

## CHAPTER 2

### LIFE SATISFACTION IN THE EC COUNTRIES 1975-1984

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*Did the Crisis really hurt? Effects of the 1980 – 1982 economic recession on satisfaction, mental health and mortality.*

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#### **Summary**

*Year to year fluctuations in economic growth in nine EC countries from 1975 to 1984 are compared with year to year fluctuations in life satisfaction. Variations in life satisfaction appear not to coincide with economic ups and downs, but there is a tendency for life satisfaction to follow economic fluctuations with a one year delay. Both average level of satisfaction ( $\bar{x}$ ) and spread in life satisfaction (SD) follow the economic tide. The effects are quite small and variable across countries. The effect is greatest in the countries that provide their citizens least social security.*

*The average level of life satisfaction appears somewhat more responsive to economic ups and downs among the poor, the unemployed and singles. The observed effects of economic ups and downs on life satisfaction mark short term fluctuations rather than a steady influence. In spite of substantial economic growth in the decade under review, the level of life satisfaction remained essentially the same.*

#### **1. RESEARCH QUESTIONS**

This paper considers the correlation between macro-economic fluctuations and satisfaction with life in nine EC countries between 1975 and 1984. As such it will also deal with the effects of the 1980/1982 recession. The focus is on the following four questions:

- A. Were economic fluctuations followed by corresponding changes in the average level of life satisfaction in these countries?
- B. Did the average level of life satisfaction appear more sensitive to economic ups and downs in the most vulnerable social categories?
- C. Did economic fluctuations affect the inequality in life satisfaction in the countries studied?
- D. Do the possible effects mark short-lived fluctuations in life satisfaction or steady increases/decreases?

## 2. DATA

### *Life satisfaction*

Time series data on satisfaction with life are drawn from the so-called Eurobarometer surveys. The Eurobarometer surveys are held twice a year among representative samples of all EC countries. The core questionnaire involves the following two questions on life satisfaction:

- a. On the whole: are you satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead? (1) very satisfied (2) fairly satisfied (3) not very satisfied (4) not at all satisfied.
- b. Taking all things together, how would you say things are these days, would you say you're very happy, fairly happy, or not too happy these days? (1) very happy (2) fairly happy (3) not too happy.

The last question was not included in the years 1980, 1981 and 1984, and is therefore dropped from the analysis. We concentrate on the question about 'satisfaction with life as a whole'. Yearly averages per country were computed by combining the spring survey with the autumn survey. These averages are presented in [appendix 1](#), the standard deviations in [appendix 2](#).

The Eurobarometer surveys started in 1975 and involved at that time the following countries: France, Belgium, the Netherlands, Germany, Italy, Luxembourg, Denmark, Ireland and the United Kingdom. In 1981 Greece was added. As the present analysis requires a time series of at least ten years, Greece was excluded from the analysis.

Reported satisfaction with life differs remarkably among these EC countries, for instance in 1979 the average was 3.5 in Denmark and 2.6 in Italy. These differences may to some extent be due to semantics and response styles. As the focus here is on changes within countries through time, this is not much of a problem to the present analysis.

### *Economic ups and downs*

Economic fluctuations were expressed in the year to year percentage change in real Gross Domestic Product per head of the population (GDP p/c). Data on GDP p/c per country were drawn from the OECD Historical Statistics (1987). Key figures are summarized in [appendix 3](#).

## 3. METHODOLOGY

### *Correlation of change*

To assess the impact of economic fluctuations on life satisfaction, product moment correlations were calculated for the year to year percentage change in GDP p/c.<sup>1</sup> These correlations were computed for each of the nine countries over the ten years. Hence correlations draw on only nine observations (nine changes from one year to another) which is clearly less than desirable from a statistical point of view. Both a simultaneous effect and a possible one-year-delay-effect were considered. For that purpose the correlations were computed for economic change and life

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<sup>1</sup> Ouweneel (1987) has reported a similar analysis on the same data. He correlated the year to year changes in GNP to the % change in life satisfaction rather than to average life satisfaction in the next year.

satisfaction in the same year as well as with life satisfaction one year later. Thus 18 correlations resulted (nine countries and two intervals). If economic ups and downs do affect life satisfaction, these correlations must characteristically be positive.

### *Deprived social categories*

The above analysis at the national level was repeated for specific social categories that are likely to be more vulnerable to economic fluctuations. The following categories appeared sufficiently represented in the data to allow an analysis: (1) the lowest income bracket (2) unemployed (3) singles.

The lowest income bracket is represented by the lowest income quartile. The category 'unemployed' includes 'real unemployed', as well as the retired, housewives, students and the military. The number of 'real' unemployed was in most countries too small to be included in this analysis. The retired and the housewives were sufficiently represented to be compared with the employed. The category of singles was represented in two different ways: First under 'marital status' as people without a steady life partner and second under 'household size' as people living alone. The following comparisons were made:

- the lowest income bracket versus the highest
- (all) unemployed versus employed
- the retired and housewives versus unemployed
- without a life partner versus with a life partner
- living alone versus people living with two or more.

If these categories are indeed more vulnerable, the correlations within these social categories must be typically higher than in the contrast categories. The differences in correlations were obtained by simply subtracting the one from the other. More or less arbitrarily a difference greater than .30 was considered to be noteworthy. [Appendix 4](#) shows the differences in correlations observed in the vulnerable social categories and their contrasts. The differences reflect the average differences in the nine EC countries involved.

### *Inequality in life satisfaction*

Inequality in life satisfaction within countries at different points in time was measured by the standard deviation in the combined year samples. Standard deviations were computed by means of the following formula:

$$SD = \left( \frac{f(x_i)}{n} \right)^2 - \frac{f(x_i)^2}{n}$$

i = category number; f = frequency of i; x = category; n = number of respondents; SD = standard deviation (source: Hays, page 162 (1981)).

The standard deviations are shown in [appendix 2](#). In order to find out whether economic fluctuations affect inequality in life satisfaction, these scores were correlated with the year to year percentage change in GDP p/c in each country. Again two time frames were considered which again yielded 18 correlations (nine countries and two time frames).

## 4. RESULTS

### 4.1 Does average life satisfaction vary with economic ups and downs?

The correlational data are presented in [scheme 1](#),

On average there appears to be no simultaneous correlation and only a modest correlation with one year delay. That implies that: economic ups and downs correspond more or less with life satisfaction one year later (see also the graphs in [appendix 5](#)). Thus there is support for the prediction made. However, this support is quite modest:  $r = +.19$ . It is even more modest if we consider the enormous variations between the countries. In four countries the correlations are consistently positive (Germany, Ireland, Luxembourg and Belgium), however, in the other countries they are not.

These correlations are based on the 1975-1984 period. The focus of this symposium is what happened in the years 1980-1982 in particular. Do we observe a relatively stronger correspondence between variations in the economy and average life satisfaction in this crisis period compared with the period before?

**Scheme 2** compares the corresponding and not corresponding year to year changes of GDP p/c and average life satisfaction one year later in both periods.

The percentages in **scheme 2** are based on 45 observed sequences in the pre-crisis period (9 countries x 5 years) and 36 sequences in the crisis period. In both periods about half the changes in average life satisfaction follow the direction of the changes in economic growth the year before. The other half of the observed changes in life satisfaction are in the opposite direction. In the crisis period and its aftermath no more corresponding changes appear. Hence the crisis does not stand out as a period of particular impact on life satisfaction.

### 4.2 Are derived social categories more sensitive to economic fluctuations?

**Scheme 3** presents the average differences in correlation between contrasting social categories. Correlations appear stronger in the deprived segments of the population.

It appears that in the lowest income brackets life satisfaction is indeed somewhat more affected by changes in the economy, both in the year the economic change is manifested and in the year thereafter. People outside the working force are also more sensitive to economic fluctuations. The effect of being single depends on whether one takes marriage as the criterion or household. It is not a love relation that matters, but whether one lives alone or not. Here the influence of the economy strikes in the same year.

### 4.3 Do economic ups reduce inequality in life satisfaction and do the downs increase inequality?

**Scheme 4** shows the year to year percentage change in GDP p/c correlated with the standard deviation of life satisfaction in these EC countries.

The results are very much like the situation for average life satisfaction: on average no simultaneous effect and a very modest delayed effect in the predicted direction. The greater the economic fluctuation, the greater the inequality in happiness. Again these average trends mask an enormous variation between the countries. In some countries the correlations are consistently positive (United Kingdom, Luxembourg, Ireland and Belgium) but in other countries they are consistently negative (France, Denmark and Italy). In Germany and the Netherlands simultaneous correlations are negative but the lagged correlations are positive.

Again it was investigated whether the effects of economic variation were more pronounced in the period of the crisis. Once more this appears not be the case (see [scheme 5](#)).

## 5. DISCUSSION

As we have seen the trend is in line with expectations, but the average correlations are low and there is a great variation between countries. Why are there not firmer and more consistent results?

There are two possible answers. One is that the effects of economic ups and downs depend very much on country characteristics and are therefore positive in some types of countries and negative in others. The other answer is that we are dealing with countries that share one important characteristic: that they are rich welfare states in which economic growth does not really add to life satisfaction any more and where ups and downs produce at best short-term ripples at an otherwise stable level of life satisfaction.

### 5.1 Are some countries more sensitive than others?

Are the countries in which positive correlations emerge different from the countries in which the correlation is negative? When we inspect **scheme 1** no systematic differences emerge. Obvious differences in economic development cannot explain the variation: the pattern of correlation is the same in rich Germany as in relatively poor Ireland. There is no consistent north-south variation nor is there a systematic difference between small and big countries. Another thing to note in **scheme 1** is that the pattern of correlations is not consistent in several countries: a negative simultaneous correlation but a positive delayed effect (Denmark, Italy) or stronger simultaneous correlation than at one year interval (Luxembourg, United Kingdom). Yet there is some system in this variation, at least in the lagged effects. The correlations tend to be highest in the countries where the social security expenditures are lowest:  $r = -.42$ . See **scheme 6**. Apparently welfare states do buffer the effects of economic fluctuation.

### 5.2 Ripples around a stable level of life satisfaction?

Considering these data on short-term economic fluctuations, we must realize that long term economic growth hardly adds to the level of life satisfaction in these rich countries. As shown by Veenhoven (1989d) national wealth is subject to a law of diminishing happiness returns. The relationship between GDP and happiness is curvilinear: moderately poor countries are happier than very poor countries, but very rich countries are hardly happier than moderately rich. This view is confirmed in our data. Though all countries have witnessed considerable economic growth in the period at hand (10 to 25%) the level of life satisfaction remained essentially the same. Furthermore, the changes to greater life satisfaction that do appear in some countries are no more frequent among the countries that showed the greatest economic growth, there is rather a tendency to the reverse. See **scheme 7**.

A second point to keep in mind is that we only found an effect at a one year delay. At a two year interval no further effect is found (see Ouweneel 1987, who analyzed the same data). This means that our correlations do not reflect glimpses of an upgoing curve, but rather oscillations around an almost horizontal baseline. This implies that we in fact deal with short lived variations in life satisfaction, rather than with enduring effects. These minor fluctuations in life satisfaction are likely to be heavily influenced by the current opinion, climate, reactions in the press and salient happenings in the country. If so, that could explain the great variation in effects between

countries: where the crisis as such has no compelling impact, the local views on it determine the scene.

## 6. CONCLUSION

During the last few decades economic ups and downs in the nine EC countries tended to be followed by slight changes in life satisfaction one year later. Average life satisfaction rose somewhat after growth and tended to decline a bit after the onset of the decline. The effects are strongest in the countries that provide least social security. The sensitivity of life satisfaction to economic ups and downs appears somewhat more pronounced in the low income brackets among the unemployed, and among people living alone. Inequality in life satisfaction in these countries varies accordingly. Yet these average trends mask enormous variation between countries. The effects are short lived.

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Scheme 1. **Correlation of yearly change in GDP p/c to average life satisfaction in the EC 1975-1984**

Country	r with life satisfaction in <u>same year</u>	r with life satisfaction <u>one year later</u>
Germany	+.63	+.57
Ireland	+.60	+.43
Luxembourg	+.53	+.27
Belgium	+.16	+.40
The Netherlands	-.18	-.01
Denmark	-.22	+.23
France	-.35	-.43
Italy	-.37	+.21
United Kingdom	-.37	-.00
EC (average r)	+.05	+.19

Scheme 2. **Percentage corresponding and not corresponding changes of GDP p/c and average life satisfaction one year later**

Pre-crisis period 1975 – 1980	Crisis period 1980 - 1984	
Corresponding changes	49%	45%
Not corresponding changes	51%	55%

**Scheme 3. Differences in correlation between change in GDP p/c and average life satisfaction in specific categories. Average EC.**

	Difference in r with life satisfaction in <u>the same year</u>	Difference in r with life satisfaction <u>one year later</u>
Lowest income (vs highest)	+ .14	+ .13
All unemployed (vs employed)	+ .09	+ .14
Retired and housewives (vs employed)	- .07	+ .12
Without a life partner (vs people with)	+ .04	- .02
Living alone (vs people living with another)	+ .16	+ .03
Living alone (vs people living with two or more others)	+ .18	+ .03

**Scheme 4. Correlation of change in GDP p/c and level of inequality in life satisfaction per country in the EC 1975-1984**

Country	r with life satisfaction <u>in same year</u>	r with life satisfaction <u>one year later</u>
United Kingdom	+ .33	+ .64
Luxembourg	+ .23	+ .64
Ireland	+ .08	+ .32
Belgium	+ .05	+ .29
The Netherlands	- .16	+ .19
Italy	- .22	- .24
Denmark	- .23	- .24
France	- .23	- .24
Germany	- .39	+ .15
EC (average r)	+ .06	+ .13

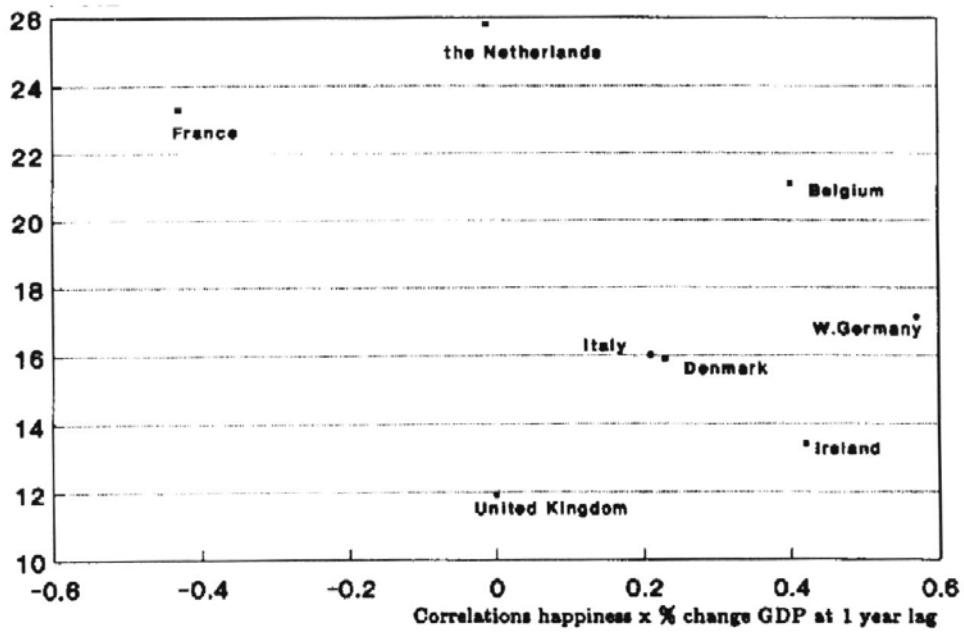


**Scheme 5. Percentage corresponding and not corresponding changes of GDP p/c and spread of life satisfaction one year later**

	Pre-crisis period 1975 – 1980	Crisis period 1980 - 1984
Corresponding changes	60%	47%
Not corresponding changes	40%	53%

Scheme 6 Social security expenditures per country by sensitivity of life-satisfaction to economic fluctuations

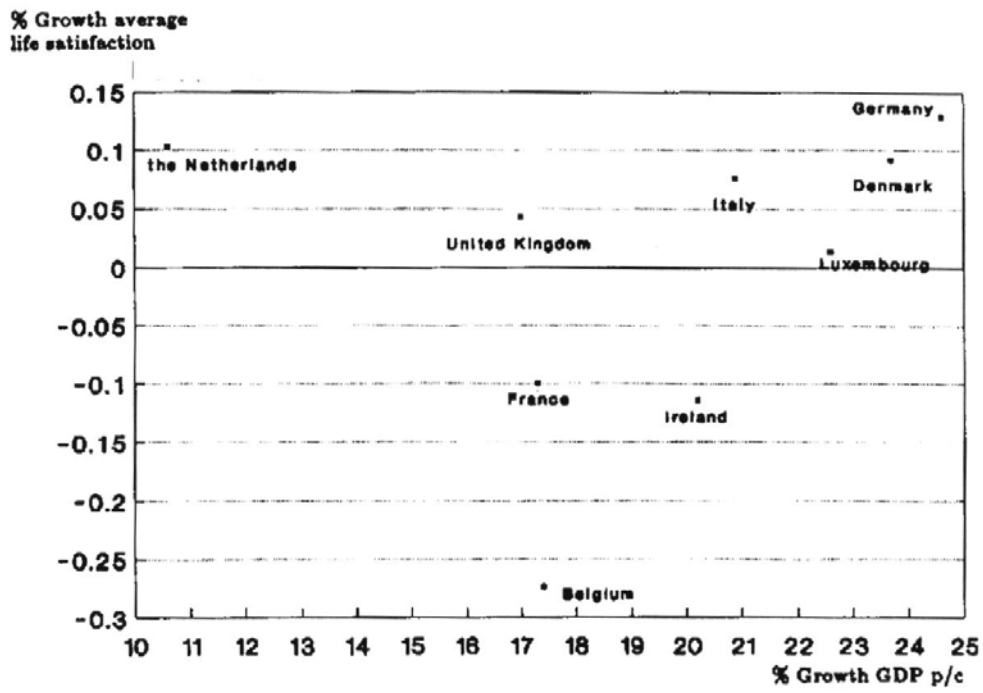
Social security transfers as a % of GDP



R= -.42

Scheme 7

Percentage growth of GDP p/c and growth in average life satisfaction 1975-1984



$EC(r) = +.05$

## APPENDIX 1

<b>Average levels of life satisfaction in nine EC countries 1975-1984</b>										
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
France	2.845	2.772	2.740	2.746	2.710	2.729	2.755	2.869	2.792	2.745
Belgium	3.262	3.260	3.302	3.288	3.325	3.204	3.193	3.067	2.982	2.989
The Netherlands	3.250	3.287	3.322	3.376	3.421	3.431	3.368	3.368	3.300	3.353
Germany	2.972	3.002	3.034	3.035	3.107	3.017	2.940	3.001	2.949	3.056
Italy	2.566	2.518	2.597	2.612	2.565	2.651	2.722	2.714	2.670	2.642
Luxembourg	3.126	3.183	3.272	3.227	3.264	3.269	3.327	3.252	3.291	3.266
Denmark	3.420	3.427	3.479	3.505	3.452	3.495	3.536	3.521	3.505	3.512
Ireland	3.240	3.207	3.237	3.255	3.154	3.169	3.143	3.218	3.063	3.126
United Kingdom	3.155	3.047	3.057	3.155	3.130	3.081	3.062	3.164	3.112	3.128

These figures are based on recorded scores.

(1) not at all satisfied  
(2) not very satisfied  
(3) fairly satisfied  
(4) very satisfied

## APPENDIX 2

**Standard deviation of life satisfaction in nine EC countries 1975-1984**

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
France	0.760	0.749	0.764	0.765	0.776	0.742	0.751	0.705	0.751	0.763
Belgium	0.699	0.701	0.706	0.713	0.683	0.719	0.751	0.733	0.719	0.888
Netherlands	0.663	0.672	0.653	0.640	0.602	0.595	0.664	0.633	0.659	0.659
Germany	0.622	0.669	0.668	0.645	0.636	0.604	0.678	0.630	0.657	0.641
Italy	0.795	0.823	0.879	0.819	0.801	0.779	0.807	0.792	0.777	0.801
Luxembourg	0.797	0.878	0.666	0.710	0.592	0.482	0.632	0.697	0.656	0.699
Denmark	0.593	0.648	0.614	0.619	0.628	0.683	0.621	0.599	0.599	0.773
Ireland	0.722	0.729	0.771	0.760	0.813	0.737	0.771	0.738	0.830	0.844
Utd Kingdom	0.762	0.790	0.747	0.728	0.732	0.757	0.785	0.749	0.739	0.743

## APPENDIX 3

**Year to year percentage change in real GDP p/c in nine EC countries 1974-1984**

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
France	2.6	-0.3	4.8	2.6	3.3	2.9	0.5	-0.1	1.2	0.3	1.1
Belgium	3.8	-1.8	5.2	0.3	2.9	2.0	3.9	-1.6	1.8	-0.3	1.7
Netherlands	3.2	-1.0	4.3	1.7	1.8	1.7	0.1	-1.4	-1.9	1.0	2.0
Germany	0.1	-1.2	5.9	3.2	3.0	4.1	1.0	0.0	-0.6	1.9	3.2
Italy	3.5	-4.2	5.4	1.8	2.0	4.6	3.7	0.0	-0.8	-0.5	2.6
Luxembourg	2.8	-6.7	1.7	1.8	3.5	2.7	1.2	-1.2	1.3	3.2	5.5
Denmark	-1.4	-1.0	6.2	1.3	1.2	3.3	-0.6	-0.8	3.1	2.6	3.5
Ireland	2.6	2.0	-0.2	6.8	5.8	1.4	2.1	2.1	0.2	-2.6	3.4
Utd. Kingdom	-1.0	-0.6	3.8	1.1	3.6	2.1	-2.4	-1.3	1.0	3.7	1.9

## APPENDIX 4

Differences in correlation of yearly change in GPD to  
life satisfaction between contrasting social categories

Country	Difference in r with life satisfaction in <i>same year</i>	Difference in r with life satisfaction <i>one year later</i>
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Lowest incomes (versus highest)		
France	+ .71	- .04
Denmark	+ .45	+ .59
Ireland	+ .36	+ .25
Germany	+ .07	+ .31
Luxembourg	+ .04	+ .05
Belgium	- .03	- .04
The Netherlands	- .05	+ .34
Italy	- .15	- .05
United Kingdom	- .18	- .25
EC (r)	+ .14	+ .13
<hr/>		
Unemployed (versus employed)		
Luxembourg	+ .50	+ .47
Italy	+ .28	+ .21
France	+ .23	- .55
The Netherlands	+ .13	+ .32
United Kingdom	+ .10	+ .07
Germany	- 0.4	- .01
Ireland	- .08	+ .52
Belgium	- .12	+ .02
Denmark	- .17	+ .17
EC (r)	+ .14	+ .13
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## Appendix 4 (cont. 1)

Country	Difference in r with life satisfaction in <i>same year</i>	Difference in r with life satisfaction <i>one year later</i>
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## Retired and housewives (versus employed)

Luxembourg	+ .52	+ .43
Denmark	- .07	+ .03
Germany	- .07	- .24
Belgium	- .09	+ .01
Ireland	- .11	+ .03
France	- .14	+ .49
The Netherlands	- .21	+ .13
Italy	- .21	+ .15
United Kingdom	- .28	+ .03
EC (r)	- .07	+ .12

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## People without a life partner (versus people with)

The Netherlands	+ .47	- .09
Germany	+ .31	- .19
Denmark	+ .12	+ .07
Italy	+ .10	- .21
Ireland	+ .06	- .15
France	+ .05	+ .22
Luxembourg	- .12	+ .23
Belgium	- .31	- .07
United Kingdom	- .36	- .03
EC (r)	+ .04	- .02

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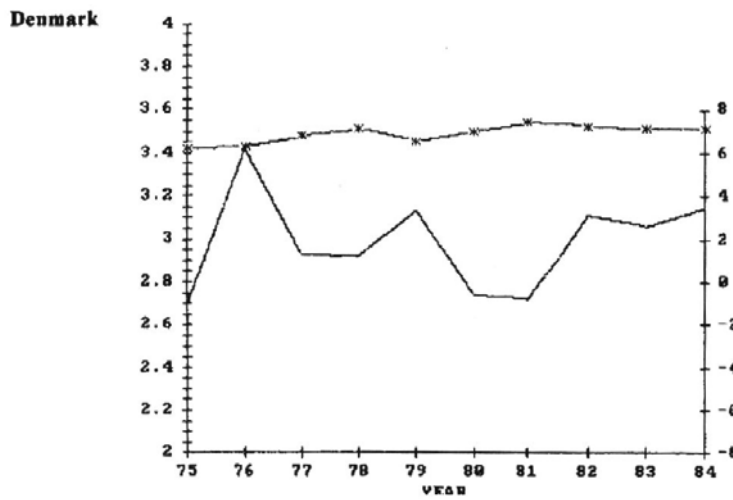
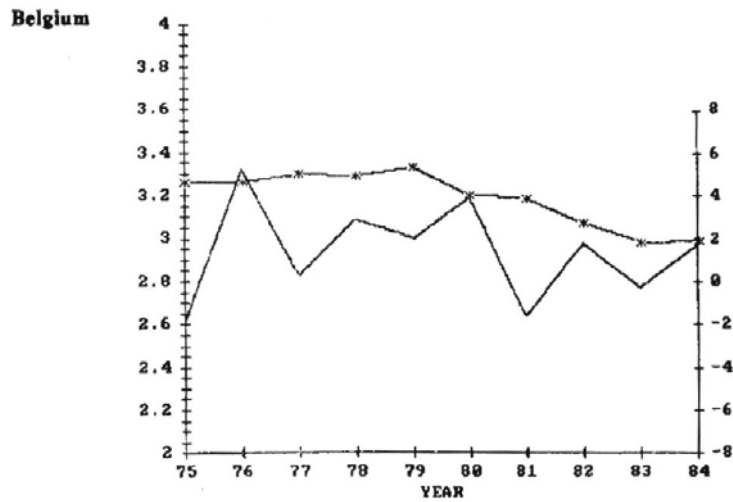
## Appendix 4 (cont. 2)

Country	Difference in r with life satisfaction in <i>same year</i>	Difference in r with life satisfaction <i>one year later</i>
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People living alone (versus living with another)		
The Netherlands	+ .72	+ .15
Belgium	+ .28	- .03
Germany	+ .14	+ .01
France	+ .07	- .13
United Kingdom	+ .05	+ .19
Denmark	+ .04	+ .10
Italy	.00	- .19
Luxembourg	n.a.	n.a.
EC (r)	+ .04	- .02
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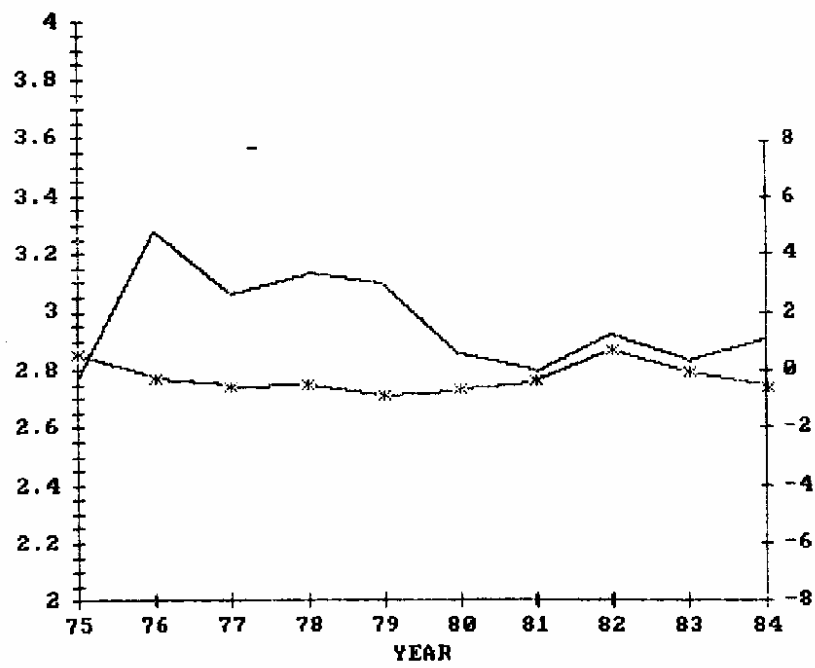
Appendix 5

Relation average level of life satisfaction and year to year percentage change in real GDP p/c (\* = life satisfaction; --- = GDP p/c)

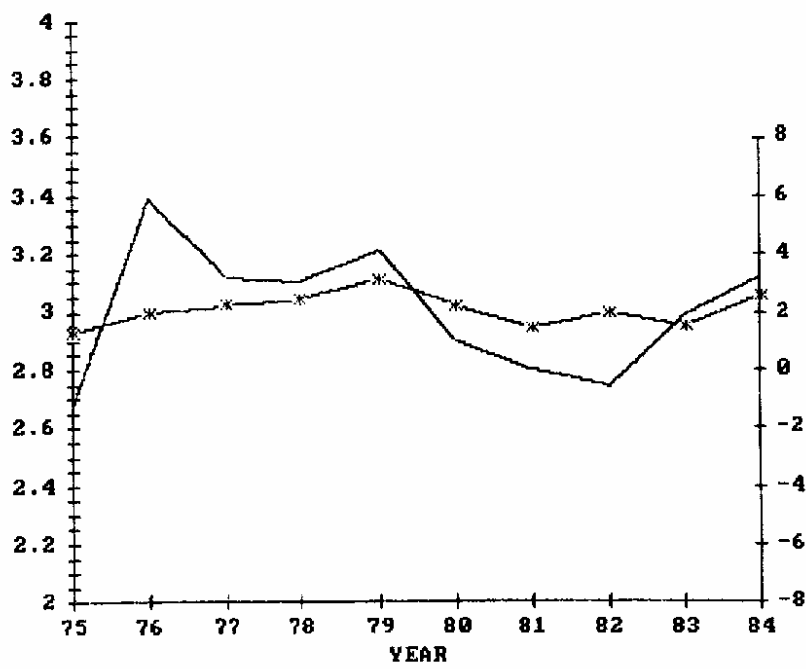


APPENDIX 5 Continued 1

**France**

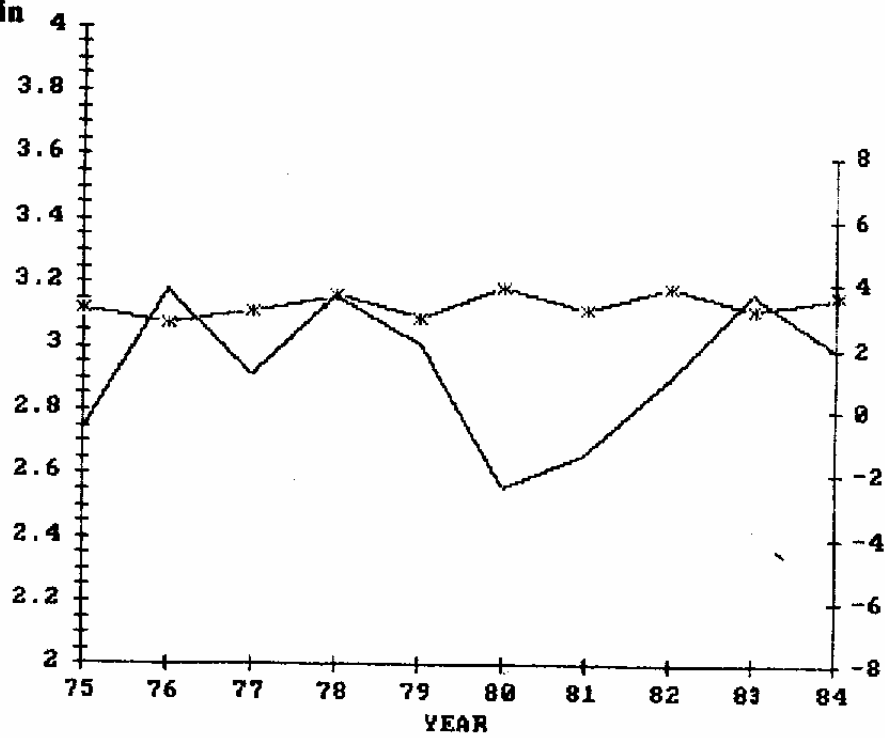


**Germany**

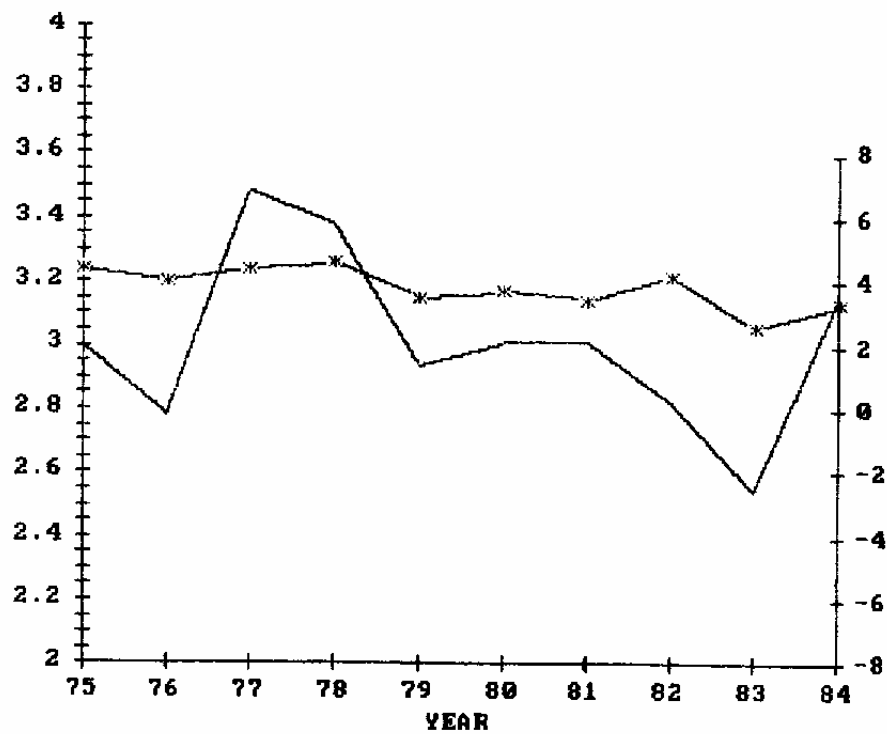


APPENDIX 5 Continued 2

**Great Britain**

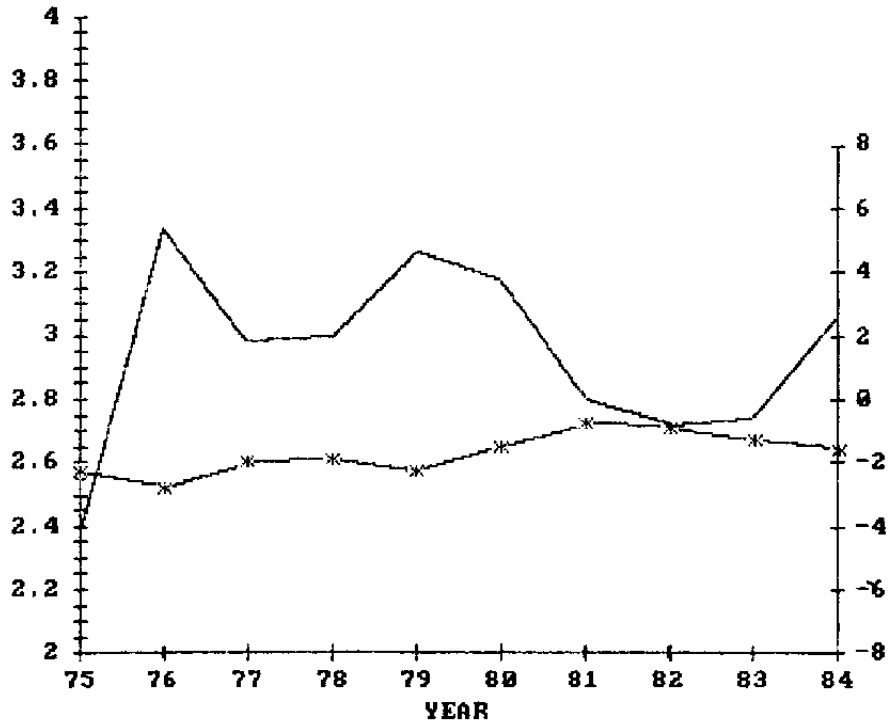


**Ireland**

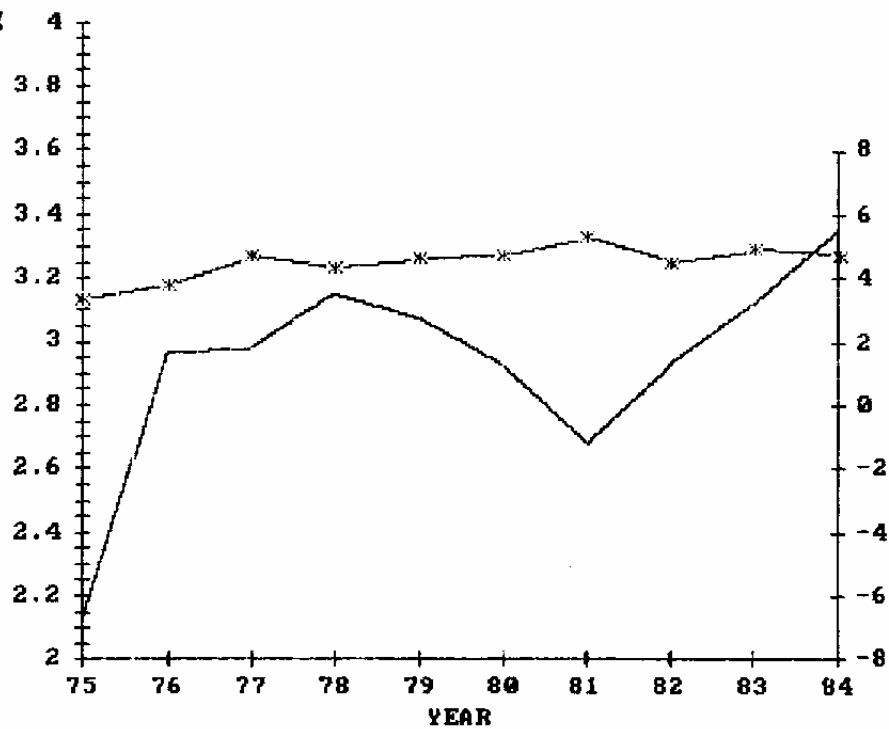


APPENDIX 5 Continued 3

Italy



Luxembourg



APPENDIX 5 Continued 4

the Netherlands

