THE election of November, 1978 had citizens in the State of Michigan voting on three important amendments to the state constitution. Each would have made quite fundamental changes in the fiscal rules under which both the state and local governments operate, and, as it happened, each was rather complex. Never before have voters in Michigan been asked to make up their minds about such a complicated set of fiscal matters and then to express their preferences. Because the amendments were so complicated, there was substantial uncertainty about their outcome, but voting interest and participation were high. All of the proposals were well ahead in the polls as late as two weeks before the election, but the two more radical proposals ultimately went down to a resounding defeat, while the least radical proposal, the so-called Headlee Amendment, barely won with fifty-one percent of the vote.1

Voting and participation behavior in the recent election offers a unique chance to test some hypotheses regarding the behavior of public expenditures and public sector wages. These hypotheses involve the level of information possessed by voters on fiscal matters, relative turnout rates for public and private voters, and the underlying tastes for public expenditures on the part of public and private voters. One should be able to obtain reasonably good measures of voter information and tastes because voters were asked to vote explicitly on fiscal matters, not on a set of political candidates with uncertain views on these and other matters. In the paper we describe what we consider to be an appropriate framework for the normative and positive analysis of tax limitation amendments. We then show how one can test some of the empirical hypotheses generated within this framework, and finally we discuss the content of a survey of Michigan adults which will provide most of our data.2

We begin the paper by describing briefly a model of the determination of public budgets, both expenditures and wage rates, that we have developed in another paper.3 This model develops three important hypotheses which could affect public sector fiscal outcomes quite substantially, but about which very little is known. We then describe the natural experiment that occurred in Michigan: the amendments people were voting on and what would they have done. This leads to a description of our plan for testing our three hypotheses, as well as some other hypotheses relevant to the tax limitation movement. The last section contains some concluding observations.

1. Public Employee Power and the Level of Government Spending

The growth of the public employee work force and its unionization in recent years has given new meaning to the old complaint that government is getting too big (out of control, too monolithic, etc.). According to a simple argument, as government employees become a larger share of the work force and voting population, they have more and more to say about which politicians win elections and they are able to forge explicit or implicit contracts about their own wages. The same voters are, in other words, demanding and supplying public services, and the private sector may have little to do but pay the bills. There may be some constraints under which these politician-voter alliances are being formed, but in the words of Buchanan and Tullock (1977) “presumably there is some limit on the process, but it has not been determined either theoretically or empirically.”4

*Department of Economics and Institute of Public Policy Studies, The University of Michigan. We are grateful to Richard Curtin, whose experience and advice in survey design has been invaluable to our work on this topic.
In a model designed to deal with this question from a theoretical standpoint, we analyze a small open jurisdiction in which one factor (labor, denoted by E) may be used either to produce a consumption good (C) or a pure public good (measured by \( E_g \), the level of government employment) under a constant returns to scale technology. All actors in the model are employed in either the public or private sector, and maximize utility functions where the arguments are \( C \) and \( E_g \). Since the topic under investigation is the possibility that public sector worker-voters only extract rent from the private sector, we assume that public employees can restrict entry and perhaps raise their wage above that in the private sector. We then allow for the possibility that private employees can exit from the community in response to excessive public wage rates. Since this private sector mobility serves as an important check on the degree to which public employees may raise their own wages, we assume that private employees do not have identical tastes for living in the community: these will vary randomly and those members of the community who have the weakest preference for residence there will emigrate as their tax price for public goods rises. As long as private workers remain in the community, they are assumed to supply labor perfectly inelastically.

By assuming a balanced public budget we require that total public sector expenditures (\( E_p \), times the public sector wage \( W_p \)) be just equal to total revenues, which, to simplify matters, are assumed to be raised by a proportional income tax applied to the earned income of all workers. Thus the tax base is simply total labor income in the community, and is defined as the product of some nominal wage index (\( W^* \)) times total employment (E), such that

\[
W^* E = W_p E_p + W_g E_g, \tag{1}
\]

where \( E_p \) is private employment and \( W_p \) is the constant private sector wage, determined by the technology of private sector production. Note that when public employees have no bargaining power, \( W^* = W_g \). With bargaining power, \( W^* \) can exceed \( W_g \) and \( W^* \) becomes a weighted average of wage rates in the two sectors.

The results of the model are found by comparing the desired outcomes favored by public and private employees. These will in general be different from each other, and we assume that such differences are resolved by majority voting on the size of public employment. It is here that there is potential for interactions between public employees' political power (measured by their population share) and their bargaining power.

Given a level of \( W_g \), both public and private employees compute their desired level of \( E_g \) in the conventional manner— they maximize their utility functions subject to budget constraints which include their respective tax prices. In this case, even if tastes are identical, public employees are likely to prefer a higher level of \( E_g \) due to the fact that if \( W_g \) is greater than \( W_p \), they will have higher incomes (though in principle a strong substitution effect could outweigh this income effect). It also follows that if the compensated demand function for public output is inelastic, the uncompensated demand function of the public employees will be less elastic than that for private employees. This is because increases in the price of public output are also increases in income for the public employees. Furthermore, it may be that preferences for public output differ between the two groups, and if this is the case it seems most plausible to assume that public employees simply like public output better than private employees do. Thus, without any reference to interactions between political power and bargaining power, public employees might be expected to prefer larger amounts of public output, at any public wage greater or equal to the private wage, than private employees.

More interesting is the analysis of public employees' desired wages at a fixed level of public employment. We make this calculation not because it is necessarily realistic, but only to find what wage public employees would desire if they were to gain substantial voting power. Since our communities are assumed to be open to
mobility, some private employees will leave the jurisdiction in response to increases in the tax rate levied to increase \( W_g \). We define the elasticity of the total tax base with respect to the public sector wage as \( \eta \), and can show in the context of the model that the utility maximizing wage for public employees when total public employment is fixed at some \( E_g \) is given by:

\[
\frac{W_g E_g}{W^* E} = \frac{1}{2 - \eta} = t, \tag{2}
\]

where \( t \) is also the proportional income tax rate applied to all public and private sector earnings. Clearly, an upper bound on the value of \( \eta \) is unity, in which case private employees have no mobility and simply give all of their output to public employees. There appears to be no lower bound on \( \eta \), however, and if private sector mobility is great enough, the elasticity could be negative, implying that the tax base in a community will fall in response to the attempts of a bureaucracy of fixed size to increase its rents.\(^6\) Note that since mobility uses real resources there is a rationale for a constitutional limitation on tax rates—tax limitations may achieve an outcome similar to private sector emigration but with less of a loss of real resources-moving costs. (We will discuss this point in greater detail later.)

The third hypothetical case combines the previous two and allows public sector employees to set \( E_g \) and \( W_g \) simultaneously. The conventional demand first order condition (maximize utility subject to a budget constraint with all prices fixed) and the wage first order condition (equation 2) are solved simultaneously, with the solutions depicted as intersections between the two conditions in Figure 1, panels A and B. In each panel the dotted line is the expenditure first order condition and the two solid lines are the possible wage first order conditions (2), with the top line showing the situation where \( \eta = 0 \) and the bottom solid line showing the wage first order condition when \( \eta < 0 \). As \( \eta \) becomes negative, the private sector is more mobile and the optimal wage line for any \( E_g \) is shifted down. But the wage at which the ultimate intersection between the expenditure and wage condition takes place may be shifted either up or down, depending on public employees' price elasticity of demand for \( E_g \). If demand is inelastic (as in Figure 1A), a community with a great deal of mobility (i.e., one in which \( \eta \) is negative) will have lower wages and a higher equilibrium level of government output than will a community with enough mobility so that

---

\( t \) is also the proportional income tax rate applied to all public and private sector earnings. Clearly, an upper bound on the value of \( \eta \) is unity, in which case private employees have no mobility and simply give all of their output to public employees. There appears to be no lower bound on \( \eta \), however, and if private sector mobility is great enough, the elasticity could be negative, implying that the tax base in a community will fall in response to the attempts of a bureaucracy of fixed size to increase its rents.\(^6\) Note that since mobility uses real resources there is a rationale for a constitutional limitation on tax rates—tax limitations may achieve an outcome similar to private sector emigration but with less of a loss of real resources-moving costs. (We will discuss this point in greater detail later.)

The third hypothetical case combines the previous two and allows public sector employees to set \( E_g \) and \( W_g \) simultaneously. The conventional demand first order condition (maximize utility subject to a budget constraint with all prices fixed) and the wage first order condition (equation 2) are solved simultaneously, with the solutions depicted as intersections between the two conditions in Figure 1, panels A and B. In each panel the dotted line is the expenditure first order condition and the two solid lines are the possible wage first order conditions (2), with the top line showing the situation where \( \eta = 0 \) and the bottom solid line showing the wage first order condition when \( \eta < 0 \). As \( \eta \) becomes negative, the private sector is more mobile and the optimal wage line for any \( E_g \) is shifted down. But the wage at which the ultimate intersection between the expenditure and wage condition takes place may be shifted either up or down, depending on public employees' price elasticity of demand for \( E_g \). If demand is inelastic (as in Figure 1A), a community with a great deal of mobility (i.e., one in which \( \eta \) is negative) will have lower wages and a higher equilibrium level of government output than will a community with enough mobility so that

---

\( t \) is also the proportional income tax rate applied to all public and private sector earnings. Clearly, an upper bound on the value of \( \eta \) is unity, in which case private employees have no mobility and simply give all of their output to public employees. There appears to be no lower bound on \( \eta \), however, and if private sector mobility is great enough, the elasticity could be negative, implying that the tax base in a community will fall in response to the attempts of a bureaucracy of fixed size to increase its rents.\(^6\) Note that since mobility uses real resources there is a rationale for a constitutional limitation on tax rates—tax limitations may achieve an outcome similar to private sector emigration but with less of a loss of real resources-moving costs. (We will discuss this point in greater detail later.)

The third hypothetical case combines the previous two and allows public sector employees to set \( E_g \) and \( W_g \) simultaneously. The conventional demand first order condition (maximize utility subject to a budget constraint with all prices fixed) and the wage first order condition (equation 2) are solved simultaneously, with the solutions depicted as intersections between the two conditions in Figure 1, panels A and B. In each panel the dotted line is the expenditure first order condition and the two solid lines are the possible wage first order conditions (2), with the top line showing the situation where \( \eta = 0 \) and the bottom solid line showing the wage first order condition when \( \eta < 0 \). As \( \eta \) becomes negative, the private sector is more mobile and the optimal wage line for any \( E_g \) is shifted down. But the wage at which the ultimate intersection between the expenditure and wage condition takes place may be shifted either up or down, depending on public employees' price elasticity of demand for \( E_g \). If demand is inelastic (as in Figure 1A), a community with a great deal of mobility (i.e., one in which \( \eta \) is negative) will have lower wages and a higher equilibrium level of government output than will a community with enough mobility so that

---

\( t \) is also the proportional income tax rate applied to all public and private sector earnings. Clearly, an upper bound on the value of \( \eta \) is unity, in which case private employees have no mobility and simply give all of their output to public employees. There appears to be no lower bound on \( \eta \), however, and if private sector mobility is great enough, the elasticity could be negative, implying that the tax base in a community will fall in response to the attempts of a bureaucracy of fixed size to increase its rents.\(^6\) Note that since mobility uses real resources there is a rationale for a constitutional limitation on tax rates—tax limitations may achieve an outcome similar to private sector emigration but with less of a loss of real resources-moving costs. (We will discuss this point in greater detail later.)

The third hypothetical case combines the previous two and allows public sector employees to set \( E_g \) and \( W_g \) simultaneously. The conventional demand first order condition (maximize utility subject to a budget constraint with all prices fixed) and the wage first order condition (equation 2) are solved simultaneously, with the solutions depicted as intersections between the two conditions in Figure 1, panels A and B. In each panel the dotted line is the expenditure first order condition and the two solid lines are the possible wage first order conditions (2), with the top line showing the situation where \( \eta = 0 \) and the bottom solid line showing the wage first order condition when \( \eta < 0 \). As \( \eta \) becomes negative, the private sector is more mobile and the optimal wage line for any \( E_g \) is shifted down. But the wage at which the ultimate intersection between the expenditure and wage condition takes place may be shifted either up or down, depending on public employees' price elasticity of demand for \( E_g \). If demand is inelastic (as in Figure 1A), a community with a great deal of mobility (i.e., one in which \( \eta \) is negative) will have lower wages and a higher equilibrium level of government output than will a community with enough mobility so that

---

\( t \) is also the proportional income tax rate applied to all public and private sector earnings. Clearly, an upper bound on the value of \( \eta \) is unity, in which case private employees have no mobility and simply give all of their output to public employees. There appears to be no lower bound on \( \eta \), however, and if private sector mobility is great enough, the elasticity could be negative, implying that the tax base in a community will fall in response to the attempts of a bureaucracy of fixed size to increase its rents.\(^6\) Note that since mobility uses real resources there is a rationale for a constitutional limitation on tax rates—tax limitations may achieve an outcome similar to private sector emigration but with less of a loss of real resources-moving costs. (We will discuss this point in greater detail later.)

The third hypothetical case combines the previous two and allows public sector employees to set \( E_g \) and \( W_g \) simultaneously. The conventional demand first order condition (maximize utility subject to a budget constraint with all prices fixed) and the wage first order condition (equation 2) are solved simultaneously, with the solutions depicted as intersections between the two conditions in Figure 1, panels A and B. In each panel the dotted line is the expenditure first order condition and the two solid lines are the possible wage first order conditions (2), with the top line showing the situation where \( \eta = 0 \) and the bottom solid line showing the wage first order condition when \( \eta < 0 \). As \( \eta \) becomes negative, the private sector is more mobile and the optimal wage line for any \( E_g \) is shifted down. But the wage at which the ultimate intersection between the expenditure and wage condition takes place may be shifted either up or down, depending on public employees' price elasticity of demand for \( E_g \). If demand is inelastic (as in Figure 1A), a community with a great deal of mobility (i.e., one in which \( \eta \) is negative) will have lower wages and a higher equilibrium level of government output than will a community with enough mobility so that
\( \eta \) is exactly equal to zero. But if demand is elastic (as in Figure 1B), a counter-intuitive result arises: here the community with more mobility actually has a higher level of wages and a lower level of public employment than the community where not as much mobility is possible. Hence even though private sector mobility will constrain public employee wage demands at any given level of government employment, the full static equilibrium can lead to some surprising results.\(^7\)

Thus far we have described the determination by private and public employees of their desired levels of public employment. In order to enrich the analysis of the determination of actual levels of employment through majority voting, we must drop the assumption that the tastes for public expenditures of members of each group are identical and instead assume that each group has known distribution of tastes, which are in general different from each other. Thus the analysis of desired levels of \( E_p \) now becomes an analysis of the levels desired by the median member of each group, and we assume that the chosen level of public output is equal to the desired level of the median voter.

While a number of cases can be considered in this context, the results are by and large unsurprising until we recognize the possibility that wage bargaining strength might be endogenous. Assume that when the public sector is very small, public employee wages are set competitively at \( W_p \). As \( E_g \) grows, public employees have progressively more power in moving to their desired wage as given in (2). But as \( E_g \) gets very large even the desired optimum wage given by (2) implies that once again public wages are forced back down to \( W_p \) (see Figure 2). As a result there is likely to be an inverse parabolic relationship between \( W_g \) and \( E_g \). Public wages equal private wages when \( E_g \) is small and when \( E_g \) is large, but there is some possibility of gaining rents in the middle. The key question is whether this middle ground occurs in the region where a majority or near majority of the voting population is in the public sector. If it does, the public employees will be able to get close to their desired curve and gain large rents. The answer, as it turns out, depends on \( \eta \). The maximum share of total employment in the public sector at which \( W_g \) can be equal to \( W_p \) can be shown to equal \( 1/(2-\eta) \).\(^8\) If \( 1/(2-\eta) \) exceeds one half, then the level of \( E_g/E \) desired by public employees could also. But if \( \eta < 0 \), the share would be unambiguously less than one-half. At least under these conditions, it is reassuring for private sector workers to know that pure self interest considerations will dictate that public sector workers remain a minority.

We might then look at the impact of, and potential utility gains from tax limitations in this model. To do so, assume that the limitation takes a very simple form: the actual tax rate \( t \) must be less than or equal to a stated limitation, \( \bar{t} \). This is exactly the form of one of the Michigan (Headlee) limitations on the state budget, although the local limitations are a good deal more complex. The utility gains of this limitation to private employees depend on the particular circumstances that we consider. In the simplest case, if \( E_g \) were fixed and the public sector were varying \( W_g \) so as to maximize public employees' utility functions and t
the limitation clearly benefits private employees, since $W_g$ falls and $E_g$ is unaffected. If $W_g$ were fixed and $t > \bar{t}$, the tax limitation would reduce $E_g$, the output of the public sector. If the actual level of $E_g$ is above that preferred by the median private employee, there could be a utility gain when $E_g$ was reduced. In our model this could happen if public employees set $E_g$ above that preferred by private employees.\footnote{While we have not defined an overall social welfare function in this two sector voting model, it should be understood that any complete benefit-cost analysis of these limitation amendments would involve a weighting of the gains and losses of both public and private employees.}

The most interesting case is where expenditures and wages are simultaneously determined. As $t$ is lowered below $\bar{t}$, public expenditures must fall, and this will be brought about by some reduction in both $W_g$ and $E_g$. The former clearly makes the private sector better off, but the latter could make it either better or worse off, depending on how $E_g$ relates to the desired public output of the private sector voters at the new $W_g$. Thus, there are clearly cases in which private voters gain either because they can reduce their rent payments to public employees or they are no longer required to overconsume public output. However, if the decline in $W_g$ and the initial overconsumption of $E_g$ are slight, and the forced reduction on $t$ large, this may not be the case.

One final impact of tax limitations is worth considering. The assumption in the model is that of a small community—private employees have other communities to which they can move if $W_g$ gets too large. But, the options available in other communities depend heavily on the assumptions that one makes. In one extreme, the pure Tiebout model, public unions would have no wage power, since private employees could costlessly charter new communities were public employees to raise their wage. In this case, a statewide tax limitation constricting local budgetary freedom would clearly be suboptimal. However, were all public em-

ployees to be geographically integrated in a metropolitan union, $W_g$ could be raised simultaneously in all communities. In this case, outmigration is no longer a viable option, $\eta$ rises, and the private employees are worse off. In this modified version of the Tiebout model, potential emigrants have a fiscal stake in the affairs of all other communities in the metropolitan area. Such a possibility provides a clear rationale for the passage of a statewide limitation on the tax rates in all communities. Whether such a limitation is desirable is once again an empirical question.

Our theoretical discussion makes clear that most of the normative issues surrounding tax limitation depend heavily on empirical testing. Some empirical work, concerning the extent of public employee market power and the elasticity of local tax base, can best be done with aggregate community-level cross-section data. But other work involves voter (and non-voter) tastes for public goods. In this case we feel that survey information is more appropriate. We see three broad areas in which either the assumptions of the conclusions of the model can be tested with survey information:

a) The level of information possessed by workers in both the public and private sector as they vote on budgetary matters. Do voters in fact correctly perceive their economic self interest, and do they vote it?

b) The basic tastes for expenditures of both public and private employees. Are their implied wage elasticities of expenditure demand different, as implied by this model? Are the basic taste shift parameters different, as could be true in this model? Are actual expenditures higher than those desired by the median private sector voter, a question that must be answered to measure the gains to private voters from limitation amendments?

c) Turnout rates. Do public and private employees participate in elections with equal probability, or is the political power of public employees in some sense disproportionate to their actual numbers because of turnout, greater propensity to live in the jurisdiction where they work,
common bonds among union members, clearer perception of self-interest, or whatever?

II. The Natural Experiment

Before describing how we plan to investigate these three questions, it is necessary to describe what Michigan voters were asked to vote on in the election. To a perhaps unprecedented degree, they had to make decisions that could shape the long run fiscal outlook for the state government, local governments, and particularly local school boards. The ballot in fact contained eleven prospective amendments to the state constitution, of which three involved fiscal matters. The three fiscal amendments can be characterized as follows:

1. The Headlee Amendment, named for its leading sponsor, would (a) limit the ratio of own-source State revenues to State personal income at the current level; (b) limit increases in local property tax revenues from existing property in a given jurisdiction to the same rate as the national consumer price index;10 (c) require voter approval for all millages where enactment would lead to revenues exceeding the limits implicit in (b) above; (d) require voter approval for most local bond issues; and (e) require state financing of laws which mandate local programs. Thus, as its proponents pointed out, the Headlee amendment was not strictly a tax limitation proposal. Its intent was to prevent the further growth of both state and local governments as shares of private resources in the state. To the extent that the value of real local property rises faster than consumer prices, however, it would reduce the share of local resources going to governments unless the voters vote to override the provision. The Headlee amendment passed with 51 percent of the vote.

2. The Tisch Amendment was closer in spirit to California's recently passed Proposition 13. It would have required that all assessments on local property be reduced to twenty-five percent (instead of the current fifty percent) of current market value, and that such assessments could not increase by more than 2.5 percent per year. The immediate consequence of passage of this amendment would have been a reduction of about $1.75 billion of property taxes, of which about $1.15 billion would have been revenues currently received by school districts. The State would have been permitted to increase the income tax by one percentage point ($4.75 billion in revenue), and would also be permitted to increase other taxes. Local school districts would also have been permitted to levy income taxes, but probably would not do so (at least in the short run), as the current State matching formula for aid to local education would have required the state to pick up most of the revenue lost by school districts. Strangely, Tisch would not have directly limited property tax revenues so local governments would have still been able to increase property tax rates. When carefully analyzed, the Tisch amendment was as much a tax substitution amendment (state for local; income and business taxes for property taxes) as a tax limitation amendment. Further, like Proposition 13, its limitations on increases in the property tax base would probably have caused distortions in the relative prices of different components of that base (i.e., residential vs. commercial and industrial), and it would have led to higher tax rates for new home owners than old home owners, and thus generated a "lock-in" effect. Finally, the Tisch amendment shared with Headlee provisions requiring that the state pay for state-mandated local functions. The Tisch plan, although ahead in the polls only two weeks before the election, received only 36 percent of the vote.

3. The School Voucher Plan was aimed at changing the method of school finance. It would have abolished the use of property taxes as a means of school finance and have required that state taxes be raised and distributed to parents in the form of vouchers which could be used to help pay for either private or public education. The Voucher plan was a far cry from the pure "free market" version of such a plan that has long been advocated by Milton Friedman; and differed even more markedly from the restricted plans recently experi-
mented with by the National Institute of Education in Alum Rock, California. The proposed plan would not have eliminated the state's responsibility for supporting a free public school system, nor would it affect the responsibility of local districts for running such a system. Rather, the purpose of the plan seemed to be primarily to allow substantial state aid to private (and parochial) education with the elimination of property taxes acting as a "sweetener." The size of the voucher was not specified in the proposal, and would have been determined by the legislature. Thus many fiscal and legal (as well as educational) consequences of the plan were quite unclear on election day. Perhaps because of these uncertainties, the Voucher plan received only 25 percent of the vote though it too was ahead (by a smaller margin than the others) in early polls.

Voting on these amendments was complicated by the possibility that more than one of them would pass. Since there were no technical inconsistencies among the three proposals, passage of more than one of them could have led to very severe restrictions on state and local governments, the specific consequences of which were extremely difficult to predict. For example, if all three had passed (which looked quite possible in mid-October) the state would have been required to finance the entire school system, but would have been prevented from raising any more than a quarter of the necessary funds through income tax increases. In addition, the Voucher proposal could have increased required education expenditures, while the Headlee proposal would have prohibited the raising of additional state revenues to provide revenue sharing for local government functions.

III. The Voter Survey

The presence of the three proposals on the November ballot provides a valuable opportunity to test hypotheses regarding tastes for and information about the public sector. Past survey experience indicates that voters are not reluctant to talk about either their votes, their type of employ-
are and how the amendments are perceived.

The second set of hypotheses regards the basic taste for public expenditures of public and private employees. Following Deacon and Shapiro (1975) and Rubinfeld (1977) among others, we might assume that an individual’s desired level of public services depends on his or her demographic characteristics, the extent that his or her family benefits from the provision of public goods, and on the income and tax price faced by the family. In this context, the Headlee Proposal may be seen as a referendum on the overall level of state public expenditures. A “yes” vote (or preference) on Headlee implies the respondent favors at most the current level of expenditure, and a “no” vote implies that he/she favors more expenditures. Abstention, which in this case means either voting in the election but not on the proposal, or, for non-voters, failing to indicate a preference for or against the proposal, is most easily interpreted as indicating that the respondent is simply uncertain whether passage of the proposal will make him better or worse off.

In using respondents’ voting behavior or expressed preferences towards Headlee to infer demands for expenditures as a whole we are stretching the standard methodology of inferring expenditure demands from referenda in two ways. First, we are treating the entire vector of state supplied public services as a composite commodity, clearly a strong assumption. The assumption may be tested in our survey by comparing respondents’ attitudes to across the board increases or decreases in state spending and taxing to their vote or preferences on Headlee. Second, it is not clear what the appropriate specification for tax price should be. Almost all taxes collected by the state from individuals are income taxes and sales taxes. Yet a good deal of state revenue is derived from a “Single Business Tax” (a value added tax), the incidence of which is both unclear to economists and probably not even thought about by most citizens. It is easiest to assume that the shares of the three major taxes in state revenue will remain constant and that respondents do not perceive themselves as bearing any portion of the Single Business Tax. We can then use information of income and exemptions to estimate income and sales tax liabilities for households, and convert these estimates into tax prices for state provided public services.

While the Headlee proposal can be interpreted as a referendum on state spending in general, neither the Tisch nor Voucher proposals lend themselves readily to interpretation as referenda on levels of public provision of any particular service or class of services. It is possible, however, that respondents in the survey perceived them thus. If so, votes on Tisch could be modelled in much the same way as Headlee—as referenda on current levels of provision of a fairly well defined publicly provided composite commodity. Demands for that “commodity” could then be estimated using similar techniques, and, indeed, we would have a better estimate of the relevant tax price—namely that associated with the property tax. Unfortunately, we simply do not know at this point whether such procedures will prove to be appropriate.

In addition to asking respondents for their votes (preferences) regarding the ballot proposals, the survey contains a number of questions which directly ask respondents if they would favor more, less or the same amount of public expenditure and taxes on the following types of services: police and fire protection; welfare payments; local public schools; state colleges and universities; road repair and maintenance; and parks and recreation facilities. Furthermore, the survey asks respondents if they would favor increased or decreased spending across-the-board, for the state and for localities separately, and, if they express a preference, respondents are asked for their desired percentage change in both spending and taxes. At all times it is emphasized that there are no free goods: that their taxes will go up proportionately if expenditures rise.

The survey responses concerning particular functions of government may be interpreted as referenda on those issues, and the responses may be used to estimate expenditure demand functions once we
have computed the relevant tax prices. For local government functions we will obtain information from the Census of Governments and other sources as to current levels of expenditure in the communities where respondents reside. These data can be used as independent variables in the expenditure demand functions.

The more quantitative questions, in which respondents are asked for a desired level of overall expenditures compared to the norm, can be used to test whether the overall level of expenditures, both for the state and for localities on average, is close to that desired by the median voter. If the “logrolling” model described by Buchanan and Tullock (1962) and others is accurate, we would expect a majority to favor new expenditures on individual functions, but a minority to favor increased overall expenditures. In any event, by asking for quantitative information on the desired levels of overall spending we can get some estimate not only of the mean and median desired levels but also of the shape of the distribution. In light of a number of contributions, both recent (Bergstrom, 1978) and not so recent (Bowen, 1943) to the effect that majority voting can be optimal with symmetric distributions of tastes, this information may be of considerable interest.

The next set of hypotheses, on which the literature gives very little guidance, regards the relative political strength of public and private employees. To begin with, all demand functions will be estimated separately for public and private employees to see how they differ and suggest in qualitative terms how much weight actual government budgetary behavior appears to give the desires of each group. But we can also make a much more careful test of the political ability of public employees to raise their own wages. Our public employee wage relationship described above had public employee political strength depending positively on \( E_g / E \), the share of public employees in the total labor force. But in fact there is another equation, or set of equations, here: those transmitting employee shares into voting shares, and then into political strength. The voting share of public employees will be different from their employment shares if turnout is higher, information is better, tastes are more homogeneous within the group, or if the incidence of commuting is less. Almost nothing is known about any of these factors, and the survey gives a valuable opportunity to test them.

In addition to testing all of these propositions relevant for filling out our theoretical model, a survey such as ours can also speak to a number of other questions regarding the causes of support for these amendments in the U.S. at this time. Public opinion polling associated with Proposition 13 in California (see (Citrin, 1978)) as well as the recent history of events in that state indicate that a large proportion of the population there believed that tax levels could be cut without any appreciable effect on service levels. Data from the survey can be used to establish which respondents have beliefs of this type and whether such beliefs are correlated with votes (preferences) on the limitation proposals.

Another possible source of support for both the Voucher and Tisch proposals would be from citizens with property tax shares which are higher than their shares would be under other taxes. Both the Tisch and Voucher Plans would have cut property tax collections considerably. Thus, even if one believed that other taxes would be raised to maintain existing levels of expenditure, simple self-interest might yield tax limitation support from taxpayers who perceived that their own total state and local tax liabilities would fall. In the survey we have a number of questions concerning respondents’ perceptions as to the effect of each of the amendments on different types of taxes and service levels. By comparing these perceptions with the respondents’ taxable property and income, we can attempt to separate out support for tax limitation, tax substitution, and reductions in service levels.

In a recent paper on tax limitation, Ladd (1978) suggests that one possible source of support for state imposed limitations on local spending would be from interests who believe that they can command more political power at the state level than they
can at the local level. While Ladd associates such possibilities with the ability to lobby effectively in the state legislature, it may also be the case that the dynamics of public opinion are such that a limitation proposal can win a statewide referendum even in an environment in which local millages generally pass. In our survey we ask respondents if they voted in the last school millage election—thus we can compare the tastes and votes of those who vote on millages with those of the population as a whole, and establish the representativeness of the relatively small group (under 20 percent of the electorate) which generally votes on school budgets.

Finally, of great interest to macroeconomists, there is the possibility that support for tax limitation derives in part from a perception that private incomes have not been increasing rapidly enough to support expansion of public services. If people feel burdened by inflation and adverse shifts in relative prices, striking back at taxes and the government may be one of their few options. To test for this possibility, and for the related phenomenon that voters do not expect private incomes to rise very much, we have included two questions in the survey which are aimed at establishing whether respondents' economic circumstances have improved (deteriorated) in the recent past and are expected to improve (deteriorate) over the next few years.

IV. Concluding Remarks

It is difficult to draw conclusions from an analysis as yet only half done, but the basic goal of this project is to illuminate the three important sets of questions asked above:

a. How do voters see their self-interest, how well do they understand fiscal issues proposed in a referendum, and how closely do they vote it?

b. What are the underlying tastes of private voters for public goods, how do they vary across demographic groups, communities, and with fiscal variables. Also, how do they compare with public employee tastes, and how do both compare with public expenditures at various levels of government?

c. Can the usual median voter analysis be modified with a more complete understanding of voter turnout rates, and are these turnout rates related to sector of employment, tastes, etc.? Resolving these issues, as we hope to do in this survey, should help us to understand patterns of voting and the degree to which tax limitation will raise or lower the utility levels of private sector voters.

FOOTNOTES

1 Confirming a hypothesis by Shalala, et al. (1973), which pointed out that complicated and radical fiscal proposals tend to lose support as the election approaches in direct proportion to their complexity and to their radical nature.

2 These tests could not be made without the generous, informed and interested support of the Research and Analysis Division of the Department of Housing and Urban Development.

3 See Courant, Gramlich, and Rubinfeld, "Public Employee Power and the Level of Government Spending" (forthcoming).

4 Among the authors who have in one form or another discussed the phenomenon are Horton (1972) in connection with actual labor bargaining events in New York City; and Reder (1975), Buchanan (1977), Tullock (1974), Bush and Denzau (1977), Borcherd, Bush, and Spann (1977), and Buchanan and Tullock (1977).

5 Not surprisingly, this condition can be shown to be equivalent to the solution obtained if revenue collected from private employees is maximized.

6 To be more precise about it, \( \eta = \frac{dW^*_E}{W_t} \), \( E_t = (W_t - W^*_E) \), \( \frac{dE_t}{dW_t} \). The first term in brackets is the negative mobility effect, the second term is the positive direct effect, and the third term adjusts for any changes in expenditure demand. When \( E_t \) is fixed, of course, the third term drops out. This elasticity parameter is introduced only to condense the notation: in general, it is not a constant.

7 We have not dealt with the question of where these equilibria are stable. A plausible argument can be made that the case shown in Figure 1A is stable and the other is not. For example, if \( \eta \) drops, \( W_t \) might begin falling as public employees recompute their first order condition. This moves toward equilibrium in 1A and away in 1B.

8 From (1), it can be seen that this occurs when \( W_t = W^* \). (From (2), \( W_t = W^* \) when \( E_t/E_t = 1/(2\eta) \).

9 In a more complicated model where private employees were the dominant electoral group, such a possibility would also exist with any of the well-known defects of the median voter model—control of the agenda, lack of information, and bureaucratic aggrandizement, to name a few.

10 The amendment requires that property tax rates adjust such that revenues do not rise faster than the consumer price index. The property tax base will
continue to be 50% of true market value, as under current law.

11 We will be happy to make a copy of the questionnaire available upon request.

12 Essentially as was done in Curtin (1974).

13 In an earlier version of the survey instrument we attempted to obtain such quantitative information function by function. It turned out that we were unable to devise a question which linked taxes and expenditures correctly (e.g., a 10 percent rise in school spending implies about a 5 percent rise in local property taxes) and remained comprehensible to the pre-test respondents, many of whom were political scientists.

14 For some preliminary evidence on the similarity of distributions of expenditure demands for non-voters and voters, see Rubinfeld (1978).

15 In addition to casual evidence observing such things as New York mayoral elections (Horton, 1972), one straw in the wind is a finding by Rubinfeld (1977) that teachers tend to vote much more uniformly for school millages than comparable non-teachers.

REFERENCES


