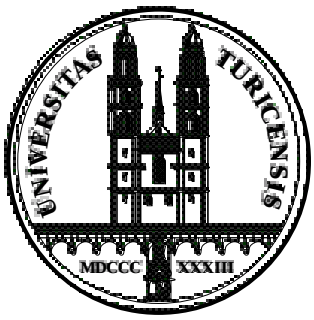


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**Maximising Happiness?**

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# MAXIMISING HAPPINESS?

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**Summary:** The measurement of individual happiness challenges the notion that revealed preferences only reliably reflect individual utility. Reported subjective well-being is a broader concept than traditional decision utility; it also includes concepts like experience and procedural utility. Micro- and macroeconometric happiness functions offer new insights on determinants of life satisfaction. However, one should not leap to the conclusion that happiness should be maximized in the sense of social welfare function maximization. In contrast, happiness research strengthens the validity of an institutional approach such as reflected in the theory of democratic economic policy.

*JEL classification*: D60, D71, I31

*Keywords*: constitutional economics; happiness; institutions; social welfare function

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Recently, a great progress has occurred in economics: happiness has been seriously measured, and its determinants have been identified. This constitutes a sharp break from the notion, much cherished by economists, that revealed preferences only reliably reflect individual utility. In happiness studies, instead of inferring utility from data on income and prices, people are directly asked about their subjective well-being.

This paper wants to draw attention to this important development and discusses its consequences for the theory of economic policy. Three propositions are put forward:

(1) The measurement of happiness constitutes a great advance for economics;

(2) It is a mistake to leap to the conclusion that happiness should be maximized (in the sense of social welfare function maximization);

(3) Happiness research strengthens the validity of an institutional approach (in the sense of a democratic economic policy).

Section I briefly discusses the concepts of utility and happiness basic to the argument. The following section provides econometric estimates of happiness functions. Section III argues that maximizing such a happiness function is erroneous for several reasons. The next section demonstrates empirically that the institutional approach suggested by the theory of democratic economic policy is fruitful. The final section V summarizes the results and shows that the study of happiness (i) helps to better grasp the role of institutions in the economy and society; and (ii) is an area well-suited to the integration of economics and psychology.

# I. Utility and Happiness

Economic analysis builds on individual utility. Happiness is a different concept. This section provides a short overview[1]of the several types of utility (subsection A), of happiness as the ultimate objective of life (subsection B), and discusses their relationship (subsection C).

### *A. Utility*

Standard economic theory (and decision science) uses an „objectivist" position[2] based on observable choices made by individuals. Individual utility only depends on tangible factors (goods and services), is inferred from revealed behavior (or preferences), and is in turn used to explain the choices made. This „modern" view is influenced by the positivistic movement, rejects subjectivist experience (e.g. captured by surveys) as being „unscientific" because it is not objectively observable. Moreover, choices are made to provide *all* the information required about the utility of outcomes.

This view is dominant in economics, and is reproduced in the micro-textbooks, but not all contemporary economists subscribe to it. Sen (1986: 18) observes that „the popularity of this view in economics may be due to a mixture of an

[1] An extensive discussion with many references is given in Lane (1991: 423-590). See also Benedikt (1996: 557-579).

[2] See Kahneman and Varey (1991), Kahneman, Wakker and Sarin (1997) for the term "objectivist" (and "subjectivist").

obsessive concern with observability and a peculiar belief that choice ... is the only human aspect that can be observed“. Examples for non-objectivist theoretical analyses are: emotions (e.g. Elster 1998) such as regret, social comparisons (e.g. Clark and Oswald 1998) or status (e.g. Frank 1985), as well as even broader considerations beyond the normal use of utility (e.g. Sen's 1982 „entitlements“).

Recently, there has also been a revival of cardinalism and interpersonal welfare comparability (Ng 1997, 1999). Much earlier, the initiators of the modern analysis of decision-making (Bernoulli and Bentham) understood utility as satisfaction, referring to the hedonic quality in terms of pleasure and pain. This early idea may be called 'experience utility', and the „modern“ idea 'decision utility' (Kahneman, Wakker and Sarin 1997: 375).

The position of psychologists has differed strongly from the economic one. They value subjective experience as an important source of information about individual utility. They are less convinced that choices are always rational (see the vast literature on anomalies in decision-making, e.g. Thaler 1992), and therefore doubt that utility can meaningfully be derived from observed choices. Moreover, they go beyond tangible carriers of utility and emphasize the importance of emotions such as fear and hope, disappointment, guilt and pride. Psychologists have also transcended the consequentialism (of which utilitarianism is a special case, see Hammond 1991) and have considered procedural utility (Tyler 1990).

In their empirical work, especially in the large number of cost-benefit analyses, economists have strongly relied on consumer's surplus to measure the welfare effects of changes in incomes and prices. Yet „it is now widely accepted that consumer's surplus should not be used as a welfare measure“ (Slesnick 1998: 2108). But the welfare indicators suggested as an improvement (e.g. Hausman 1981, Jorgenson, Lau and Stoker 1982) all infer changes in utility from the consumption behavior of households. They thus stick to decision utility, and are unable to integrate the broader aspects of experience and procedural utility.[3]

The exclusive reliance of standard economic theory on an objectivist approach is thus open to doubt, both theoretically and empirically. There is room for the subjectivist approach of happiness, and we turn to that now.

### *B. Happiness*

„For most people, happiness is the main, if not the only, ultimate objective of life“ (Ng 1996: 1). Happiness can be understood to mean a „lasting, complete and justified satisfaction with life as a whole“ (Tatarkiewicz 1976: 16). Happiness, or as it is often called, subjective well-being, is measured by representative surveys. There is a vast literature on the measures and correlates of subjective well-being. A possible single-item measure is the individual question „how satisfied are you with your life taken as a whole?“. The answer is given on a three point up to an eleven point scale. These surveys were initiated by social psychologists and accordingly have a high scientific standard.

[3] In fact, such subjectivist notions of happiness are still often excluded, without even bothering to provide a reason; as done e.g. by Slesnick (1998: 2109) in his long survey on "Empirical Approaches to the Measurement of Welfare".

For a long time, Easterlin (1974) has been the only economist to seriously consider happiness. A discussion in the *Economic Journal*, with contributions by Oswald (1997), Frank (1997) and Ng (1997), has recently sparked interest.[4]

In psychology, there is a much older and broader tradition. A first review of the state of the art was written by Wilson (1967) almost 35 years ago. Monographs on happiness have been published e.g. by Argyle (1987), Myers (1993) and the sociologist Veenhoven (1993), and a recent survey has been prepared by Diener, Suh, Lucas and Smith (1999). Lane (1991, part IV) gives an overview of both the psychological and the economic literature.[5]

As has been pointed out, the surveys on happiness have a high scientific standard. The measures of happiness have high consistency, reliability and validity. Happy people are e.g. more often smiling during social interaction, are rated as happy by friends and family members and show less stress symptoms like high heart rate, high blood pressure and low skin resistance (Konow and Earley 1999). „All of the global measures of well-being and life satisfaction have significant convergence with peer-reports, and . . . showed good temporal reliability . . . The data provide evidence for a significant degree of stability in subjective well-being and life satisfaction" (Pavot and Diener 1993: 1; see also Lucas et al. 1996 for the discriminant validity of well-being measures and Fox and Kahnemann 1992 for the problem of inter-and intrapersonal comparison and order effects in judgements of satisfaction). Happiness measures have also been shown to be reflected in behavior, e.g. „people who call themselves happy ... are more likely to initiate social contacts with friends; more likely to respond to requests for help; ... less likely to be absent from work; less likely to be involved in disputes at work ..." (Frank 1997: 1833). But there is, of course, room for methodological concerns (e.g. Diener et al. 1999: 277-8). Economists should, however, not be too critical, in view of the deficiencies of what they measure and use as a matter of course. National income is a case in point. Its shortcomings are obvious and need not be discussed here. But the same applies to more innocuous concepts such as real income (e.g. Kapteyn 1994). Moreover, as will be demonstrated in this paper, the main use of happiness measures is not to compare levels, but rather to seek to identify the determinants of happiness.

### *C. Relationship between utility and happiness*

Subjective happiness and „objective" decision utility (as commonly used in economics) enter the stage of economic research from different sides. However, happiness certainly is a broader concept than decision utility; it includes experience as well as procedural utility. It may be argued that happiness is the *fundamental* goal of people, because to be happier is a goal in itself (Ng 1999: 209). That is not the case for other things we may want, such as job security, status, freedom, and especially money (income). We do not want them for themselves, but rather to give us the possibility of making ourselves happier.

[4] Published works are e.g. Clark and Oswald (1994), Easterlin (1995), Gerlach and Stephan (1996), Kenny (1999), and Winkelmann and Winkelmann (1998). Yet unpublished papers are e.g. Di Tella, MacCulloch and Oswald (1999), Frey and Stutzer (1999), Konow and Earley (1999) and Ravallion and Lokshin (1999).

[5] Country specific contributions are Glatzer and Zapf (1984), Glatzer (1992) and Noelle-Neumann (1996) for Germany and Leu, Burri and Priester (1997: chapter III.7) for Switzerland.

## II. Micro- and Macroeconometric Happiness Functions

Happiness functions seek to establish an econometric relationship between the happiness measure and the determinants of happiness. The data in happiness come e.g. from the Euro-Barometer Survey, which asks the question: „On the whole, are you satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?“ This yields a four-scale index of happiness. The U.S. General Social Survey asks 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?“ This yields a three scale index of happiness.

Happiness depends mainly on four sets of individual or micro factors and on four macroeconomic variables, according to existing econometric estimates (e.g. Di Tella, MacCulloch and Oswald 1999):

a) Individual factors, such as employment status, income, education and demographic factors;

b) Macroeconomic factors, such as unemployment rate, inflation rate, gross domestic product per capita and unemployment benefits.

Table 1 shows respective microeconometric happiness functions for a pooled cross-section time series estimate for Germany, 1975-1991 (taken from Di Tella et al. 1999), and for Switzerland, 1992. The latter estimate is based on survey results of more than 6,000 inhabitants in Switzerland collected by Leu, Burri and Priester (1997). (The variables are described in Appendix I. Summary statistics for Switzerland are presented in Appendix III.)

The estimates for Germany and Switzerland reveal qualitatively very similar effects on happiness (but, in the case of Switzerland, somewhat more determinants are statistically significant). The effect on happiness of *individual unemployment* is strongly negative in a highly statistically significant way ($p < 0.01$). For Switzerland, Table 1 also reports the marginal effect for the highest score of happiness. With unemployment, the marginal effect is – 0.284. This indicates that the probability of an unemployed person reporting the highest level of happiness is (cet. par.) 28.4 percentage points smaller than for an employed person. Or, equivalently, the share of unemployed persons reporting to be „completely satisfied“ is 28.4 percentage points smaller than for employed persons, cet. par.

Table 1 – Determinants of Satisfaction with Life in Germany and Switzerland

| | | Germany 1975-1991 Di Tella et al. (1999) | | Switzerland 1992 | | |
|---|---|---|---|---|---|---|
| | | Coefficient | Standard error | Coefficient | Standard error | Marginal effect |
| *a) Employment status* | | | | | | |
| employed | | Reference group | | Reference group | | |
| unemployed | | -0.421** | 0.036 | -0.834** | 0.041 | -0.284 |
| self employed | | 0.023 | 0.029 | 0.105** | 0.023 | 0.036 |
| at home | | 0.024 | 0.022 | 0.177** | 0.023 | 0.060 |
| school | | 0.027 | 0.033 | 0.047 | 0.102 | 0.016 |
| retired | | 0.079** | 0.027 | -0.118** | 0.039 | -0.040 |
| other | | | | 0.186** | 0.054 | 0.064 |
| *b) Income* | | | | | | |
| first quartile | | Reference group | | Reference group | | |
| second quartile | | 0.186** | 0.020 | 0.056(*) | 0.028 | 0.019 |
| third quartile | | 0.319** | 0.021 | 0.151** | 0.027 | 0.052 |
| fourth quartile | | 0.452** | 0.022 | 0.263** | 0.027 | 0.090 |
| *c) Education* | | | | | | |
| low | | Reference group | | Reference group | | |
| middle | | 0.001 | 0.018 | 0.176** | 0.017 | 0.060 |
| high | | 0.110** | 0.023 | 0.136** | 0.025 | 0.046 |
| *d) Demographic factors* | | | | | | |
| female | | Reference group | | Reference group | | |
| male | | -0.029 | 0.016 | -0.027 | 0.016 | -0.009 |
| age | | -0.008** | 0.003 | -0.010* | 0.004 | -0.004 |
| age squared | | 1.20e-4** | 2.87e-5 | 1.76e-4** | 4.27e-5 | 0.1e-3 |
| marital status: | single | Reference group | | Reference group | | |
| | married | 0.154** | 0.023 | 0.107** | 0.021 | 0.037 |
| | divorced | -0.330** | 0.037 | -0.178** | 0.033 | -0.061 |
| | separated | -0.408** | 0.076 | -0.612* | 0.257 | -0.208 |
| | widowed | -0.078* | 0.033 | -0.077 | 0.052 | -0.026 |
| no. of young children: | one | -0.014 | 0.021 | | | |
| | two | -0.027 | 0.028 | | | |
| | three | -0.046 | 0.049 | | | |
| Threshold parameters: | one | -1.944** | 0.071 | 0.302** | 0.026 | |
| | two | -0.850** | 0.069 | 0.724** | 0.027 | |
| | three | 1.086** | 0.070 | 1.060** | 0.027 | |
| | four | | | 1.529** | 0.027 | |
| | five | | | 2.286** | 0.027 | |
| | six | | | 2.767** | 0.027 | |
| Observations | | 28151 | | 6126 | | |
| Log likelihood function | | -25881.1 | | -10321.77 | | |

*Notes*: Ordered probit estimation (weighted for Switzerland). Dependent variable: level of satisfaction on a four point scale for Germany and on an eight point scale (scores of 1, 2 and 3 were aggregated) for Switzerland, respectively. The regression for Germany includes region dummies and year dummies from 1975 to 1991. The regression for Switzerland includes a constant term. Significance levels: (*) $0.05 < p < 0.10$, * $0.01 < p < 0.05$, ** $p < 0.01$.
*Source for Germany*: Di Tella, MacCulloch and Oswald (1999).
*Data source for Switzerland:* Leu, Burri and Priester (1997).

As can also be seen from Table 1, to be self-employed and work at home significantly raises happiness in Switzerland (cet. par.). But while people in Germany report a higher well-being when retired, the opposite holds for Switzerland (a result worth further inquiry).

The second set of factors report the highly significant positive effect on happiness of *income* as measured by quartiles: higher income thus seems to improve the human lot, but it does so only a little, as revealed by the marginal effects for Switzerland.[6] The third set of factors refers to education. Persons with higher education report higher happiness than those with low education (this effect has also been found in other studies, see e.g. Oswald 1997: 1823 or Diener et al. 1999: 293).

Demographic factors (the fourth set of influences) have statistically significant effects on happiness. Age has a U-formed impact: the young are happier than persons around 30 years of age, and thereafter happiness rises with age. Married persons are happier than singles, and divorced persons are unhappier than singles. These results are supported by other studies on the effect of demographic variables on happiness (e.g. Oswald 1997: 1823, and the survey by Diener et al. 1999: 289-293).

Table 2 presents two macroeconometric happiness functions for a panel of eleven European countries, 1972-1991 (again from Di Tella et al. 1999). The results indicate that higher *unemployment and inflation rates* decrease satisfaction with life, while higher unemployment benefits and income per capita increase subjective well-being. However, per capita income has only a significant effect on happiness if the two macroeconomic bads are included in the estimation model as an aggregate misery index composed of a non-weighted addition of the inflation and the unemployment rate.

Robustness analyses of micro- as well as macroeconometric happiness functions reveal that most signs of the coefficients remain stable when the specification of the estimation equation is varied. Happiness functions are thus able to well capture important determinants of reported subjective well-being.

Table 2 – Macroeconomic Conditions and Satisfaction with Life in 11 European Countries

| | (1) | | (2) | |
|---|---|---|---|---|
| | Coefficient | Standard error | Coefficient | Standard error |
| Unemployment rate (U) | -1.629** | 0.531 | | |
| Inflation rate ($\pi$) | -1.116** | 0.344 | | |
| GDP per capita | 3.9e-5 | 3.1e-5 | 5.4e-5* | 2.7e-5 |
| Unemployment benefits | 0.590** | 0.155 | 0.615** | 0.151 |
| Misery index (U + $\pi$) | | | -1.194** | 0.323 |

[6] This result confirms Easterlin's (1974) well-known finding that higher income within a country raises happiness. Careful surveys of the large number of studies dealing with the relationship between happiness and income conclude that income does raise happiness but not to a large extent (see the survey by Diener and Oishi 1999 and Diener et al. 1999: 287-289).

| | | |
|---|---|---|
| Observations | 150 | 150 |
| Adjusted $R^2$ | 0.16 | 0.16 |

*Notes*: Panel estimation with control for country and time fixed effects, and corrected for heteroscedasticity using White's method. Dependent variable is the mean residual life satisfaction for each year and each country. The residuals are generated in a first step with OLS regressions on individual characteristics for each country (for characteristics see table 1). Explanatory variables are three year moving averages. Unemployment benefits are the OECD index of replacement rates (unemployment benefit entitlements divided by the corresponding wage). Significance levels: (*) $0.05 < p < 0.10$, * $0.01 < p < 0.05$, ** $p < 0.01$.
*Source*: Di Tella, MacCulloch and Oswald (1999).

## III. Should Happiness be Maximized?

An obvious temptation is to consider happiness functions as a reasonably good (the best existing) approximation to a *social welfare function*, and to maximize them. The optimal values of the determinants thus derived are – according to this view – the goals which economic policy should achieve. It seems that, at long last, the (so far empirically empty) social welfare maximum of the quantitative theory of economic policy (Tinbergen 1956, Theil 1968) has been filled with life.

This is exactly how the influential paper by Di Tella, MacCulloch and Oswald (1999) proceeds. They open their paper with the following statement: „Modern macroeconomics textbooks rest upon the assumption of a social welfare function defined on inflation, $\pi$, and unemployment, U. To our knowledge, no formal evidence for such a function W ($\pi$, U), has ever been presented in literature. . . . Although an optimal policy rule cannot be chosen unless the parameters of the presumed W ($\pi$, U) function are known, that has not prevented the growth of a large amount of theoretical literature in macroeconomics" (p. 2; without footnotes).

Such an endeavor overlooks some fundamental problems of the social welfare maximization approach (Frey 1983: 182-194). The three most important shortcomings are the problem of preference aggregation, the empirical emptiness and the missing incentives. Only *one* shortcoming, the empirical emptiness, has been overcome (provided one is prepared to accept happiness functions as a reasonable approximation of a social welfare function). The other problems remain, and become even more severe:

### (1) Impossibility theorem

Since Arrow (1951), it is generally known that under a number of „reasonable" conditions, no social welfare function exists that ranks outcomes consistently, except a dictatorship. This impossibility result spawned a huge amount of literature (called Social Choice), analyzing its robustness to modifications of the assumptions. Theorem after theorem demonstrated that almost all changes in the axiomatic structure left the dictatorial result unchanged (see e.g. Sen 1995, Slesnick 1998). It must be concluded that „there is no way we can use empirical observations on their own to produce an ethically satisfactory cardinalization, let alone an ethically satisfactory social welfare ordering" (Hammond 1991: 220-21).

This verdict applies fully to happiness functions if they are used as quasi social welfare functions.

(2) Missing incentives

Deriving optimal policies by maximizing a social welfare function only makes sense if the government has an incentive to put the optimal policies into reality. This is only the case if a „benevolent dictator“ government is assumed (Brennan and Buchanan 1985). From introspection as well as from empirical analyses in Political Economy (see e.g. the collection of papers on Political Business Cycles in Frey 1997b), we know that governments are *not* benevolent and do not follow the wishes of the population, even in well-functioning democracies, not to mention authoritarian and dictatorial governments. Hence, to maximize social welfare corresponds to a 'technocratic-elitist' procedure neglecting the crucial incentive aspect.

This criticism applies fully to the endeavor to derive optimal policies by maximizing happiness.

There is a solution at hand which overcomes the problems posed by the impossibility theorem and by the government's missing incentives. *Constitutional Political Economy* (e.g. Buchanan 1991, Frey 1983, Mueller 1996) redirects attention to the level of the social consensus where, behind the veil of ignorance, the basic rules governing a society – the fundamental institutions – are chosen or emerge. At the same time, the approach shifts from a (vain) effort to directly determine social outcomes to shaping the *politico-economic process* by setting the institutions. The following section empirically demonstrates that the fundamental social institutions do indeed systematically influence happiness.

# IV. Happiness and Institutions

The fundamental social institutions shape the incentives of the policy makers. Once these basic institutions are in place, and the incentives therefore set, little can be done to influence the current politico-economic process. The goal of economic policy therefore must be to help to establish those fundamental institutions, which lead to the best possible fulfilment of individual preferences. Economic research helps to identify which institutions serve this goal, and whether they do in fact systematically affect happiness.

According to the modern theory of institutions, we hypothesize that two basic special institutions importantly affect happiness: direct democracy and federalism.

## *A. Direct democracy*

Over the last few years, extensive econometric research has demonstrated the beneficial effects of direct-democratic institutions on political outcomes. (Semi-) direct democracy allows the citizens to decide on substantial political issues via popular initiatives and referenda (see e.g. Budge 1996). While practically all countries have used referenda at one time or another (e.g. to vote on entry to the European Union), by far the greatest number of referenda have been undertaken in the United States (on the state and local level) and in Switzerland (on the national, cantonal and communal level) (Butler and Ranney 1994).

The results of the research on direct democracy are the subject of various surveys (e.g. Kirchgässner et al. 1999). For the United States, government expenditures and government revenues are lower with institutions of direct democracy (Matsusaka 1995). In contrast, educational public expenditures are higher when a referendum is possible (Santerre 1993). For Switzerland, the econometric evidence is even more compelling, one reason being that the institutions of direct democracy are better developed than in the U.S., and their effect on political outcomes can be better identified. Public expenditures in 131 Swiss cities are lower by 14%, but the median tax rate is higher[7] by 14% in cities with well developed institutions of referenda (Feld and Kirchgässner 1999). Due to a 5% higher share of self-financing, the per capita debt is no less than 45% lower. In addition, public expenditures exhibit significantly lower growth in cities with well established direct democracy (Schneider and Pommerehne 1983). Tax evasion is significantly lower in cantons with a higher degree of direct participation rights for voters (Frey 1997a). Finally, gross domestic product per capita is 5.4% higher in cantons with better established direct-democratic institutions than in more representative ones (Feld and Savioz 1997). All these results are based on estimates which carefully control influences unrelated to direct democracy, and establish a causal effect from that institution on political outcomes and their consequences in terms of behavior (tax evasion) or economic activity (income). We now test the proposition whether democratic institutions systematically affect *happiness.*

The test proceeds by extending the happiness function for Switzerland presented above by a variable representing the influence of direct democracy. Table 3 shows the estimated coefficients, standard errors and marginal effects for *all* the determinants taken into account in Table 1. The coefficients, and in particular the marginal effects of employment status, income, education and demographic factors, are very similar to the ones reported in Table 1.

In addition, the effect of „direct-democratic rights" is revealed. Direct-democratic rights is an index capturing the varying extent of direct participation possibilities in the 26 cantons of Switzerland, ranging from 1 („low extent of direct-democratic rights") to 6 („high extent of direct-democratic rights") (for the index construction see appendix II). Table 3 reports a statistically highly significant ($p<0.01$) positive influence of direct-democratic rights on happiness. The marginal effect on the highest happiness level (score 10) is 0.03: An increase in the index of direct participation rights by one point (say from 4 to 5) raises the probability of belonging to that highest happiness class by 3 percentage points. This means that individuals in canton Solothurn (with a direct participation score of 5.42), compared to citizens in canton Genève (with a direct participation score of 1.75), respond with a 11 percentage points higher probability that they are „completely satisfied".

Table 3 – Institutions and Satisfaction with Life in Switzerland

| | Coefficient | Standard error | Marginal effect (score 10) |
|---|---|---|---|
| *a) Employment status* | | | |
| employed | | Reference group | |

[7] There are two countervailing effects. Voters prefer lower taxes in order to have a higher disposable income. At the same time they are prepared to tolerate higher taxes because they believe that they are more wisely and more efficiently spent when they can control directly the political outcome. In the above case, the second effect dominates.

| | | | |
|---|---|---|---|
| unemployed | -0.825** | 0.043 | -0.280 |
| self employed | 0.085** | 0.023 | 0.029 |
| at home | 0.160** | 0.023 | 0.054 |
| school | 0.041 | 0.102 | 0.014 |
| retired | -0.112* | 0.039 | -0.038 |
| other | 0.155* | 0.055 | 0.053 |
| *b) Income* | | | |
| first quartile | | Reference group | |
| second quartile | 0.069* | 0.029 | 0.023 |
| third quartile | 0.164** | 0.027 | 0.056 |
| fourth quartile | 0.269** | 0.028 | 0.091 |
| *c) Education* | | | |
| low | | Reference group | |
| middle | 0.152** | 0.018 | 0.052 |
| high | 0.135** | 0.026 | 0.046 |
| *d) Demographic factors* | | | |
| female | | Reference group | |
| male | -0.026 | 0.017 | -0.009 |
| age | -0.011** | 0.004 | -0.004 |
| age squared | 1.83e-4** | 4.27e-5 | 0.1e-3 |
| Marital status: single | | Reference group | |
| married | 0.099** | 0.022 | 0.034 |
| divorced | -0.146** | 0.033 | -0.050 |
| separated | -0.560* | 0.262 | -0.204 |
| widowed | -0.072 | 0.052 | -0.025 |
| *e) Institutional factor* | | | |
| Direct-democratic rights | 0.089** | 0.007 | 0.030 |
| Observations | 6126 | | |
| Log likelihood function | -10262.42 | | |

*Notes*: Weighted ordered probit estimation. Dependent variable level of satisfaction is on an eight point scale (scores of 1, 2 and 3 were aggregated). The regression includes a constant term and additional control variables (not shown) for size of community (5 variables) and type of community (7 variables). Significance levels: $^{(*)}$ $0.05 < p < 0.10$, * $0.01 < p < 0.05$, ** $p < 0.01$.
*Data source*: Leu, Burri and Priester (1997) and Stutzer (1999).

### *B. Federalism*

Federalism is a second fundamental institution relevant for subjective well-being. „... those who value a federal system typically do so for some mix of three reasons: it encourages an *efficient* allocation of national resources; it fosters *political participation* and a sense of the democratic community; and it helps to protect basic *liberties and freedoms*" (Inman and Rubinfeld 1997: 44). The first reason given is emphasized by Oates (1994: 130), who states that „[t]he tailoring of outputs to local circumstances will, in general, produce higher levels of well-being than a centralized decision to provide some uniform level of output across all jurisdictions ...".[8]

Here, we take up the traditional argument of fiscal federalism mentioned above and directly test the proposition that the extent of decentralization affects happiness. The differences in the degree of federalism in the 26 Swiss cantons is

[8] The set of arguments in favor of federalism is combined and extended in a new federal concept basing on functional, overlapping and competing jurisdictions (FOCJ) (Frey and Eichenberger 1999).

captured by an index for local autonomy. The index is based on survey results by Ladner (1994). Chief local administrators in 1856 Swiss municipalities were asked to report how they perceive their local autonomy on a ten point scale, with one indicating „no autonomy at all", and ten „very high" communal autonomy. Average scores for each canton were calculated from the answers. (The index is shown in Appendix II.)

Estimate (1) in Table 4 shows the statistically positive effect ($p<0.01$) on happiness by the extent of local autonomy in the cantons. The coefficient is slightly larger than the one for direct democracy in Table 3.

In order to keep the table as simple as possible, only the estimated coefficient (and statistical significance) for this particular institutional variable is reproduced, although the ordered probit estimation includes *all* the variables shown in Table 1 (as in Table 3, the signs of the coefficients are unchanged, and their size is little affected).

Table 4 also exhibits estimates demonstrating that the influence of the two fundamental institutional variables – direct democracy and federalism – is fairly robust. Equation (2) indicates that direct democracy remains an important determinant of happiness, even when local autonomy is simultaneously taken into account: the coefficient remains similar to the one in Table 2 and is equally statistically significant ($p<0.01$). The effect of decentralization as measured by local autonomy in the cantons has a lower statistical significance ($0.05<p<0.10$) than in equation (1), the reason being some extent of correlation ($r = 0.444$**).

A canton's size of population negatively influences happiness (equation 3), but the introduction of this variable does not (much) affect the size and significance of the direct democracy variable (equation 4). The same holds true when per capita income is included among the determinants (equations 5 and 6). It can be concluded that the extent of direct democracy, as well as federalism, have a robust influence on happiness.

Table 4 –Satisfaction with Life in Switzerland – Further Results

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| *Individual factors a)-d)* | yes | yes | yes | yes | yes | yes |
| *Federalism* | | | | | | |
| Local autonomy in canton | 0.099** | 0.029(*) | | | | |
| | (0.012) | (0.014) | | | | |
| Population in canton | | | -0.008** | -0.007** | | |
| (in 100'000) | | | (0.002) | (0.002) | | |
| *Macroeconomic conditions* | | | | | | |
| National income per capita | | | | | -0.001 | -0.003* |
| in canton (in 1'000) | | | | | (0.001) | (0.001) |
| *Institutional factor* | | | | | | |
| Direct-democratic rights | | 0.079** | | 0.088** | | 0.092** |
| | | (0.008) | | (0.007) | | (0.007) |
| Observations | 6126 | 6126 | 6126 | 6126 | 6126 | 6126 |
| Log likelihood function | -10275.61 | -10261.74 | -10284.43 | -10260.57 | -10286.64 | -10261.14 |

*Notes*: See table 2. Coefficients with significance levels. Standard errors in parentheses.
*Data sources*: Ladner (1994), Leu, Burri and Priester (1997), Stutzer (1999) and Swiss Federal Statistical Office (various years).

## V. Concluding Remarks

Happiness research adds a novel element to economics. It stands in stark contrast to the „objectivist“ way economists have measured welfare via revealed preference. Happiness is a „subjectivist“ measure of individual welfare, but it is broader than the way individual utility is normally defined. It seeks to capture a fundamental and stable goal of people, the „satisfaction with life taken as a whole“. While happiness is not derived from actual behavior, it is systematically and closely connected with generally accepted manifestations of well-being. The happiness approach is consistent with modern concepts of cardinalism and interpersonal welfare comparisons.

This paper identifies the determinants of happiness via econometrically estimated micro and macro functions with data for Germany, Switzerland and a set of eleven European countries. Among individual determinants, unemployment, income, education and marital status stand out, while among the macroeconomic determinants it is the rate of unemployment and inflation that stand out.

Following the tradition of social welfare maximization, some scholars have been tempted to try to maximize the estimated happiness functions. Such an endeavor overlooks the fundamental problems of welfare aggregation and, even more importantly, the missing incentives of governments to pursue a happiness maximization policy. Rather, scholars should follow the institutional approach taken by the theory of democratic economic policy. The paper empirically demonstrates for the case of Switzerland that the institutions of direct democracy and federalism are two such institutions systematically affecting individual well-being. This novel research field thus underlines the importance of process rather than outcome-oriented economic policy.

The empirical analysis is consistent with the three propositions advanced at the beginning of the paper: (1) Happiness research constitutes a significant advance in economic research; (2) Happiness functions should not be maximized; and (3) Institutional choice crucially affects individual well-being.

Happiness research moreover represents a case of a productive cross-fertilization of two otherwise isolated fields, economics and psychology.

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Appendix I

**Definition of variables**

a) Sample for Germany

Satisfaction with life: Discrete variable (four values) from Euro-Barometer Survey Series (1975-1991). Question: „On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with your life you lead?". Response categories: „Very satisfied", „fairly satisfied", „not very satisfied" and „not at all satisfied". (Not included in data set: „don't know" and „no answer" categories.)

Employment status: Dummies for unemployed or self-employed people, housekeepers, people at school, retired people and others. Reference group employed people.

Income: Dummies for second, third and fourth income quartile. Reference group lowest income quartile.

Education: Dummies for education to age 15-18 years (middle) and education to age 19 years or over (high). Reference group low education.

Demographic factors: Dummies for male, married, divorced, separated and widowed people and people with one, two or three 8-15 year old children living at home. The reference groups are female, single and people with no children. Age in years. Age in years squared.

b) Sample for Switzerland

Satisfaction with life: Discrete variable (ten values) from Leu, Burri and Priester (1997). Question: „How satisfied are you with your life as a whole these days?". Simultaneously, the respondents were shown a table with a ten point scale of which only the two extreme values („completely dissatisfied" and „completely satisfied") were verbalised. For the estimation model the scores of 1, 2 and 3 were aggregated.

Employment status: Dummies for unemployed or self-employed people, housekeepers, people at school, retired people and others. Reference group employed people.

Income: Dummies for second, third and fourth income quartile. Reference group lowest income quartile. The income measure is calculated as an equivalence income. Total household income after taxes and social security expenditure is divided through the equivalence scale of the Swiss conference for public assistance (SKOS).

Education: Dummies for middle and high education. Reference group low education.

Demographic factors: Dummies for male, married, divorced, separated and widowed people and foreigners. Reference groups female, single and Swiss. Age in years.

Population: Average number of residents in a canton in 1992 (Swiss Federal Statistical Office 1993).

National income p.c.: Nominal national income per capita in a canton in 1992 (Swiss Federal Statistical Office 1997).

Appendix II

**Index for direct-democratic rights in Swiss cantons**

Direct democracy is here defined in terms of individual political participation possibilities. In Switzerland, institutions for the direct political participation of citizens exist on the level of the federal state as well as on the level of cantons. However, the direct-democratic rights on the level of cantons are very heterogeneous. Therefore, an index is constructed to measure the different barriers for citizens entering the political process, apart from elections in the year 1992. The index is based on data collected in Trechsel and Serdült (1999) (for details see Stutzer 1999).

The four main legal instruments to directly influence the political process in Swiss cantons are

a) the initiative to change the canton's constitution,
b) the initiative to change the canton's law,
c) the compulsory and optional referendum to prevent new or changing law and
d) the compulsory and optional referendum to prevent new state expenditure.

Barriers are in terms of

a) the necessary signatures to launch an instrument (absolute and relative to the number of citizens with the right to vote),
b) the legally allowed time span to collect the signatures and
c) the level of new expenditure per head allowing a financial referendum.

(Compulsory referenda are treated like referenda with the lowest possible barrier.)

Each of these restrictions is evaluated on a six point scale: „one" indicates a high barrier, „six" a low one. From the resulting ratings, a non-weighted average is calculated, which represents the measure of direct-democratic rights in Swiss cantons. The results are presented in table A.1.

Table A.1 – Index for direct-democratic rights in Swiss cantons in 1992

| Canton | Index | Canton | Index | Canton | Index |
|---|---|---|---|---|---|
| Aargau | 5.46 | Graubünden | 4.75 | Schwyz | 4.93 |
| Appenzell i. Rh. | 5.25 | Jura | 3.71 | Thurgau | 4.04 |
| Appenzell a. Rh. | 5.50 | Luzern | 4.48 | Ticino | 2.10 |
| Bern | 3.50 | Neuchâtel | 2.13 | Uri | 5.42 |
| Basel Land | 5.69 | Nidwalden | 4.92 | Vaud | 2.42 |
| Basel Stadt | 4.40 | Obwalden | 5.58 | Valais | 3.42 |
| Fribourg | 2.42 | Sankt Gallen | 3.40 | Zug | 4.42 |
| Genève | 1.75 | Schaffhausen | 5.08 | Zürich | 4.17 |
| Glarus | 5.50 | Solothurn | 5.42 | | |

**Index for local autonomy in Swiss cantons**

The index for local autonomy is based on survey results by Ladner (1994). Chief local administrators in 1856 Swiss municipalities reported how they perceive their local autonomy on a ten point scale, with one indicating „no autonomy at all", and ten „very high" communal autonomy. Average scores for each canton are presented in table A.2.

Table A.2 – Index for local autonomy in Swiss cantons in 1994

| Canton | Index | Canton | Index | Canton | Index |
|---|---|---|---|---|---|
| Aargau | 4.9 | Graubünden | 5.8 | Schwyz | 4.6 |
| Appenzell i. Rh. | 5.0 | Jura | 4.0 | Thurgau | 5.9 |
| Appenzell a. Rh. | 5.8 | Luzern | 4.1 | Ticino | 4.3 |
| Bern | 4.6 | Neuchâtel | 3.7 | Uri | 5.4 |
| Basel Land | 4.3 | Nidwalden | 5.5 | Vaud | 4.7 |
| Basel Stadt | 5.5 | Obwalden | 6.0 | Valais | 5.5 |
| Fribourg | 4.2 | Sankt Gallen | 4.9 | Zug | 6.0 |
| Genève | 3.2 | Schaffhausen | 6.1 | Zürich | 5.4 |
| Glarus | 5.6 | Solothurn | 4.9 | | |

Appendix III

Table A.3 – Summary Statistics – Satisfaction with Life in Switzerland

| | Satisfaction with life | Mean/Share | Minimum | Maximum | Standard deviation |
|---|---|---|---|---|---|
| Satisfaction with life | 8.219 | 8.219 | 1 | 10 | 1.717 |
| *a) Employment status* | | | | | |
| employed | 8.209 | 0.383 | | Dummy | 0.486 |
| unemployed | 6.562 | 0.021 | | Dummy | 0.144 |
| self employed | 8.306 | 0.109 | | Dummy | 0.312 |
| at home | 8.384 | 0.142 | | Dummy | 0.349 |
| school | 8.199 | 0.024 | | Dummy | 0.153 |
| retired | 8.230 | 0.298 | | Dummy | 0.458 |
| other | 8.368 | 0.022 | | Dummy | 0.147 |
| *b) Income* | | | | | |
| first quartile | 7.994 | 0.249 | | Dummy | 0.433 |
| second quartile | 8.172 | 0.249 | | Dummy | 0.432 |
| third quartile | 8.245 | 0.251 | | Dummy | 0.434 |
| fourth quartile | 8.464 | 0.251 | | Dummy | 0.434 |
| *c) Education* | | | | | |
| low | 7.975 | 0.309 | | Dummy | 0.462 |
| middle | 8.309 | 0.554 | | Dummy | 0.497 |
| high | 8.407 | 0.137 | | Dummy | 0.344 |
| *d) Demographic factors* | | | | | |
| female | 8.219 | 0.503 | | Dummy | 0.500 |
| male | 8.219 | 0.497 | | Dummy | 0.500 |
| age | | 50.051 | 20 | 102 | 19.362 |
| age squared | | 2.880e+3 | 400 | 10.404e+3 | 2.038e+3 |
| marital status: single | 8.076 | 0.230 | | Dummy | 0.421 |
| married | 8.356 | 0.598 | | Dummy | 0.490 |
| divorced | 7.600 | 0.061 | | Dummy | 0.240 |
| separated | 6.500 | 0.004 | | Dummy | 0.060 |
| widowed | 8.178 | 0.108 | | Dummy | 0.310 |
| Direct-democratic rights | | 3.832 | 1.75 | 5.69 | 1.080 |
| Local autonomy | | 4.791 | 3.2 | 6.1 | 0.645 |
| Population (in 100'000) | | 5.513 | 0.14 | 11.75 | 3.724 |
| National income p.c. (in 1'000) | | 42.686 | 31.77 | 73.98 | 7.411 |

*Notes*: The number of observations is 6126. All the descriptive statistics are not weighted.
*Data sources*: Ladner (1994), Leu, Burri and Priester (1997), Stutzer (1999) and Swiss Federal Statistical Office (various years).