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Japanese Voters and the Responsibility Hypothesis
–The 1996 House of Representatives Election

by

Sung Jin Kang

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Sung Jin Kang[1]
The University of Tsukuba,
The Institute of Policy and Planning Sciences
sungjin@sk.tsukuba.ac.jp

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Abstract

Using district-level data, this paper shows that Japanese voting behavior in the 1996 House of Representatives Election was significantly affected by economic factors such as the unemployment rate and the growth rate of real income per capita. In addition to the economic indicators, noneconomic indicators such as urban/rural cleavage, incumbency, and the vote participation rate are shown to be statistically significant. Furthermore the estimated coefficients on the effects of economic indicators show opposite sign between the LDP and the JCP. Contrary to the well-known "consensus" on Japanese voting behavior, this paper shows that Japanese are not unlike voters elsewhere with respect to the influence economic factors have on their voting behavior.

Keywords: Responsibility Hypothesis; Economic Voting.

1 Introduction

Following Anthony Downs (1957), it is presumed that the economy is linked to the voter via the responsibility hypothesis, which implies that voters regard the ruling party as responsible for economic performance and then decide to vote for or against the ruling party. Study of the responsibility hypothesis is the study of *economic voting*. This paper is an attempt to employ some statistical specifications to explore whether voting behavior in the Japanese 1996 House of Representatives election was affected by economic conditions.

Research on Western countries by scholars such as Kramer (1971), Stigler (1973), Goodmand and Kramer (1975), Bloom and Price (1975), Alvarez, et al. (2000), Anderson (2000), and Lewis-Beck and Nadeau (2000) shows that voters are very individualistic, because economic conditions such as the growth rate of per capita income and unemployment rate are tied closely to their voting behavior.

However, using macroeconomic data and emphasizing the role of social factors, rather than the economic conditions individuals face studies on Japanese voting behavior such as those by Inogouchi (1983), Reed and Bunk (1984), Kabashima (1998) and Miyake (1998) did not strongly support the responsibility hypothesis. Consequently, they assert that Japanese voting behavior is different from that in Western countries, and that Japanese voters are not individualistic economic voters. Wade and Owens (1992) are an exception to this and show that the percentage share of the electoral district votes for the Liberal Democratic Party (LDP) in the 1983 and 1986 House of Representatives elections was negatively related to the unemployment rate but not related to the growth rate of per capita income. Their study, however, was limited to only the LDP.

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This paper tackles those well-known results mentioned above from three aspects. First, in contrast to aggregate national level or survey data that many studies have used, district level data at the electoral district level is used. District-level data, which is tied to the economies in which the individual voter is actually situated, is preferable to the national-level data and survey data typically employed in econometric studies of economic voting. The recent availability of the district level data makes electorate-level analysis possible.

Second, in addition to testing of responsibility hypothesis on votes for the ruling party, this paper tests the effects of economic variables on alternative parties as well. Whether and to what extent voters assign credit or blame for the country's economic performance depends on whether they can identify i) who is in charge of economic performance, ii) how much responsibility the politicians have, and iii) what alternatives voters have. Once voters have assessed economic performance, they must decide which politicians should be rewarded or punished. Since voters presumably regard some of the nonruling parties as an alternative to the ruling party, the realized share of total votes might be reversed from the ruling party to the non-ruling party. Under these circumstances, if for example, the non-ruling partiet wins a large number of the votes, it could be a sign that voters feel that the ruling party is more responsible for the current economic performance, and, therefore could be a sign that the voters are balming the ruling party for the lack of economic success.

Finally, in order to avoid model specification issues due to outliers and missing variables bias, robustness test of empirical findings are provided. In addition to economic indicators, noneconomic variables such as incumbency, rural/urban cleavage, and the voting participation rate are considered in the estimation. For example, the rural/urban

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cleavage variable has been assumed to reflect the social network which is a well-known factor in the literature on Japanese voting behavior. Wade and Owens (1992) and Scheiner (2000) showed this variable to be significant whereas Kohno (1997) did not show a significant role of the rural/urban cleavage.

Confirming the responsibility hypothesis, this paper shows that economic variables such as the growth rate of real income per capita and unemployment rate are statistically significant and robust as predictors of the vote. The data and model specifications used in this research are different from those used in prior, and the results are in contrast to those of other studies on Japan's elections. The significant role of economic conditions is not affected by the consideration of other noneconomic control variables, such as incumbency, rural/urban cleavage and the voting participation rate. The empirical results lead to the assertion that Japanese are not unlike voters elsewhere with respect to the influence economic factors have on their voting behavior.

The next section reviews the recent literature on economic voting. Following this, the model specifications are introduced in Section 3, and the empirical findings on economic voting are shown in Section 4. Then Section 5 provides the robustness tests of economic voting. The final section summarizes the results and robustness of economic voting.

2   Related Literature

The economic voting model based on the responsibility hypothesis begins with the simple proposition that votes received by political parties are affected by macroeconomic performance, with all other noneconomic factors being equal. For example, when the macroeconomy has been performing well, it is expected that the incumbent ruling party will

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receive a relatively higher share of the vote. Otherwise, other parties as alternative to the ruling party receive a higher share of the vote.

There is an extensive literature examining the impact of economic conditions on voting behavior. While there is some disagreement over the specific ways in which economic conditions affect voting behavior, there is at least consensus that the economic variables do influence electoral outcomes in the aggregate. Differences in findings probably stem from the choice of indicators, the type of data, and the methodologies employed.

Empirical studies of the effects of economic conditions on voting behaviors have been of two types. By using nationally aggregated data, the first approach seeks to estimate the relationship between economic variables and voting outcomes in elections. They include Kramer (1971), Stigler (1973), Arcelus and Meltzer (1975), Bloom and Price (1975), and Reed and Brunk (1984). By using the economic indicators of unemployment rate, income growth, and the consumer prices for the period of 1896-1964 as variables for a regression on the US presidential party's share of the national congressional votes, Kramer found a strong relationship of short-run changes in income and prices with the vote, and confirmed the hypothesis that voters punish the party in power during economic depression and reward it during economic boom. However, no significant relationship between unemployment rate and the vote share emerged.[1] In all of these cases, however, the observations are too few to inspire confidence.

What these models have in common is that they define the dependent variable presented at a national level. They are more interested in the effect of macroeconomic variables on national voting than in

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[1]Stigler (1973) following the same model, but modifying the measurement of variables results in a weak relationship between income change and voting.

district-level voting. This methodology might be used because national economic data is readily available.

The second approach from which most of our recent knowledge is drawn has used national sample survey data to estimate the relationship between the respondents' economic circumstances and their voting behaviors. The most recent studies out of a huge literature are Alvarez et al. (2000), Anderson (2000), and Lewis-Beck and Nadeau (2000). An important benefit of this approach is that the number of observations available for analysis is often large, since relevant polls frequently are conducted in settings, such as in Japan, the United States and Great Britain. Moreover, it is possible, with survey data, to estimate the extent to which sociological and political sentiments are present in the mass public. The approach does, however, have a significant limitation, since the dependent variable is a measure of the respondents' state of mind and may or may not be related to actual voting choices at election time or to changes in the political compositions of governments.

3 Model Specification

This paper analyzes the effects of local economic variables as well as other conditioning variables on voting behavior. The first model is used to determine the role of economic performance in the allocation of votes to the main parties. The variables which reflect economic performance are the unemployment rate and the growth rate of real income per capita at the local level. The effects of economic variables can be examined from a disaggregated perspective on the following model specification.

$$vote_i^j = \text{constant} + \beta_{1i} X_{1i} + \beta_2 X_{2i} + \varepsilon_i^j \tag{1}$$

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Here $vote_i^j$ represents the share of total votes cast for candidate j in each constituency election, i. X_k is the economic performance variables $k = 1$, and 2, where X_{1i}, and X_{2i} are the unemployment rate, and the growth rate of real income per capita in each electoral district, respectively. β_k is a kth parameter to be estimated and ε_i is a disturbance term. The parties considered in this analysis are the liberal democratic party (LDP), the New Frontier Party (NFP), the Democratic Party of Japan (DPJ), and the Japan Communist Party (JCP). In the 1996 House of Representatives election, voters had over 10 parties including independent candidates from which to choose. This paper considers only these four parties since the sample size and voting share of the other parties are insignificant.

The dependent variable reflects the realized share of total votes for each candidate in each electorate, regardless of electoral outcome. Thus the dependent variable is not as discrete as the dummy variable used in the poll-data analysis, which reflects whether or not the voter supports a specific party. Two variables which are consistently considered as important in the literature on economic voting, the unemployment rate and the growth rate of real income per capita, are used.

The least square estimation (OLS) is used throughout the paper. Generally speaking, the decision to vote for each party is not independent, leading to a possible correlation of error terms of all estimation equations across all parties. Since all independent variables of all estimation equations, however, are identical, the estimation specification can be interpreted as the reduced form of a simultaneous equation system of voting decisions for all parties.

Before we move forward, it is useful to look at the ideologies of the parties through realignment history before the 1996 election.[2] The

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[2]In 1996 Japan conducted the first election based on a new side-by-side electoral

realignment of political parties began when the Japan New Party was organized in May 1992. In June 1993, the restructuring of the Liberal Democratic Party (LDP) launched the Shinsei (Renewal) Party and Sakigaki (Harbinger) Party. The merger of several parties, the Japan Democratic Socialist Party, the Clean Government Party, the Japan New Party, and the Shinsei Party, to the conservative NFP, followed in December 1994.

The Socialist Party (SP), which had been a leading minority party since the two leading conservative parties merged to form the LDP in 1955, changed some of its policies on defense and taxation so that its stance could be aligned more closely with those of the LDP after it became a minority partner in the coalition government. Eventually, it changed its name to the Social Democratic Party of Japan (SDP) to better serve this. In September 1996, the Democratic Party of Japan (DPJ) was formed by members of Sakigake, the NFP, and the SDP to attract city-voters as the election approached. Independently of this realignment, the Japan Communist Party (JCP) remained, as usual, on its own, while the other parties did not differ significantly from the LDP in ideological terms.

If only economic variables are considered when testing economic voting behavior, the estimation results might provide incorrect information due to errors in model specification such as outliers and missing variable bias. As a first step, one must acknowledge that the estimated

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system which includes single member district as well as proportional representation seats. The main intention of the new system is to avoid dominance by one large party. The proportional representation seats in the new parliament might operate as a conduit for new parties and new candidates into parliament via split ballots. However, the unusual dual candidacy rule allows candidates to run for both single member district seats and proportional representation seats. See Cox and Rosenbluth (1995) and McKean and Scheiner (2000) for details.

coefficients can be biased by outliers. Through a simple plotting of economic variables and main parties' (LDP and JCP) vote shares, several outliers which might affect estimation results are excluded. Outliers are excluded from the first regression specification, (1). As a second step, in order to avoid misspecification bias due to missing variables, other non-economic variables are included as follows:

$$vote_i^j = \text{constant} + \beta_1 X_{1i} + \beta_2 X_{2i} + Y_i \gamma + \varepsilon_i^j \qquad (2)$$

where Y_i is the vector of other conditioning variables, and γ_i is a vector of parameters to be estimated. These variables (incumbency, rural/urban cleavages and voter participation rates) are used to test the robustness of the economic conditions in each district.

4   Economic Performance and Share of Votes

Economic indicators generally used in economic voting research are the unemployment rate and growth rate of income per capita. For the district level data of these economic variables, it must be emphasized that it is not always as complete or in some cases as operationally precise as might be preferred since complete data by district are not available.

First, the 1995 unemployment rate which is defined as the ratio of unemployed persons to the total labor force is used in this study. Second, since data on the real disposable income by electorate is not available, taxable income per capita is as an approximation used and converted into real value by deflating nominal values with consumer price indexes of seven regions in each year. The income data of some electorates are not available so the data of a larger region which includes those electorates are used as an approximation. The economic

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Table 1: Descriptive Statistics

	Mean	Standard Deviation	Min	Max	Sample
LDPratio	0.41	0.14	0.10	0.85	288
NFPratio	0.35	0.09	0.13	0.65	235
DPJratio	0.22	0.11	0.03	0.62	143
JCPratio	0.13	0.06	0.03	0.35	299
Unemp95	0.04	0.01	0.02	0.10	300
Gy9496	0.01	0.01	-0.04	0.08	300

indicators are from Regional Economic Indicators of Toyo Keizai (1996, 1998, 1999).[3] Table 1 shows the summary statistics of economic indicators and the voting share of each party. The total electoral districts in the 1996 election were 300. The first four rows show the voting share of each party, LDP, NFP, DPJ, and JCP. Unemp95 is the unemployment rate in 1995.[4] Finally Gy9496 reflects the growth rate of real income per capita between 1994 and 1996. For example, the mean of the voting share of the LDP is 41 per cent, while that of the JCP is 13 per cent. The mean values of the NFP and the DPJ are 35 and 22 per cent, respectively.

Before we discuss the empirical estimation, the simple correlation between the voting ratio and other economic variables are shown in Figures 1 and 2. As regards the relation of the voting share to the unemployment rate, Figure 1 shows a negative relation with the LDP vote share, but a positive relation with that of the JCP. Figure 2 indicates that the growth rate of real income per capita is positively related to

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[3] CPI by electorate as well as by prefecture is not available.

[4] The unemployment rate in 1996 might be more appropriate, since the election was held in Oct. of that year. However, since the number of workers by each electorate is available only every 5 years, the unemployment rate in 1995 is used.

the LDP vote ratio but negatively related with that of JCP. Even with a simple correlation between economic variables and voting share, the responsibility hypothesis can be supported. Since several extreme outliers show in Figures 1 and 2 might affect the estimation results, they are excluded throughout the estimation process. The outliers include 17 electorates: 7 electorates from the Hyogo prefecture, 3 electorates of the Okinawa prefecture and others from different prefectures. And, these results could be affected through inclusion of other variables so that the robustness tests are taken in section 5.

Table 2 shows the regression results for economic voting, confirming the responsibility hypothesis Downs (1959) suggested. First, the coefficient for the unemployment rate confirms the hypothesis. The results show a negative sign for the LDP and a positive sign for the JCP, which confirms the second premise as discussed in the introduction.[5] However, the NFP and the DPJ are not significantly affected by the unemployment rate. Secondly, for the LDP, the coefficient for the growth rate of real income per capita is positive and significant at a 5% level. This indicates that voters who have experienced rapid income growth tended to vote for the ruling party, the LDP. The NFP shows the same

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[5]The result is contrasted with those of Kramer (1971) and Stigler (1973) for U.S. presidential elections. They found no correlation between the unemployment rate and a party's share of the vote. Wade and Kang (1990) and Wade and Owens (1992), however, show that the unemployment rate significantly is correlated but that the growth rate of income is not correlated with the party's share of the total vote in each electorate in the South Korea 1988 election and the Japanese 1983 and 1986 House of Representatives elections.
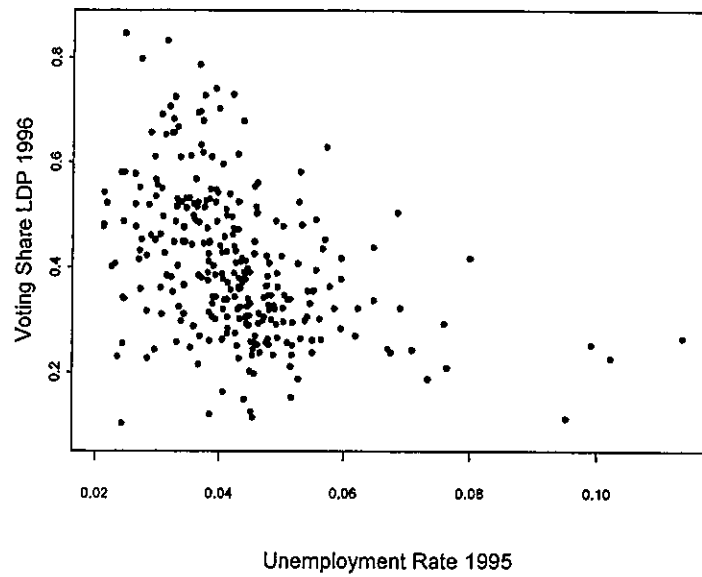
Figure 1: Voting Share and Unemployment Rate: LDP (top panel) and JCP (bottom panel).
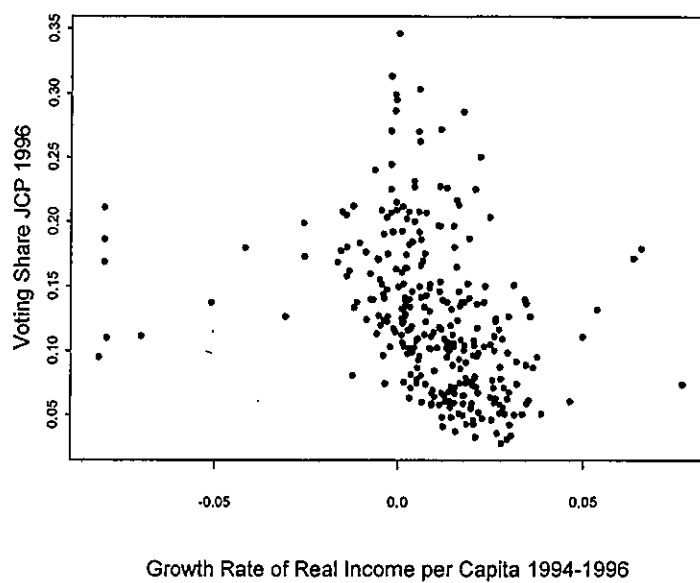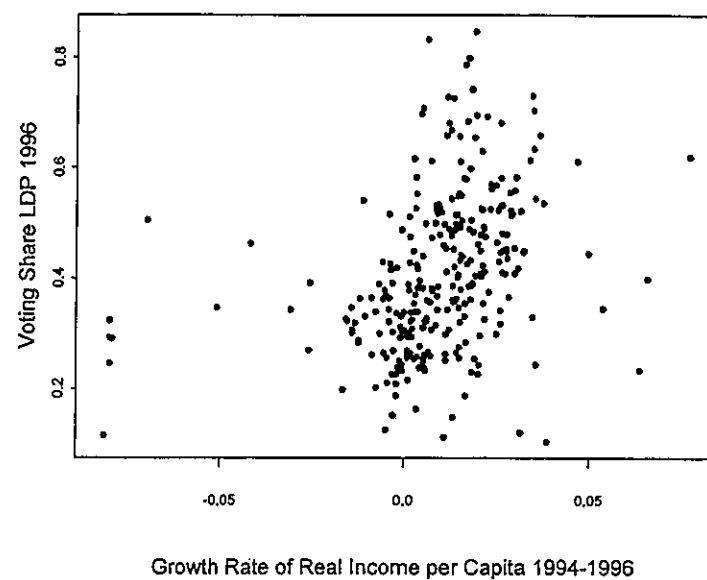
Figure 2: Voting Share and Income Growth: LDP (top panel) and JCP (Bottom panel).

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sign and the coefficient is significant at a level of 5%, while the DPJ was not affected by income growth. However, for the JCP, the coefficient of the growth rates of real income per capita is negative and significant at a level of 5%. Thus, the voters who experienced high income growth were likely to support the LDP, the ruling party. Otherwise an alternative nonruling party, particularly the JCP, was supported.

As discussed in section 3, the DPJ was not affected significantly by economic variables; this may mean, because this party was formed relatively close to election time, that the voters may not have been able to take the abilities of the DPJ candidates into full account.

The explanatory power of economic variables on votes for the LDP and the JCP are 0.24 and 0.36, respectively. As discussed in Section 2, these empirical findings are in strong contrast with the existing studies based on opinion poll data in Japan. On the other hand, the results in this paper are consistent with the district-level and poll-based studies in the United States, Great Britain and other Western countries. This leads to the conclusion that Japanese are like voters elsewhere with respect to the influence such factors have on their voting behavior.

5 Robustness Tests of Economic Voting

Although we are interested in the effects of economic factors on voting behavior, it would be wrong to expect that voting is entirely a function of economic conditions. Since the estimated coefficients of economic variables might be biased due to the exclusion of appropriate control

Table 2: Regression Results of Economic Voting

	LDP	NFP	DPJ	JCP
constant	0.55	0.32	0.19	0.04
	(15.32)	(10.42)	(3.68)	(3.17)
unemp95	-4.03	0.24	0.62	2.36
	(-5.15)	(0.37)	(0.53)	(7.86)
Gy9496	3.26	1.74	0.60	-1.50
	(5.42)	(3.28)	(0.78)	(-6.41)
R^2	0.24	0.05	0.01	0.36
N	264	213	134	275

Note: t-statistics in parentheses.

variables, it is necessary to conduct robustness tests of economic variables in order to consider possible missing variable bias.

Three main variables (incumbency, rural/urban cleavage and the voting participation or turnout) are considered as other independent factors. First, two measures of incumbency are used. The first looks at whether or not the candidate is a current member of the Diet. The second deals with whether or not the candidate has earlier experience as a member of the Diet. The first one is denoted as Inc_current and the second as Inc_exp. It is well known that incumbency is one of the main factors which affects the vote. Hayama (1992) and McKean and Scheiner (2000) show that an average of 80.3 percent of all incumbents won re-election between 1958 and 1990 as did 76.7 percent in the 1996 election. McKean and Scheiner (2000) assert that the new Japanese electoral system in 1993 and 1996 seems hardly more open to newcomers than the prior system. They found that in spite of the clamor for change, only 26.2 percent of the 1993 winners and only 23.0 percent of the 1996 winners were neither incumbents nor returnees.

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Second, the rural and urban cleavage variable is used. This variable reflects the social networks which have been assessed by considerable, qualitative and statistical evidence. Rural voters tied into social networks are consistently supportive of both conservative politicians and parties. At the same time, the relative lack of such social networks in an impersonal urban settings arguable induces voters to support the small and nonruling parties in the expectation that those parties might better represent their urban lifestyle (Richardson, 1988; Wade and Owens, 1992; Scheiner, 2000).

By using the proportion of each district's population engaged in primary sector industry, Wade and Owens (1992) demonstrate the significant influences of social networks on Japanese voting behavior. They show that the LDP in the 1983 and the 1986 elections was strongly supported by voters in rural area. Without jointly considering the effects of economic variables, Kohno (1997) utilizes electoral data to indicate the importance of institutional arrangements, especially the electoral laws and largely rejects the centrality of the urban-rural distinction in shaping party strategy and success. Scheiner (1999), on the other hand, offers empirical evidence suggesting that an approach founded in the urban-rural split has greater explanatory power than the purely institutional model. The above studies, however, do not investigate the effect of the urban/rural cleavage on the voting share of the alternative parties to the LDP.

In order to reflect the rural/urban cleavage, this paper uses two approximations. The first variable, **City**, is a dummy for city size,

which is 1 if the population of the electorate is in a metropolis of more than 1 million people. The second variable, **Agriratio**, is the ratio of workers in the agricultural sector to the total number of workers in each electorate. A high value implies that the electorate is relatively in agricultural workers. The data is taken from Regional Economic Indicators of Toyo Keizai (1998).

Finally, it is worth mentioning that, compared to the older generation, young voters prefer nonruling parties to the ruling party, and their voting participation rate is no higher than that of the older generation.[6] The voting participation rate, **Votertratio**, is defined as the total number of voters divided by the total number who have the right to vote. Having explained this, we can test the effects of the participation rate on the number of votes cast for both the ruling party and the nonruling parties.

The results of the robustness tests are shown in Tables 3 to 6 for the four parties, respectively. Interestingly, the signs of the estimated coefficients remain as before, but the effects of the economic conditions become stronger for the LDP and less so for the JCP. The coefficients for the unemployment rate and income growth show the same trends as the empirical results of section 4 without other conditioning variables. However, the results for JCP have different implications: the inclusion of other control variables made the impact of the economic variables weaker.

Generally speaking the inclusion of noneconomic variables does not

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[6]Voting participation rates by age at the district-level is not available.

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affect the findings of the previous section. For example, the unemployment and income growth rate are strongly related with the share of vote for the LDP and the JCP. From the estimation results of Section 4 and 5, voters act as if the LDP is responsible for current economic performance and treat the JCP as an alternative.

Also, the coefficients for the incumbency variables confirm the well-known facts offered by Hayama (1992) and MeKean and Scheiner (2000), namely that all four parties are strongly affected by incumbency. And, the rural/urban cleavage, **City** and **Agriratio**, is also an important control variable, as stated in Scheiner (2000). The empirical results suggest that the LDP is relatively supported by the voters in rural area while the JCP enjoys support from major metropolitan areas. Table 7 summarizes the voting share by the rural/urban cleavage, **City**, showing that the LDP received a higher share of votes in more rural areas in comparison to that of the JCP. The LDP received 43 percent from rural areas but only 31 percent from more urban areas.

Finally, the effect of the participation rate is of some interest. The empirical results show that two parties, the LDP and the JCP, are negatively affected by the participation rate which is contrary to common expectations. It might be interpreted that the younger generation does not look at existing nonruling parties as an alternative to the LDP.

As Tables 4 and 5 show, the economic performance does not play an significant role for the other two parties, the NFP and the DPJ. Instead of economic variables, the noneconomic variables such as incumbency and the city dummy are shown to be statistically significant.

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6 Conclusion

This paper asked the question "How do Japanese voters react to the Responsibility Hypothesis?". Unlike the well-known assertions that the Japanese are not individualistic in their voting behavior, this paper concludes that, in the 1996 House of Representatives election, voters for candidates from the LDP and the JCP were influenced by economic conditions. The unemployment rate and the income growth rate were found to be especially significant. Other parties, however, were not affected by economic conditions. This, perhaps, is because the voters were not able fully to take into account of their policy positions due to the party realignment that occurred just before the 1996 election. Furthermore, the opposite signs of the estimation coefficients of the economic indicators for the LDP and the JCP suggest that the Japanese voters might regard the JCP as an alternative to the LDP in the 1996 election in terms of economic performance.

In addition to economic factors, noneconomic control variables described in the literature, such as incumbency, rural/urban cleavage and the voter participation rate in voting were statistically significant. The significant role of incumbency contrasts with the aims of the new side-by-side electoral system introduced in 1996. Another important determinants of voting behavior in Japan, the rural/urban cleavage, which was assumed to reflect social network, is shown to be statistically significant. In contrast to the above results of economic indicators, the negative signs of the voting participation rate for the LDP and the JCP show that the younger generation does not regard the JCP as an alter-

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Table 3: Robustness Tests of LDP Economic Voting

	LDP1	LDP2	LDP2	LDP4
constant	0.44	0.38	0.64	0.72
	(12.54)	(9.89)	(6.26)	(7.20)
Unemp96	-2.45	-1.70	-3.18	-2.73
	(-3.24)	(-2.22)	(-3.84)	(-3.42)
Gy9496	2.09	1.06	2.52	1.44
	(3.55)	(1.65)	(4.05)	(2.26)
Inc_current	0.10	0.09	0.11	0.10
	(7.18)	(6.19)	(7.48)	(6.68)
City	-0.05		-0.05	
	(-2.37)		(-2.68)	
Agriratio		0.70		0.94
		(4.30)		(5.47)
Voterratio			-0.29	-0.53
			(-2.07)	(-3.68)
R^2	0.38	0.41	0.39	0.44
N	264	264	264	264

Note: t-statistics in parentheses.

native party to the LDP. Another important determinant, incumbency, is strongly correlated with the voting share received by all parties.

In conclusion, this paper shows that Japanese voting behavior is not unique relative to other countries. Unlike the analyses based on survey data, however, the individual-level attitudinal variables are not available by electorates. Incorporating attitudinal data in this study would enrich the explanatory power of the models explored here.

Table 4: Robustness Tests of NFP Economic Voting

	NFP1	NFP2	NFP3	NFP4
constant	0.29	0.25	0.09	0.10
	(10.17)	(7.84)	(1.01)	(1.15)
Unemp96	0.38	0.66	1.13	1.08
	(0.61)	(1.01)	(1.63)	(1.55)
Gy9496	1.54	1.04	1.01	0.89
	(2.95)	(1.73)	(1.80)	(1.47)
Inc_current	0.07	0.07	0.07	0.07
	(6.20)	(6.35)	(5.84)	(5.93)
City	-0.03		-0.03	
	(-2.13)		(-1.71)	
Agriratio		0.36		0.22
		(2.51)		(1.35)
Voterratio			0.29	0.24
			(2.45)	(1.78)
R^2	0.21	0.22	0.24	0.23
N	213	213	213	213

Note: t-statistics in parentheses.

Table 5: Robustness Tests of DPJ Economic Voting

	DPJ1	DPJ2	DPJ3	DPJ4
constant	0.18	0.13	0.32	0.45
	(3.74)	(2.22)	(2.04)	(2.84)
Unemp96	0.20	1.15	-0.31	0.48
	(0.19)	(0.97)	(-0.25)	(0.40)
Gy9496	0.04	-0.52	0.25	-0.32
	(0.06)	(-0.67)	(0.33)	(-0.42)
Inc_current	0.11	0.10	0.11	0.11
	(5.68)	(5.56)	(5.74)	(5.76)
City	0.005		0.001	
	(0.21)		(0.02)	
Agriratio		0.37		0.73
		(1.48)		(2.45)
Voterratio			-0.20	-0.53
			(-0.93)	(-2.17)
R^2	0.20	0.22	0.21	0.25
N	134	134	134	134

Note: t-statistics in parentheses.

Table 6: Robustness Tests of JCP Economic Voting

	JCP1	JCP2	JCP3	JCP4
constant	0.06	0.08	0.28	0.28
	(4.46)	(5.23)	(7.42)	(7.28)
Unemp96	1.80	1.61	0.92	0.99
	(6.06)	(5.18)	(2.97)	(3.18)
Gy9496	-1.23	-0.97	-0.71	-0.75
	(-5.37)	(-3.74)	(-3.08)	(-3.03)
Inc_current	0.11	0.11	0.11	0.11
	(6.53)	(6.60)	(6.98)	(7.00)
City	0.02		0.01	
	(2.37)		(1.68)	
Agriratio		-0.20		-0.03
		(-3.03)		(-0.52)
Voterratio			-0.32	-0.32
			(-6.23)	(-5.65)
R^2	0.46	0.46	0.53	0.52
N	275	275	275	275

Note: t-statistics in parentheses.

Table 7: The Vote Share by Regions

	Mean	Standard Deviation	Min	Max
LDP Metro	0.31	0.07	0.15	0.49
LDP Rural	0.43	0.15	0.10	0.85
NFP Metro	0.32	0.07	0.13	0.50
NFP Rural	0.36	0.10	0.13	0.65
DPJ Metro	0.22	0.09	0.07	0.47
DPJ Rural	0.22	0.12	0.03	0.62
JCP Metro	0.18	0.06	0.08	0.35
JCP Rural	0.11	0.05	0.03	0.30

Reference

Alvarez, R. M., J. Nagler., and J. R. Willette (2000), "Measuring the Relative Impact of Issues and the Economy in Democratic Elections," *Electoral Studies* 19, 237-253.

Anderson, C. J. (2000), "Economic Voting and Political Context: A Comparative Perspective," *Electoral Studies* 19, 151-170.

Arcelus, F. and A. H. Meltzer (1975), "The Effects of Aggregate Economic Variables on Congressional Elections," *The American Political Science Review* 69, 1232-1239.

Bloom, H. S. and H. D. Price (1975), "Voter Response to Short-Run Economic Conditions: The Asymmetric Effect of Prosperity and Recession," *The American Political Science Review 69*, 1240-1254.

Cox G. W. and F. Rosenbluth (1995), "Anatomy of a Split: the Liberal Democrats of Japan," *Electoral Studies* 14, 355-376.

Downs, A. (1957), *An Economic Theory of Democracy*, New York, NY: Harper & Row.

Hayama, A. (1992), "Incumbency Advantages in Japanese Elections," *Electoral Studies* 19, 46-57.

Inogouchi, T. (1981), "Explaining and Predicting Japanese General Elections," *Journal of Japanese Studies* 7, 283-318.

Inogouchi, T. (1983), *Gendai Nihon Seiji Keizai no Kouzu: Seifu to Shijo (Contemporary Japanese Political Economy: Government and Market)*, Toyo Keizai Shinposha, Tokyo (in Japanese).

Kabashima, I. (1998), "Seiken Koukai to Yukensha no Taido Henyo (Power Changes and Attitude Changes of Eligible Voters)", *Party Politics* 4, 151-176. (in Japanese)

Kohno, M. (1997), *Japan's Postwar Party Politics*, Princeton University Press, Princeton.

Kramer, G. (1971), "Short-term Fluctuations in US Voting Behavior, 1896-1964," *American Political Science Review* 65, 131-143.

Lewis-Beck, M. S. and R. Nadeau (2000), "French Electoral Institutions and the Economic Vote," *Electoral Studies* 19, 171-182.

McKean M. and E. Scheiner (2000), "Japan's New Electoral System: La Plus Ça Change...," *Electoral Studies* 19, 447-477.

Miyake, I. (1998), *Tōhyo Kōdō (Electoral Behavior)*, University of Tokyo Press, Tokyo. (in Japanese)

Owens, J., R. (1984), "Economic Influences on Elections to the U.S. Congress," *Legislative Studies Quarterly* 9, 123-150.

Owens, J., R. and L. L. Wade (1988), "Economic Conditions and Constituency in Great Britain," *Political Studies* 36, 30-51.

Reed, S. and G. G. Brunk (1984), "A Test of Two Theories of Economically Motivated Voting: The Case of Japan," *Comparative Politics* 17, 55-66.

Richardson, B. M. (1988), "Constituency Candidates Versus Parties in Japanese Voting Behavior," *The American Political Science Review* 82, 695-718.

Scheiner E. (1999), "Urban Outfitters: City-based Strategies and Success in Post-war Japanese Politics," *Electoral Studies* 18, 179-198.

Stigler, G. (1973), "General Economic Conditions and National Elections," *American Economic Review* 63, 160-167.

Wade, L. L. and S. J. Kang (1990), "Economic Voting in South Korea: the 1988 Assembly Elections," *Journal of Northeast Asian Studies* 9, 47-58.

Wade, L. L. and J. R. Owens (1992), "Economic Conditions and Voting in Japanese House Elections," *Journal of Northeast Asian Studies* fall, 1-24.