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The Asymmetric Effects of Macroeconomic Performance on Happiness: Evidence for the EU

An analysis of data from the Eurobarometer finds evidence of the asymmetric effects of macroeconomic performance on happiness. The evidence reveals that the negative effect of an economic recession on happiness can be at least twice the positive effect of economic growth. In short, a single year of recession can undo the happiness gains from years of economic growth. Moreover, while this evidence focuses on a short-run asymmetry, it nonetheless supports the Easterlin paradox of a nil relationship between macroeconomic performance and happiness. The evidence indicates that stable rather than rapid economic growth is a more sensible target for policymakers, because macroeconomic stability can lead to conditions that allow the pursuit of happiness and thus secure greater well-being.

Kahneman and Tversky demonstrated that, in risky settings, negative events elicit much stronger effects than positive ones do.[1] Losing money in a bet, for instance, results in a more intense emotional experience than winning the same amount. Their subsequent research findings, however, emphasise that the asymmetry in effects can occur in riskless situations as well.[2] Losing or letting go of a thing that is valuable to a person is a more emotional experience than finding or receiving an identical replacement. These asymmetric effects are a significant conclusion, one that challenges the conventional view in economics that, given the assumption of rationality and well-defined preferences, the valuations of things, events or states must be the same in absolute terms.[3] This view also applies at the macro level.[4]

Most of the studies in the Kahneman-Tversky tradition look at the asymmetric property of valuations at the individual level.[5] For instance, Boyce et al. confirm the asymmetric effects of changes in money on happiness.[6] Studies that look into how individuals respond to variations in aggregate indicators include Barberis et al. on asset prices,[7] Dräger et al. on inflation,[8] De Neve et al.

1 D. Kahneman, A. Tversky: Prospect theory: An analysis of decision under risk, in: Econometrica, Vol. 47, No. 2, 1979, pp. 263-292. This was later affirmed in A. Tversky, D. Kahneman: Advances in prospect theory: Cumulative representation of uncertainty, in: Journal of Risk and Uncertainty, Vol. 5, No. 4, 1992, pp. 297-323.

2 A. Tversky, D. Kahneman: Loss aversion in riskless choice: A reference-dependent model, in: Quarterly Journal of Economics, Vol. 106, No. 4, 1991, pp. 1039-1061; see also R. Thaler: Toward a positive theory of consumer choice, in: Journal of Economic Behavior & Organization, Vol. 1, No. 1, 1980, pp. 39-60; D. Kahneman, J. Knetsch, R. Thaler: Anomalies: The endowment effect, loss aversion, and status quo bias, in: Journal of Economic Perspectives, Vol. 5, No. 1, 1991, pp. 193-206; and R. Baumeister, E. Bratslavsky, C. Finkenauer, K. Vohs: Bad is stronger than good, in: Review of General Psychology, Vol. 5, No. 4, 2001, pp. 323-370.

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3 A parallel body of literature in environmental valuation states that the willingness-to-pay (WTP) and the willingness-to-accept (WTA) are equal, provided the object of valuation is the same. However, the evidence indicates otherwise, because the estimates of WTA can reach six to seven times more than the estimates of WTP. See J. Horowitz, K. McConnell: A review of WTA / WTP studies, in: Journal of Environmental Economics and Management, Vol. 44, No. 3, 2002, pp. 426-447; and T. Tunçel, J. Hammitt: A new meta-analysis on the WTP/WTA disparity, in: Journal of Environmental Economics and Management, Vol. 68, No. 1, 2014, pp. 175-187.

4 C. Otrok: On measuring the welfare cost of business cycles, in: Journal of Monetary Economics, Vol. 47, No. 1, 2001, pp. 61-92; and R. Lucas: Macroeconomic priorities, in: American Economic Review, Vol. 93, No. 1, 2003, pp. 1-14.

5 For a survey, see e.g. N. Barberis: Thirty years of prospect theory in economics: A review and assessment, in: Journal of Economic Perspectives, Vol. 27, No. 1, 2013, pp. 173-196.

6 C. Boyce, A. Wood, J. Banks, A. Clark, G. Brown: Money, well-being, and loss aversion: Does an income loss have a greater effect on well-being than an equivalent income gain?, in: Psychological Sciences, Vol. 24, No. 1, 2013, pp. 2557-2562.

7 N. Barberis, M. Huang, T. Santos: Prospect theory and asset prices, in: Quarterly Journal of Economics, Vol. 96, No. 1, 2001, pp. 1-53.

8 L. Dräger, J. Menz, U. Fritsche: Perceived inflation under loss aversion, in: Applied Economics, Vol. 46, No. 3, 2014, pp. 282-293.

on economic growth,[9] and Binder and Coad on unemployment.[10] The few studies that look into how society in general responds to variations in aggregate indicators include Rosenblatt-Wisch on economic growth,[11] and Bowman et al. and Foellmi et al. on consumption,[12] but they do not look into the effects in terms of happiness at the country level.

This paper seeks to contribute to the literature with its determination of the asymmetric effects of macroeconomic performance on happiness at the country level. It utilises the country-level analysis in order to be consistent with the analysis of Easterlin.[13] The evidence indicates that a unit of economic recession produces a larger impact on happiness than does the same unit of economic growth, which implies that an economic recession can undo the gains from years of economic growth, at least with regard to happiness.

The paper in turn argues that stable, rather than rapid, economic growth is a more sensible goal for economic policy, because it can lead to secure living conditions that form the foundation on which everyone can pursue happiness and, in the end, experience greater social well-being. The paper further argues that the asymmetric effects of macroeconomic performance on happiness provide another explanation for the Easterlin paradox, or the nil long-run relationship between macroeconomic performance and happiness.[14] In a setting of economic insecurity and volatility, the pursuit of economic stability is back at the centre of policy debates.

Methodology

Consider a happiness function like $H_t = F[y_t]$, where H_t is the country-level average of happiness, y_t is the income stimulus and t is time. Here, assume $Fy_t \geq 0$. The expression considers only the income stimulus in order to streamline the presentation.

It is important to note that happiness is not what an external observer thinks about the internal state of being of another person. Rather, as Kahneman et al. and Holländer point out,[15] a report on "happiness" is a personal and direct expression of one's own situation.[16] Such an appraisal reflects one's experiences in the past and one's anticipations regarding the future. It is a truthful expression of a person's state of being, because there is arguably no incentive to do otherwise.

Studies find a high correlation between happiness and, say, success in careers[17] and in other life domains such as family life,[18] engagement in society,[19] good health[20] and longevity.[21] People who are happy display "genuine" smiles.[22] People who are happy are also rated happy by their spouses, relatives and friends.[23] Unsurprisingly, studies find that the

9 J. De Neve, G. Ward, F. De Keulenaer, B. Van Landeghem, G. Kavetsos, M. Norton: Individual experience of positive and negative growth is asymmetric: Evidence from subjective well-being data, Discussion Paper 1304, Centre for Economic Performance, 2015.

10 M. Binder, A. Coad: Heterogeneity in the relationship between unemployment and subjective wellbeing: A quantile approach, in: Economica, Vol. 82, No. 328, 2015, pp. 865-891.

11 R. Rosenblatt-Wisch: Loss aversion in aggregate macroeconomic time series, in: European Economic Review, Vol. 52, No. 7, 2008, pp. 1140-1159.

12 D. Bowman, D. Minehart, M. Rabin: Loss aversion in a consumption-savings model, in: Journal of Economic Behavior & Organization, Vol. 38, No. 2, 1999, pp. 155-178; and R. Foellmi, R. Rosenblatt-Wisch, K. Schenk-Hoppe: Consumption paths under prospect utility in an optimal growth model, in: Journal of Economic Dynamics and Control, Vol. 35, No. 3, 2011, pp. 273-281.

13 R. Easterlin: Does economic growth improve the human lot? Some empirical evidence, in: P. David, M. Reder (eds.): Nations and households in economic growth: Essays in honor of Moses Abramovitz, New York 1974, Academic Press, pp. 89-125; R. Easterlin: Will raising the incomes of all increase the happiness of all?, in: Journal of Economic Behavior & Organization, Vol. 27, No. 1, 1995, pp. 35-47; R. Easterlin: Income and happiness: Towards a unified theory, in: Economic Journal, Vol. 111, No. 473, 2001, pp. 465-484; and R. Easterlin: Paradox Lost?, IZA Discussion Paper 9676, Institute for the Study of Labor, 2016.

14 Ibid.

15 D. Kahneman, P. Wakker, R. Sarin: Back to Bentham? Explorations on experienced utility, in: Quarterly Journal of Economics, Vol. 112, No. 2, 1997, pp. 375-405; and H. Holländer: On the validity of utility statements: Standard theory versus Duesenberry's, in: Journal of Economic Behavior & Organization, Vol. 45, No. 3, 2001, pp. 227-249.

16 Textbook discussion of happiness and related concepts are available in B. Frey: Happiness: A revolution in economics, Cambridge 2008, MIT Press; and S. Oishi: The psychological wealth of nations, Malden 2012, Wiley-Blackwell. I point out that there are three types of happiness: emotional happiness, evaluation happiness and eudaimonia happiness. Most research that deals with economic concepts uses evaluation happiness.

17 E. Diener, C. Nickerson, R. Lucas, E. Sandvik: Dispositional affect and job outcomes, in: Social Indicators Research, Vol. 59, No. 3, 2002, pp. 229-259.

18 S. Lyubomirsky, L. King, E. Diener: The Benefits of Frequent Positive Affect: Does Happiness Lead to Success, in: Psychological Bulletin, Vol. 131, No. 6, 2005, pp. 803-855.

19 C. Guven: Are happier people better citizens?, in: Kyklos, Vol. 64, No. 2, 2011, pp. 178-192.

20 J. Weinman, M. Ebrecht, S. Scott, J. Walburn, M. Dyson: Enhanced wound healing after emotional disclosure intervention, in: British Journal of Health Psychology, Vol. 13, No. 1, 2008, pp. 95-102.

21 D. Danner, D. Snowdon, W. Friesen: Positive emotions in early life and longevity: Findings from the nun study, in: Journal of Personality and Social Psychology, Vol. 80, No. 5, 2001, pp. 804-813.

22 P. Ekman, R. Davidson, W. Friesen: The Duchenne Smile: Emotional Expression and Brain Physiology II, in: Journal of Personality and Social Psychology, Vol. 58, No. 2, 1990, pp. 342-353.

23 P. Costa, R. McCrae: Personality in adulthood: A six-year longitudinal study of self-reports and spouse ratings on the NEO personality inventory, in: Journal of Personality and Social Psychology, Vol. 54, No. 4, 1988, pp. 853-863; and E. Sandvik, E. Diener, L. Seidlitz: Subjective well-being: The convergence and stability of self-report and non-self-report measures, in: Journal of Personality, Vol. 61, No. 3, 1993, pp. 317-342.

loss of a job[24] or the dissolution of a marriage always reduces happiness.[25] Research shows that the appraisal of one's life is distinct from one's appraisal of the prevailing political and social conditions.[26] Indeed, there are also studies that find no correlation between the level of happiness and the level of economic welfare.[27] The studies imply that the internal and external states of well-being are separable and independently measurable.[28] There is nonetheless a suggestion that the measurement of happiness has value because it reflects a person's internal state of being.[29]

Studies also find that the reports on happiness are relatively stable and consistent across time,[30] as long as no extraordinary or serious life events occurred after an initial interview.[31] Thus, barring such events, a person who is happy at time t will also be happy at time t+1.[32]

There are now well-developed procedures for obtaining happiness data.[33] Nonetheless, there is an ongoing debate on the cardinality of reported happiness. Few in economics agree,[34] yet elsewhere in the social sciences, the cardinality of reported happiness is a standard assumption. However, as e.g. Ferrer-i-Carbonell and Frijters argue, the inference is qualitatively the same regardless of the assumption used on the measure of happiness.[35]

Given the foregoing premise, the following is thus asserted: happiness, h_t, represents a positive monotonic transformation of the internal state of being, h_t^*. There can be discrepancies between the internal state and its external articulation because of human error. Now, allowing for the law of large numbers and the normality in the human error, it is argued that $h_t \equiv h_t^*$. Assuming h_t is a cardinal number, then it is possible to get a country-level average of happiness, H_t. Moreover, assuming that people share the same concerns (e.g. live a good life, enjoy pleasant health and benefit from a satisfying job), notwithstanding the tendency of people to compare their conditions with those of others, then putting together h_t to obtain an aggregate measure like H_t is meaningful.

Therefore, it is possible to consider a structural model for an analysis of the effect of y_t on H_t like

$$H_{kt} = \alpha + \sum_{j=0}^{t} \beta_{1j}\, y^{+}_{k,t-j} + \sum_{j=0}^{t} \beta_{2j} \left| y^{-}_{k,t-j} \right| + \pi \ln \mathrm{GDP}_{kt} + e_{kt} \quad (1)$$

where y^+ is the actual value of a positive income stimulus for a country k and zero otherwise, y^- is the actual value of a negative income stimulus for a country k and zero otherwise, GDP is the gross domestic product per capita of the country, t is time, and j is the time lag from 0 to t. Alternatively, the positive and negative stimuli can be read as economic growth and economic recession, respectively.

Equation (1) follows Deaton, Di Tella and MacCulloch, and Inglehart et al., among others, in including the GDP per capita as a control for the effect of living standard trends on happiness.[36] The model excludes other factors, and so the evidence presented needs to be interpreted with some caution. The parameter ϖ is interpreted as a numer-

24 A. Clark, E. Diener, Y. Georgellis, R. Lucas: Lags and leads in life satisfaction: A test of the baseline hypothesis, in: Economic Journal, Vol. 118, No. 529, 2008, pp. F222-F243.

25 N. Marks, J. Lambert: Marital status continuity and change among young and midlife adults: Longitudinal effects on psychological well-being, in: Journal of Family Issues, Vol. 19, No. 6, 1998, pp. 652-686.

26 For political conditions, see F. Andrews, S. Withey: Social indicators of well-being, New York 1976, Plenum Press. For social conditions, see M. Hooghe: I am happy, hope you're happy too: Examining the different dynamics of individual subjective well-being and view on society, in: Journal of Happiness Studies, Vol. 13, No. 1, 2012, pp. 17-29.

27 R. Easterlin: Does economic growth…, op. cit.; R. Easterlin: Will raising the incomes…, op. cit.; R. Easterlin: Income and happiness…, op. cit.; and R. Easterlin: Paradox Lost…, op. cit.

28 R. Lucas, E. Diener, E. Suh: Discriminant validity of well-being measures, in: Journal of Personality and Social Psychology, Vol. 71, No. 3, 1996, pp. 616-628; and E. Diener, R. Emmons: The independence of positive and negative affect, in: Journal of Personality and Social Psychology, Vol. 47, No. 5, 1985, pp. 71-75.

29 R. Lucas et al., op. cit.; and E. Diener, R. Inglehart, L. Tay: Theory and validity of life satisfaction scale, in: Social Indicators Research, Vol. 112, No. 3, 2013, pp. 497-527.

30 F. Andrews, S. Withey, op. cit.; and J. Ehrhardt, W. Saris, R. Veenhoven: Stability of life satisfaction over time: Analysis of change in ranks in a national population, in: Journal of Happiness Studies, Vol. 1, No. 2, 2000, pp. 177-205.

31 E. Diener, R. Larsen: Temporal stability and cross-situational consistency of affective, behavioral, and cognitive responses, in: Journal of Personal and Social Psychology, Vol. 47, No. 4, 1984, pp. 580-592; P. Costa, R. McCrae, op. cit.; and U. Schimmack, S. Oishi: The influence of chronically and temporarily accessible information on life satisfaction judgments, in: Journal of Personality and Social Psychology, Vol. 89, No. 3, 2005, pp. 395-406.

32 There is the possibility of adaptation to extraordinary or serious life events. See R. Easterlin: Income and happiness, op. cit.; and A. Clark et al., op. cit.

33 See, for example, F. Andrews, J. Robinson: Measures of subjective well-being, in: J. Robinson, P. Shaver, L. Wrightsman (eds.): Measures of personality and social psychological attitudes, San Diego 1991, Academic Press, pp. 61-114; D. Kahneman, E. Diener, N. Schwarz: Well-being: The foundations of hedonic psychology, New York 1999, Russell Sage Foundation; and M. Eid, R. Larsen: The science of subjective well-being, New York 2008, Guilford Press.

34 Exceptions include Y.-K. Ng: A case for happiness, cardinalism, and interpersonal comparability, in: Economic Journal, Vol. 107, No. 445, 1997, pp. 1848-1858; and B. van Praag, A. Ferrer-i-Carbonell: Happiness quantified: A satisfaction calculus approach, Oxford 2004, Oxford University Press.

35 A. Ferrer-i-Carbonell, P. Frijters: How important is methodology for the estimates of the determinants of happiness, in: Economic Journal, Vol. 114, No. 479, 2004, pp. 641-659.

36 A. Deaton: Income, health, and well-being around the world: Evidence from the Gallup World Poll, in: Journal of Economic Perspectives, Vol. 22, No. 2, 2008, pp. 53-72; R. Di Tella, R. MacCulloch: Gross national happiness as an answer to the Easterlin Paradox, in: Journal of Development Studies, Vol. 86, No. 1, 2008, pp. 22-42; and R. Inglehart, R. Foa, C. Peterson, C. Welzel: Development, freedom, and rising happiness, in: Perspectives on Psychological Science, Vol. 3, No. 4, 2008, pp. 264-285.

aire for the valuation of the income stimuli.[37] As such, $\sum_{j=0}^{t} \beta_{1j} / \pi$ shows how much society is "willing to pay" for a positive income stimulus, and $\sum_{j=0}^{t} \beta_{2j} / \pi$ shows the compensation that society is "willing to accept" for a negative income stimulus. The ratio $\Omega = \left| \sum_{j=0}^{t} \beta_{2j} / \sum_{j=0}^{t} \beta_{1j} \right|$ is the degree of asymmetric effects of macroeconomic performance on happiness.

The model in Equation (1) uses a segmented regression procedure in the same fashion as Shea and Bowman et al.[38] But a stepwise regression approach is also used because there is no prior information on the appropriate number of lags for the right-hand side variables, although the extant studies find evidence for short time lags on the income stimuli. More specifically, income stimulus lags are stopped when the coefficient on the next lag turns out to be statistically not significant.

There is one more item to mention before proceeding to the next step of the study, and it concerns the size of Ω. In both Kahneman and Tversky as well as in Tversky and Kahneman, it is pointed out that the effect of a loss is in general twice the effect of a gain.[39] It is therefore argued that one way to validate the asymmetric effects of macroeconomic performance on happiness is to obtain $\Omega \geq 2$.

Description of the data and sources

The key variables used in the regression analysis are country-level average happiness and macroeconomic performance. The annual mean of life satisfaction of a country is used as a proxy measure for happiness. The raw data consists of the responses to the query "*On the whole, are you very satisfied, fairly satisfied, not very satisfied, not at all satisfied with the life you lead?*" with 4 (maximum), 3, 2 and 1 (minimum) as their respective numerical representations. With the assumption of cardinality, a country-level average can be obtained that is also between 4 and 1.

The proxy measure used for macroeconomic performance is the annual rate of economic growth or recession of a country. The data is segmented into positive and negative stimuli, as defined in Equation (1). For the analysis, however, the absolute value of the economic recession is used to make the results of the negative income stimulus easier to interpret. The GDP per capita is the measure for the standard of living in a country.

The database used for the regression analysis covers the period 1995 to 2014 – the longest publicly available annual data – and includes 15 European countries. The data for happiness comes from the Eurobarometer survey. The data for economic growth rates and GDP per capita is from the World Development Indicators.

Results

Descriptive statistics

Table 1 presents the country-level averages of happiness for 15 countries in the period 1995-2014. It shows Denmark had the highest figure for the period and Portugal the lowest. The difference between the two suggests a large amount of variation in happiness among the countries in the sample. The table also shows that three countries had lower happiness in 2014 relative to their 1995 figure (Portugal, Italy and Greece) and that five countries had essentially the same level of happiness at both the beginning and the end of the 20-year period (Denmark, Ireland, Luxembourg, Netherlands and Spain). While not shown in this table, the annual figures reveal declining happiness trends in Spain, Italy, Portugal and Greece since 2007 and relatively "steady" trends for the rest of the countries. Of course, the global financial crisis in 2008-2009 and the economic crisis in Europe thereafter are part of the reason for the recent declines in happiness in these four countries.[40] For the 15 countries as a group, Table 1 shows a trivial increase in the overall happiness in Europe between 1995 and 2014.

Table 2 presents the country-level averages of macroeconomic performance. Nearly all the countries registered a drop in their annual performance between 1995 and 2014, which is in large part due to the global financial crisis and the ensuing economic crisis in Europe. Moreover, the trend is also consistent with the view that the macroeconomic performance of the advanced capitalist economies

37 See H. Welsch, J. Kühling: Using happiness data for environmental valuation: issues and applications, in: Journal of Economic Surveys, Vol. 23, No. 2, 2009, pp. 385-406; and B. Frey, S. Luechinger, A. Stutzer: The life satisfaction approach to environmental valuation, in: Annual Review of Resource Economics, Vol. 2010, No. 1, 2010, pp. 139-160.

38 J. Shea: Union contracts and the life-cycle/permanent-income hypothesis, in: American Economic Review, Vol. 85, No. 1, 1995, pp. 186-200; and D. Bowman et al., op. cit.

39 D. Kahneman, A. Tversky: Choices, values, and frames, in: American Psychologist, Vol. 39, No. 4, 1984, pp. 341-350; and A. Tversky, D. Kahneman: Advances in…, op. cit. See also M. Rabin, R. Thaler: Anomalies: Risk aversion, in: Journal of Economic Perspectives, Vol. 15, No. 1, 2001, pp. 219-232.

40 B. Greve: The impact of the financial crisis on happiness in affluent European countries, in: Journal of Comparative Social Welfare, Vol. 28, No. 3, 2012, pp. 183-193; D. Blanchflower, D. Bell, A. Montagnoli, M. Moro: The happiness trade-off between unemployment and inflation, in: Journal of Money, Credit and Banking, Vol. 46, No. S2, 2014, pp. 117-141; and H. Welsch, J. Kühling: How has the crisis of 2008-2009 affected subjective well-being? Evidence from 25 OECD countries, in: Bulletin of Economic Research, Vol. 68, No. 1, 2016, pp. 34-54.

Table 1
Happiness in the EU, 1995-2014
Index

Country	Average	Maximum	Minimum	Range	Start 1995	End 2014	End-Start
Austria	3.02	3.23	2.92	0.31	3.03	3.23	0.20
Belgium	3.10	3.23	2.91	0.32	3.09	3.19	0.10
Denmark	3.61	3.68	3.51	0.17	3.60	3.68	0.08
Finland	3.21	3.32	3.07	0.25	3.15	3.31	0.16
France	2.89	3.03	2.72	0.31	2.76	3.03	0.27
Germany	2.97	3.19	2.73	0.46	2.93	3.19	0.26
Greece	2.51	2.74	2.04	0.70	2.52	2.20	-0.32
Ireland	3.17	3.31	3.02	0.29	3.18	3.27	0.09
Italy	2.76	2.89	2.52	0.37	2.86	2.66	-0.20
Luxembourg	3.31	3.45	3.19	0.26	3.33	3.33	0.00
Netherlands	3.39	3.49	3.22	0.27	3.39	3.48	0.09
Portugal	2.48	2.67	2.13	0.54	2.60	2.42	-0.18
Spain	2.93	3.13	2.77	0.36	2.81	2.86	0.05
Sweden	3.37	3.46	3.26	0.20	3.32	3.46	0.14
United Kingdom	3.18	3.34	3.01	0.33	3.12	3.34	0.22
Group average	3.06	3.21	2.87	0.34	3.05	3.11	0.06

Note: Data is based on a four-point scale, where 4 = maximum and 1 = minimum.

Source of raw data: Eurobarometer.

Table 2
Economic growth rates in the EU, 1995-2014
in %

Country	Average	Maximum	Minimum	Range	Start 1995	End 2014	End-Start
Austria	1.86	3.62	-3.80	7.42	2.67	0.35	-2.31
Belgium	1.82	3.71	-2.28	6.00	2.38	1.35	-1.04
Denmark	1.32	3.80	-5.09	8.88	3.07	1.09	-1.98
Finland	2.34	6.25	-8.27	14.52	4.21	-0.40	-4.61
France	1.60	3.88	-2.94	6.82	2.09	0.18	-1.91
Germany	1.33	4.08	-5.62	9.70	1.74	1.60	-0.14
Greece	0.98	5.79	-9.13	14.93	2.10	0.65	-1.45
Ireland	5.01	11.18	-5.64	16.82	9.63	5.20	-4.44
Italy	0.59	3.71	-5.48	9.19	2.89	-0.44	-3.33
Luxembourg	3.51	8.44	-5.38	13.82	1.43	4.07	2.64
Netherlands	1.96	5.05	-3.77	8.82	3.12	1.01	-2.10
Portugal	1.31	4.79	-4.03	8.82	4.28	0.91	-3.38
Spain	2.09	5.29	-3.57	8.86	2.76	1.36	-1.40
Sweden	2.47	5.99	-5.18	11.17	4.02	2.33	-1.69
United Kingdom	2.27	4.92	-4.19	9.11	4.92	2.94	-1.98
Group average	2.03	5.37	-4.96	10.33	3.42	1.48	-1.94

Source of raw data: World Development Indicators.

declined after the 1960s.[41] Notice, too, that the figures in the mid-2010s in Table 2 are about half their mid-1990s levels.

From Tables 1 and 2, a statistically not significant partial correlation is obtained between the country-level average of happiness and macroeconomic performance (pr = -0.018, p = 0.951). The result is the same for the difference between the first and last reported entries (end-start) of the two variables (pr = -0.117, p = 0.691). In a way, these findings present initial evidence in support of the Easterlin paradox.

Empirical findings

Table 3 presents various regression outputs. The evidence should be read with some caution because the findings may be unique to the database used in the analysis. Nonetheless, the estimates are in line with the literature. Recall that GDP per capita is included in order to control for the trends in standard of living and as a numeraire for the valuation of macroeconomic performance. The segmented values of GDP per capita are included in Table 3 in order to check the robustness of the results.

The baseline result in Model 1 already indicates an asymmetry in the effects of the income stimuli on happiness. The subsequent analyses suggest that lags on both the positive and the negative income stimuli may be necessary. Put another way, the results in Models 2-5 reveal income adaptation.[42] They present qualitatively the same results in terms of the asymmetric effects of macroeco-

41 A. Maddison: Growth and slowdown in advanced capitalist economies: Techniques of quantitative assessment, in: Journal of Economic Literature, Vol. 25, No. 2, 1987, pp. 649-698; S. Marglin, J. Schor: The golden age of capitalism, Oxford 1990, Oxford University Press; and G. Dumenil, D. Levy: Capital resurgent, Cambridge 2004, Harvard University Press.

42 See R. Easterlin: Income and happiness..., op. cit; R. Di Tella, R. MacCulloch, A. Oswald: Macroeconomics of happiness, in: Review of Economics and Statistics, Vol. 85, No. 4, 2003, pp. 809-827; R. Di Tella, J. De New, R. MacCulloch: Happiness adaptation to income and to status in an individual panel, in: Journal of Economic Behavior & Organization, Vol. 76, No. 3, 2010, pp. 834-852; S. Paul, D. Guilbert: Income–happiness paradox in Australia: Testing the theories of adaptation and social comparison, in: Economic Modelling, Vol. 30, No. 1, 2013, pp. 900-910; and A. Clark: Adaptation and the Easterlin Paradox, in: T. Tachibanaki (ed.): Advances in Happiness Research: A Comparative Perspective, New York 2016, Springer, pp. 75-94.

nomic performance on happiness. However, the results for Models 2 and 4 represent a more parsimonious model than those for Models 3 and 5.

In any case, the sum of the coefficients of economic recession is larger than the sum of the coefficients of economic growth. The valuation of the income stimuli in turn indicates that economic recession "costs" from six to nine per cent of GDP per capita, whereas economic growth "costs" from three to four per cent of GDP per capita, a finding that is consistent with De Neve et al.[43] The ratio of the negative to positive income stimuli is at least two to one, which coheres with Kahneman and Tversky as well as with Tversky and Kahneman.[44]

Note that the coefficient of GDP per capita is in fact a small number. That is, from Table 3, a unit change in the standard of living in Europe each year could raise happiness by only 0.007 point on a 0 to 4 scale. Alternatively, using the group average information in Table 2, happiness could reach an average of 2.73 with a doubling in the standard of living in Europe after 35 years of sustained macroeconomic performance. Such a finding is remarkable in the present European context, in which the political and economic configuration makes economic growth for even a few years a significant challenge, and in the context of the overall declining macroeconomic performance of advanced economies since the 1960s. Overall, I argue that this finding on the small effect of GDP per capita on happiness coheres with the Easterlin paradox.

What do the findings imply for public policy? One implication relates to the nature of economic cycles and the consequences in the context of happiness. Consider, for instance, an economic cycle with the following attributes: two per cent economic growth annually over a period of four years and then two per cent economic recession in the fifth year. If this (admittedly simplified) economic cycle repeats itself several times, the findings in Table 3 suggest that the level of happiness in the fifth year could turn out to be lower than in the first year of each cycle. Certainly, if economic crises are more frequent[45] and more severe today because of neoliberalism,[46] and if the volatility of economic cycles affects the quality of macroeconomic performance,[47] then it should not be unusual to find that increasing happiness, and then sustaining it at an elevated level, is not feasible in the long term. In a way, then,

Table 3
Regression output

Dependent variable: Happiness, H_t	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-4.253 < 0.000	-4.063 < 0.000	-4.382 < 0.000	-3.951 < 0.000	-4.169 < 0.000
Economic growth, t	0.020 < 0.000	0.014 0.003	0.010 0.032	0.013 0.007	0.008 0.079
Economic growth, t-1		0.011 0.020	0.007 0.194	0.011 0.018	0.007 0.189
Economic growth, t-2			0.011 0.017		0.012 0.010
Economic recession, t	-0.043 < 0.000	-0.024 0.001	-0.032 < 0.000	-0.021 0.010	-0.028 0.001
Economic recession, t-1		-0.030 < 0.000	-0.010 0.268	-0.030 < 0.000	-0.010 0.269
Economic recession, t-2			-0.020 0.008		-0.021 0.006
GDP per capita (ln), t	0.704 < 0.000	0.681 < 0.000	0.713 < 0.000		
GDP per capita (ln) in expansion years				0.671 < 0.000	0.694 < 0.000
GDP per capita (ln) in contraction years				0.668 < 0.000	0.690 < 0.000
Time fixed effects	Yes	Yes	Yes	Yes	Yes
R-squared	0.656	0.657	0.669	0.657	0.669
Value of pos. stimulus, % GDP per cap.	0.028	0.037	0.039	0.036	0.039
Value of neg. stimulus, % GDP per cap.	-0.061	-0.079	-0.087	-0.076	-0.086
Ratio of the income stimuli, Ω	2.2	2.2	2.3	2.1	2.2

Notes: 1. The results are from a panel regression with random effects (Hausman test p-value = not significant). The numbers below the parameters are p-values. The results of the Wald test for joint significance of time dummies as zero are $p < 0.000$, for all specifications. The dependent variable H_t is the country-level average of happiness. The table does not show the results for the subsequent lags on the income stimuli because they are statistically not significant.

2. Recall, the valuation procedures are $\left|\sum_{j=0}^{t} \beta_{1j} / \pi\right|$ and $\left|\sum_{j=0}^{t} \beta_{1j} / \pi\right|$ for the respective income stimuli; and the ratio $\Omega = \left|\sum_{j=0}^{t} \beta_{2i} / \sum_{j=0}^{t} \beta_{1i}\right|$ represents the degree of asymmetric effects of macroeconomic performance.

3. List of countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Source: Author's calculations.

43 J. De Neve et al., op. cit.

44 D. Kahneman, A. Tversky: Choices, values..., op. cit.; and A. Tversky, D. Kahneman: Advances in prospect..., op. cit.

45 M. Bordo, B. Eichengreen, D. Klingsbiel, M. Martinez-Peria: Is the crisis problem growing more severe?, in: Economic Policy, Vol. 16, No. 32, 2001, pp. 51-82; and C. Kindleberger: Manias, panics, and crashes, Hoboken 2005, John Wiley.

46 S. Marglin, J. Schor, op. cit.; and G. Dumenil, D. Levy, op. cit. See also M. Blyth: Austerity, Oxford 2013, Oxford University Press.

47 G. Ramey, V. Ramey: Cross-country evidence on the link between volatility and growth, in: American Economic Review, Vol. 85, No. 5, 1995, pp. 1138-1151; and P. Martin, C. Rogers: Long-term growth and short-term economic instability, in: European Economic Review, Vol. 44, No. 2, 2000, pp. 359-381.

a singular focus on macroeconomic performance might be a losing strategy in the context of happiness, given the nature of capitalism.

A related implication of the findings relates to economic recession itself. A recession can be very disruptive and damaging to society, enhancing feelings of insecurity and putting greater strain on people. Policies must thus seek to lessen this impact. The two critical elements of policy are the timeliness of assistance to those affected by recessions and the coordination of responses across the affected sectors in order to help moderate the harm and trigger economic recovery. This can be difficult when a recession in one area begins to spill over to others, but the key is for all sectors to cooperate toward a coordinated response across the afflicted areas.

Moreover, given that both support and spending must continue for several years in order to avert a relapse, the required endeavour for a recovery can be expensive to pursue. Thus, countries with public finance constraints may end up with partial or weak responses in the absence of external help. Once again, cooperation is vital. The need for political courage to forge a collective response becomes critical.

A further implication of the findings relates to a Keynesian approach to the management of macroeconomic performance. While it is clearly not realistic to get rid of economic cycles in a capitalist system, it is possible to curb their frequency and moderate their intensity with the application of countercyclical policies – that is, policies that use a long-run timeframe and are precautionary in approach yet innovative in outlook. The procyclicality that characterises policies today (e.g. economic austerity in times of recessions) not only aggravates but also prolongs the economic malaise. Controlling the irrationalities of capitalism is then a sensible goal for government.

The Easterlin paradox asserts that macroeconomic performance and happiness do not correlate in the long term. In other words, macroeconomic performance and happiness are dissimilar concepts: the former measures the well-being of an economy, whereas the latter measures the well-being of the people. Such a disconnect exists because capitalism values achievement, competition and profitability much more than relationships, community and citizenship. Such a disconnect can worsen in an unstable macroeconomy because people are more concerned with the short-term goals of survival and security. Therefore, in securing the economy with policies that are long-term in character, the pursuit of things that are relevant to happiness becomes more possible.

A final implication of the findings is that policies to build the social conditions that enable people to advance their lives as far as possible and on their own terms must accompany the policies that aim to secure the macroeconomic performance of a country. Jobs, education, health care and safety matter in this regard, because they relate to how people can live and thrive and ultimately be happy. In this regard, regulation of the education system and the mass media is appropriate, because they play a role in turning a society into one that builds relationships, community and citizenship. More importantly, a complementarity between social policies and the aforementioned economic policies is indispensable if the purpose is to build a society that is not only robust and vibrant but also happy. These agendas are obviously in competition with one another, and so it is important that the government is flexible enough to allow and facilitate social participation in policymaking. This is not only to address the frustrations that can bring about indifference in some groups and resentment in others but also to forestall actions that can block its mission, which is to transform society into one that people have reason to value. In such a configuration, greater happiness can still be achieved despite economic cycles.

Conclusion

This paper analysed the impact of macroeconomic performance on happiness using data from the Eurobarometer. It found evidence that the negative effect of economic recession on happiness is at least twice the positive effect of economic growth on happiness. The results imply that economic recessions can reverse the happiness achieved after years of economic growth. In addition, the asymmetric effect of macroeconomic performance on happiness supports the Easterlin paradox.

The implications of the findings in this paper are straightforward. First, policy should focus more on keeping economic cycles in check. Second, social policies that seek to build a society that allows people to flourish on their own terms must complement the policies that seek economic stability. Third, the government needs to balance its pursuit of its economic and social objectives. More emphasis must be placed on achieving stable macroeconomic performance, as economic stability can bring about conditions that allow the pursuit of happiness and secure the attainment of greater well-being. Such a policy approach makes greater happiness possible, despite the reality of economic cycles.