

## **Money and Happiness: The Combined Effects of Wealth, Income and Consumption\***

By Bruce Headey, Ruud Muffels, and Mark Wooden

### **Abstract**

The paper uses household economic panel data from five countries – Australia, Britain, Germany, Hungary and The Netherlands – to provide a reconsideration of the impact of economic well-being on happiness. The main conclusion is that happiness is considerably more affected by economic circumstances than previously believed. In all five countries wealth affects life satisfaction more than income. In the countries for which consumption data are available (Britain and Hungary), non-durable consumption expenditures also prove at least as important to happiness as income.

*JEL Classification: I31*

### **1. Introduction**

The accepted view in psychology is that objective economic circumstances have only a small though statistically significant effect on happiness (Andrews and Withey, 1976; Argyle, 1987; Diener and Biswas-Diener, 2002). This view has sometimes been echoed by economists, usually referring to Easterlin's famous 1974 paper, "Does economic growth improve the human lot?" However the Easterlin paradox – the claim that money, and by extension economic growth, have little effect on happiness – is almost entirely based on weak relationships between survey measures of happiness and measures of household income. The single exception appears to be a paper by Mullis (1992), which was based on a sample of 55–69 year old American men, and showed that, for this age group, income and wealth combined additively to affect scores on a composite index of satisfaction with standard of living, housing, neighbourhood, health, leisure and 'life in general'.

Plainly income is not the only or necessarily the best indicator of material standard of living. Using data from five national household panels, this paper

---

\* This paper reports on research being conducted as part of the research program, "The Dynamics of Economic and Social Change: An Analysis of the Household, Income and Labour Dynamics in Australia Survey." It is supported by an Australian Research Council Discovery Grant (DP0342970).

estimates the combined effects of wealth (net worth), disposable income and consumption on measures of overall life satisfaction and also measures of subjective economic well-being. This reconsideration indicates that objective economic circumstances have considerably greater impact on subjective outcomes than previously believed.

The point of including a measure of wealth or net worth as one indicator of household standard of living hardly needs to be laboured. Wealth confers economic security; it enables one to tide over bad times at least for a while. It also enables one to borrow money both to cope with bad times and for investment purposes. Most important, both financial and non-financial assets generate real income, a real flow of benefits. This is plainly just as true for the housing one lives in, or fine paintings on the wall, as for shares or savings accounts which generate direct cash income.

Now consumption. In order to assess current living standards it is just as important to measure consumption as income. The reason is that it is clear from household expenditure surveys that a high percentage of households in the bottom half of the income distribution (up to 50% in some countries, including Australia; see ABS, 1999) appear to consume more than they earn. The standard explanation relies on permanent income theory; the idea that people smooth their consumption over time, despite transitory fluctuations in income.

### *Economic and psychological theory*

Until very recently, the two major social science literatures on happiness and well-being – the economic literature on utility and the psychological literature on subjective well-being (SWB) – steadfastly ignored each other. Economists, fortified by intensive training, learn never to measure utility directly, but instead to infer it from behaviour. An exception to this generalization is the Leyden School of Dutch economists who, against the tide, have persisted in asking people about satisfaction with their material well-being. Most economists, however, follow Samuelson (1938) in treating behaviours as “revealed preferences”. Utility is viewed as involving trade-offs between work and leisure. Work is regarded as pain but provides the wherewithal for consumption, while leisure is regarded as pleasure. Individuals are viewed as making different trade-offs, depending on their preferences for consumption and leisure, but essentially a happy person is seen as someone with a full shopping basket and lots of free time. This is a rather hedonistic and perhaps shallow view.

In psychology the study of happiness or subjective well-being is a fairly new topic. Psychologists have traditionally followed a medical model, seeing themselves as researchers and therapists dealing with the causes and cures of pathologies, and not taking much interest in what may have been seen as the

lightweight topic of happiness. Empirical research on well-being began in the late 1960s and 1970s at the Universities of Chicago (Bradburn 1969) and Michigan (Andrews and Withey 1976; Campbell, Converse and Rodgers 1976). The early studies made two ‘discoveries’, which are still debated but are accepted by the large majority of researchers. These discoveries, if correct, are of great importance to economists and others focused on economic well-being:

- *Economic variables*, notably income, appear to have little effect on happiness. This is part of a more general finding that objective circumstances of all kinds (gender, age, marital status, employment status etc) have quite modest relationships with subjective outcomes. Well-being turns out to be much more strongly related to personality traits, reports of the quality of personal relationships and perceptions of one’s family, job, health etc.
- *The hedonic treadmill: adaptation* appears to swamp the effects of changes in economic circumstances (and other objective circumstances) on happiness. It is claimed that, even if a person’s economic circumstances improve dramatically, he / she will rapidly adapt (habituate) and raise expectations of future circumstances, so that no gain in happiness occurs. One much cited study showed this to be true even of lottery winners (Brickman et al. 1978). This result has led to the conclusion that we are all on a hedonic treadmill; apparent improvements in life situation yield no subjective benefits.

In just the last five years or so, economists have begun to take an interest in the psychological literature. A landmark piece, “What can economists learn from the literature on happiness?” (Frey and Stutzer 2002) appeared in the *Journal of Economic Literature*, setting out the case for measuring well-being / utility directly and reviewing recent research on the effects of income, unemployment, inflation and institutions on SWB.

An important motivation for the recent interest among economists in psychological theories and results relating to SWB is a concern that the ‘revealed preferences’ approach may be open to challenge (Hollaender 2001). This approach depends on the assumption that people’s preferences for goods and leisure are exogenously determined. If preferences are exogenous and relatively fixed, then it can be inferred that increases in supply will increase utility. However, there is a counter-theory. Duesenberry (1949) proposed that preferences are to a large extent endogenous; that people change their preferences in response to what others have and want (“keeping up with the Joneses” is one symptom). If this is so, then one cannot reasonably infer that more goods and leisure, preferred at time  $t$ , will necessarily increase utility if acquired at  $t + 1$ . Easterlin’s (1974) famous paper, referred to earlier, appeared to support Duesenberry’s theory by showing that, in so far as income affects happiness at all, it is relative income – one’s own income relative to others in society – and not absolute gains in income that make a difference.

## 2. Data and Measures

### *Five National Household Panels:*

#### *Australia, Britain, Germany, Hungary and The Netherlands<sup>1</sup>*

This paper is based on the only five national socio-economic panels which, to our knowledge, have included measures of household wealth and subjective well-being, as well as income. These panels are the Australian (HILDA) panel, 2001–, the British (BHPS) panel, 1991–, the Dutch (SEP) panel, 1984–2000, the German (SOEP) panel, 1984–, and the Hungarian (Tarki) panel, 1991–97. Only the British and Hungarian panels always include measures of consumption,<sup>2</sup> and the Hungarian panel alone measured wealth, income and consumption every year.

#### *Australia: the HILDA Panel 2001–*

The Australian (HILDA) panel began in 2001 with a sample of almost 7,700 households. Everyone aged 15 and over in households is interviewed face to face. A quite detailed inventory of household wealth was included in the 2002 survey. This included housing, business assets, equity and cash investments, bank accounts, accumulated pension holdings, vehicles and collectibles. Questions relating to debt covered housing debt, credit cards, student debt and personal debt. Most questions were answered by one respondent (the household reference person or his/her partner) on behalf of the entire household. All questions asked for an exact monetary value, although for those unable to provide an exact figure for pension assets (a particularly difficult topic), bands were used. About two-thirds of households provided complete wealth data. Some components had to be imputed for the remaining third.

The measure of “happiness” in HILDA was a 0–10 scale on which respondents are asked, “All things considered, how satisfied are you with your life?” Only the ends of the scale were labeled such that 0 represented “totally dissatisfied” and 10 represented “totally satisfied”. The same scale was used to ask about satisfaction with ‘your financial situation’.

#### *Britain: the BHPS Panel 1991–*

The BHPS began in 1991 with about 10,300 respondents in 5,500 households. It interviews everyone aged 16 and over in sample households. Wealth measures were included in 1995 and 2000. The questions covered housing, financial assets, the value of vehicles and the amount of debt owed. They

---

<sup>1</sup> More information about the five panels can be found in a longer version of the paper available on the website of the IZA, Bonn: [www.iza.org](http://www.iza.org)

<sup>2</sup> In some years, the Australian and German panels include measures of food consumption, but unfortunately they did not do so in the latest years in which they measured wealth.

appear not to have explicitly covered business assets. Questions were asked about contributions to retirement pension, but no attempt has been made here to calculate accumulated holdings. In answering wealth questions, respondents were asked to give exact monetary amounts.

In recent years the BHPS has included several questions on consumption: the amount spent by households on shopping for food per week, the amount spent on meals out per month, the amount spent on leisure per month, housing costs, annual fuel costs and purchases of consumer durables in the last year. The last three measures turned out to be unrelated to measures of SWB.<sup>3</sup> So the consumption measure used in this paper sums and annualizes three expenditures on non-durables: food and groceries, meals out and leisure.<sup>4</sup> Together these amount to well over half the annual non-durable expenditure of most households.

In the BHPS questions about life satisfaction and household income satisfaction were asked on a 7-point scale.

#### *Germany: the SOEP Panel, 1984 –*

The SOEP began in West Germany in 1984 with a sample of 12,200 respondents in about 5,900 households. Every household member 16 and over is interviewed. SOEP was extended to East Germany in 1990 and has been augmented with several further samples (e.g. in order to sufficiently include recent immigrants).

Wealth measures were included in 1988 and then in more detail in 2002. A feature of the 2002 survey was that a special sample of high income – and thus potentially high wealth – households was added. So the SOEP, unlike the other panels included here, does not inadequately represent the richest 2–3 % of households who own at least a quarter of household wealth in all Western countries, and so need to be over-sampled in order to get an accurate picture of wealth holdings.

Subjective outcomes: life satisfaction and satisfaction with household income were measured on a 0–10 scale.

---

<sup>3</sup> If included in a measure of overall consumption, both these items actually lowered the correlation between consumption and subjective outcomes. These initially surprising results are probably due to the fact that housing expenditure is strongly related to how recently one bought one's dwelling, and fuel expenditure is related to the age of a dwelling, as well as size.

<sup>4</sup> Respondents gave their answers to these three questions within 12 expenditure bands (under 10 pounds, 10–19, 20–29 etc). In calculating total consumption we assumed expenditure at the mid-point of the band.

*Hungary: the Tarki Panel 1992–97*

The Tarki panel ran from 1992–1997, designed and administered by Professor Rudolf Andorka and his colleagues at the Economics University, Budapest. The sample size was initially 8,200 respondents. Everyone aged 16 and over in sample households was interviewed.

A key feature of Tarki was quite detailed questions about both wealth and consumption, asked each year on the household questionnaire, and thus responded to by one person on behalf of the entire household. The main reason for these inclusions was that Andorka and his colleagues doubted whether income by itself was remotely adequate as a measure of economic well-being in a middle income country with a large rural sector, which was making the transition from communism to democracy and capitalism.

The consumption battery comprised 11 questions (exact monetary amounts) about typical monthly expenditures, plus four about typical annual expenditures on a range of non-durables plus housing.<sup>5</sup> This was followed by a final question which asked the household respondent to estimate total household expenditure for a typical month. The wealth and debt questions ran for several pages. They covered real estate including agricultural land, bank accounts and building accounts, shares, vehicle values and debts, and paintings and antiques. Major consumer durable purchases in the last year were also covered.

The life satisfaction question was on a 0–10 scale, as was a question about satisfaction with “your standard of living”.

*The Netherlands: SEP Panel 1984–2000*

The Dutch panel began in 1984 with a sample of about 11,000 respondents. Everyone aged 16 and over was interviewed. Until 1990 respondents were interviewed twice a year, but since then annual interviews have been conducted.

Moderately detailed questions about assets and debts are asked each year on the individual rather than the household questionnaire. However, it is clear from the sample means that the questions are not detailed enough, because the means are well below national aggregate figures for the household sector available from the Central Bureau of Statistics.

A question about life satisfaction has been asked only twice – in 1988 and 1991 – and then only on a dichotomous scale. This makes the Dutch question too different from life satisfaction as asked in the other countries, so we

---

<sup>5</sup> The expenditures covered were utilities, rent/mortgage, clothing, doctors, prescribed medicines, other medicines, transport, cleaning woman, nurse, baby-sitting, food, tuition fees, holidays, charity gifts, and money transferred to other households.

decided not to use it.<sup>6</sup> More usefully, a question about “How well you are getting along on your household income?” has been included every year. The scale runs from 1 (“with great difficulty”) to 6 (“very easily”) and results relating to it are given in Table 3.

### *Summary of available measures*

- For four of the five countries we use a single item measure of life satisfaction. For all five we use a single item measure of satisfaction with something like standard of living (household income, financial situation). As indicated above, the original scales were not all of the same length, so for ease of comparison we have transformed them all to run from 0 to 100. Regression coefficients can thus be interpreted as quasi-percentiles.
- A measure of household net worth (assets minus debts) has been constructed for each country. The natural logarithm is used in equations since wealth is highly skewed towards the top end.
- Measures of household disposable income, available for all five countries, have been equivalised, using the International Experts’ Scale, i.e. income divided by the square root of household size (Buhmann et al. 1988).
- The British and Hungarian consumption measures, described above, were also equivalised.

## 3. Results

First, to give an overview, Table 1 shows how much variance is accounted for in life satisfaction and satisfaction with standard of living by (1) household income by itself, then (2) household income and wealth (net worth) combined, then (3) household income, wealth and household consumption combined. The reason for presenting results in this sequence is that previous research has focused solely on income. So our approach is to use income results as a baseline, and then see how much more variance is accounted for by wealth and consumption. For Australia, Germany and The Netherlands only income and wealth data are available (not consumption), so we give results for these countries in the second row of the table. Then in the third row we add consumption for the two countries for which it is available, namely Britain and Hungary. Results are for the latest year in which wealth data are available: Australia 2002, Germany 2002, Netherlands 1997, Britain 2000 and Hungary 1996.<sup>7</sup>

<sup>6</sup> However, in a trial run, results for the effects of wealth and income on life satisfaction were significant at the 0.001 level, although the size of the effects was small, as would be expected with a dichotomous dependent variable.

<sup>7</sup> 1996 was preferred to 1997 because sample attrition was substantial in the final year of the panel.

Table 1

**Variance Accounted for in Life Satisfaction (LS) and Standard of Living Satisfaction (SLS) by Income, Net Worth and Consumption\***

	Australia 2002 (N = 12559)		Germany 2002 (N = 18688)		Netherlands 1997 (N = 8126)		Britain 2000 (N = 14439)		Hungary 1996 (N = 3061)	
	LS	SLS	LS	SLS	LS	SLS	LS	SLS	LS	SLS
Income by itself (R <sup>2</sup> )	0.5%	3.6%	2.5%	8.3%	na	11.5%	1.3%	8.2%	4.2%	4.1%
Income and Wealth (R <sup>2</sup> )	1.7%	9.2%	3.9%	11.2%	na	16.0%	2.4%	10.7%	4.9%	5.3%
Income and Wealth and Con- sumption (R <sup>2</sup> )	na	na	na	na	na	na	2.4%	11.1%	7.0%	6.9%

\* Given the large Ns, all results are significant at the .001 level.

Source: Authors' calculations from HILDA 2002, SOEP 2002, SEP 1997, BHPS 2000, Tarki Panel 1996.

The first row of Table 1 confirms the standard view that income by itself only accounts for very limited variance in life satisfaction, but rather more variance in satisfaction with standard of living. Variance accounted for in life satisfaction ranges from 0.5 % in Australia to 4.2 % in Hungary. The relatively strong relationship in Hungary could be due to the fact that people there give higher priority to financial concerns, given that it is much the poorest of these five countries.<sup>8</sup>

The most striking preliminary results, shown in the middle row of the table, relate to wealth. In all these countries the combination of income and wealth accounts for considerably more variance in both life satisfaction and standard of living satisfaction than income alone. In Australia the variance accounted for in life satisfaction goes up from 0.5 % to 1.7 %; tripling off a very low base! Variance accounted for in satisfaction with “your financial situation” rises from 3.6 % to 9.2 %. In Germany, the Netherlands and Britain too, the variance accounted for in subjective outcomes rises substantially (by at least 25 %) for both dependent variables. It is also worth mentioning that, in three of the countries (the exception being Hungary), the Pearson correlation of wealth with life satisfaction was higher than for income.

<sup>8</sup> Dr Zsolt Speder, a co-investigator in Tarki, confirms that research using the Hungarian panel consistently finds a close relationship between life satisfaction and standard of living satisfaction ( $r \sim 0.6$ ), and consistently finds that economic variables account for as much variance in life satisfaction as in the domain satisfaction.



Discussion of the impact of consumption is best postponed until Tables 2 and 3 in which consumption is entered into equations at the same step as income and wealth, rather than being arbitrarily entered last. What Table 1 appears to show is that addition of this third measure of household economic circumstances accounts for substantial extra variance in Hungary but not Britain.

Of course the evidence in Table 1 could prove deceptive. Not only were the three measures of household economic circumstances considered in an arbitrary sequence, there were also no “controls”. In Table 2, still using cross-sectional rather than panel analysis, we now estimate the combined effects of income, wealth and consumption on life satisfaction, controlling for other “objective” circumstances. As “controls” we included a range of “objective” measures, and excluded “subjective” measures which would be likely to covary with life satisfaction because some people, due to personality and other omitted factors, are just generally more satisfied than others.<sup>9</sup> Standard demographic, human capital and labour force variables were included (see below). Also used is a measure of “bad health” which is a measure of disability or restriction of daily activities, and not a self-report satisfaction or “good health” measure.<sup>10</sup>

For the key monetary predictor variables in Tables 2 and 3, we print standardized coefficients (Betas), as well as metric coefficients (bs). The usefulness of the standardized coefficients in this context is that they enable us to make direct if crude comparisons of the “importance” of wealth, income and consumption as predictors of life satisfaction both within and between countries. Ordinary least squares (OLS) regression is used,<sup>11</sup> and the data relate to the same years as in Table 1.

### *Life Satisfaction*

The evidence in Table 2 quite clearly confirms that wealth is at least as important as income in predicting life satisfaction. The standardized coefficient (Beta) for wealth is in fact a little higher than for income in all countries except Hungary, where it is the same. In all countries wealth and income are both significant predictors at the 0.001 level.

---

<sup>9</sup> So the effect of including subjective variables on the RHS might well have been to bias the coefficients of main interest due to covariation between the subjective variables, omitted variables like personality traits and the dependent variable of life satisfaction.

<sup>10</sup> For the Netherlands (included in Table 3 but not Table 2) the only available measure was a self-report “bad health / good health” dichotomous variable.

<sup>11</sup> The dependent variable is really only an ordinal scale, so strictly speaking an ordinal scale technique like ordered probit analysis would be more appropriate. However, like many researchers before us, starting with Andrews and Withey (1976), we found that OLS and ordinal scale results were substantively little different, and OLS has the advantages of familiarity and ease of interpretation.

Table 2: Impact of Income, Wealth and Consumption on Life Satisfaction: OLS Regressions

Explanatory variables	Australia 2002 Dependent variable Life satis. (0–100)		Germany 2002 Dependent variable Life satis. (0–100)		Britain 2000 Dependent variable Life satis. (0–100)		Hungary 1996 Dependent variable Life satis. (0–100)	
	<i>b</i>	<i>Beta</i>	<i>b</i>	<i>Beta</i>	<i>b</i>	<i>Beta</i>	<i>b</i>	<i>Beta</i>
Equivalised income / 1000 <sup>a)</sup>	.04	.05***	.07	.09***	.17	.06***	.04	.06***
Net worth (ln)	.65	.08***	.42	.11***	.53	.08***	.32	.06***
Equivalised consumption / 1000 <sup>a)</sup>	na		na		.13	.01 <sup>ns</sup>	.19	.13***
Sex ( <i>f</i> = 1, <i>m</i> = 0)	.70**		.26 <sup>ns</sup>		.62 <sup>ns</sup>		.96 <sup>ns</sup>	
Age	-.74***		-.65***		-.91***		-1.52***	
Age <sup>2</sup> / 10	.09***		.06***		.11***		.15***	
Partnered (1–0)	4.66***		2.97***		6.60***		8.46***	
Education: Years	-.52***		.13 <sup>ns</sup>		-.39***		1.26***	
Working <sup>b)</sup> (1–0)	-.17 <sup>ns</sup>		-.04 <sup>ns</sup>		.36 <sup>ns</sup>		-1.00 <sup>ns</sup>	
Unemployed <sup>b)</sup> (1–0)	-2.81***		-9.23***		-4.72***		-9.89***	
Bad health (1–0)	-5.89***		-14.92***		-12.26***		-1.05**	
Constant	87.52***		75.83***		81.73***		62.65***	
<i>R</i> <sup>2</sup>	8.4%		10.8%		10.2%		14.1%	
<i>N</i>	11755		9958		14101		3055	

Notes: \*\*\* significant at 0.001 level; \*\* significant at 0.01; \* significant at 0.05; ns = not significant.

<sup>a)</sup> Equivalised incomes and consumption were divided by 1000 for all countries except Hungary, where the division was by 10000.

<sup>b)</sup> Reference variable for employment status: 'not in the labour force'.

Source: Authors' calculations from HILDA 2002, SOEP 2002, BHPS 2000, Tarki Panel 1996.

The results for the two countries where we have consumption measures are sharply different. In Hungary consumption is a stronger predictor of life satisfaction than either wealth or income, while in Britain it is not significant even at the 0.05 level. Plainly consumption is better measured in Hungary (15 items rather than 3), but it is not possible to assess whether there is a genuine inter-country difference here, or merely an apparent difference due to measurement error.

It may be noted that only the main effects of wealth, income and consumption were statistically significant; no significant interactions were detected. Also, the correlations among these variables, which are in the 0.35 to 0.55 range, are not so high as to give rise to problems of multicollinearity.

The variance accounted for by the three household economics measures, in combination with standard demographic, human capital, labour force variables and 'bad health', ranged from 8.4 % for Australia to 14.1 % for Hungary. Clearly, on this reading, economic circumstances make a far from trivial contribution to life satisfaction, and clearly their impact is stronger than previous research has concluded.

#### *Satisfaction with material standard of living*

Table 3 now provides evidence for assessing the net effects of income, wealth and consumption on satisfaction with material standard of living.

In all five countries wealth and income are both statistically significant at the 0.001 level in accounting for differences in satisfaction with standard of living. And in Hungary and Britain consumption too is significant at this level. Together with standard controls, the variance accounted for ranges from 13.0 % for Hungary to 22.3 % for The Netherlands. Not surprisingly this is considerably more variance than was accounted for in life satisfaction.

The evidence about the relative importance of wealth, income and consumption is somewhat distorted by the fact that in three countries – Britain, Germany and The Netherlands – the dependent variable is a measure of satisfaction with household income (not standard of living or financial situation), and thus provides a linguistic bias towards finding that income is more important than the other two measures. Even so, wealth appears to have as much or more impact than income in three of the five countries, although not perhaps in Germany and Britain.

Table 3: Impact of Income, Wealth and Consumption on Standard of Living Satisfaction: OLS Regressions

Explanatory variables	Australia 2002 Dependent variable		Germany 2002 Dependent variable		Netherlands 1997 Dependent variable		Britain 2000 Dependent variable		Hungary 1996 Dependent variable	
	SL satis. (0–100)		SL satis. (0–100)		SL satis. (0–100)		SL satis. (0–100)		SL satis. (0–100)	
	<i>b</i>	<i>Beta</i>	<i>b</i>	<i>Beta</i>	<i>b</i>	<i>Beta</i>	<i>b</i>	<i>Beta</i>	<i>b</i>	<i>Beta</i>
Equivalised income / 1000 <sup>a)</sup>	.13	.11***	.22	.22***	.16	.17***	.68	.20***	.07	.10***
Net worth (ln)	2.40	.19***	.72	.15***	1.37	.23***	1.17	.13***	.51	.10***
Equivalised consumption / 1000 <sup>a)</sup>	na		na		na		.94	.07***	.20	.14***
Sex ( <i>f</i> = 1, <i>m</i> = 0)	1.31***		1.21***		.82***		1.39***		–.49 <sup>ns</sup>	
Age	–1.27***		–.79***		–.64***		–1.20***		–1.63***	
Age <sup>2</sup> / 10	.16***		.09***		.07***		.14***		.15***	
Partnered (1–0)	3.97***		4.10***		4.18***		3.42***		3.75***	
Education: Years	.53***		.25**		.88***		.15***		.12 <sup>ns</sup>	
Working <sup>b)</sup> (1–0)	4.67***		.25 <sup>ns</sup>		7.74***		.65 <sup>ns</sup>		–1.50 <sup>ns</sup>	
Unemployed <sup>b)</sup> (1–0)	–12.02***		–13.33***		–5.08**		–10.71***		–6.15***	
Bad health (1–0)	–5.49***		–5.78***		–5.54***		–9.71***		–1.09**	
Constant	36.67***		57.20***		55.91***		58.45***		66.42***	
R <sup>2</sup>	8.0%		16.9%		22.3%		15.5%		13.0%	
N	11755		9958		5280		14101		3055	

Notes: \*\* significant at 0.001 level; \* significant at 0.01; \* significant at 0.05; ns = not significant.

<sup>a)</sup> Equivalised incomes and consumption were divided by 1000 for all countries except Hungary, where the division was by 10000.

<sup>b)</sup> Reference variable for employment status: 'not in the labour force'.

Source: Authors' calculations from HILDA 2002, SOEP 2002, SEP 1997, BHPS 2000, Tarki Panel 1996.

#### 4. Discussion

Arguably, our results have implications both for the psychology literature on happiness and for welfare economics. The implications for psychology are obvious and just involve a modified understanding of what matters to happiness or SWB. The implications for economics are more subtle. If the ‘revealed preferences’ approach survives the challenges it currently faces, then research on happiness will presumably remain on the fringe of economics. If, on the other hand, it comes to be accepted by increasing numbers of economists that gains in utility cannot be validly inferred from gains in consumption and leisure, then issues will arise about the need for direct measurement of utility/happiness. It will then be comforting to know that household living standards matter significantly to happiness.

A final editorial remark. Nothing in this paper should be read as indicating that psychologists have got it wrong in claiming that personality and personal relationships matter a lot more to happiness than money and material well-being. Nor do we necessarily deny the claim by some psychologists that giving top priority to material gain is toxic to happiness (Nickerson et al., 2003). All we claim is that by including wealth and consumption, as well as income, on the right hand side of equations, we have shown that money matters more to happiness than previously believed.

#### References

- Andrews, F. M. / Withey, S. B. (1976): Social Indicators of Well-Being: Americans’ Perceptions of Quality of Life, New York.*
- Argyle, M. (1987): The Psychology of Happiness, London.*
- Australian Bureau of Statistics (ABS) (1999): Household Expenditure Survey, Canberra.*
- Bradburn, N. M. (1969): The Structure of Psychological Well-Being. Chicago.*
- Brickman, P. / Coates, D. D. / Janoff-Bulman, R. (1978): Lottery winners and accident victims: is happiness relative?, Journal of Personality and Social Psychology 36, 917–27.*
- Buhmann, B. / Rainwater, L. / Schmaus, G. / Smeeding, T. N. (1988): Equivalence scales, well-being, inequality and poverty: sensitivity estimates across ten countries, using the Luxembourg Income Study (LIS) database, The Review of Income and Wealth 34, 115–42.*
- Campbell, A. / Converse, P. E. / Rodgers, W. L. (1976): The Quality of American Life: Perceptions, Evaluations, and Satisfactions, New York.*
- Diener, E. / Suh, E. M. / Lucas, R. E. / Smith, H. L. (1999): Subjective well-being: three decades of progress, Psychological Bulletin 125, 276–302.*

- Diener, E. / Biswas-Diener, R.* (2002): Will money increase subjective well-being? A literature review and guide to needed research, *Social Indicators Research* 57, 119 – 169.
- Duesenberry, J. S.* (1949): *Income, saving and the theory of consumer behavior*, Cambridge.
- Easterlin, R. A.* (1974): Does economic growth improve the human lot? Some empirical evidence. In: P. A. David / M. W. Reder (eds): *Nations and Households in Economic Growth: Essays in Honor of Moses Abramowitz*, New York, 89 – 125.
- Frey, B. S. / Stutzer, A.* (2002): What can economists learn from happiness research?, *Journal of Economic Literature* 40, 402 – 435.
- Hollaender, H.* (2001): On the validity of utility statements: standard theory versus Duesenberry's, *Journal of Economic Behavior and Organization* 45, 227 – 49.
- Mullis, R. J.* (1992): Measures of economic well-being as predictors of psychological well-being, *Social Indicators Research* 26, 119 – 135.
- Nickerson, C. / Schwarz, N. / Diener, E. / Kahnemann, D.* (2003): Zeroing in on the dark side of the American Dream: a closer look at the negative consequences of the goal for financial success, *Psychological Science* 14, 531 – 36.
- Samuelson, P. A.* (1938): A note on the pure theory of consumer's behavior, *Economica* 5, 61 – 71.