Issue Emphasis
in U.S. Presidential Elections*

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JOB MARKET PAPER
February 11, 2011

Abstract
This paper examines the role of economic and non-economic issues in U.S. Presidential elections from 1952 to 2004. I estimate the relationship between issue emphasis in political campaigns and voter choice. Noting that political campaigns are simultaneously determined by competing politicians, given their observed and unobserved characteristics, I build a structural model that allows me to account this endogeneity. I construct a data-set of issue emphases using the primaries' acceptance speeches and in conjunction with the American National Election Studies data-set I estimate my model using techniques from the applied microeconomics literature on estimating the demand for a product. I find that issue emphasis on economics, the political system (corruption, political authority, etc) and traditional values is a significant determinant of vote shares and the effect of each issue varies by party affiliation and the policy position of a politician.

*I am grateful to Christopher Phelan, Narayana Kocherlakota and Paul Goren for their help and encouragement. Thanks also go to Minesh Amin, Costas Arkolakis, Justin Barnette, Theodoros Diasakos, Alan Drazen, Andy Glover, Fatih Guvenen, Stelios Michalopoulos, Ayca Ozdogan, Amil Petrin, Imke Reimers, Ina Simonovska and Thomas Youle, as well as to the participants of the Public Economics and Policy workshop at the University of Minnesota, the MOOD Doctorate Workshop at EIEF, the 9th CRETE conference and the EconCon PhD conference at Princeton University for many helpful comments and suggestions. This paper was previously titled “Issue Emphasis and Opportunistic Redistribution in U.S. Presidential Elections.”
1 Introduction

Political platforms are multidimensional objects pertaining to a multitude of issues; economic policy, national defense, and so on. This paper examines how non-economic issues have been used by U.S. Presidential candidates in order to attract votes and how such issues interact with the economic policy campaigning of the candidates. I consider all facets of a politician’s platform as well as demographic characteristics and preferences of the US electorate to examine the effect of political campaigning on voter choice and thus election outcomes. Noting that political campaigns are simultaneously determined by competing politicians, given their observed and unobserved characteristics, I build a structural model that allows me to account this endogeneity. I construct a data-set of issue emphases using the primaries’ acceptance speeches and in conjunction with the American National Election Studies data-set I estimate my model using techniques from the applied microeconomics literature on demand estimation. I find that issue emphasis on economics, the political system (corruption, political authority, etc) and traditional values is a significant determinant of vote shares and the effect of each issue varies by party affiliation and the policy position of a politician. I find that issue emphasis on the quality of the two parties, traditional values and on the economy are all significant determinants of voter choice. The magnitude and sign of each campaign effect depends on the perceived position and party of the politician campaigning.

The contribution of this paper is three-fold. First, by accounting for the importance of non-economic issues and the tools that politicians have to affect voters’ preferences on them, I shed new light in the pre-election literature in political economics. The effects non-economic dimensions in determining policy outcomes have been considered in the literature, but in this approach preferences on non-economic issues are exogenous to the setup. In this paper, through campaigning politicians are able to manipulate the preferences of voters by changing the salience of various issues. Understanding how US voters’ preferences are affected by politicians is key to understanding election outcomes and consequently policy

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1Most recently through the papers of De La O and Rodden (2008), Lee and Roemer (2006), Shapiro et al. (2008) among others.
2Glaeser et al (2005) in a similar flare examine the reasons behind the recent “extreme” statements of political candidates in terms of traditional values issues.
outcomes. In fact, the findings support the hypothesis that campaigning on non-economic issues matters for election outcomes.

Second, in the political science literature, voter preferences and campaigns have been examined thoroughly but seldom in a setting that considers the interaction of the two in a setting that allows for the complexity of the voting process and the fact that campaigns are set through political competition and are thus endogenous to the model. This paper provides a interdisciplinary bridge between political science and economics, by considering essential topics from political science and using sophisticated techniques from economics to address them.

Third, the newly constructed data-set on acceptance speeches allows us to shed new light in the political history of the United States and in conjunction with the provided setup one can run policy experiments to examine how certain events shaped election outcomes and also forecast future election outcomes.

To address the importance of non-economic issues I start theoretically by building upon the probabilistic voting framework of Lindbeck and Weibull (1987), to provide a tractable model of political platforms that endows political candidates with both economic and non-economic instruments for political targeting. Politicians are endowed with campaign time which can be distributed amongst a multitude of issues (both economic and other). Although politicians’ positions are fixed by party affiliation, campaigns can differentially emphasize the various aspects of the politician’s agenda. Issue emphasis can be thought of as a signal of the time a politician will spend once in power on that issue. The effect of emphasis on voters’ payoffs is allowed to be different across politicians, issues and demographic groups of voters. This is consistent with differences in campaign technology due to media exposure as well differences resulting from which party voters think can best handle a particular problem, i.e. the idea of ”issue ownership” Petrocik (1996). To bring the theory closer to the existing literature, I also allow politicians to make binding redistributive promises prior to the elections (as in Linbeck and Weibull, 1987) and provide conditions under which both politicians offer the same consumption promise, as is the case in some

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3An example for that being, examining what would have happened in the 2004 election was there not a war on Iraq or Afghanistan.
of the literature. If, however, there is enough heterogeneity in the campaign technology the two politicians are going to face different tradeoffs when deciding how to campaign on each issue and platform divergence will be the outcome of this game. It is the way voters trade off utility among different issues, their political power (in terms of sheer numbers) and their preferences for one politician over the other, on different issues, that determine optimal consumption promises and issue emphasis.

Empirically, I estimate the demand for a politician, i.e. the share of votes a politician receives given his campaign. I enrich the model by allowing the voting decisions of agents to be also influenced by observed and unobserved politician characteristics. The former refer to demographic and career characteristics of the politician and the latter to personality traits such as charisma. As there is currently no data set for consumption promises, political campaigns in the empirical exercise are solely the campaign time politicians spent on various issues (issue emphasis). To allow for the fact that campaign effects vary with the position of a politician, I introduce interaction terms for the different dimensions. In other words, each issue enters the estimation of vote share in three ways: (i) the effect of campaign time on that issue, (ii) the effect of the politician’s position on that issue and (iii) the effect of the two interacted. The following provides a simple representation of the setup.

In order to estimate the model, I construct my own data-set, using the party Presidential
Nominating Convention acceptance speeches for each candidate, that take place in the spring before the election. The content analysis follows the one done by the Comparative Manifesto Project (CMP) on party platforms. Namely, each sentence is broken down to “quasi-sentences,” defined as a part of the sentence in which an idea is self-contained. The largest possible quasi-sentence is the whole sentence. Each quasi-sentence belongs to one of fifty six minor issue categories, seven major ones. I added an “oratory” category to place the introductory sentences that were meant to get the attention of the audience. I created the measure of issue emphasis by counting the total number of quasi-sentences (excluding the oratory ones), and the number in each category. I use this data-set in conjunction with the National Election Studies data-set that contains voter-level data on demographics, voting and opinions from 1948 till today.

To estimate the demand for a politician, I break down a voter’s indirect utility from a politician into two parts. A population average $\delta$ and an individual level component, $\mu_i$, where $i$ denotes a voter. The former, $\delta$, includes the average effects of campaign and politician characteristics on voter payoffs.

$$\begin{pmatrix} 
\text{\delta, average indirect utility if } j \text{ wins} \\
\text{various issue preferences depends on politician campaign} 
\end{pmatrix} = \begin{pmatrix} 
\text{observed} \\
\text{unobserved} 
\end{pmatrix} + \begin{pmatrix} 
\text{observed} \\
\text{unobserved} 
\end{pmatrix}$$

Noting the similarities between two campaign-setting political candidates and two price-setting oligopolists, I use techniques from the demand estimation literature. I extend Berry’s (1994) techniques to this setup and show that there exists a unique mapping from market shares to $\delta$. Given the estimated values of $\delta$, the above is now a simple regression with the unobserved politician characteristics entering linearly, I thus use standard instrumental variable techniques to estimate the last of the parameters. Since, the dependent variable is the average voter utility if a specific politician wins, I can use various measures of the campaigns and characteristics of his opponent’s party in other years as instruments. For

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4See the appendix for a list of categories.
example, looking at the indirect utility of voters if Bush won the 2004 election we note that Bush’s charisma (unobserved characteristic) is most likely uncorrelated with the campaign of all democratic candidates in the 1952 - 2000 elections. The latter however should be highly correlated with Bush’s campaign through party linkages and because the two parties are competing with each other. Thus various measures of past (and future) campaigns and politician characteristics are used as instruments.

I first estimate this model to establish the aggregate campaign effects in the US electorate and then construct a random effects model the understand the source of the effects. In other words I account for the heterogeneity of voters’ preferences by allowing campaign effects to vary for each voter, depending on her own demographic characteristics and issue preferences. For the random effects estimation I use the techniques of Berry Levinsohn and Pakes (2004, BLP henceforth).

A voter’s utility from a politician winning the election is again the sum of a population average \( \delta \) and an individual level component, \( \mu^i \). In this case, \( \mu^i \) is voter \( i \)'s deviation from that average that depends on her demographic characteristics and issue preferences. Following BLP (2004) I use a method of moments to match

1. The covariances of the campaign and observed characteristics of the politician voted for with voter demographic characteristics (useful for estimating the campaign effects as they vary by voter demographic characteristics)

2. The covariances of the campaign and observed characteristics of the politician voted for with voter answers to feeling thermometer questions\(^5\) (useful for estimating the campaign effects as they vary by individual voter preferences)

3. The shares of votes a politician receives.

(1) and (2) provide estimates for the parameters in \( \mu^i \), given those, there exists a unique \( \delta \) (average indirect utility in the population if a politician wins) that matches predicted and actual vote shares. The estimated values of \( \delta \) can now be used to estimate the rest of the parameters.

\(^5\)Questions that ask the voter to place on a scale from 0 to 100 their opinion about a specific issue/person, where 50 implies indifference.
I find that issue emphasis on the political system\(^6\), economics and traditional values issues are all significant determinants of vote shares. The effect of the political system depends on the party affiliation of the presidential candidate. It is negative for Republican and positive for Democratic candidates.

Issue emphasis on economics has a statistically significant and positive effect for any presidential candidate. A 5 percentage points increase in the share of time on economics (from 20% to 25% of total campaign time) leads to anywhere from a 3% to 30% increase in the share of votes and on average an increase of 8.3 percentage points in votes. The effect varies because economic issue emphasis enters quadratically in the demand for a politician, revealing that the campaign technology is better in terms of turning issue emphasis into votes the more time a politician spends in economics. One can see this as a credibility effect. Changes in economic policy are in general hard to pass through congress, the more time a politician spends on them the greater the marginal effect of issue emphasis as voters become more convinced the policy will pass.

In terms of issue emphasis on traditional values issues (such as gay marriage, abortion and anything else pertaining to traditional morality) the effect depends on the perceived position of the politician. The more conservative a politician is perceived to be the larger the effect of issue emphasis. A 5 percentage points increase in the share of time on traditional values issues by a politician considered to be conservative to extremely conservative will increase his share of votes on average by 4 percentage points (at most 12), for a moderate on average 2.8 percentages points (at most 7.6) and for a liberal to extremely liberal politician on average 1.3 percentage points (at most 3.5 percentage points). A reason for this may be that the voters for which the exogenous salience of traditional values issues is the highest are the more conservative ones and thus the ones that will respond the most to politicians in agreement with their preferences.

These results are in agreement with the theory in the sense that issue emphasis matters and the effect of issue emphasis varies (at least for some issues) with the position of the politician. It is interesting to note that campaign time (and positions) on other issues such as foreign relations, welfare and the environment are not significant determinants of vote

\(^6\)Governmental and administrative efficiency, political corruption, political authority/party competence.
choice.

In the following, section 2 presents the theoretical model, section 3 estimates the model and section 4 concludes. The appendix includes tables with the notation for the quantitative exercise, the data categories and the results.

2 A Theory of Political Campaigns

2.1 The Case of Virginia

In this section I discuss an example that illustrates the main mechanism of my model.\footnote{Thanks to Christopher Phelan for pointing out this example.}

In the 2009 Gubernatorial elections of the state of Virginia, Republican candidate Robert “Bob” McDonnell ran against Democrat R. Creigh Deeds. McDonnell won the election by a landslide, with a 58.61% share of the vote. This came as a surprise to many seeing as the Senators and last two Governors of Virginia were Democrats, Virginia voted for Pres. Obama in the 2008 race and polls showed that this support had not significantly decreased since Obama took office. Moreover, McDonnell is considered to be an extreme social conservative.

McDonnell’s campaign strategy was to run with a moderate, for a Republican, economic platform (focusing on creating new jobs through public projects, etc) and to focus all of his campaigning on economic issues and away from social issues. When asked about the latter, he would either have no comment or shift the focus of the discussion towards the economy. In the context of my model, it is these tools, economic policy promises and issue emphasis, that politicians have at their disposal for political targeting. The presence of non-economic issues and the existence of these two kinds of tools determine which groups of voters will be targeted using economic policy (mostly the poor in this case) and which issues (economic instead of social issues) will be the focus of the campaign, thereby drawing the attention towards different aspects of a politician’s platform, those that voters best respond to.

The model that follows is based on the probabilistic voting theory of Lindbeck and Weibull (1987). Note that given the endogeneity of political campaigns and the latter’s
dependence on both observed and unobserved politician characteristics, it is essential to build and estimate a structural model.

2.2 Setup

Consider a static endowment economy with two politicians, \( j \in \{R, D\} \) and a continuum of voters, indexed by \( i \), \( i \in [0, 1] \). Each voter belongs to a group \( g \in G \). \( g = (g_y, g_n) \) is a vector of demographic characteristics. \( g_y \in \{0, 1\} \) is the endowment level of voter \((i, g)\) and \( g_n \in \{0, 1\} \), is another demographic characteristic. Let, for example, \( g_n \) be the gender of a voter with \( g_n = 0 \) denoting a female and \( g_n = 1 \) a male voter. In this case, there are four demographic groups in the population, \((0, 0)\) poor women, \((0, 1)\) poor men, \((1, 0)\) rich women and \((1, 1)\) rich men. The results of this section carry through if there are multiple but finite voter demographic characteristics and values for each characteristic. Let \( \pi_g \) be the fraction of the population in group \( g \in G \).

Actions

There are two payoff-relevant issues, \( e \) denotes the economic and \( s \) is social issue dimension. Politicians actions are campaigns.

**Definition 2.1** A campaign \((c, t)\) is a consumption promise for each group in the population, \( c_g \in \mathbb{R} \ \forall g \in G \), a fraction of campaign time spent on economic issues \( t_e \in [0, 1] \) and a fraction of campaign time on social issues \( t_s \in [0, 1] \).

**Definition 2.2** A campaign \((c, t)\) is feasible if

1. \( g_y = g'_y \implies c_g = c_{g'} \ \forall g, g' \) (GCC)

2. \( \sum_g \pi_g (c_g - g_y) \leq 0 \) (RC)

3. \( t_e + t_s = 1 \) (TC)

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8The results of this section carry through with multiple, but a finite number of issue dimensions, e.g. introducing gun control, immigration policy, national defense, etc.

9In the theory, the only economic policy issue is consumption promises.
(GCC) is the group consumption constraint. It states that consumption promises can only depend on the endowment level of a voter, namely $g$. Consumption promises thus correspond to campaigning for income taxes. (RC) is the resource constraint, so that consumption promises are redistributive, and (TC) is the campaign time constraint. A campaign is a consumption promise for the poor (irrespective of gender), a consumption promise for the rich, campaign time spent on economic policy and campaign time on social issues. Following the pre-election literature,\footnote{See Persson & Tabellini (2000) for a review.} I assume that consumption promises of politicians are binding.\footnote{Grypari (2010) provides a richer model that allows for non-binding consumption promises. In the quantitative part of this paper, however, I use only issue emphasis and do not quantify consumption promises, therefore I abstract from this complication.} Note that issue emphasis, i.e. the campaign time on an issue, can be chosen by a politician for both the economic and social dimensions, but positions are only variable for the economic dimension (through consumption promises). The position of a politician for social issues is thought to be fixed by party affiliation.

Voters choose to vote for one of the two politicians, $b \in \{R,D\}$. The timing of this game is as follows:

1. Politicians campaign, $(c^j, t^j)$, $j \in \{R,D\}$
2. Voters vote $b^i_g \in \{R,D\}$, $i \in [0,1]$, $g \in G$
3. The simple majority winner $j^* \in \{R,D\}$ is elected
4. $j^*$ takes office and implements $c^{j^*}$.

**Payoffs**

Given political campaigns $(c^j, t^j)$, voters learn their winner-contingent payoffs. For voter $i$ in group $g$, if politician $j$ wins

$$u^{ij}_g (c^j, t^j) = \underbrace{w^j_{eg}(t^j_i) v(c^j_i)}_{uw_{econ} \text{ if } j \text{ wins}} + \underbrace{w^j_{sg}(t^j_i) \varepsilon^{ij}_g}_{uw_{social} \text{ if } j \text{ wins}}$$

for $j \in \{R,D\}$, where $w^j_{ng}(\cdot)$, $n = e,s$ are weight functions on the economic and social components of a voter $(i,g)$’s utility. I assume that they are increasing in campaign time.
((w_{ng})' > 0). Once can thus think of campaign time as a signal of the amount of time a politician will spend once in power on a specific issue. I take the approach that emphasis affects the salience of an issue on voter’s payoffs.\footnote{There are other explanations consistent with increasing weight functions, such as campaign time increasing the credibility that a politician will implement her position on an issue once in power. One could also explain the increasing salience of an issue with a “politician knows best” argument, so that emphasis on an issue provides the voters with information that they are in a state of the world were that specific issue is more important. The specification I picked is a reduced form consistent with different scenarios.} Note also that the campaign technology (i.e. the weight function) is allowed to differ across groups $g$, politicians $j$, and issues $n$. This is to allow for differences in access to campaigns and in issue ownership. The latter term was first coined by Petrocik (1996) and it is the idea that campaign effects vary depending on both the political party of a presidential candidate and the issue he is addressing. For example, Petrocik finds that people “listen” when Democrats address health care issues and when Republican talk about national defense, but not the other way around.

The economic part of an agent’s utility is $w^j_{eg}(t^e_j)v(c^j_g)$ where the utility from consumption promises $c$ is strictly increasing, $v' > 0$, strictly concave, $v'' < 0$ and satisfies the Inada conditions, $v'(0) = \infty$, $v' (\infty) = 0$. $\epsilon^i_{yg}$ is the utility of voter $(i,g)$ from $j$’s implicit position on social issues, which is fixed by party affiliation. $\epsilon^i_{yg}$ is private to the voter since preferences on non-economic issues are harder to measure and distributed according to $F^j_g$ which is twice differentiable ($F^j_g \in C^2$) and has full support ($F^j_g = F^j_g > 0$). The true distribution of shocks within a group, $F^j_g$ are known to both politicians and there is thus no aggregate uncertainty. $\epsilon_{yg}$ is the only source of heterogeneity amongst voters of the same group.

Equilibrium

**Definition 2.3** Given campaigns $(c^j, t^j)_{j=R,D}$ and social issue shock realizations $\epsilon^i_{yg}$, $\forall i, g$ the swing voter of group $g$ is voter $i$ such that

$$\bar{\epsilon}_g \equiv \begin{cases} w^R_{sg}(t^R_s)\epsilon^R_g - w^D_{sg}(t^D_s)\epsilon^D_g & \text{social issue bias for } R \text{ over } D \\ w^D_{eg}(t^D_e)u_g(c^D_g) - w^R_{eg}(t^R_e)u_g(c^R_g) & \text{economic issue bias for } D \text{ over } R \end{cases}$$

where $\bar{\epsilon}_g$ is distributed according to $F^j_g(t^D_s, t^R_s)$ which is determined by group shock distributions $F^j_g$, $j \in \{R, D\}$ and social issue emphasis by politicians, $t^R_s, t^D_s$. The swing voter is
indifferent between the two candidates. Any voter with social issue bias for \( R \) over \( D \) less than \( \varepsilon_g \) (leaning more towards \( D \)) will vote for \( D \). The share of voters in group \( g \) that vote for \( D \) is

\[
F_g \left( w_{eg}(t^D_e)u_g(c^D_g) - w_{eg}(t^R_e)u_g(c^R_g); t^D_s, t^R_s \right)
\]

and the total share of votes \( D \) gets (and thus her payoff) is:

\[
s^D(c^D, t^D, c^R, t^R) = \sum_g \pi_g F_g \left( w_{eg}(t^D_e)u_g(c^D_g) - w_{eg}(t^R_e)u_g(c^R_g); t^D_s, t^R_s \right)
\]

Politician \( R \) receives \( s^R = 1 - s^D \) share of the votes.
Definition 2.4 A Nash Equilibrium (NE) in this economy is campaigns for both candidates \((\hat{c}^j, \hat{t}^j)_{j=D,R}\) such that:

- Given \((\hat{c}^R, \hat{t}^R)\), politician D chooses
  \[
  (\hat{c}^D, \hat{t}^D) \in \text{argmax}_{(c,t) \in \mathcal{C}} s^D(c^D, c^R, t^D, t^R)
  \]

- Given \((\hat{c}^D, \hat{t}^D)\), politician R chooses
  \[
  (\hat{c}^R, \hat{t}^R) \in \text{argmax}_{(c,t) \in \mathcal{C}} - s^D(c^D, c^R, t^D, t^R)
  \]

Note that inter-group heterogeneity arises from (a) the fraction of voters, \(\pi_g\), (b) the social issues distribution of preferences for each politician \(F^j_g\), \(j = R, D\) and (c) the campaign technology \(w_{ng}(\cdot)\). It is the interaction of all these that will determine the groups of voters that will be targeted by each politician, and equilibrium outcomes.

2.3 Platform Divergence

Standard Probabilistic Voting

We can re-write the preferences in this model to match those of the original probabilistic voting framework of Lindbeck and Weibull (1987).

For voter \(i\) in group \(g\), if politician \(j\) wins

\[
u^j_g(c^j) = w_{eg}v(c^j) + \begin{cases} w_{eg}\varepsilon_{ij} & \text{if } j \text{ wins} \\ w_{sg}\varepsilon_{ij} & \text{if } j \text{ wins} \end{cases}
\]

where \(w_{ng}\) are now exogenous weights on the two issues, \(n = e, s\), there is no campaign time and thus politicians have no instruments to affect the salience of the social component of voters' preferences. In this setup, the equilibrium outcome is platform convergence so that both politicians offer the same campaign, \(c^R = c^D\). Although voters have preferences on social issues that differentiate the two politicians, \(\varepsilon_{ij}\), in terms of economic issues both politicians are identical. Thus candidates face the same tradeoffs when deciding optimal
consumption promises. It is the lack of interaction between social and economic issues that arises through the combination of a separable utility function and the lack of social issue campaigning that creates this counterfactual result.

In this setup, the following result holds.

**Lemma 2.5 (Platform Convergence)**

If \( w_{eg}(\cdot) = w_{eg'}(\cdot), \forall g, g' \in G \) and \( \forall j \in \{R, D\} \) then in equilibrium we have

\[
c^R = c^D
\]

In other words if the campaign technology of a specific politician for economic issues is identical for all groups of voters in the economy, both politicians will offer the same consumption promise. The intuition of the proof is similar to the standard probabilistic voting case. The tradeoffs politicians face allocating consumption between the rich and the poor are now independent of campaign time, since the effect of the latter is identical for all groups in the economy \( (w_{eg}^j = w_{eg'}^j, \forall g, g') \). Since campaign time is the instrument that linked economic and social issues, by removing this interaction the marginal gain of votes from one more unit of consumption to the rich over the poor is identical for both politicians and they will thus converge to the same economic platform.

In general, however, if we allow for enough heterogeneity in campaign technology across groups and politicians the outcome of this game will be platform divergence.\(^{\text{13}}\)

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\(^{\text{13}}\)Note that there are several papers that address the issue of platform divergence. This specific setup was chosen as a natural extension of standard probabilistic voting that allows for issue emphasis.
2.4 Numerical Comparative Statics

Consider the following voter preferences. For voter \( i \) in group \( g \), if politician D wins

\[
 u^D_i(c^D, t^D) = \begin{cases} 
 u_{econ} \text{ if } D \text{ wins} \\
 (w^u_{eg} - w^l_{eg})(t_e)^\delta + w^l_{eg} \end{cases} \text{ if } D \text{ wins} \\
 (w^u_{eg} - w^l_{eg})(t_s)^\delta + w^l_{eg} \text{ if } D \text{ wins} (1 - \varepsilon^i_g) 
\]

and if politician R wins

\[
 u^R_i(c^R, t^R) = \begin{cases} 
 u_{econ} \text{ if } R \text{ wins} \\
 (w^u_{rg} - w^l_{rg})(t_e)^\rho + w^l_{rg} \end{cases} \text{ if } R \text{ wins} \\
 (w^u_{rg} - w^l_{rg})(t_s)^\rho + w^l_{rg} \varepsilon^i_g 
\]

where \( w^u_{ng}, w^l_{ng} > 0 \) are the exogenous upper and lower bounds of issue \( n \) salience for group \( g \); \( \delta, \rho \) are the campaign technologies for \( D \) and \( R \) respectively and \( \varepsilon^i_g \sim U[\phi_1g, \phi_2g] \). For this specification I find the following comparative statics:

1. If two groups have the same mean in terms of social issues, consumption promises will be higher for the group that is more homogeneous, i.e. the one with higher \( \frac{1}{\phi_2g - \phi_1g} \).

2. More efficient campaign technology for issue \( n \implies \) more emphasis on issue \( n \), \( t_n \uparrow \).

3. As the number of payoff relevant issues increases (e.g. introducing national defense) \implies \text{emphasis on economics decreases (}t_e \downarrow\).

(1) is the usual result from probabilistic voting stating that the most responsive groups in the population in terms of consumption promises are going to be targeted. (2) is consistent with the results of the issue ownership literature discussed previously. This model thus predicts that Democrats would emphasize health care issues more than Republicans and Republicans foreign policy issues more than Democrats. (3) predicts that when the number of payoff-relevant non-economic issues increases, e.g. when there is a war, people respond less to economic issue emphasis (in terms of votes) and thus campaign time is allocated towards other issues.

These results provide intuition on how issue emphasis and thus voting outcomes respond to consumer demographics and preferences, which are the variables of interest in the
empirical exercise. Most importantly this section illustrates the tradeoffs two competing politicians face in terms of issue emphasis and sheds light to the observed election outcomes.

3 Estimation

In this section, I estimate an enriched version of the model previously described using data from U.S. Presidential Elections from 1952 - 2004.

3.1 Enriched Model

The specification I take to the data has the following characteristics. There are no consumption promises, as there is currently no data on them, so that the only instrument for a politician is campaign time, which enters linearly. There are several issue dimensions $n \in \{1, \ldots, N\}$, several observable voter characteristics $g = (g_y, g_1, \ldots, g_D)$ and four choices for each voter: Rep (Republican), Dem (Democrat), Ind (Independent) or 0 (not vote). I also introduce a $1 \times K$ vector of observable (to the econometrician) politician characteristics, $X^j$ such as the party she belongs to, political history, etc and I denote with $\xi^j$ the unobserved politician characteristics, such as charisma. Lastly, I allow the voters to have (unobserved) preferences $\{\varepsilon^{i, r}\}_{r=1}^{N+K}$ on each issue dimension, 1, $\ldots$, $N$ and on politician’s characteristics, 1, $\ldots$ $K$. $t_n p_n$ is an interaction term with elements $t_n p_n$, where $p_n$ is the position of a politician on issue $n$. This is to allow a differential effect of issue emphasis depending on party position. For voter $i$, if politician $j$ wins

$$u^{ij} = \underbrace{t^j}_{1 \times N} \alpha^i + \underbrace{t^j}_{1 \times N} \beta + \underbrace{X^j}_{1 \times K} \gamma^i + \xi^j + \nu^{ij}$$

where

$$\begin{pmatrix} \alpha^i \\ \gamma^i \end{pmatrix} = \underbrace{\alpha}_{\gamma} + \underbrace{\Pi}_{\mathcal{D} \times 1} \underbrace{g^j}_{(N+K) \times 1} + \underbrace{\Sigma}_{(N+K) \times 1} \varepsilon^j$$

14In the estimation, I also allow for non-linearities, but simplify it here for notational convenience.
\( \nu_{ij} \) are independently and identically distributed across voters and politicians with Type I extreme value distribution so that \( P_{\nu}(\nu) = \exp(-\exp(-\nu)) \). The random coefficients \( \alpha^i \) allow for campaign effects that vary by demographic group through \( \Pi g_i \) and by individual preferences through \( \Sigma \varepsilon^i \). \( \varepsilon^i \)'s are jointly distributed according to the multivariate standard Normal. We can break down these payoffs into a population average and an individual deviation.

\[
u_{ij} = \delta^j(t^j, p^j, X^j, \xi^j; \theta_1) + \mu^j(t^j, X^j, \varepsilon^j, g_i; \theta_2) + \nu^j
\]

where

\[
\delta^j = t^j \alpha + t_p^j \beta + X^j \gamma + \xi^j,
\]

mean utility of politician \( j \)

\[
\mu^j + \nu^j = [t^j, X^j](\Pi g^i + \Sigma \varepsilon^i) + \nu^j
\]

heteroscedastic deviation from pop. average

\[
\theta_1 = (\alpha, \beta, \gamma), \quad \text{linear parameters}
\]

\[
\theta_2 = (\Pi, \Sigma), \quad \text{nonlinear parameters}
\]

\[
w_{m} = \varepsilon_{m}^0, \quad \text{the payoff from not voting, normalized to 0}
\]

Let \( A^j(\delta) \) be the set of individuals that vote for \( j \) given the vector of average utilities \( \delta \), for all \( j \in \{\text{Rep, Dep, Ind, 0}\} \).\(^{15} \) We have

\[
A^j(\delta, t, X; \theta_2) \equiv \left\{ (g^i, \varepsilon^i, \{\nu^j\}_j) \middle| u^j \geq u^l, \forall l \in \{\text{Rep, Dep, Ind, 0}\} \right\}
\]

Assuming ties occur with zero probability, the market share of the \( j \)th politician is just an integral over the mass of voters in region \( A^j \).

\[
s^j(\delta, t, X; \theta_2) = \int_{A^j} dP^*(g, \varepsilon, \nu)
\]

\[
= \int_{A^0} dP^*(\nu|g, \varepsilon) dP^*(\varepsilon|g) dP^*_g(g)
\]

\[
= \int_{A^j} dP^*_\nu(\nu) dP^*_\varepsilon(\varepsilon) dP^*_g(g)
\]

\(^{15}\)Note that an individual in this specification is a tuple \((g^i, \varepsilon^i, \nu^j)\).
for \( j = \text{Rep}, \text{Dep}, \text{Ind}, 0 \) where \( P^*(\cdot) \) denotes population distribution functions. Note that, this model allows for flexible substitution patterns. The composite random shock \( \mu_{ij} + \nu_{ij} \) is not independent from voter and politician characteristics which will lead to more realistic campaign effects that will link the campaign of a politician and his characteristics (such as party affiliation).

Note that the focus of this paper is primarily on \((\alpha^i, \gamma)\) as these parameters determine which issues voters are more responsive to and how this varies by demographics and other observed voter characteristics. Section 5.1 in the appendix provides details on the notation and assumptions used.

### 3.2 Data

I am using data from US Presidential Elections from 1952 to 2004 to estimate the model. Individual level data on voting choices and voter characteristics come from the National Election Studies (NES).\(^{16}\) I have constructed my own campaign data using presidential candidate acceptance speeches at the presidential nominating conventions. I estimated issue emphasis as the fraction of the acceptance speech on a specific issue. The content analysis is done in the same way as in the Comparative Manifesto Project (CMP).\(^{17}\) Acceptance speeches were selected as a high-visibility representative sample of the campaign of that politician. I chose not to use the CMP data, since it is estimated using political platforms that represent a wider set of party preferences, rather than the presidential candidate’s. Each sentence of the acceptance speech is broken down to “quasi-sentences,” defined as a part of the sentence in which an idea is self-contained. The largest possible quasi-sentence is the whole sentence. Each quasi-sentence belongs to one of fifty six minor issue categories, seven major ones.\(^{18}\) I added an “oratory” category to place the introductory sentences that were meant to get the attention of the audience. I created the measure of issue emphasis by counting the total number of quasi-sentences (excluding the oratory ones), and the number in each category.

\(^{16}\)http://www.electionstudies.org/
\(^{18}\)See the appendix for a list of categories.
The observed politician characteristics that I include in $X^j$ are listed in table 5.1.2 in the appendix. The observed voter characteristics include demographics, self-proclaimed partisanship, a personal assessment of the state of the economy and self-proclaimed most important problem (MIP) for the United States (table 5.1.3 in the appendix). The assessment of the state of the economy has been found to be an important determinant of voter choice in the political science literature, and the MIP was selected to account for changes in exogenous factors over time.

**Defining a Market**

In this discrete choice, characteristic based approach of demand estimation a politician is completely described by $(t, X, \xi)$ and when defining a market it is important that the characteristics of a politician are perceived to be the same for all voters in that market. Specifically, since it has been well documented that voters often misperceive the positions of a politician I use survey questions from NES to separate voters into groups (within each year). If voter $i$ thinks that politician $j$ is planning to start a new war, but voter $l$ thinks that politician $j$ is supportive of peace, then if we place $i$ and $l$ in the same market the estimates of the effects of the national defense issue emphasis for politician $j$ will be meaningless because essentially politician $j$ is not the same for voter $i$ and voter $l$. One can think of this as separating voters into groups depending on how informed/sophisticated they are. I control for the correlation of errors of voters within a group using either fixed effects or robust clustered standard errors.

The question from the NES I choose to create groups in the population is one about the liberal to conservative placement of a Presidential candidate. Although it is not ideal because liberal and conservative may mean different things to voters, it is the position question that is the least correlated with a campaign. Other questions, such as whether or not a specific candidate is likely to start a war, although they have a more objective interpretation they are likely to be influenced by the campaign of a politician. Note that the NES is conducted anywhere between 3 months to 1 day before the election. A liberal to conservative scale is a distinction which was most likely made by voters before the presidential campaign started.
With this manipulation, a market is defined as the year and the group in the population agreeing on a politician’s position, there is a of maximum four choices in each market.\textsuperscript{19} Table 5.2.1 in the appendix provides summary statistics of the data.

### 3.3 Identification Strategy

I use the methods of BLP (2004) to estimate the model. Note that

$$u^{ijm} = \delta^{jtm} + [t^{jm}, X^{jm}](\Pi g_i + \Sigma \varepsilon_i) + \nu^{ijm}$$

where \(m\) denotes the market, defines a traditional random coefficients discrete choice model with choice-specific constant terms \(\delta\). Given the previously stated parametric assumptions on \((\varepsilon, \nu)\) and standard regularity conditions, I can obtain consistent estimators on \(\delta, \theta_2 = (\Pi, \Sigma)\) from individual level NES data without assumptions on \(X\)’s and \(\xi\)’s. I can then estimate \(\theta_1 = (\alpha, \beta)\) using the estimates of \(\delta\) and data on politician campaign and characteristics.

**Identification Procedure:**

1. Estimate \((\theta_2, \delta)\) without restrictions on \(\xi, X\)
2. Use estimated \(\delta\)’s to estimate \((\alpha, \beta)\) using various assumptions on \(\xi, X\).

To do (1) we use a method of moments estimator. This compares the moments predicted by my model for different values of \((\theta_2, \delta)\) to my sample’s moments and then chooses the value of \((\theta_2, \delta)\) that minimizes the “distance” between the model’s predictions and the data. The predicted moments to match are:

1. covariances of politician campaign and characteristics and observed voter characteristics (useful for estimating \(\Pi\))
2. covariances of politician campaign and characteristics and voters answers to “feeling thermometer” questions (useful for estimating \(\Sigma\))

3. vote shares for each candidate (useful for estimating $\delta$)

Using the theory of BLP (2004), I have that given $(\Pi, \Sigma)$ there exists a unique $\delta$ that matches the observed market vote shares to the model’s predicted vote shares (the third moment I match). Given the predicted $\hat{\delta}$'s I can estimate $\hat{\delta}^j = t^j \alpha + X^j \beta + \xi^j$.

**Instruments**

Since the error terms $\xi^j$ is correlated with campaigns $t^j$, I need a set of instruments $Z$ to consistently estimate the model. Under the assumption that $\xi^j$ is composed of personal traits of a politician (such as charisma), I use the sum of politician characteristics in other markets for the same or opposing party,\(^{20}\) excluding the cases where the same politician ran several times. Assuming independence of politician charisma across years\(^{21}\) we can also create Hausman instruments, using measures of the campaign of a politician in different years. Campaigns and characteristics from other years will be correlated with current campaigns due to party linkages, so that these instruments are strong.

Given (a) this set of instruments, (b) the predicted values of $\delta$ that depend on parameter values $\theta_2 = (\Pi, \Sigma)$, and (3) the fact that $\delta^j = t^j \alpha + X^j \beta + \xi^j$, I use GMM and the moment condition $E(Z \xi^j) = 0$ to estimate the parameters.

### 3.4 Aggregate Effects

To show the importance of allowing for campaign effects to vary by voter demographics and characteristics, I first run the aggregate effects model.

$$u^{ijm} = t^{jm} \alpha + t_p^{jm} \gamma + X^{mj} \beta + i.party + i.year + i.group + \xi^j + \nu^{ijm}$$

where $i.party$, $i.year$ and $i.group$ control for party and year and voter group fixed effects. Note that $\xi^j$ is now the variation of unobserved politician characteristics (that is not captured by the market and party dummy variables).

Using Berry’s (1994) method for inverting market shares and the assumption on $\nu^{ijm}$


\(^{21}\)Excluding repeating candidates
and \( u^{0i} \), I can write

\[
\ln(s^{jm}) - \ln(s^{0m}) = \delta^j = t^{jm}_p \alpha + t^{jm}_p \gamma + X^j \beta + i.party + i.year + i.group + \xi^j
\]

I use the instruments described in the previous section to estimate the model. The results are presented below.\(^{22}\)

<table>
<thead>
<tr>
<th>Variable</th>
<th>OLS</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>( t_{\text{con}}^{2} )</td>
<td>24.38***</td>
<td>3.32*</td>
</tr>
<tr>
<td></td>
<td>(8.89)</td>
<td>(1.94)</td>
</tr>
<tr>
<td>( t_{\text{poli}}^{2} )</td>
<td>-2.87</td>
<td>-29.56**</td>
</tr>
<tr>
<td></td>
<td>(19.31)</td>
<td>(12.54)</td>
</tr>
<tr>
<td>( t_{\text{poli}}^{2} \times \text{Dem} )</td>
<td>65.84***</td>
<td>48.34***</td>
</tr>
<tr>
<td></td>
<td>(10.38)</td>
<td>(9.5)</td>
</tr>
<tr>
<td>( t_{\text{welf}}^{2} \times \text{poswelf} )</td>
<td>23.52</td>
<td>-4.16</td>
</tr>
<tr>
<td></td>
<td>(14.55)</td>
<td>(8.9)</td>
</tr>
<tr>
<td>( t_{\text{trad}}^{2} )</td>
<td>-532.07***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(176.56)</td>
<td></td>
</tr>
<tr>
<td>( t_{\text{trad}}^{0.5} \times \text{postrad} )</td>
<td>7.77***</td>
<td>2.13*</td>
</tr>
<tr>
<td></td>
<td>(1.42)</td>
<td>(1.16)</td>
</tr>
<tr>
<td>( t_{\text{envi}}^{0.5} )</td>
<td>-7.50**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.94)</td>
<td></td>
</tr>
</tbody>
</table>

**Measures of Fit**

<table>
<thead>
<tr>
<th>OLS</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>5%</td>
</tr>
</tbody>
</table>

Table 1: Aggregate Effects

Notes: * significant at 10%, ** significant at 5%, *** significant at 1%. The measure of fit for OLS is the adjusted R-squared, and for IV 5% implies that the Wald F-Statistic passes the Stock Yogo relative bias test at the 5% level, so that the instruments are strong.

Issue emphasis enters in these non-linear forms as these are the ones that the best fit to the data. Table 5.2.2 in the appendix contains the results for other specifications and details on the data used. I find that issue emphasis on the political system,\(^{23}\) economics and traditional values issues are all significant determinants of vote shares. The effect of the

\(^{22}\)See tables 5.1.1 and 5.1.4 for notation and a detailed description of the data.

\(^{23}\)Governmental and administrative efficiency, political corruption, political authority/party competence
political system depends on the party affiliation of the presidential candidate. It is negative for Republican and positive for Democratic candidates.

Issue emphasis on economics has a statistically significant and positive effect for any presidential candidate. A 5 percentage points increase in the share of time on economics (from 2% to 25% of total campaign time) leads to anywhere from a 3% to 30% increase in the share of votes and on average an increase of 8.3 percentage points in votes. The effect varies because economic issue emphasis enters quadratically in the demand for a politician, revealing that the campaign technology is better in terms of turning issue emphasis into votes the more time a politician spends in economics. One can see this as a credibility effect. Changes in economic policy are in general hard to pass through congress, the more time a politician spends on them the greater the marginal effect of issue emphasis as voters become more convinced the policy will pass.

In terms of issue emphasis on traditional values issues (such as gay marriage, abortion and anything else pertaining to traditional morality) the effect depends on the perceived position of the politician. The more conservative a politician is perceived to be the larger the effect of issue emphasis. A 5 percentage points increase in the share of time on traditional values issues by a politician considered to be conservative to extremely conservative will increase his share of votes on average by 4 percentage points (at most 12), for a moderate on average 2.8 percentages points (at most 7.6) and for a liberal to extremely liberal politician on average 1.3 percentage points (at most 3.5 percentage points). A reason for this may be that the voters for which the exogenous salience of traditional values issues is the highest are the more conservative ones and thus the ones that will respond the most to politicians in agreement with their preferences.

These results are in agreement with the theory in the sense that issue emphasis matters and the effect of issue emphasis varies (at least for some issues) with the position of the politician. It is interesting to note that campaign time (and positions) on other issues such as foreign relations, welfare and the environment are not significant determinants of vote choice.

Lastly, it is clear that the OLS estimates are biased upwards. Variations in valuation
of politician charisma and other personal traits beyond the party average are as predicted correlated with political campaigns. The larger the variation, the greater the effect of issue emphasis.

4 Conclusion

This paper examines the effects of economics and non-economic issues on political campaigns of U.S. Presidential elections from 1952 to 2004. I provide a tractable model that allows for heterogeneity in voter demographics and preferences over issues, accounts for the endogeneity of political campaigns and controls for unobserved politician characteristics. I estimate the model using the techniques of Berry, Levinsohn and Pakes (2004).

Accounting for the interaction between demographics, population preferences, political campaigns and election outcomes is a first step towards understanding the effects of pre-election competition in several dimensions, on economic and non-economic policy outcomes.
References


5 Appendix

5.1 Data and Assumptions

\[ u_{jm} = \delta_{jm} + \mu_{jm} + \nu_{jm} \]

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>DESCRIPTION</th>
<th>ASSUMPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \delta_{jm} )</td>
<td>average utility in market ( m ) from politician ( j )</td>
<td>( \delta^j = t^j\alpha + t^j\beta + X^j\gamma + \xi^j )</td>
</tr>
<tr>
<td>( \iota_{jm} )</td>
<td>( N )-dimensional politician ( j ) issue emphasis (table 5.1.4)</td>
<td></td>
</tr>
<tr>
<td>( X_{jm} )</td>
<td>observed politician ( j ) characteristics in market ( m )</td>
<td></td>
</tr>
<tr>
<td>( \xi_{jm} )</td>
<td>unobserved politician ( j ) characteristics in market ( m ) (table 5.1.2)</td>
<td></td>
</tr>
<tr>
<td>( (\iota_{jm}, X_{jm}, \xi_{jm}) )</td>
<td>politician ( j ) in market ( m )</td>
<td></td>
</tr>
<tr>
<td>( \theta_1 = (\alpha, \beta, \gamma) )</td>
<td>coefficient in ( \delta_{jm} )</td>
<td></td>
</tr>
<tr>
<td>( \mu_{jm} + \nu_{jm} )</td>
<td>heteroscedastic deviation of market and politician average utility</td>
<td>( \mu_{ijm} = [t^j, X^j](\Pi g^i + \Sigma \xi) )</td>
</tr>
<tr>
<td>( g^i )</td>
<td>voter ( i ) observed characteristics (table 5.1.3)</td>
<td></td>
</tr>
<tr>
<td>( \varepsilon^i )</td>
<td>( (N \times K) )-dimensional vector of unobserved voter preferences on issues ( {1, \ldots, N} ) and politician characteristics ( {1, \ldots, K} )</td>
<td>( \sim ) multivariate standard Normal</td>
</tr>
<tr>
<td>( \theta_2 = (\Pi, \Sigma) )</td>
<td>coefficients in ( \mu_{jm} )</td>
<td></td>
</tr>
<tr>
<td>( \nu_{jm} )</td>
<td>mean zero stochastic term in voters payoff from politician ( j ) in market ( m )</td>
<td>( \sim ) iid across voters, politician and markets, Type 1 extreme value distribution</td>
</tr>
<tr>
<td>( (\nu^i, \varepsilon^i, g^i) )</td>
<td>a voter</td>
<td></td>
</tr>
<tr>
<td>( \sigma_{jm} )</td>
<td>vote share of politician ( j ) in market ( m )</td>
<td></td>
</tr>
</tbody>
</table>
### Table 5.1.2: Politician Characteristics, $X$

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>party</td>
<td>party of a politician</td>
</tr>
<tr>
<td>age</td>
<td>age of a politician</td>
</tr>
<tr>
<td>years_milit</td>
<td>number of years in the military</td>
</tr>
<tr>
<td>years_poli</td>
<td>number of years in politics</td>
</tr>
<tr>
<td>no_kids</td>
<td>number of children</td>
</tr>
<tr>
<td>divorced</td>
<td>dummy variable, value 1 if politician was ever divorced</td>
</tr>
<tr>
<td>lawschool</td>
<td>dummy variable, value 1 if politician went to lawschool</td>
</tr>
<tr>
<td>incumbent</td>
<td>dummy variable, value 1 if politician is an incumbent in this election</td>
</tr>
<tr>
<td>vp</td>
<td>dummy variable, value 1 if politician was ever a vice president</td>
</tr>
<tr>
<td>ran_nc</td>
<td>dummy variable, value 1 if politician ever ran a national campaign before</td>
</tr>
</tbody>
</table>

These variables were constructed.

### Table 5.1.3: Voter Characteristics, $g$

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vincome</td>
<td>income group of a voter</td>
</tr>
<tr>
<td>vedu</td>
<td>education level of a voter</td>
</tr>
<tr>
<td>vreligious</td>
<td>religiosity of a voter</td>
</tr>
<tr>
<td>vrace</td>
<td>race of a voter</td>
</tr>
<tr>
<td>vgender</td>
<td>gender of a voter</td>
</tr>
<tr>
<td>vunemployed</td>
<td>dummy variable, value 1 if voter unemployed</td>
</tr>
<tr>
<td>vpartisan</td>
<td>voter's degree of partisanship</td>
</tr>
<tr>
<td>vmip</td>
<td>voter’s answer to “most important problem in the economy” question</td>
</tr>
<tr>
<td>veconomy</td>
<td>voter’s answer to “state of the economy” question</td>
</tr>
</tbody>
</table>

This data comes from the National Election Studies.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t_{econ}$</td>
<td>campaign time on economic policy</td>
<td>Free enterprise, incentives, market regulation, economic planning, corporatism, protectionism, economic goals, Keynesian demand management, productivity, technology and infrastructure, controlled economy, nationalization, economic orthodoxy, growth, labor groups, farmers, middle class and professionals.</td>
</tr>
<tr>
<td>$t_{civil}$</td>
<td>campaign time on civil rights issues</td>
<td>Freedom and human rights, democracy, constitutionalism, social justice, law and order, social harmony, multiculturalism, underprivileged minority groups, non-economic demographic groups.</td>
</tr>
<tr>
<td>$t_{foreign}$</td>
<td>campaign time on foreign relations issues</td>
<td>Foreign relations, imperialism, colonialism, military, peace, internationalism, European integration, national way of life/protectionism.</td>
</tr>
<tr>
<td>$t_{poli}$</td>
<td>campaign time on political system issues</td>
<td>Decentralization (not economic), federalism, government and administrative efficiency, political corruption, parties and political authority.</td>
</tr>
<tr>
<td>$t_{envi}$</td>
<td>campaign time on culture and the environment</td>
<td>Environmental protection, need for spending on culture and leisure (museums, facilities, etc).</td>
</tr>
<tr>
<td>$t_{welf}$</td>
<td>campaign time on welfare issues</td>
<td>Social services, social security, public health services and education.</td>
</tr>
<tr>
<td>$t_{trad}$</td>
<td>campaign time on traditional morality issues</td>
<td>Traditional moral values, prohibition, censorship and suppression of immorality and unseemly behavior, maintenance and stability of family, religion, abortion, etc.</td>
</tr>
</tbody>
</table>

1: These categories are the same ones used by the Comparative Manifesto project (formerly Manifesto Research Group) see Klingemann et al (2006).  
2: The categories capture on average 98% of political platforms.
### 5.2 Summary Statistics and Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Rep</th>
<th>Dem</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t_{econ}$</td>
<td></td>
<td>28.1%</td>
<td>27.9%</td>
</tr>
<tr>
<td>$t_{foreign}$</td>
<td></td>
<td>23.8%</td>
<td>24.1%</td>
</tr>
<tr>
<td>$t_{poli}$</td>
<td></td>
<td>8%</td>
<td>9.3</td>
</tr>
<tr>
<td>$t_{civil}$</td>
<td></td>
<td>21.7%</td>
<td>20.3%</td>
</tr>
<tr>
<td>$t_{envi}$</td>
<td></td>
<td>5.4%</td>
<td>5.1%</td>
</tr>
<tr>
<td>$t_{trad}$</td>
<td></td>
<td>2%</td>
<td>2.4%</td>
</tr>
<tr>
<td>$t_{welf}$</td>
<td></td>
<td>9.1%</td>
<td>8.2%</td>
</tr>
<tr>
<td>age</td>
<td></td>
<td>61.9</td>
<td>53.2</td>
</tr>
<tr>
<td>years_milit</td>
<td></td>
<td>11.8</td>
<td>3.5</td>
</tr>
<tr>
<td>years_poli</td>
<td></td>
<td>12.9</td>
<td>15</td>
</tr>
<tr>
<td>no_kids</td>
<td></td>
<td>3.1</td>
<td>3.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>No Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>divorced</td>
<td>Rep</td>
</tr>
<tr>
<td>lawschool</td>
<td></td>
</tr>
<tr>
<td>incumbent</td>
<td></td>
</tr>
<tr>
<td>vp</td>
<td></td>
</tr>
<tr>
<td>ran_nc</td>
<td></td>
</tr>
</tbody>
</table>
Table 5.2.2: Aggregate Effects

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>(i) OLS</th>
<th>(ii) OLS</th>
<th>(iii) IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t_{0.5}^{econ}$</td>
<td>13.21*** (3.49)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t_{econ}$</td>
<td></td>
<td>24.38*** (8.89)</td>
<td>3.32* (1.94)</td>
</tr>
<tr>
<td>$t_{econ} \times pos_{econ}$</td>
<td>0.21 (1.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t_{0.5}^{civ}$</td>
<td>3.62 (2.45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t_{civ}^{2}$</td>
<td></td>
<td>-8.86 (5.48)</td>
<td></td>
</tr>
<tr>
<td>$t_{civ}^{2} \times pos_{civ}$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t_{foreign}^{2} \times Dem$</td>
<td>5.69 (5.69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t_{0.5}^{poli}$</td>
<td>-10.86*** (3.19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t_{poli}^{2}$</td>
<td></td>
<td>-2.87 (19.31)</td>
<td>-29.56** (12.54)</td>
</tr>
<tr>
<td>$t_{poli}^{2} \times Dem$</td>
<td></td>
<td>131.91*** (34.74)</td>
<td>65.84*** (10.38)</td>
</tr>
<tr>
<td>$t_{poli} \times Rep$</td>
<td>0.10** (0.05)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t_{welf}^{2} \times pos_{welf}$</td>
<td>59.40*** (19.31)</td>
<td>23.52 (14.55)</td>
<td>-4.16 (8.9)</td>
</tr>
<tr>
<td>$t_{0.5}^{trad}$</td>
<td>-16.24*** (4.62)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t_{trad}^{2}$</td>
<td></td>
<td>-532.07*** (176.56)</td>
<td></td>
</tr>
<tr>
<td>$t_{trad}^{2} \times pos_{trad}$</td>
<td>6.32*** (4.62)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t_{0.5}^{envi}$</td>
<td>-22.5*** (7.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measures of Fit</td>
<td>0.34</td>
<td>0.48</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Note: * significant at 10%, ** significant at 5%, *** significant at 1%. The measure of fit for OLS is the adjusted R-squared, and for IV 5% implies that the Wald F-Statistic passes the Stock Yogo relative bias test at the 5% level, so that the instruments are strong. $pos_a$ varies from extremely liberal to extremely conservative.