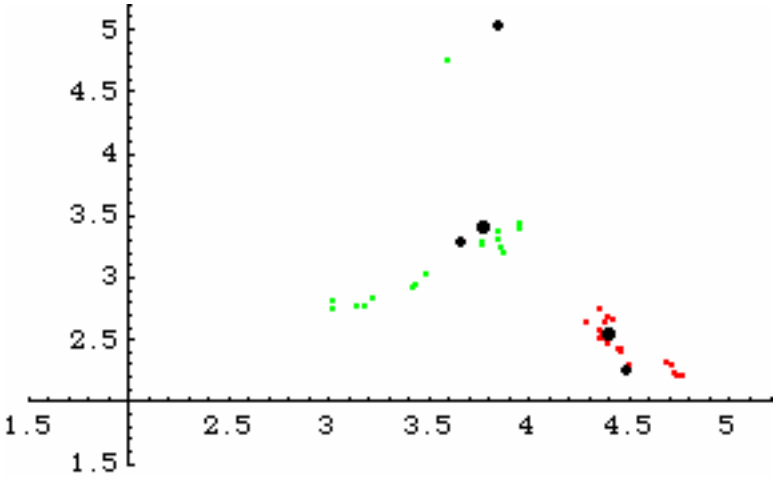

Figure 16. 2002 PUNEs. See the legend of Figure 15 for interpretation.

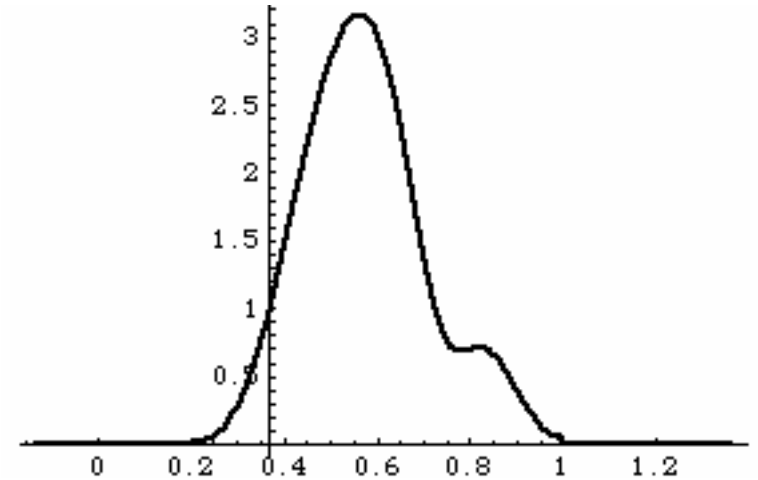

Figure 17 Kernel density function of the value α for Left in 1988 PUNEs

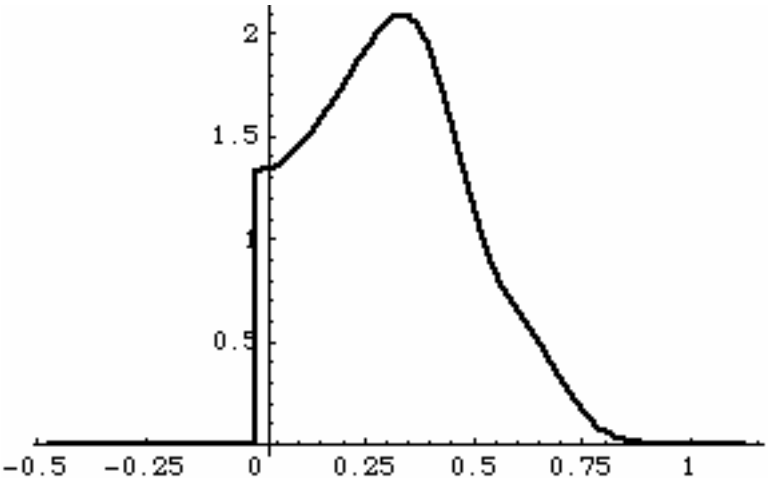

Figure 18. Kernel density function of the value β for Right in 1988 PUNEs

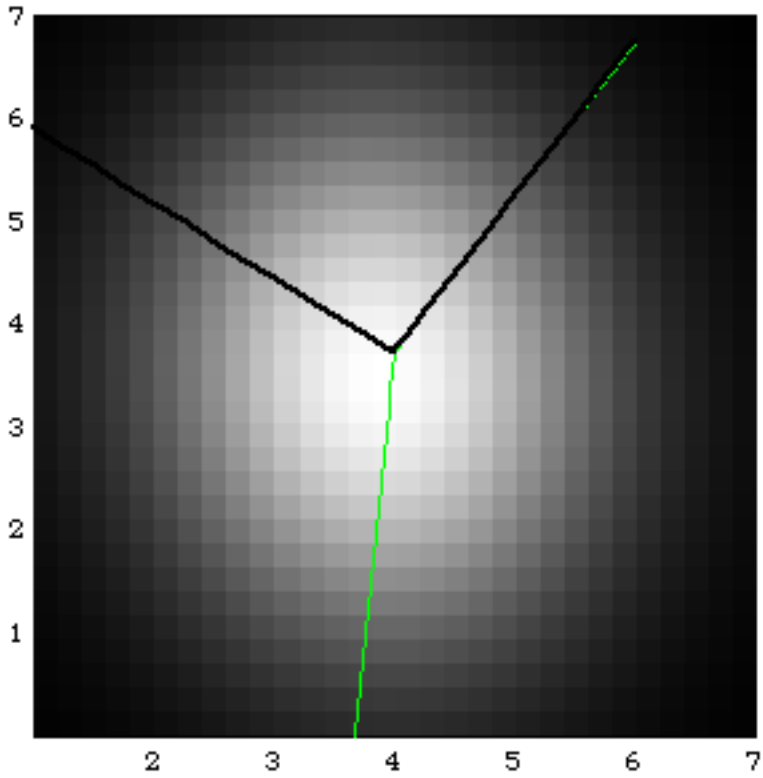

Figure 19. Partition of the type space into party memberships, average PUNE, 1988. The three regions, reading from the left and proceeding counter-clockwise, are Right, Left, and Extreme Right.

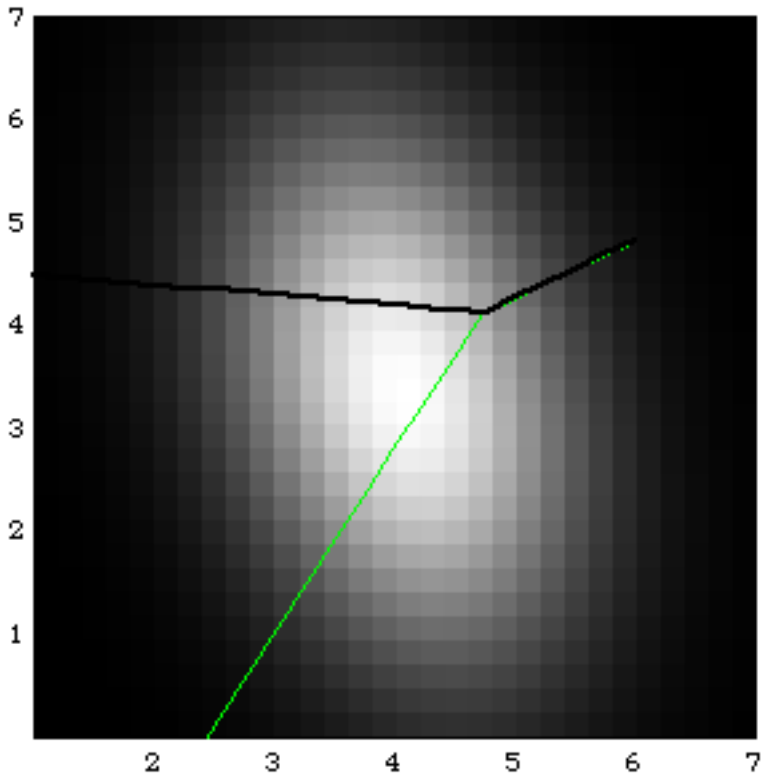

Figure 20. Party partition, 2002 PUNEs. See legend of Figure 19.

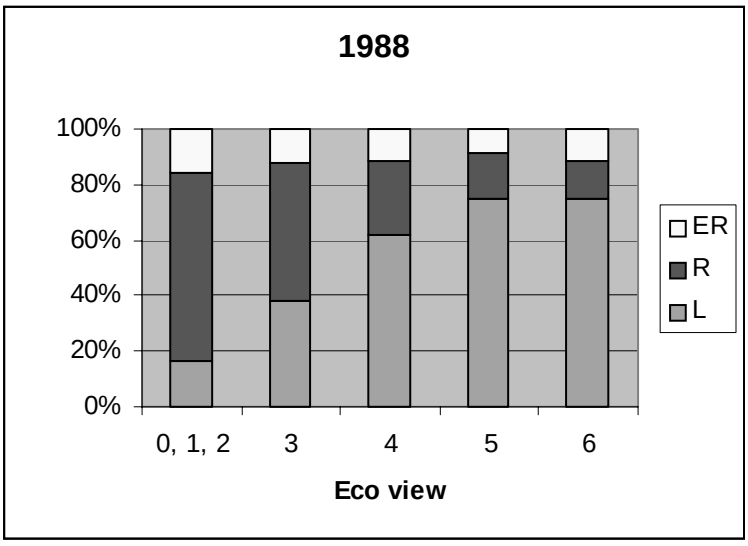

Figure 21 Distribution of vote share according to public-sector view, observed

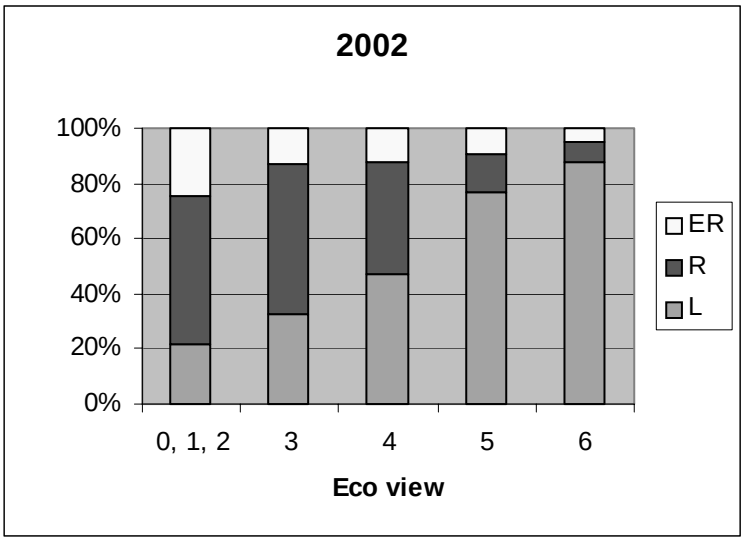

Figure 22. Party vote shares by economic view, observed

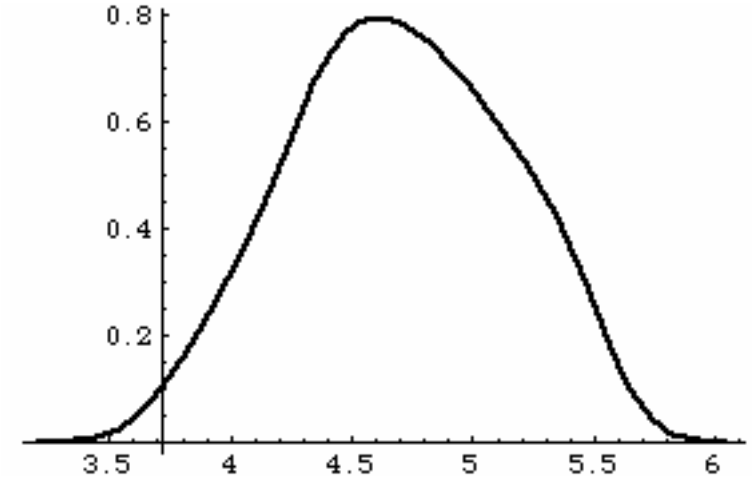

Figure 23. Kernel density of Left tax rates in second counterfactual model with $\mu^*=4.30$, year 2002

Appendix Tables

	First round April, 24th 1988	Second round, May, 8th 1988
Number of Registered voters	38,179,118	38,168,869
Total number of ballots	31,059,300	32,085,071
Number of valid ballots	30,436,744	30,923,249
Abstention (in percentage)	18.6%	15.9%

	First round		Second round		Coali
	# voters	% of total	#voters	% of total	-tion
F. Mitterand (Parti Socialiste)	10,381,332	34.1	16,704,279	54.0	L
J. Chirac (Rassemblement Pour la République)	6,075,160	20.0	14,218,970	46.0	R
R. Barre (Union pour la Démocratie Française)	5,035,144	16.5			R
J.-M. Le Pen (Front National)	4,376,742	14.4			ER
A. Lajoinie (Parti Communiste)	2,056,261	6.7			L
A. Waechter (Verts)	1,149,897	3.8			L
P. Juquin (Parti Communiste Diss.)	639,133	2.1			L
A. Laguiller (Lutte Ouvrière)	606,201	2.0			L
P. Boussel (Parti des Travailleurs)	116,874	0.4			L

Table A1. Results of the 1988 presidential election

	First round April, 23th 1995	Second round, May, 7th 1995
Number of Registered voters	39,993,954	39,976,944
Total number of ballots	31,346,960	31,845,819
Number of valid ballots	30,464,552	29,943,671
Abstention (in percentage)	21.62	20.34

	First round		Second round		Coali
	Nb voters	% of total	-tion	% of total	-tion
L. Jospin (Parti Socialiste)	7,098,191	23.30	14,180,644	47.4	L
J. Chirac (Rassemblement Pour la République)	6,348,696	20.84	15,763,027	52.6	R
E. Balladur (Union pour la Démocratie Française)	5,658,996	18.58			R
J.-M. Le Pen (Front National)	4,571,138	15.00			ER
R. Hue (Parti Communiste)	2,632,936	8.64			L
A. Laguiller (Lutte Ouvrière)	1,615,653	5.30			L
P. de Villiers (Mouvement pour la France)	1,443,235	4.74			R
D. Voynet (Verts)	1,010,738	3.32			L
J. Cheminade (Solidarité et progrès)	84,969	0.28			ER

Table A2. Results of the 1995 presidential election

	First round April, 22th 2002	Second round, May, 5th 2002
Number of Registered voters	41,194,689	41,191,151
Total number of ballots	29,495,733	32,831,501
Number of valid ballots	28,498,471	31,066,781
Abstention (in percentage)	28.40	20.29

	First round		Second round		Coali
	Nb voters	% of total	Nb voters	% of total	-tion
J. Chirac (Rassemblement Pour la République)	5,665,855	19.88	25,540,874	82.21	R
J.-M. Le Pen (Front National)	4,804,713	16.86	5,525,907	17.79	ER
L. Jospin (Parti Socialiste)	4,610,113	16.18			L
F. Bayrou (Union pour la Démocratie Française)	1,949,170	6.84			R
A. Laguiller (Lutte Ouvrière)	1,630,045	5.72			L
J.-P. Chevènement (Mouvement des Citoyens)	1,518,528	5.33			L
N. Mamère (Verts)	1,495,724	5.25			L
O. Besancenot (Ligue Communiste Rév.)	1,210,562	4.25			L
J. Saint-Josse (Chasse Pêche Nature et Tradition)	1,204,689	4.23			R
A. Madelin (Démocratie Libérale)	1,113,484	3.91			R
R. Hue (Parti Communiste)	960,480	3.37			L
B. Mégret (Mouvement National Républicain)	667,026	2.34			ER
C. Taubira (Parti Radical de Gauche)	660,447	2.32			L
C. Lepage (CAP 21)	535,837	1.88			R
C. Boutin (Union pour la Démocratie Française)	339,112	1.19			R
D. Glückstein (Parti des Travailleurs)	132,686	0.47			L

Table A3. Results of the 2002 presidential election

	1988		1995		2002	
Very positive	11.1	13.9	8.8	9.8	4.1	4.7
Quite positive	32.5	40.9	40.5	45.2	41.4	47.1
Quite negative	25.2	31.8	29.4	32.9	33.7	38.4
Very negative	10.6	13.4	10.8	12.1	8.6	9.1
Do not answer	20.7		10.4		12.1	
Obs.	4,032	3,199	4,078	3,652	4,107	3,609
Mean (scale 0-3)		1.45		1.47		1.53
St. Dev. (scale 0-3)		0.89		0.83		0.73

Question: Does the word “privatization” have a positive or negative connotation for you ?

Table A4. Distribution of Economic Anti Liberalism

	1988		1995		2002	
Strongly disagree / Very negative	3.6	3.7	2.2	2.2	1.1	1.1
Rather disagree / Quite negative	6.7	6.8	7.2	7.3	4.9	4.9
Rather agree / Quite positive	31.5	32.1	34.8	54.2	34.2	34.5
Strongly agree / Very positive	56.2	57.4	54.7	55.3	58.9	59.4
Do not answer	2.0		1.1		0.9	
Obs.	4,032	3,952	4,078	4,031	4,107	4,069
Mean (scale 0-3)		2.43		2.43		2.52
St. Dev. (scale 0-3)		0.78		0.72		0.65

Question: The State should guarantee a minimum revenue to all households. (1988)
Does the word “solidarity” have a positive or a negative connotation for you ? (1995, 2002)

Table A5. Distribution of support for welfare programs

	1988	1995	2002
Correlation Anti Liberalism / Pro Welfare	0.19	-0.01	0.06
Obs.	3,156	3,633	3,602

Table A6. Correlation between Anti Liberalism and Support for Welfare

	1988		1995		2002	
0	1.0	1.3	0.2	0.3	0.1	0.1
1	3.1	3.9	1.1	1.2	0.8	0.9
2	6.3	8.1	6.3	7.1	3.5	3.9
3	18.0	22.9	23.9	26.8	20.2	23.1
4	25.0	31.9	32.2	36.2	34.4	39.3
5	17.1	21.9	18.3	20.6	22.5	25.7
6	7.8	1.0	7.0	7.9	6.2	7.0
No answer	21.7		10.9		12.3	
Obs.	4,032	3,156	4,078	3,633	4,107	3,602
Mean		3.86		3.91		4.06
St Dev		1.31		1.10		1.01

Table A7. Distribution of Economic views

	1988		1995		2002	
Strongly disagree	13.2	14.0	10.6	10.8	15.7	16.1
Rather disagree	16.2	17.2	14.1	14.3	21.7	22.3
Rather agree	29.9	31.7	32.4	33.0	30.0	30.8
Strongly agree	34.9	37.1	41.0	41.8	30.0	30.0
Do not answer	5.8		1.9		2.5	
Obs.	4,032	3,796	4,078	4,000	4,107	4,003
Mean (scale 0-3)		1.92		2.06		1.76
St. Dev. (scale 0-3)		1.05		1.00		1.06

Question: There are too many immigrants in France.

Table A8. Distribution of views about the number of immigrants

	1988		1995		2002	
Strongly disagree	23.5	24.4	19.9	20.4	16.0	16.4
Rather disagree	23.8	24.6	21.5	22.0	29.8	30.6
Rather agree	22.6	23.4	23.3	23.8	30.4	31.3
Strongly agree	26.7	27.6	33.0	33.8	21.3	21.9
Do not answer	3.4		2.3		2.4	
Obs.	4,032	3,893	4,078	3,984	4,107	4,007
Mean (scale 0-3)		1.54		1.71		1.58
St. Dev. (scale 0-3)		1.13		1.14		1.00

Question: Nowadays, we do not feel at home as we used to.

Table A9. Distribution of feelings whether one feels at home.

	1988	1995	2002
Correlation Too many immigrants / Do not feel at home	0.46	0.64	0.58
Obs.	3,689	3,919	3,919

Table A10. Correlation between Too many immigrants / Do not feel at home anymore

	1988		1995		2002	
0	8.0	8.7	7.8	8.1	8.0	8.4
1	7.8	8.5	6.8	7.1	9.5	10.0
2	11.9	13.0	11.0	11.5	14.5	15.2
3	17.0	18.5	13.4	13.9	15.8	16.5
4	15.9	17.3	15.9	16.6	17.8	18.7
5	13.9	15.2	15.6	16.2	15.2	16.0
6	17.1	18.7	25.5	26.6	14.5	15.2
No answer	8.5		3.9		4.6	
Obs.	4,032	3,689	4,078	3,919	4,107	3,919
Mean		3.48		3.79		3.36
St Dev		1.87		1.93		1.84

Table A11. Distribution of Anti Immigration views

	Pro-Public Sector	*Anti-Immigration*
Economic issues		
The French do not work hard enough.	-0.19	+0.20
If everybody earned the same amount of money, they would have no incentive to work.	-0.14	+0.13
Whether children perform well at school or not depends more on their social background than on their own skills.	+0.05	+0.05
When speaking about someone who made a fortune in a few years, do you rather feel admiration or distrust?	-0.13	-0.04
To face economic hardships, do you think that the State should trust private firms and give them more freedom or rather impose more controls and regulation on them?	+0.60	-0.02
Can you tell me if the word profit have rather a positive connotation for you?	-0.18	+0.03
Can you tell me if the word stock exchange have rather a positive connotation for you?	-0.19	0.00
Can you tell me if the word nationalizations have rather a positive connotation for you?	+0.28	-0.19
Can you tell me if the word firm have rather a positive connotation for you?	-0.15	-0.03
The “Impôt sur les grandes fortunes” (a tax paid only by very wealthy households) should be reenacted.	+0.40	-0.09
If the social security system was suppressed, would you say that it would be very terrible, quite terrible, somewhat terrible or not a problem at all?	+0.18	-0.02
Immigration issues		
Jews have too much power in France.	+0.08	+0.48
Muslims living in France ought to have mosques to practice their cult.	+0.02	+0.44
Law and order / Society issues		
Death penalty should be reenacted.	+0.00	+0.56
In a society, one needs hierarchy and chiefs.	-0.09	+0.28
Homosexuality is morally condemnable.	-0.02	+0.28
The role of women is before anything else to have children and raise them.	+0.03	+0.32

Table A12. Correlation of opinions variables with Pro-Public-Sector and Anti-Immigration, Year 1988.

	Pro-Public Sector	*Anti-Immigration*
Economic issues		
(1) Firms should have the right to hire or fire depending on the situation (2) Firms should undergo control by the state before being allowed to fire. Do you agree most with (2)?	+0.22	-0.02
(1) People may tend to be happy with the "Revenu Minimum d'Insertion" (a welfare benefit) and not look for work. (2) It helps people go through hard times.Do you agree most with (2)?	+0.20	-0.33
The number of civil servants should be reduced. Do you agree?	-0.26	+0.16
The word profit has rather a positive connotation for you.	-0.30	+0.10
The SNCF (national railway company) would work better if I were privatized. Do you agree with this statement?	-0.31	+0.25
Immigration issues		
The presence of immigrants in France is an opportunity of cultural enrichment.	+0.19	-0.59
Some races are less gifted than others.	-0.17	+0.49
Jews have too much power in France.	-0.14	+0.42
Can you tell me if the word Islam have rather a positive connotation for you?	+0.12	-0.45
Can you tell me if the word United States has rather a positive connotation for you?	-0.18	+0.17
In France, the Black and Maghibi are too often treated as second order citizens.	+0.19	-0.34
Law and order / Society issues		
Death penalty should be reenacted.	-0.24	+0.54
In a society, one needs hierarchy and chiefs.	-0.14	+0.28
To fight against delinquency, family benefits should be withdrawn from families with juvenile delinquents.	-0.20	+0.44
Can you tell me if the word "Authority" has rather a positive or negative connotation for you?	-0.07	+0.22
Same sex couples should have a right to adopt children.	+0.13	-0.26
Homosexuality is an acceptable way of living one's sexuality.	+0.12	-0.29

Table A13. Correlation of opinion variables with Pro-Public-Sector and Anti-Immigration, Year 2002.