

# **Sub-National Fiscal Activity as a Determinant of Individual Happiness: Ideology Matters**

Robert W. Wassmer\*  
Edward L. Lascher, Jr.\*  
Stephan Kroll^

\*Professors  
Department of Public Policy and Administration  
California State University, Sacramento  
Sacramento, California 95819-6081

^Associate Professor  
Department of Economics  
California State University, Sacramento

Contact Information:

Phone: (916) 278-6304  
[rwassme@csus.edu](mailto:rwassme@csus.edu)

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## **Abstract**

Though there has been a recent outpouring of studies on the determinants of individual happiness, there remains a paucity of research on the influence of specific sub-national government policies. Additionally, theoretical expectations about how fiscal variables influence happiness are unclear, making further empirical research imperative. Combining survey data and aggregate information about state and local government revenue and expenditures within the United States, we draw inferences about whether or not such activities affect individual happiness. We find no indication that the overall level of state or local fiscal activity affects life satisfaction. However, we offer evidence that personal happiness depends in part on the mix of state and local fiscal activity. Perhaps more importantly, we find that political ideology mediates the influence of a variety of fiscal variables on happiness.

**Keywords:** happiness, GSS, fiscal variables, ideology, sub-national government policies

# **Sub-National Fiscal Activity as a Determinant of Individual Happiness: Ideology Matters**

## **Abstract**

Though there has been a recent outpouring of studies on the determinants of individual happiness, there remains a paucity of research on the influence of specific sub-national government policies. Additionally, theoretical expectations about how fiscal variables influence happiness are unclear, making further empirical research imperative. Combining survey data and aggregate information about state and local government revenue and expenditures within the United States, we draw inferences about whether or not such activities affect individual happiness. We find no indication that the overall level of state or local fiscal activity affects life satisfaction. However, we offer evidence that personal happiness depends in part on the mix of state and local fiscal activity. Perhaps more importantly, we find that political ideology mediates the influence of a variety of fiscal variables on happiness.

## 1. Introduction

Do higher levels of state and local fiscal activity reduce individuals' assessment of their happiness? Does the division of overall sub-national government activity between state and local governments influence life satisfaction? Does the mix of the different types of sub-national taxes and/or expenditures affect happiness levels? As important as these questions are, at present the answers are uncertain.

Economists account for personal happiness through the theoretical concept of utility. Through consumer theory, economists presume that taxes/fees levied on individuals, holding all else constant, decrease personal utility (happiness) by reducing the material prosperity necessary to consume the private goods or services that increase utility. By contrast an increase in the government provision of goods or services desired by citizens raises utility, as would be the case for any increase in the consumption of a private good. The optimal level of government activity for an individual is thus likely to exhibit no measurable influence on personal happiness. The increase in happiness generated by a marginal increase in government activity is expected to be offset by the decrease in happiness generated by the marginal increase in taxes/fees to fund it. Alternatively, if the level of government activity is less (greater) than what an individual desires, an increase in this activity is expected to exhibit a positive (negative) influence on happiness because the satisfaction derived from further government activity would be greater (smaller) than the dissatisfaction generated by the taxes/fees raised to support the expansion.

Furthermore, if political leaders are well representing the interests of their constituents, the mix of revenue and expenditures in any particular jurisdiction should approach what the average voter in this jurisdiction desires. Accordingly, we might expect that aggregate revenue and expenditure levels do not influence life satisfaction across jurisdictions, since such levels

roughly reflect underlying interests. For example, if people in jurisdiction A are happier with relatively low taxes and spending, the budget in Jurisdiction A should reflect this reality. By contrast, if people in jurisdiction B find more life satisfaction with relatively high taxes and expenditures, jurisdiction B's budget should also be reflective of such desires. Nevertheless, it is quite possible that even if the average person is satisfied, major *sub-groups* of the population do not find the mix of taxes and expenditures to their liking.

Additionally, an outpouring of empirical research on happiness by economists casts some doubt on the straightforward conclusions derived from consumer theory that economic variables are a major determinant of happiness at all. Starting with Easterlin's (1974) seminal paper, this line of research has generally found that personal income beyond a certain level has little influence on personal happiness. Instead, other factors (e.g., relative income, age, marriage, class, and health) exert much larger influences (see especially Ladyard, 2005).

Decades of public opinion studies by political scientists also casts doubt on the reasonableness of expecting that citizens have even a vague understanding of the specifics of taxation and expenditure decisions or their consequences. Survey research commonly finds that the average citizen is woefully ignorant about the particulars of public policy decisions (see for example Delli Carpini and Keeter, 1996). Both economists and political scientists sometimes use the term "rational ignorance" to explain this phenomenon, since the costs of obtaining public policy information is high while any particular individual's ability to affect policy outcomes is likely to be very limited. It is quite possible that citizens will pick up simple cues about taxing and spending in their areas, even without detailed information. But it is far from certain whether voters will obtain such cues.

The impact of government fiscal decisions on happiness in part may be salvaged by people being aware of the *outputs* that follow from funding choices even if they were never aware of (or have forgotten) the *inputs* or *decisions* that led to such outputs. For instance, people may be aware that their neighborhood school or school district is performing well, and this may increase their happiness. Yet citizens may have forgotten the connection between such performance and earlier passage of a tax override to fund the schools. The problem is that we can reasonably expect that people are unaware of even a great many outcomes of governmental funding decisions, especially if they fail to have a personal impact. For example, people may be aware of the quality of local schools but unaware of the performance of nutrition programs for the elderly, childcare services for poor working families, or road maintenance at the other end of town. Furthermore, the connection between inputs and outcomes may be unclear. Thus despite a relatively high level of funding for local schools, people may be unhappy because education performance is poor for unrelated reasons (e.g., because the school serves a large immigrant population with major skill deficiencies). Thus if the only variables that can easily be measured are fiscal input variables, we may not witness a positive connection between such variables and happiness.

On the contrary, as we will discuss at greater length in the following section, some prior studies suggest that governmental institution variables *do* have an impact on individual happiness. Some researchers have found that factors such as the size of the welfare state, or the presence or absence of direct democracy, influence perceived life satisfaction, even controlling for a number of more personal variables known to influence happiness. Moreover, popular political discourse commonly assumes that people will be less happy if, say, political leaders raise taxes without making any other policy changes.

In short, empirical research is necessary because theory and logic leave it unclear what to expect about how taxation and expenditure variables affect happiness. On the one hand, many people assume that aggregate sub-national government taxing and spending decisions influence life satisfaction, and (as is discussed in greater depth in the following section) some empirical studies find that political/economic variables affect happiness. On the other hand, there are reasons to doubt whether budgetary choices affect happiness. The marginal effects of increased spending and expenditures may be offsetting at the individual level. Taxation and expenditures in any particular jurisdiction may reflect the underlying desires of the average citizen. Economic factors in general may only have a minor influence on happiness. Voters may be largely ignorant of the budgetary choices made by government officials. We cannot in the abstract resolve the questions posed at the beginning of this paper; we need to examine the data.

The present study aims to fill in the gaps in our understanding of the relationship between the activities of sub-national governments and personal happiness. Such progress is possible because of the unique nature of our data. To our knowledge, this is the first study to combine individual-level happiness data (derived from the General Social Survey, or GSS, the most commonly used source of data on life satisfaction in the United States and one of the most commonly used data sources in the world) with detailed revenue and expenditure data from sub-national governments across the United States. That is, we take advantage of the variance in state and local government finances and expenditures in the United States to draw inferences about whether or not such activities affect personal assessments of life satisfaction. The result is a much richer picture of the impact (and in many cases, lack of impact) of these fiscal variables than previously available.

The remainder of this paper is organized as follows. Section 2 reviews the literature on happiness, focusing especially on the influence of economic/governmental factors. Section 3 contains a description of the regression model used and the data used to estimate it. The results of the regression analysis are contained in Section 4, while the final section offers our concluding thoughts.

## **2. Literature Review**

The empirical study of what determines individual happiness is no longer the exclusive domain of sociologists and psychologists: the past several years have witnessed a boom in research conducted by economists and political scientists (for summaries see Frey and Stutzer, 2002a, 2002b; Di Tella and MacCulloch, 2006; Helliwell, 2006). As background to our own research on this topic, we describe four themes from this previous research that are directly relevant.

First, despite some expressed concerns about the validity of happiness measures based on survey data and clear indications that such variables are “noisy,” a number of studies have demonstrated the validity of subjective happiness measures by considering the pattern of their correlations with a variety of more objective physiological, medical, and societal criteria. Positive correlates of self-reported happiness measured through a survey question include: (1) heart rate measures as responses to stress, (2) left prefrontal cortex activity (which is associated with the processing of pleasure), (3) reports on one’s happiness made by friends, and (4) length and frequency of Duchenne or “unfakeable smiles.” Negative correlates with happiness include unemployment, divorce and suicide rates (Kahnemann and Krueger, 2006; Di Tella and MacCulloch, 2006; Konow and Earley, 2008).

Our second theme is that even though scholars have only recently turned their attention to institutional and public policy factors that may affect happiness, many such studies have found

statistically and substantively significant influences. Findings include: 1) a higher rate of collective unemployment insurance in a European Union country raises individual happiness (Di Tella, MacCulloch, and Oswald, 2001); 2) nationwide expenditures for medical care, child benefits, unemployment, old age, and for cases of illness and disability raise happiness in countries sampled across the world (Veenhoven, 2000); and 3) life satisfaction is higher in advanced nations in which left-wing governments are dominant (Radcliff, 2001). Di Tella and MacCulloch (2005) determined that people on the political left are significantly happier under left-wing governments while those on the political right are significantly more satisfied with life under right-wing governments. A related project (Alesina, Di Tella, and MacCulloch, 2004) found that people in both Europe and the United States tend to be happier when income inequality is lower. In contrast with Radcliff, Ovaska and Takashima (2006) found in a cross-national study of 68 countries that government size has a consistently negative (albeit not always significant) relationship to subjective well-being. Finally, Bjørnskov, Dreher, and Fischer (2007) use regression analysis to find the correlation between differences in an aggregate measure of individual life satisfaction across 74 countries and the size of the government sector. Controlling for other factors, they find that a larger public sector is related to less life satisfaction in a country, and perhaps surprisingly, this influence is even greater the more left-leaning the political ideology of the average citizen. The striking diversity of results, based on different data sources and model specifications, suggests that further research on the effects of government institutions on happiness is well justified.

Third, what we know about the effects of institutional and public policy variables on personal assessments of happiness is based mainly on cross-national comparisons. We have learned relatively little about whether sub-national differences might affect life satisfaction. The

distinction is important because policy variance across sub-national governments tends to be somewhat more subtle than the dramatic differences seen across nations.<sup>1</sup> With the exception of one study that concentrates on the narrow issue of cigarette taxes (Gruber and Mullainathan, 2005), we were unable to locate another published study that focused on whether government induced differences across the American states affected happiness.<sup>2</sup> We did identify a study of Swiss cantons, conducted by the leaders among economists in the study of happiness, which determined that mechanisms of direct democracy (initiatives and referenda) and a greater extent of local autonomy are strongly associated with higher levels of personal happiness (Frey and Stutzer, 2000; but for a reconsideration of the Swiss data that finds no relationship between direct democracy and happiness, see Dorn *et al.*, forthcoming). However, even though economists widely believe that greater local control of government revenue and expenditure activity leads to greater personal satisfaction, they have not tested the proposition using the available survey data on personal happiness.

The fourth theme from the previous literature is that when attempting to isolate the effects of particular revenue/expenditure patterns on individual happiness, it is important to use a variety of controls. Given the non-random distribution across the United States of people with different characteristics known to influence happiness, it is insufficient simply to regress overall happiness on a set of tax and expenditure measures. Instead, individual level control measures must also be included. Past studies are generally consistent in their choice of these necessary control variables. Accordingly, we have chosen to include in the study the control variables most frequently identified by Frey and Stutzer (2002a) in one of the most comprehensive surveys of happiness research.

In summary, the literature suggests that happiness measures are broadly valid, that it is worth examining the impact of public policy/institutional factors, that there is very limited understanding of these factors at the sub-national level, and that a variety of controls must be included in an empirical investigation. Our study builds on all four of these themes.

### 3. Regression Model and Data Used

Following the lead of earlier empirical research, the regression model used in this research is:

$$(1) \quad \mathbf{Happiness}_{i,t,p} = \alpha_0 + \beta_1(\mathbf{Socio-Demographics})_{i,t} + \beta_2(\mathbf{Economics})_{i,t} + \beta_3(\mathbf{Context})_{i,t} + \beta_4(\mathbf{Personal Beliefs})_{i,t} + \beta_5(\mathbf{Institutions})_{i,t} + \beta_6(\mathbf{PSU})_P + \beta_7(\mathbf{2002 Survey Dummy}) + \varepsilon_{i,t,p},$$

Where:

$i$  indexes individuals,  $p$  indexes the possible primary sampling units (PSUs) that individuals are from, and  $t$  indexes the 1998 and 2002 waves of the GSS Survey;

and

***Socio-Demographics, Economics, Context, Personal Beliefs, and Institutions*** represent vectors of these factors expected to cause differences in the dependent variable ***Happiness***.

We draw our data from the 1998 and 2002 waves of the General Social Survey (GSS) administered by the National Organization for Research at the University of Chicago (NORC), the universe for which is the non-institutionalized population in the United States. There are two reasons for restricting our analysis to the 1998 and 2002 waves. The first is that their years of administration correspond closely to United States data on state and local government finances gathered most recently in 2002 and 1997. The second is that we obtained additional information from NORC on the location of survey participants consistently gathered over these two waves for 100 Primary Sampling Units (PSUs) in the United States, but not gathered in the same manner for earlier years of the GSS.<sup>3</sup> The 1998 wave of the GSS contained interview results for

2,832 individuals. The 2002 wave sampled 2,765 individuals. After dropping missing observations, the data sample used for the full regression consisted of 3573 observations.<sup>4</sup>

The publicly released version of the GSS does not contain the codes for either state of residence or the respondent's PSU. The National Opinion Research Center only offers this information for a fee and with a commitment not to share the codes with other researchers or jeopardize the confidentiality of individual records. By obtaining this information, we were able to analyze the impact of states and localities in a manner not possible for researchers using only the public release version of the GSS.

Beginning in 1972, the General Social Survey has always asked participants the question:

*Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy, or not too happy?*

The dependent variable used in all our regressions was crafted from the 1998 and 2002 responses to the above question by coding happiness equal to three if “very happy,” two if “pretty happy,” and one if “not too happy.” Given such a categorical coding, we chose the maximum likelihood method of ordered probit as available in the LIMDEP (Version 8.0) statistical package. Like earlier empirical research on the determinants of happiness that used a similar form of dependent variable, we also report simple linear regression results. In all regressions, we correct the standard errors calculated for both the ordered probit and linear regression results for heteroscedasticity. The ordered probit estimation uses the heteroscedasticity corrected White estimator. A multiplicative heteroscedasticity correction that used four of the included explanatory variables generated the linear regression results. Since the sign and statistical significance of the calculated regression coefficients are generally consistent across the ordered probit and linear regression methods, the reporting of both results offers two different ways of interpreting the magnitude of influence of an explanatory variable.

Frey and Stutzer, in their 2002 book entitled *Happiness and Economics*, identify the five general determinants of individual happiness that we include in the regression model. The specific explanatory variables that we use to account for these five determinants are listed in Table 1. With the exception of the institutions category, the included explanatory variables are based upon the literature cited earlier, and reviews by Frey and Stutzer (2000, 2002a, and 2002b) and Di Tella and MacCulloch (2006) of what previous empirical researchers have found as significant in the determination of individual happiness. These explanatory measures are included as the appropriate controls necessary to determine the independent influence of the institutional measure of sub-national revenue and expenditure that are our primary focus.

The measures of state and local revenue and expenditure activities fall under the institutions category included in equation (1). Scholars may reasonably disagree about whether to measure sub-national government activity in per capita terms or as a percentage of a state's personal income (see Fisher, 2007, Chapter 1). We find plausible the argument that the typical person is more likely to consider for their own calculation of well-being the amount of government activity occurring per citizen, rather than per their state's income level. Nevertheless, we tried model specifications using each of the above approaches. When using state and local fiscal activity weighted by income, we found it statistically insignificant and little statistical significance among the institutions category of explanatory variables. We thus have chosen to stick with a per capita measure to control for the overall level of state and local fiscal activity experienced by an individual.

When we included both sub-national expenditure per capita and sub-national revenue per capita, multicollinearity resulted, and we found little overall statistical significance.<sup>5</sup> We therefore measure sub-national government activity in a state in this analysis with just one

variable: state and local based expenditure per capita. Beginning with the work of Tiebout (1956), public economists have written extensively on the desirability of government activity occurring at the local level. Thus, we also include an explanatory variable that measures the percentage of total sub-national government activity occurring at the local level of government.

With state and local expenditures per capita and percentage of sub-national expenditure at the local level as controls, we felt it appropriate to assess also whether the percentages of revenue garnered from various sources and the percentages of expenditures on various activities influence happiness. The basis for our choice of the specific revenue and expenditure categories is inclusion in the 1997 and 2002 versions of the Census of Governments, and categories that we thought would most likely affect individual happiness. Thus we have chosen tax/fee and expenditure categories that have a direct impact on the individual. The excluded categories are revenue instruments that are directly levied on business and expenditure categories that only have an indirect connection to individuals. Through the inclusion of these institutional explanatory variables, we believe we have created an empirical test that will effectively measure whether (1) the level of sub-national fiscal activity, (2) the mix of this sub-national activity between state and local, and/or (3) the mix of revenue and expenditure categories exert any influence on the stated happiness of someone experiencing them.

Following the discussion in our introduction, it appears quite possible that sub-national expenditure per capita could exert no statistically significant influence on personal happiness, for at least two reasons. The first is that such expenditure may not affect an individual's happiness. The second is that even if it does, if provided at the optimal level for an individual, a marginal increase may exert no influence on happiness because of the offsetting influence of higher taxes/fees. We therefore only expect sub-national government expenditure per capita to exhibit a

significant influence on personal happiness if this variable enters into a person's calculation of their level of happiness and if the expenditure it is on average being over-provided or under-provided. An over-provision would result in an expected negative regression coefficient on this explanatory variable, while an under-provision should yield a positive regression coefficient.

We expect the sign of a particular regression coefficient on an included revenue category to be statistically significant and positive if the typical individual feels that an increase on a particular revenue instrument funded by a decrease in reliance on the excluded categories of business taxes/fees is desirable. Similarly, the signs of the coefficients on the expenditure categories will be positive if the typical individual's happiness would rise through greater expenditure at the expense of less expenditure on the excluded category.

We control for unmeasured location factors that do not change between 1998 and 2002 by including a set of 96 dummy variables that represent one less than the number of PSUs in the regression sample (the Los Angeles CMSA is the excluded PSU; this choice is arbitrary). The inclusion of this set of dummy variables should instill greater faith in a finding that a statewide measure of sub-national fiscal activity is truly driving happiness, and not just a proxy for an omitted characteristic.

In the full regression, we test whether political party identification and political ideology (liberalism and conservatism) influence individual happiness. We include both measures because empirical political science research has demonstrated that measures of party and ideological identification are correlated but nowhere near identical (see for example Abramowitz and Saunders, 2006). While liberals are more likely to be Democrats and conservatives are more likely to be Republicans, and while there is evidence that the linkage between the ideology and partisanship variables has become stronger over time, many people do not fit this pattern (e.g.,

there are a substantial number of conservative Democrats and moderate Republicans; see Abramowitz and Saunders 1998). In sub-sample regressions, we also test whether the influence of state and local fiscal choices on happiness varies for persons who identify with different political parties or ideologies. We based the decision to divide the sample by party and ideological groups on both prior research stressing a role for partisanship in happiness (see especially Di Tella and MacCulloch, 2005) and the common observation that party/ideological adherents differ in their opinions about revenue and expenditure choices. We did this by running six additional regressions: three for those reporting a leaning toward the Democratic or Republican, or neither, and three for those reporting a leaning toward a liberal, conservative, or moderate political ideology. The division by political party identification yielded less statistical significance and no substantial differences in the direction of effects found in the full sample. We report below the interesting differences that resulted from division by political ideology.

Table 1 presents descriptions and descriptive statistics for all explanatory variables used in our full sample regression analyses. We denote the variables by the categories specified in equation 1.

*Insert Table 1 Here*

#### **4. Regression Results**

##### *Full Sample Results*

Table 2 contains the full sample regression results, divided between the ordered probit and linear regression models. Table 2 entries in bold represent marginal effects that have been calculated to be statistically different from zero with at least a 90 percent level of confidence in a two-tailed test. Marginal effects calculated for an ordered probit regression model represent the percentage change in the likelihood of being in one of the three categories of happiness given a one-unit

change in an explanatory variable. We report only the marginal effects for being in category three (very happy).

***Insert Table 2 Here***

Before moving to the institutional variables that are at the center of our interest, it is worth noting (and intellectually reassuring) that many of the socio-demographic and economic variables held the expected relationship to happiness based on earlier research. For example: 1) holding other explanatory factors constant, African Americans are about four percent less likely to place themselves in the highest category of happiness; 2) happiness declines with age but at a diminishing rate; 3) married individuals are about 20 percent more likely than single individuals to classify themselves as “very happy”; 4) being unemployed or believing one’s income is below average respectively reduces by nearly 13 and nearly 10 percent the likelihood of characterizing oneself as “very happy;” and 5) income has a statistically insignificant relationship with happiness. The non-impact of *actual* income may surprise some economists, but not those familiar with earlier happiness research that has consistently found that the self-assessment of happiness is more strongly tied to perceptions of *relative* earnings.

Other perceptions also influence personal happiness through the explanatory variables included in the context category. Beliefs about health status are especially important. Relative to those who believe they are in good health, people who believe they are in poor health are close to 30 percent less likely to say they are “very happy.” In addition, identifying oneself as belonging to the “lower class” or “working class” (as compared to any of the “higher” class choices offered) reduces the likelihood of being “very happy” by about 16 and 5 percent, respectively. As well, those who attend religious services especially frequently (more than once a week) are about seven percent more likely to place themselves into the highest category of

happiness. It is also interesting to note that people, who identify with *either* the Republican or Democratic political parties, are more likely to place themselves in the “very happy” category.<sup>6</sup> Perhaps this difference results from partisans’ warm feelings from a sense of group identification.<sup>7</sup> Political ideology exerts no significant influence on individual happiness in the full sample.

We turn now to the institutional variables that are at the heart of our study. For all of these variables, we have failed to find a statistically significant relationship to individual happiness in the full sample. Regarding state and local expenditure per capita (our measure of overall sub-national government activity experienced by an individual) and the various revenue and expenditure categories, this lack of significance may be due to the two reasons offered earlier. That is these measures of sub-national government activity may truly exert no influence on one’s happiness, or the amount or percentages provided on average is optimal.<sup>8</sup>

#### *Split Sample Results*

The full sample regression results reveal that overall state or local activity per person is unrelated to one’s assessment of happiness. Nevertheless, previous research (especially Di Tella and MacCulloch, 2005) suggests that it is unwise to restrict empirical analysis of this type to the sample as a whole. Empirical results for the entire sample might mask significant differences in how institutions affect personal happiness among people of different political views, since such views can push people in opposing directions.

The results reported in Table 3 confirm the importance of dividing the sample into groups with shared political ideologies.<sup>9</sup> Table 3 contains the regression results when the full sample is split into three sub-samples representing political liberals (1003 observations), moderates (1374 observations), or conservatives (1196 observations). There are striking differences across the

three groups. Spending on public safety now becomes the only state and local fiscal variable significantly related to the self-reported happiness of political liberals. A one-percentage point increase in sub-national expenditure on public safety, gained through an equivalent decrease in sub-national expenditures not directly consumed by individuals, raises a political liberal's likelihood of reporting being "very happy" by about 12 percent. By contrast, reliance on current charge revenue is the only fiscal variable significantly related to the happiness of political moderates. A balanced-budget, one-percentage point increase in reliance on current charge revenue, that comes about through an equivalent reduction in revenue not directly raised from individuals, is expected to reduce a moderate's chance of reporting being "very happy" by about two percent. In addition, in the split sample representing only political conservatives, we now find that a one percentage point increase in sub-national revenue reliance on property taxation that occurs to fund a one-percentage point reduction in revenue instruments not directly levied on individuals, reduces individual happiness. The regression results for the conservative subsample indicate that raising property tax reliance by one-percentage point increases the likelihood of an individual reporting maximum happiness by 2.5 percent. As discussed earlier, these statistically significant regression results offer evidence that at least within a group of individuals possessing the same political ideology, some sub-national revenue and spending choices influence individual happiness.

**Insert Table 3 here**

## **5. Conclusion**

We opened this paper with a number of questions about the influence of fiscal variables on happiness. We have provided some answers to these questions through a series of regression analyses that assessed the influence of state and local tax and expenditure choices on the

individual happiness of the entire population, and for sub-populations classified by political ideology.

We find no indication that *overall* levels of sub-national fiscal activity at the state or local levels influence personal happiness. We have also found no evidence to indicate that the *division* of overall sub-national fiscal activity between state and local governments influences personal happiness. Nevertheless, we offer evidence that personal happiness depends in part on the mix of *types* of state and local revenues and expenditures. Perhaps most importantly, we find that certain measures of sub-national government revenue and expenditure activity matter more to different ideological groups.

Our findings raise as many questions as they answer. In particular, it is unclear why particular fiscal variables exercise differential impact on ideological groups. The one finding that seems to coincide with *a priori* expectations is that the happiness of political moderates increases with a larger percentage of state and local revenue gathered where they reside being raised through current charges (fees). Both academic and anecdotal evidence indicates that a great majority of the population prefers government fees for only the government services they consume, and not the payment of general taxes. Not so easily explained are the causes of our other institutional findings. Take for instance the positive correlation between sub-national property taxation and individual happiness discovered to be even stronger among political conservatives. Is it a result of conservatives preferring to pay property taxes as opposed to the alternatives ways of raising sub-national revenue not directly levied on individuals, or is it because property taxation is usually associated with a greater degree of local control over the provision of certain desirable public services (i.e., public schooling)? In addition, why is the

self-reported happiness of political liberals only affected in a significant manner by public safety expenditure, and not other expenditure categories? We cannot offer answers to these questions.

What seems most apparent from our findings is that some forms of sub-national fiscal activity influence individual happiness, and that there is a need to continue to examine how. Consistent with the work of Di Tella and MacCulloch (2005), our research suggests people filter the impact of taxation and expenditure differences through their core political beliefs. Political liberals and conservatives may not simply hold varying beliefs and vote differently—their very happiness changes in dissimilar ways by objective conditions generated by fiscal choices made by sub-national governments.

**Table 1: Descriptions and Descriptive Statistics for all Variables**  
Data Drawn from 1998 and 2002 General Social Survey, 3573 Observations Used

<b>Name</b>	<b>Description</b>	<b>Mean</b>	<b>Std. Dev.</b>
Happiness ( <b>dependent</b> )	General happiness specified as 3 = “very happy,” 2 = “pretty happy,” and 1 = “not so happy”	2.19	0.63
2002 Survey Dummy	Equals 1 if observation from 2002 sample; else equals 0 if from 1998 sample	0.34	0.50
<b><i>Socio-demographics</i></b>			
African American	Equals 1 if respondent chose “Black” among “other” and “white” as race; else equals 0	0.13	0.34
Age	Stated age of respondent in years	45.18	17.23
Age Squared	Squared value of stated age of respondent in years	2321.0	1762.0
Male Dummy	Equals 1 if male chosen as gender; else 0 = female	0.45	0.50
Years of Education	Years of education reported by the respondent	13.34	2.95
Foreign Born Dummy	Equals 1 if respondent stated that they were not born in U.S.; else equals 0	0.08	0.29
No Children Dummy	Equals 1 if respondent reports having no children; else equals 0	0.29	0.45
Married Dummy*	Equals 1 if respondent currently reports being married; else equals 0	0.47	0.50
Divorced Dummy*	Equals 1 if respondent currently reports being divorced; else equals 0	0.16	0.37
Separated Dummy*	Equals 1 if respondent currently reports being separated; else equals 0	0.03	0.18
<b><i>Economics</i></b>			
Unemployed Dummy	Equals 1 if unemployed/laid off chosen as work status; else equals 0	0.03	0.18
Believe Income Below Average	Equals 1 if opinion of family income chosen as far below average or below average; else equals 0	0.30	0.41
Real Household Income in \$1,000s	Real value of respondent’s reported total family income in \$1,000	32.21	31.57
Homeowner	Equals 1 if respondent owns home; else equals 0	0.40	0.46
<b><i>Context</i></b>			
Believe Lower Class Dummy	Equals 1 if chose lower class when asked to identify their subjective class; else equals 0	0.05	0.23
Believe Working Class Dummy	Equals 1 if chose working class when asked to identify their subjective class; else equals 0	0.46	0.50
Believe in Good Health**	Equals 1 if respondent reports condition of health as good; else equals 0	0.42	0.49
Believe in Fair Health**	Equals 1 if respondent reports condition of health as fair; else equals 0	0.15	0.35
Believe in Poor Health**	Equals 1 if respondent reports condition of health as poor; else equals 0	0.04	0.20

**Table 1 (cont.): Descriptions and Descriptive Statistics for all Variables**  
Data Drawn from 1998 and 2002 General Social Survey, 3573 Observations Used

Name	Description	Mean	Std. Dev.
<i>Personal Beliefs</i>			
Attends Religious Services More Than Weekly	Equals 1 if respondent reports that they attend religious services more than once a week; else 0	0.07	0.27
Declared Democrat Dummy	Equals 1 if reports party id as strong/not so strong Democrat, or Independent near Democrat; else 0	0.46	0.50
Declared Republican Dummy	Equals 1 if reports party id as strong/not so strong Republican, or Independent Near Republican; else 0	0.35	0.48
Declared Liberal Dummy	Equals 1 if reports political views as extremely Liberal, Liberal, or slightly Liberal; else 0	0.28	0.40
Declared Conservative Dummy	Equals 1 if reports political views as extremely Conservative, Conservative, or slightly Conservative; else 0	0.33	0.43
<i>Institutions</i>			
State and Local Expenditure Per Capita in \$1,000s	(State and Local Expenditure in \$1,000s / Population)	6.70	1.48
Local Expenditure as % State & Local Expenditure	(Local Expenditures / State and Local Expenditures) * 100	44.40	7.54
Property Tax Revenue as % State & Local Revenue	(Property Tax Revenue / State & Local General Own Source Revenue) * 100	21.22	5.80
Sales Gross Receipts Revenue as % State & Local Revenue	(Sales Gross Receipts Revenue / State & Local General Own Source Revenue) * 100	25.11	6.76
Individual Income Tax Revenue as % State & Local Revenue	(Individual Income Tax Revenue / State & Local General Own Source Revenue) * 100	14.86	7.98
Current Charge Revenue as % State & Local Revenue	(Current Charge Revenue / State & Local General Own Source Revenue) * 100	18.94	4.15
Higher Education Expenditure as % State & Local Expenditure	(Higher Education Expenditure / State & Local Expenditure) * 100	7.95	2.20
K-12 Education Expenditure as % State & Local Expenditure	(K-12 Education Expenditure / State & Local Expenditure) * 100	20.48	2.84
Public Welfare Expenditure as % State & Local Expenditure	(Public Welfare Expenditure / State & Local Expenditure) * 100	13.53	2.36
Transportation*** Expenditure as % State & Local Expenditure	(Transportation Expenditure / State & Local Expenditure) * 100	7.02	2.23
Public Safety**** Expenditure as % State & Local Expenditure	(Public Safety Expenditure / State & Local Expenditure) * 100	7.63	1.36
Parks and Recreation Expenditure as % State & Local Expenditure	(Parks and Recreation Expenditure / State & Local Expenditure) * 100	1.48	0.85

**Notes for Table 1**

\*Excluded category of marital status is single.

\*\*Excluded category of health is excellent.

\*\*\*Transportation expenditure includes spending on the following Census of Governments categories: highways, airports, parking facilities, port facilities, and transit subsidies.

\*\*\*\*Public safety expenditure includes spending on the following Census of Governments categories: police protection, fire protection, correction, and protective inspection/regulation.

The percentages of revenue gained from different categories do not add up to one because of the exclude category of revenue gained from non-direct individual citizen sources. Similarly, the percentages of expenditure spent on different categories do not add up to one because of the excluded category of expenditure on non-direct individual citizen sources.

**Table 2: Full Sample Ordered Probit and Linear Regression Model Results<sup>^</sup>**  
 Dependent Variable: Happiness, 3573 Observations

Explanatory Variable	<u>Ordered Probit Model</u>	<u>Linear Regression Model</u>
	Coefficient (Std. Error) <i>Marginal Effect on Happiness = 3</i>	Coefficient (Std. Error)
Constant	-1.046 (1.827)	1.004 (0.927)
2002 Survey Dummy	-0.061 (0.094)	-0.032 (0.045)
African American	-0.127* (0.072) <b>-4.3</b>	<b>-0.068*</b> (0.035)
Age	-0.019** (0.007) <b>-0.7</b>	<b>-0.010***</b> (0.004)
Age Squared	0.0002*** (0.00007) <b>0.01</b>	<b>0.0001***</b> (0.00004)
Male Dummy	-0.005 (0.039)	-0.003 (0.020)
Years of Education	0.001 (0.007)	-0.0007 (0.004)
Foreign Born Dummy	-0.080 (0.073)	-0.044 (0.037)
No Children Dummy	0.038 (0.053)	0.017 (0.026)
Married Dummy	0.561*** (0.056) <b>19.5</b>	<b>0.289***</b> (0.027)
Divorced Dummy	0.049 (0.068)	0.020 (0.034)
Separated Dummy	-0.159 (0.109)	-0.080 (0.058)
Unemployed Dummy	-0.356*** (0.112) <b>-12.6</b>	<b>-0.179***</b> (0.058)
Believe Income Below Average	-0.289*** (0.046) <b>-9.9</b>	<b>-0.151***</b> (0.023)
Real Household Income in \$1,000s	0.0002 (0.0011) <b>0.04</b>	0.0001 (0.0005)

**Table 2 (cont.): Full Sample Ordered Probit and Linear Regression Model Results<sup>^</sup>**  
 Dependent Variable: Happiness, 3573 Observations

Explanatory Variable	<u>Ordered Probit Model</u>	<u>Linear Regression Model</u>
	Coefficient (Std. Error) <i>Marginal Effect on Happiness = 3</i>	Coefficient (Std. Error)
Homeowner	0.026 (0.043)	0.013 (0.020)
Believe Lower Class Dummy	-0.463*** (0.114) <b>-16.4</b>	<b>-0.217***</b> (0.052)
Believe Working Class Dummy	-0.139*** (0.044) <b>-4.9</b>	<b>-0.071***</b> (0.022)
Believe in Good Health	-0.254*** (0.045) <b>-9.0</b>	<b>-0.123***</b> (0.022)
Believe in Fair Health	-0.541*** (0.068) <b>-19.2</b>	<b>-0.272***</b> (0.032)
Believe in Poor Health	-0.836*** (0.101) <b>-29.6</b>	<b>-0.415***</b> (0.054)
Attends Religious Services More Than Weekly	0.196*** (0.071) <b>6.9</b>	<b>0.099**</b> (0.037)
Declared Democrat Dummy	0.109* (0.055) <b>3.9</b>	<b>0.054*</b> (0.027)
Declared Republican Dummy	0.145** (0.059) <b>5.1</b>	<b>0.074**</b> (0.029)
Declared Liberal Dummy	0.056 (0.050)	0.027 (0.025)
Declared Conservative Dummy	-0.008 (0.059)	-0.006 (0.030)
State and Local Expenditure Per Capita in \$1,000s	0.015 (0.091)	0.003 (0.049)
Local Expenditure as % State & Local Expenditure	-0.005 (0.012)	0.007 (0.044)
Property Tax Revenue as % State & Local Revenue	0.020 (0.017)	0.009 (0.008)

**Table 2 (cont.): Full Sample Ordered Probit and Linear Regression Model Results<sup>^</sup>**  
 Dependent Variable: Happiness, 3573 Observations

Explanatory Variable	<u>Ordered Probit Model</u>	<u>Linear Regression Model</u>
	Coefficient (Std. Error) <i>Marginal Effect on Happiness = 3</i>	Coefficient (Std. Error)
Sales Gross Receipts Revenue as % State & Local Revenue	0.007 (0.017)	0.004 (0.009)
Individual Income Tax Revenue as % State & Local Revenue	0.007 (0.014)	0.004 (0.007)
Current Charge Revenue as % State & Local Revenue	0.029 (0.021)	0.015 (0.011)
Higher Education Expenditure as % State & Local Expenditure	0.013 (0.041)	0.007 (0.021)
K-12 Education Expenditure as % State & Local Expenditure	0.011 (0.036)	0.006 (0.017)
Public Welfare Expenditure as % State & Local Expenditure	0.029 (0.025)	0.015 (0.012)
Transportation** Expenditure as % State & Local Expenditure	-0.0004 (0.028)	-0.0002 (0.015)
Public Safety*** Expenditure as % State & Local Expenditure	0.096 (0.066)	0.048 (0.033)
Parks and Recreation Expenditure as % State & Local Expenditure	-0.029 (0.062)	-0.012 (0.031)
<b>Hit Ratio or R-Squared</b>	0.127	0.189

**Notes for Table 2**

**Entries in bold indicate marginal effects that are statistically significant according to the definition given below.**

<sup>^</sup>All regressions also include a set of dummy explanatory variables that control for the fixed effect of a respondent living in one of 96 urban areas (Los Angeles excluded) that General Social Survey Respondents from in the 1998 and 2002 surveys. Standard errors corrected for heteroscedasticity using the Limdep (Version 8.0) econometric package.

\*\*\*Statistically significant at greater than the 99% confidence level in a two-tailed test.

\*\*Statistically significant at the 95 to 99% confidence level in a two-tailed test.

\*Statistically significant at the 90 to 95% confidence level in a two-tailed test.

**Table 3: Institution Results for Ordered Probit and Linear Regression Model Results for Liberal, Moderate, and Conservative Political Ideology Identification<sup>^</sup>**  
 Dependent Variable: Happiness, 1003 Observations for Liberal, 1374 Observations for Moderates, 1196 Observations for Conservatives

Explanatory Variable	<u>Liberal</u>		<u>Moderate</u>		<u>Conservative</u>	
	<u>Ordered Probit</u> Coefficient (Std. Error) <i>Marginal Effect</i> <i>Happiness =3</i>	<u>Linear Regress</u> Coeff. (Std. Error)	<u>Ordered Probit</u> Coefficient (Std. Error) <i>Marginal Effect</i> <i>Happiness =3</i>	<u>Linear Regress</u> Coeff. (Std. Error)	<u>Ordered Probit</u> Coefficient (Std. Error) <i>Marginal Effect</i> <i>Happiness =3</i>	<u>Linear Regress</u> Coeff. (Std. Error)
State and Local Expenditure Per Capita in \$1,000s	0.046 (0.247)	0.025 (0.087)	-0.0003 (0.149)	-0.001 (0.067)	0.011 (0.193)	.022 (0.076)
Local Expenditure as % State & Local Expenditure	-0.016 (0.033)	-0.006 (0.011)	0.007 (0.022)	0.003 (0.009)	0.0008 (0.026)	-0.002 (0.010)
Property Tax Revenue as % State & Local Revenue	-0.032 (0.046)	-0.012 (0.016)	0.020 (0.031)	0.009 (0.013)	0.070* (0.038) <b>2.5</b>	<b>0.031**</b> (0.014)
Sales Gross Receipts Revenue as % State & Local Revenue	0.037 (0.051)	0.018 (0.018)	0.012 (0.030)	0.005 (0.013)	0.004 (0.039)	0.002 (0.016)
Individual Income Tax Revenue as % State & Local Revenue	-0.0002 (0.042)	0.011 (0.014)	0.027 (0.026)	0.012 (0.011)	0.017 (0.034)	0.006 (0.013)
Current Charge Revenue as % State & Local Revenue	0.069 (0.067)	0.033 (0.024)	0.062* (0.036) <b>2.0</b>	<b>0.028*</b> (0.016)	0.001 (0.045)	0.002 (0.019)
Higher Education Expenditure as % State & Local Expenditure	0.096 (0.111)	0.042 (0.040)	0.014 (0.066)	0.007 (0.033)	-0.090 (0.121)	-0.043 (0.039)
K-12 Education Expenditure as % State & Local Expenditure	0.044 (0.099)	0.020 (0.035)	0.027 (0.067)	0.012 (0.027)	-0.004 (0.079)	0.003 (0.030)
Public Welfare Expenditure as % State & Local Expenditure	-0.009 (0.066)	-0.007 (0.024)	0.022 (0.047)	0.009 (0.019)	0.052 (0.050)	0.025 (0.020)
Transportation Expenditure as % State & Local Expenditure	0.047 (0.067)	0.022 (0.028)	0.066 (0.050)	0.030 (0.022)	-0.096 (0.069)	-0.039 (0.027)
Public Safety Expenditure as % State & Local Expenditure	0.382** (0.185) <b>12.3</b>	<b>0.163**</b> (0.067)	0.119 (0.124)	0.057 (0.051)	-0.167 (0.146)	-0.067 (0.055)

**Table 3 (cont.): Revenue Results for Ordered Probit and Linear Regression Model Results for Liberal, Moderate, and Conservative Political Ideology Identification<sup>^</sup>**

Dependent Variable: Happiness, 1003 Observations for Liberal, 1374 Observations for Moderates, 1196 Observations for Conservatives

Explanatory Variable	<u>Liberal</u>	<u>Linear</u>	<u>Moderate</u>	<u>Linear</u>	<u>Conservative</u>	<u>Linear</u>
	<u>Ordered Probit</u> Coefficient (Std. Error) <i>Marginal Effect</i> <i>Happiness =3</i>	<u>Regress</u> Coeff. (Std. Error)	<u>Ordered Probit</u> Coefficient (Std. Error) <i>Marginal Effect</i> <i>Happiness =3</i>	<u>Regress</u> Coeff. (Std. Error)	<u>Ordered Probit</u> Coefficient (Std. Error) <i>Marginal Effect</i> <i>Happiness =3</i>	<u>Regress</u> Coeff. (Std. Error)
Parks and Recreation Expenditure as % State & Local Expenditure	0.032 (0.151)	0,016 (0.058)	-0.110 (0.122)	-0.054 (0.052)	-0.058 (0.144)	-0.024 (0.058)
<b>Hit Ratio or R-Squared</b>	0.141	0.239	0.133	0.254	0.134	0.255

**Notes for Table 3**

**Entries in bold indicate marginal effects that are statistically significant according to the definition given below.**

<sup>^</sup>All regressions also include the entire set of other explanatory described in Table 2. Standard errors are also corrected for heteroscedasticity using the Limdep (Version 8.0) econometric package.

\*\*\*Statistically significant at greater than the 99% confidence level in a two-tailed test.

\*\*Statistically significant at the 95 to 99% confidence level in a two-tailed test.

\*Statistically significant at the 90 to 95% confidence level in a two-tailed test.

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## Endnotes

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<sup>1</sup> Helliwell (2006) highlights the discussion on whether national differences in average personality or mood make subjective cross-country data unreliable measures of life satisfaction. We chose to avoid this discussion by sampling from two periods and including a specific set of dummy variables for urban areas in the sample.

<sup>2</sup> Alesina et al. (2004) may have taken a partial step in this direction, since their measure of inequality in the United States is a state level variable. However, their focus is not on the states per se, and they discuss state differences only in passing.

<sup>3</sup> A PSU consists of a single county, group of counties, or the various configurations of a metropolitan statistical area as defined by the United States Census.

<sup>4</sup> The dependent variable measuring happiness contained 4175 valid observations. The explanatory variables with missing observations measuring African American, age, foreign born, and family income respectively had 5464, 5579, 5573, and 4965 valid observations.

<sup>5</sup> The simple correlation coefficient between local revenue per capita and state revenue per capita is 0.81. The correlation between local expenditure per capita and state expenditure per capita is 0.91.

<sup>6</sup> To classify respondents we draw from the seven-point, self-identification scale of political ideology commonly used by political scientists and available from the GSS data. With respect to combining categories within the scale, there has been considerable controversy about whether people who label themselves independents but “lean” toward one or another party are better classified with that party or with “pure” independents who do not express such a leaning. We follow the lead of many political scientists who combine “leaners” with the appropriate acknowledged partisans, based on the voting behavior and other inclinations of the former group (see especially Keith et al., 1992).

<sup>7</sup> On the importance of partisanship as a source of self-identify analogous to religious identification, see especially Green, Palmquist, and Schickler (2002).

<sup>8</sup> A third possible reason for the insignificance of our finding that sub-national government activity exerts no significant influence on individual happiness is a line of thought that began with Roback’s (1982) model of households moving between cities (and states) to obtain the highest level of utility (happiness) possible. The long-run equilibrium in such a model is that individual utility levels are equal across all locations. If people move among primary statistical units due to the overall level of sub-national fiscal activity occurring there, then the results derived here are the expected ones. But the assumption necessary for this to be the theoretical reason for our finding – a sample of jurisdictions that match everyone’s taste for sub-national public expenditure per capita – is not likely to be the case.

<sup>9</sup> We focus on divisions based on ideology rather than partisanship, because the distinctions among groups were more striking for the ideological groupings.