

Appendix A: Survey Questions

World Values Survey

Life satisfaction: All things considered, how satisfied are you with your life as a whole these days? Please use this card to help with your answer.

1 'Dissatisfied' 2 3 4 5 6 7 8 9 10 'Satisfied'

Financial satisfaction: How satisfied are you with the financial situation of your household? If '1' means you are completely dissatisfied on this scale and '10' means you are completely satisfied, where would you put your satisfaction with your household's financial situation?

1 'Dissatisfied' 2 3 4 5 6 7 8 9 10 'Satisfied'

Happiness: Taking all things together, would you say you are:

1 'Very happy' 2 'Quite happy' 3 'Not very happy' 4 'Not at all happy'

Latinobarometer

Life satisfaction: In general terms, would you say that you are satisfied with life?

1 = Very satisfied; 2 = Pretty satisfied; 3 = Not very satisfied; 4 = Not satisfied at all

Financial satisfaction: How would you define, in general, the current economic situation of yourself and your family? Would you say that it is. . .

1 = Very good; 2 = Good; 3 = Regular; 4 = Bad; 5 = Very bad

Gallup Survey (China)

Life satisfaction: Overall, how satisfied or dissatisfied are you with the way things are going in your life today? Would you say you are: very satisfied (4), somewhat satisfied (3), somewhat dissatisfied (2), or very satisfied (1)?

Life in Nation Survey (Japan)

1958 – 1963: How do you feel about your circumstances at home? Please choose one of the following: satisfied, not satisfied not dissatisfied, somewhat dissatisfied, or extremely dissatisfied.

1964 – 1969: How do you feel about your life at home? Please choose one of the following: completely satisfied, satisfied, somewhat dissatisfied, or completely dissatisfied.

1970 – 1991: How do you feel about your life now? Please choose one of the following: completely satisfied, satisfied, somewhat dissatisfied, or completely dissatisfied.

1992 – 2007: Overall, to what degree are you satisfied with your life now? Please choose one of the following: satisfied, somewhat satisfied, somewhat dissatisfied, or dissatisfied.

Cabinet Office of Japan

Life satisfaction: Are you happy with your life overall?

1 = Very satisfied; 2 = Satisfied; 3 = Not satisfied or unsatisfied; 4 = Unsatisfied; 5 = Never satisfied

Eurobarometer

Life satisfaction: On the whole, how satisfied are you with the life you lead?

1 'Not at all satisfied' 2 3 4 5 6 7 8 9 10 'Absolutely satisfied'

South African Quality of Life Trends Study (Mark Data)

Life satisfaction: [1983, 1999 wording], (revised phrasing)

Taking all things together in your life, how satisfied are you with your life as a whole these days? [On the whole] (Generally speaking) would you say you are very satisfied, satisfied, dissatisfied, or very dissatisfied? (neither/nor, don't know)

(At other dates "neither" is the middle item.)

Happiness:

5 = Very happy; 4 = Fairly happy; 3 = Neither happy nor unhappy; 2 = Fairly unhappy; 1 = Very unhappy

Appendix B: Data and Regressions, by Country

The data sources for the subjective well-being data used here, specific survey dates, and date of the GDP observations with which each SWB survey is paired are given in Appendix C. In this appendix we give for each country the WVS data on mean subjective well-being used in the regressions (in boldface) and the regression results. For the six Latin American countries we also give mean subjective well-being for the initial and terminal years of the Latinobarometer series that we use. The Latinobarometer data often overlap the WVS series and thus provide a test of the consistency between the two surveys in the change in subjective well-being. For six of the remaining countries (all but Japan) the regressions are based entirely on the WVS data and for three of these (China, South Africa, and Turkey) we give not only the WVS means but also the means from other surveys as a check of the WVS data. We also give means for subgroups of the population by education or size of place of residence where these data are relevant to evaluating the WVS series. A brief comment is provided for each country to explain the data selection decisions.

All data are presented based on their original scale (1-10, 1-4, or 1-5). The regressions are based on rescaled values of the WVS to 1-4 or 1-5 scale, as appropriate. Where the regression results are based on two component series, we present regression results separately for each segment as well as those for the combined regression. The time variable in the regressions is set equal to zero at 1980.

Latin America

Argentina

The first three WVS surveys cover the higher-income, more urbanized central portion of the country with about 70 percent of the population; thereafter the surveys are nationally representative. Comparing the five WVS surveys, one finds that differences among educational groups are quite consistent, and so too are the trends by level of education. In the periods of overlap between the WVS and Latinobarometer surveys the directions of change are consistent for life satisfaction, 1998-2006, and financial satisfaction, 1995-2006. We use the first three WVS surveys, when the geographic coverage was constant.

Mean subjective well-being

| | 1984 | 1990 | 1995 | 1998 | 2006 |
|-------------------------------|-------------|-------------|-------------------------|-------------------------|-------------------------|
| <u>Life satisfaction</u> | | | | | |
| LB (1-4 scale) | | | | 2.82^a | 3.02 |
| WVS Total | 6.77 | 7.25 | 6.93 | 7.30 | 7.70 |
| Pop ACE ^b 18+ | 6.83 | 7.05 | 6.92 | 7.39 | 7.92 |
| 13-17 | 6.69 | 7.43 | 6.99 | 7.33 | 7.80 |
| ≤ 12 | 6.52 | 7.01 | 6.74 | 7.15 | 7.42 |
| <u>Financial satisfaction</u> | | | | | |
| LB (1-5 scale) | | | 2.80^c | 2.79 | 3.16^d |
| WVS Total | 5.52 | 5.31 | 4.96 | 5.49 | 6.46 |
| Pop ACE ^b 18+ | 5.70 | 5.40 | 5.09 | 5.84 | 6.77 |
| 13-17 | 5.24 | 5.12 | 4.97 | 5.19 | 6.43 |
| ≤ 12 | 4.71 | 4.67 | 4.49 | 5.38 | 5.82 |
| WVS Sample size | 974 | 992 | 1076 | 1268 | 995 |
| “n” education | 746 | 672 | 995 | 1210 | 1002 |
| % ACE 18+ | 30 | 28 | 48 | 48 | 54 |
| % ACE 13-17 | 50 | 48 | 36 | 35 | 29 |
| % ACE ≤ 12 | 20 | 25 | 16 | 17 | 17 |

a. 2000.5

b. ACE = age completed education

c. 1995.5

d. 2005

Regressions

| | Life satisfaction (1984-2006) | | | Financial satisfaction (1984-2005) | | |
|---------------------|-------------------------------|----------------------|----------------------|------------------------------------|----------------------|----------------------|
| | WVS only | LB only | Combined | WVS only | LB only | Combined |
| time | 0.00547 [0.761] | 0.03027 [0.028]* | 0.01127 [0.204] | -0.02237 [0.120] | 0.02252 [0.242] | 0.00652 [0.663] |
| wvs_dum | | | 0.23406 [0.104] | | | 0.09953 [0.615] |
| Constant | 2.94131 [0.032]* | 2.20465 [0.001]** | 2.65123 [0.000]** | 3.11133 [0.009]** | 2.41739 [0.000]** | 2.73248 [0.000]** |
| Observations | 3 | 5 | 8 | 3 | 10 | 13 |
| R-squared | 0.135 | 0.843 | 0.477 | 0.965 | 0.166 | 0.027 |

p values in brackets
+ significant at 10%; * significant at 5%; ** significant at 1%

Brazil

The WVS surveys are designed to be nationally representative. Across the three WVS surveys below differentials between places with populations 100,000 and over and less than 100,000 are quite consistent, as are trends for the two size-of-place groups. Between the last two dates below the directions of change in the Latinobarometer and WVS survey are consistent for both life and financial satisfaction.

Mean subjective well-being

| | 1991 | 1996.5 | 2006 |
|-------------------------------|------|-------------------|-------------------|
| <u>Life satisfaction</u> | | | |
| LB (1-4 scale) | | 2.71 ^a | 2.81 |
| WVS Total | 7.37 | 7.15 | 7.64 |
| Pop | | | |
| 100k+ | 7.28 | 6.99 | 7.49 |
| <100k | 7.57 | 7.37 | 7.86 |
| <u>Financial satisfaction</u> | | | |
| LB (1-5 scale) | | 3.05 ^b | 3.19 ^c |
| WVS Total | 5.51 | 5.48 | 5.87 |
| Pop | | | |
| 100k+ | 5.28 | 5.39 | 5.78 |
| <100k | 5.85 | 5.60 | 6.04 |
| WVS Sample size | 1782 | 1149 | 1500 |
| % 100k+ | 60 | 58 | 57 |
| % <100k | 40 | 42 | 43 |

a. 2000

b. 1997

c. 2005

Regressions

| | Life satisfaction (1991-2006) | | | Financial satisfaction (1991-2005) | | |
|---------------------|-------------------------------|----------------------|----------------------|------------------------------------|----------------------|----------------------|
| | WVS only | LB only | Combined | WVS only | LB only | Combined |
| time | -0.01311 [.] | 0.01286 [0.300] | 0.00219 [0.826] | -0.002 [.] | 0.01089 [0.178] | 0.00932 [0.196] |
| wvs_dum | | | 0.37965 [0.020]* | | | 0.01693 [0.814] |
| Constant | 3.26682 [.] | 2.42714 [0.002]** | 2.67675 [0.000]** | 3.02441 [.] | 2.82097 [0.000]** | 2.85183 [0.000]** |
| Observations | 2 | 5 | 7 | 2 | 10 | 12 |
| R-squared | 1 | 0.342 | 0.934 | 1 | 0.214 | 0.21 |

p values in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Chile

The first two WVS surveys cover the higher-income central portion of the country and include about two-thirds of the population. We use these two surveys with consistent geographic coverage together with the Latinobarometer surveys in our regressions below. The third WVS survey is based on a sample of 29 cities; the fourth appears to be nationally representative.

Where the WVS and Latinobarometer surveys overlap they are consistent in the direction of change between dates.

Mean subjective well-being

| | 1989.5 | 1996 | 2000 | 2005 |
|-------------------------------|---------------|-------------------------|-------------------------|-------------|
| <u>Life satisfaction</u> | | | | |
| LB (1-4 scale) | | | <i>2.77^a</i> | <i>2.86</i> |
| WVS Total | <i>7.55</i> | <i>6.92</i> | 7.12 | 7.24 |
| Pop 100k+ | 7.56 | 6.87 | 7.14 | 7.04 |
| <100k | 7.53 | 7.21 | 6.70 | 7.76 |
| <u>Financial satisfaction</u> | | | | |
| LB (1-5 scale) | | <i>2.98^b</i> | <i>2.78^a</i> | <i>3.09</i> |
| WVS Total | <i>5.91</i> | <i>5.91</i> | 5.64 | 5.80 |
| Pop 100k+ | 5.93 | 5.83 | 5.68 | 5.61 |
| <100k | 5.83 | 6.39 | 5.36 | 5.94 |
| WVS Sample size | 1500 | 1000 | 1200 | 1000 |
| % 100k+ | 82 | 88 | 94 | 84 |
| % <100k | 18 | 12 | 6 | 16 |

a. 2000.5

b. 1995.5

Regressions

| | Life satisfaction (1989.5-2006) | | | Financial satisfaction (1989.5-2005) | | |
|---------------------|---------------------------------|----------------------|----------------------|--------------------------------------|----------------------|----------------------|
| | WVS only | LB only | Combined | WVS only | LB only | Combined |
| time | -0.03268 [.] | 0.0173 [0.365] | -0.00935 [0.585] | -0.00011 [.] | -0.00322 [0.781] | -0.00272 [0.785] |
| wvs_dum | | | 0.13778 [0.505] | | | 0.2131 [0.082]+ |
| Constant | 3.49499 [.] | 2.43351 [0.008]** | 3.05969 [0.001]** | 3.18242 [.] | 3.01245 [0.000]** | 3.00255 [0.000]** |
| Observations | 2 | 5 | 7 | 2 | 10 | 12 |
| R-squared | 1 | 0.274 | 0.683 | 1 | 0.01 | 0.451 |

p values in brackets
+ significant at 10%; * significant at 5%; ** significant at 1%

Mexico

The 1990 WVS survey was confined to cities of 50,000 population or more; thereafter the survey is nationally representative. Across four WVS surveys differentials in subjective well-being are usually small between places with population 100,000 plus and those under 100,000. The Latinobarometer and WVS trends are fairly consistent, but the 1995 WVS value for financial satisfaction seems out of line, appearing to be on the high side. To minimize the effect of the shift in geographic coverage after 1990, the analysis uses the WVS observations through 1999 for places with population of 100,000 or more.

Mean subjective well-being

| | 1981 | 1989.5 | 1995 | 1999 | 2005 |
|-------------------------------|------|-------------|-------------------------|-------------------------|-------------------------|
| <u>Life satisfaction</u> | | | | | |
| LB (1-4 scale) | | | | 2.97^a | 3.05^b |
| WVS Total | 7.97 | 7.41 | 7.54 | 8.13 | 8.23 |
| Pop. 100k+ | n.a. | 7.41 | 7.52 | 8.12 | 8.33 |
| <100k | n.a. | 7.41 | 7.57 | 8.17 | 8.11 |
| <u>Financial satisfaction</u> | | | | | |
| LB (1-5 scale) | | | 2.68^c | 2.98 | 3.16^b |
| WVS Total | n.a. | 6.15 | 7.18 | 6.63 | 7.13 |
| Pop. 100k+ | n.a. | 6.14 | 7.28 | 6.70 | 7.17 |
| <100k | n.a. | 6.18 | 7.21 | 6.48 | 7.09 |
| WVS Sample size | n.a. | 1531 | 2043 | 1292 | 1560 |
| % 100k+ | n.a. | 79 | 53 | 45 | 52 |
| % < 100k | n.a. | 21 | 47 | 55 | 48 |

a. 2000.5

b. 2005

c. 1995.5

Regressions (WVS for residents of places with population 100,000 or more)

| | Life satisfaction (1989.5-2006) | | | Financial satisfaction (1989.5-2005) | | |
|---------------------|---------------------------------|----------------------|----------------------|--------------------------------------|----------------------|----------------------|
| | WVS only | LB only | Combined | WVS only | LB only | Combined |
| time | 0.02376 [0.299] | 0.01405 [0.416] | 0.02096 [0.046]* | 0.02993 [0.618] | 0.05713 [0.016]* | 0.04913 [0.014]* |
| wvs_dum | | | 0.36632 [0.008]** | | | 0.87698 [0.000]** |
| Constant | 2.88317 [0.040]* | 2.71973 [0.004]** | 2.55754 [0.000]** | 3.10143 [0.133] | 1.78783 [0.002]** | 1.94619 [0.000]** |
| Observations | 3 | 5 | 8 | 3 | 9 | 12 |
| R-squared | 0.796 | 0.228 | 0.812 | 0.318 | 0.587 | 0.773 |

p values in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Peru

For financial satisfaction the Latinobarometer is used throughout. For life satisfaction the first two WVS values for the total population are used, together with the Latinobarometer data starting 2000. Where the WVS and Latinobarometer surveys overlap, the changes in subjective well-being are consistent between them. Across three WVS surveys differences by level of education in subjective well-being are consistent. The trends by education for the three surveys are also consistent. We therefore use the WVS values for the total population.

Mean subjective well-being

| | 1995.5 | 2000.5 | 2006 |
|------------------------------------|-------------|-------------|-------------|
| <u>Life satisfaction</u> | | | |
| LB (1-4 scale) | | 2.48 | 2.50 |
| WVS Total | 6.36 | 6.44 | 7.02 |
| Education High school+ | 6.65 | 6.53 | 7.19 |
| Vocational, incomplete secondary | 6.28 | 6.34 | 7.06 |
| None, primary | 6.02 | 6.31 | 6.78 |
| <u>Financial satisfaction</u> | | | |
| LB (1-5 scale) | 2.80 | 2.66 | 2.86 |
| WVS Total | 5.12 | 5.11 | 5.68 |
| Education High school+ | 5.44 | 5.30 | 6.19 |
| Vocational, incomplete secondary | 5.01 | 4.97 | 5.53 |
| None, primary | 4.74 | 4.65 | 5.15 |
| WVS Sample size | 1191 | 1490 | 1490 |
| % High school+ | 36 | 53 | 34 |
| % Vocational, Incomplete secondary | 45 | 34 | 42 |
| % None, primary | 19 | 13 | 24 |

Regressions

| | Life satisfaction (1995.5-2006) | | | Financial (1995.5-2005) |
|---------------------|------------------------------------|---------------------|---------------------|----------------------------|
| | WVS only | LB only | Combined | LB only |
| time | 0.00523 [.] | -0.0006 [0.985] | 0.00153 [0.944] | -0.01344 [0.247] |
| wvs_dum | | | 0.25444 [0.166] | |
| Constant | 2.70612 [.] | 2.56802 [0.035]* | 2.5182 [0.007]** | 3.02113 [0.000]** |
| Observations | 2 | 5 | 7 | 10 |
| R-squared | 1 | 0 | 0.598 | 0.163 |

p values in brackets
+ significant at 10%; * significant at 5%; ** significant at 1%

Venezuela

The wave-5 WVS survey is not yet available. For financial satisfaction we use the Latinobarometer surveys 1995 on. For life satisfaction we use the 1995 and 2000 WVS surveys complemented by the Latinobarometer 2000 on. To judge from the WVS sample distribution there is a substantial increase between 1995 and 2000 in the representation of places with population of 100,000 or more. However, the change in life satisfaction between 1995 and 2000 is much the same by size of place of residence. Hence we use the WVS life satisfaction values for the total population in 1995 and 2000. Between 1995 and 2000 the direction of change in WVS life satisfaction is the same as that in financial satisfaction in both the WVS and Latinobarometer.

Mean subjective well-being

| | 1995 | 2000 | 2005 |
|-------------------------------|-------------------------|-------------|-------------|
| <u>Life satisfaction</u> | | | |
| LB (1-4 scale) | | 3.25 | 3.44 |
| WVS Total | 6.72 | 7.52 | n.a. |
| Pop. 100k+ | 6.79 | 7.55 | n.a. |
| <100k | 6.65 | 7.43 | n.a. |
| <u>Financial satisfaction</u> | | | |
| LB (1-5 scale) | 2.80^a | 3.01 | 3.27 |
| WVS Total | 5.00 | 6.19 | n.a. |
| Pop. 100k+ | 4.93 | 6.20 | n.a. |
| <100k | 5.07 | 6.17 | n.a. |
| WVS Sample size | 1200 | 1200 | n.a. |
| % 100k+ | 53 | 71 | n.a. |
| % <100k | 47 | 29 | n.a. |

a. 1995.5

Regressions

| | Life satisfaction (1995-2006) | | | Financial (1995-2005) |
|---------------------|----------------------------------|----------------------|----------------------|--------------------------|
| | WVS only | LB only | Combined | LB only |
| time | 0.05297 [.] | 0.03097 [0.140] | 0.03901 [0.031]* | 0.01983 [0.248] |
| wvs_dum | | | -0.07398 [0.465] | |
| Constant | 2.1128 [.] | 2.61935 [0.006]** | 2.43114 [0.001]** | 2.63233 [0.000]** |
| Observations | 2 | 5 | 7 | 10 |
| R-squared | 1 | 0.57 | 0.904 | 0.163 |

p values in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Asia

China

There are four WVS surveys of China, but we exclude the first survey, which was restricted almost entirely to the urban population. The 1995 survey covered central China, almost 68 percent of the population, while the two most recent surveys appear to be nearly nationally representative. If one compares the 1995 and 2007 WVS surveys, differentials by level of education are similar. The mild decline in subjective well-being from 1995 to 2007 in the WVS surveys is consistent with declines reported in Gallup surveys conducted in 1997, 2001, and 2004, and Asiabarometer surveys in 2003 and 2006.¹ Because of the consistency in trends across three different surveys we treat the 1995 WVS survey as comparable to those in 2000.5 and 2007.

¹ We omit the 1994 Gallup survey which had five rather than the four response categories of the later surveys.

Mean subjective well-being

| | 1990 | 1995 | 2000.5 | 2007 |
|-------------------------------|------|-------------------|-------------------|-------------------|
| <u>Life satisfaction</u> | | | | |
| Gallup (1-4 scale) | | 2.82 ^a | 2.78 ^b | 2.67 ^c |
| Asiabarometer (1-5 scale) | | | 3.73 ^d | 3.68 ^e |
| WVS Total | 7.29 | 6.83 | 6.53 | 6.76 |
| Education | | | | |
| Vocational+ | n.a. | 7.01 | 6.53 | 7.08 |
| Primary | n.a. | 6.80 | 6.42 | 6.61 |
| No education | n.a. | 6.49 | 6.74 | 6.32 |
| <u>Financial satisfaction</u> | | | | |
| WVS Total | 6.12 | 6.11 | 5.65 | 5.94 |
| Education | | | | |
| Vocational+ | n.a. | 6.28 | 5.63 | 6.23 |
| Primary | n.a. | 6.09 | 5.72 | 5.89 |
| No education | n.a. | 5.78 | 5.56 | 5.39 |
| WVS Sample size | 996 | 1495 | 991 | 1959 |
| % Vocational+ | | 47 | 58 | 48 |
| % Primary | | 32 | 28 | 26 |
| % No education | | 21 | 14 | 26 |

a. 1997

b. 1999

c. 2004

d. 2003

e. 2006

Regressions

| | Life (1995-2007) | Financial (1995-2007) |
|---------------------|---------------------|--------------------------|
| time | -0.00155 [0.888] | -0.0058 [0.785] |
| Constant | 2.93496 [0.040]* | 3.29797 [0.068]+ |
| Observations | 3 | 3 |
| R-squared | 0.031 | 0.11 |

p values in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

India

There are four WVS surveys of India. In the two most recent surveys the responses for both life and financial satisfaction are confined almost entirely to five categories (1, 3, 5, 7, and 10) whereas in the first two surveys they are distributed among all ten options. As a result there is a substantial downward bias in the means for life and financial satisfaction in the last two surveys compared with the first two, making them non-comparable over time.

We choose therefore to use the responses on happiness to analyze the trend in subjective well-being. We use the surveys from 1995 on, because, as explained in the text, the happiness question changed between 1990 and 1995, making the 1990 mean not comparable with the later surveys. The 2001 and 2006 surveys appear to be fairly representative of the population generally, but the 1995 survey was in Hindi. Differentials by level of education in all these surveys, however, are quite similar in magnitude. Also the direction of change between waves is the same at each level of education. We used, therefore, the WVS values for happiness for the total population in the last three surveys as comparable over time.

Mean subjective well-being

| | 1995 | 2001 | 2006 |
|--------------------------------|-------------|-------------|-------------|
| <u>Happiness</u> | | | |
| WVS Total | 3.04 | 2.95 | 3.02 |
| Education | | | |
| College | 3.24 | 3.14 | 3.27 |
| Middle school or high school | 3.14 | 3.06 | 3.18 |
| None, primary | 2.86 | 2.83 | 2.85 |
| WVS Sample size | 2010 | 1968 | 1995 |
| % College | 19 | 14 | 12 |
| % Middle school or high school | 40 | 34 | 38 |
| % None, primary | 42 | 52 | 50 |

Regressions

| | Happiness (1995-2006) |
|---------------------|----------------------------------|
| time | -0.00276 [0.790] |
| Constant | 3.06245 [0.035]* |
| Observations | 3 |
| R-squared | 0.105 |

p values in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Japan

The primary series for life satisfaction is from the “Life in Nation” surveys, 1958-2007 (Stevenson and Wolfers 2008, Table 5). Financial satisfaction is from the five WVS surveys, 1981-2005. Life satisfaction from these WVS surveys is included below, because it is used in the analysis in Figure 1 of the text.

Mean subjective well-being

| | 1981 | 1990 | 1995 | 2000.5 | 2005 |
|----------------------------|-------------|-------------|-------------|---------------|-------------|
| Life satisfaction WVS | 6.58 | 6.53 | 6.61 | 6.48 | 6.99 |
| Financial satisfaction WVS | 6.14 | 6.03 | 6.33 | 6.17 | 6.16 |

Regressions

| | Life satisfaction | | | | Financial satisfaction | | |
|---------------------|-----------------------|----------------------|-----------------------|-----------------------|------------------------|----------------------|----------------------|
| | Stevenson-Wolfers | | | Kusago | WVS | WVS | |
| | 1958-1969 | 1970-1991 | 1992-2007 | 1958-2007 | 1978-2002 | 1981-2005 | 1981-2005 |
| time | 0.01371 [0.046]* | 0.00557 [0.004]** | -0.01221 [0.002]** | 0.00126 [0.492] | -0.01149 [0.000]** | 0.00417 [0.321] | 0.00135 [0.677] |
| interval5863 | <i>reference</i> | | | <i>reference</i> | | | |
| interval6469 | -0.19562 [0.001]** | | | -0.12089 [0.004]** | | | |
| interval7091 | | | | -0.12398 [0.010]* | | | |
| interval9207 | | | | -0.13113 [0.100]+ | | | |
| Constant | 2.70033 [0.000]** | 2.52122 [0.000]** | 3.186406 [0.000]** | 2.74392 [0.000]** | 3.12771 [0.000]** | 2.72454 [0.000]** | 3.24616 [0.000]** |
| Observations | 12 | 25 | 14 | 51 | 10 | 5 | 5 |
| R-squared | 0.803 | 0.302 | 0.571 | 0.216 | 0.801 | 0.319 | 0.066 |

p values in brackets
+ significant at 10%; * significant at 5%; ** significant at 1%

South South Korea

We use the five nationally representative WVS surveys since 1980. In the 1996 survey the question on life satisfaction was not asked, but that on financial satisfaction was.

Mean subjective well-being

| | 1980 | 1989.5 | 1996 | 2001 | 2005 |
|----------------------------|------|--------|------|------|------|
| Life satisfaction WVS | 5.33 | 6.69 | n.a. | 6.21 | 6.39 |
| Financial satisfaction WVS | 5.17 | 5.75 | 5.69 | 5.79 | 5.71 |

Regressions

| | Life (1980-2005) | Financial (1980-2005) |
|---------------------|-----------------------------|----------------------------------|
| time | 0.01044 [0.389] | 0.00924 [0.104] |
| Constant | 2.57374 [0.004]** | 2.92133 [0.000]** |
| Observations | 4 | 5 |
| R-squared | 0.374 | 0.641 |

p values in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Turkey

The four surveys appear to be nationally representative (except that the 1990 survey omitted the southeastern, predominantly Kurdish, region). The sizeable increase in subjective well-being between 2001 and 2007 in the WVS is consistent with that in the Eurobarometer.

Mean subjective well-being

| | 1990 | 1996 | 2001 | 2007 |
|-----------------------------------|-------------|-------------|-------------|-------------|
| <u>Life satisfaction</u> | | | | |
| Eurobarometer (1-4 scale) | | | 2.25 | 3.00 |
| WVS | 6.41 | 6.18 | 5.62 | 7.46 |
| <u>Financial satisfaction WVS</u> | 5.09 | 5.26 | 4.29 | 5.99 |

Regressions

| | Life (1990-2007) | Financial (1990-2007) |
|---------------------|-----------------------------|----------------------------------|
| time | 0.01596 [0.550] | 0.01468 [0.657] |
| Constant | 2.50908 [0.029]* | 2.5759 [0.044]* |
| Observations | 4 | 4 |
| R-squared | 0.202 | 0.117 |

p values in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Africa

Nigeria

The first WVS survey was designed to be carried out in the urban and literate segments of the population; thereafter the surveys appear to be more nationally representative. To improve comparability we use for all three dates data for the population in places of 100,000 population or more.

Mean subjective well-being

| | 1989.5 | 1995 | 2000 |
|-----------------------------------|---------------|-------------|-------------|
| <u>Life satisfaction WVS</u> | | | |
| Total Pop | 6.59 | 6.59 | 6.87 |
| Pop. 100k+ | 6.61 | 6.76 | 7.18 |
| Pop. <100k | 6.56 | 6.37 | 6.60 |
| <u>Financial satisfaction WVS</u> | | | |
| Total Pop | 5.51 | 5.68 | 6.28 |
| Pop. 100k+ | 5.51 | 5.87 | 6.59 |
| Pop. <100k | 5.51 | 5.48 | 6.01 |
| WVS Sample size | 997 | 1989 | 2022 |
| % 100k+ | 58 | 59 | 48 |
| % <100k | 42 | 41 | 52 |

Regressions

| | Life (1989.5-2000) | Financial (1989.5-2000) |
|--|-------------------------------|------------------------------------|
| time | 0.01802 [0.197] | 0.04527 [0.166] |
| Constant | 2.68181 [0.021]* | 2.54075 [0.047]* |
| Observations | 3 | 3 |
| R-squared | 0.908 | 0.934 |
| p values in brackets | | |
| + significant at 10%; * significant at 5%; ** significant at 1% | | |

South Africa

The WVS surveys other than that in 2007 substantially underrepresent the black population. To obtain a more accurate estimate for the total population we have weighted the means for the four population subgroups – blacks, colored, Indian, and white – by the population distribution reported by the national statistics agency. The resulting trends for the total population are generally consistent in direction of change with those reported in the SA MarkData surveys. In making comparisons with the WVS, it is important to note that the ordering of response categories differs in some of the SA MarkData surveys. When the surveys are arranged in terms of comparable response options two comparisons with the WVS are possible. The first is between the early 1980s and around 2000; both the SA MarkData and WVS surveys show a decline in life satisfaction for the population as a whole between the two dates. The second comparison is from around 1990 to 2007; both surveys report an increase in life satisfaction. Because of the consistency between the two surveys we use the WVS survey means for the total population after reweighting the component population groups by the appropriate population distribution.

Mean subjective well-being

| | 1981 | 1990 | 1996 | 2001 | 2007 |
|--------------------------------------|-------------------------|-------------------------|-------------------|-------------------|-------------|
| <u>Life satisfaction</u> | | | | | |
| Total Pop. | | | | | |
| SA MarkData ^a (1-5 scale) | | | | | |
| Q1 | 3.13 ^b | | | 3.07 ^c | |
| Q2 | | 2.97 ^d | 3.07 ^e | 3.02 ^f | 3.13 |
| WVS Original | 6.79 | 6.20 | 5.59 | 5.81 | 7.03 |
| WVS Reweighted ^g | 6.45^h | 5.86^j | 5.48 | 5.68 | 7.02 |
| Black | | | | | |
| SA MarkData (1-5 scale) | | 2.67 | 2.88 | 2.94 | 3.01 |
| WVS | | 5.40 | 4.99 | 5.25 | 6.80 |
| Colored | | | | | |
| SA MarkData (1-5 scale) | | 3.75 | 3.57 | 3.10 | 3.37 |
| WVS | | n.a. | 6.83 | 6.86 | 7.56 |
| Indian | | | | | |
| SA MarkData (1-5 scale) | | 3.80 | 3.38 | 3.39 | 3.09 |
| WVS | | 7.52 | 7.08 | 7.66 | 7.62 |
| White | | | | | |
| SA MarkData (1-5 scale) | | 3.98 | 3.50 | 3.42 | 3.65 |
| WVS | | 7.63 | 7.47 | 7.37 | 8.27 |
| <u>Financial satisfaction</u> | | | | | |
| WVS Original | | 5.46 | 4.78 | 5.09 | 6.00 |
| Reweighted ^f | | 4.34 | 4.09 | 4.52 | 5.66 |
| WVS Sample size | | 2696 | 2927 | 2995 | 2977 |
| % Black | | 40 | 55 | 43 | 69 |
| % Colored | | 7 | 13 | 17 | 10 |
| % Indian | | 7 | 7 | 10 | 4 |
| % White | | 45 | 25 | 30 | 17 |

- a. In Q1 the neutral category, neither satisfied nor dissatisfied, is the last of five options; in Q2, the neutral category is the third out of five.
- b. 1983
- c. 1999
- d. 1988
- e. 1995
- f. 2002
- g. The mean weights are black, 77 percent; colored, 9 percent; Indian, 3 percent; and white, 12 percent. The actual weights used here differ somewhat from these means, because we used the population distribution appropriate for each date.
- h. Assumes same difference (0.34) from WVS raw mean as in 1990.
- j. Reweighted value for total population includes an assumed value for colored population of 7.00, about the same difference from the white population as in 1996.

Regressions

| | Life (1981-2007) | Financial (1990-2007) |
|---------------------|-----------------------------|----------------------------------|
| time | 0.00371 [0.777] | 0.03551 [0.174] |
| Constant | 2.6439 [0.001]** | 1.97063 [0.027]* |
| Observations | 5 | 4 |
| R-squared | 0.031 | 0.683 |

p values in brackets

+ significant at 10%; * significant at 5%; **

significant at 1%

Appendix C

Data sources, survey dates, and date of GDP observations with which each survey is paired

| | Life satisfaction | | | | Financial satisfaction | | |
|----------------------|-------------------|--------|-------------------------|--------|------------------------|--------|-------------------------|
| | Survey dates | | Paired with GDP for: | | Survey dates | | Paired with GDP for: |
| | start | end | | | start | end | |
| Latin America | | | | | | | |
| <u>Argentina</u> | | | | | | | |
| WVS 10 | 1984 | 1984 | 1984 | WVS 10 | 1984 | 1984 | 1984 |
| | 199102 | 199104 | 1990 | | 199102 | 199104 | 1990 |
| | 199508 | 199509 | 1995 | | 199508 | 199509 | 1995 |
| | 199901 | 199902 | 1998 | | 199901 | 199902 | 1998 |
| | 2006 | 2006 | 2006 | | 2006 | 2006 | 2006 |
| LB 4 | 200104 | 200105 | 2000.5 | LB 5 | 199505 | 199506 | 1994.5 |
| | 200307 | 200308 | 2002.5 | | 199606 | 199607 | 1995.5 |
| | 200405 | 200406 | 2003.5 | | 199711 | 199712 | 1997 |
| | 200508 | 200509 | 2005 | | 199811 | 199811 | 1998 |
| | 200610 | 200611 | 2006 | | 200001 | 200002 | 1999 |
| | | | | | 200104 | 200105 | 2000.5 |
| | | | | | 200204 | 200205 | 2001.5 |
| | | | | | 200307 | 200308 | 2002.5 |
| | | | | | 200405 | 200406 | 2003.5 |
| | | | | | 200508 | 200509 | 2005 |
| <u>Brazil</u> | | | | | | | |
| WVS 10 | 199110 | 199201 | 1991 | WVS 10 | 199110 | 199201 | 1991 |
| | 199706 | 199706 | 1996.5 | | 199706 | 199706 | 1996.5 |
| | 2006 | 2006 | 2006 | | 2006 | 2006 | 2006 |
| LB 4 | 200104 | 200104 | 2000 | LB 5 | 199506 | 199506 | 1994.5 |
| | 200308 | 200308 | 2002.5 | | 199606 | 199607 | 1995.5 |
| | 200405 | 200406 | 2003.5 | | 199712 | 199712 | 1997 |
| | 200508 | 200509 | 2005 | | 199811 | 199811 | 1998 |
| | 200610 | 200610 | 2006 | | 200001 | 200002 | 1999 |
| | | | | | 200104 | 200104 | 2000 |
| | | | | | 200205 | 200205 | 2001.5 |
| | | | | | 200308 | 200308 | 2002.5 |
| | | | | | 200405 | 200406 | 2003.5 |
| | | | 200508 | 200509 | 2005 | | |

| | Life satisfaction | | | | Financial satisfaction | | |
|---------------|-------------------|--------|-------------------------|--------|------------------------|--------|-------------------------|
| | Survey dates | | Paired with GDP for: | | Survey dates | | Paired with GDP for: |
| | start | end | | | start | end | |
| <u>Chile</u> | | | | | | | |
| WVS 10 | 199005 | 199005 | 1989.5 | WVS 10 | 199005 | 199005 | 1989.5 |
| | 1996 | 1996 | 1996 | | 1996 | 1996 | 1996 |
| | 200011 | 200011 | 2000 | | 200011 | 200011 | 2000 |
| | 2005 | 2005 | 2005 | | 2005 | 2005 | 2005 |
| LB 4 | 200104 | 200105 | 2000.5 | LB 5 | 199504 | 199505 | 1994.5 |
| | 200307 | 200308 | 2002.5 | | 199606 | 199606 | 1995.5 |
| | 200405 | 200406 | 2003.5 | | 199712 | 199712 | 1997 |
| | 200508 | 200509 | 2005 | | 199811 | 199811 | 1998 |
| | 200610 | 200610 | 2006 | | 200003 | 200003 | 1999 |
| | | | | | 200104 | 200105 | 2000.5 |
| | | | | | 200204 | 200205 | 2001.5 |
| | | | | | 200307 | 200308 | 2002.5 |
| | | | | | 200405 | 200406 | 2003.5 |
| | | | | | 200508 | 200509 | 2005 |
| <u>Mexico</u> | | | | | | | |
| WVS 10 | 199005 | 199005 | 1989.5 | WVS 10 | 199005 | 199005 | 1989.5 |
| | 199509 | 199603 | 1995 | | 199509 | 199603 | 1995 |
| | 200001 | 200002 | 1999 | | 200001 | 200002 | 1999 |
| | 2005 | 2005 | 2005 | | 2005 | 2005 | 2005 |
| LB 4 | 200104 | 200105 | 2000.5 | LB 5 | 199505 | 199505 | 1994.5 |
| | 200307 | 200308 | 2002.5 | | 199606 | 199606 | 1995.5 |
| | 200405 | 200406 | 2003.5 | | 199711 | 199801 | 1997 |
| | 200508 | 200509 | 2005 | | 199812 | 199812 | 1998 |
| | 200610 | 200610 | 2006 | | 200001 | 200002 | 1999 |
| | | | | | 200104 | 200105 | 2000.5 |
| | | | | | 200204 | 200205 | 2001.5 |
| | | | | | 200307 | 200308 | 2002.5 |
| | | | | | 200405 | 200406 | 2003.5 |
| | | | 200508 | 200509 | 2005 | | |

| | Life satisfaction | | | | Financial satisfaction | | |
|------------------|-------------------|--------|-------------------------|--------|------------------------|--------|-------------------------|
| | Survey dates | | Paired with GDP for: | | Survey dates | | Paired with GDP for: |
| | start | end | | | start | end | |
| <u>Peru</u> | | | | | | | |
| WVS 10 | 199605 | 199605 | 1995.5 | WVS 10 | 199605 | 199605 | 1995.5 |
| | 200107 | 200107 | 2000.5 | | 200107 | 200107 | 2000.5 |
| | 2005 | 2005 | 2005 | | 2005 | 2005 | 2005 |
| LB 4 | 200104 | 200104 | 2000 | LB 5 | 199505 | 199506 | 1994.5 |
| | 200307 | 200308 | 2002.5 | | 199606 | 199606 | 1995.5 |
| | 200405 | 200405 | 2003.5 | | 199712 | 199712 | 1997 |
| | 200508 | 200509 | 2005 | | 199811 | 199811 | 1998 |
| | 200610 | 200610 | 2006 | | 200002 | 200002 | 1999 |
| | | | | | 200104 | 200104 | 2000 |
| | | | | | 200204 | 200205 | 2001.5 |
| | | | | | 200307 | 200308 | 2002.5 |
| | | | | | 200405 | 200405 | 2003.5 |
| | | | | | 200508 | 200509 | 2005 |
| <u>Venezuela</u> | | | | | | | |
| WVS 10 | 199603 | 199604 | 1995 | WVS 10 | 199603 | 199604 | 1995 |
| | 200011 | 200012 | 2000 | | 200011 | 200012 | 2000 |
| LB 4 | 200104 | 200104 | 2000 | LB 5 | 199505 | 199506 | 1994.5 |
| | 200307 | 200308 | 2002.5 | | 199606 | 199607 | 1995.5 |
| | 200405 | 200406 | 2003.5 | | 199712 | 199712 | 1997 |
| | 200508 | 200509 | 2005 | | 199811 | 199812 | 1998 |
| | 200610 | 200610 | 2006 | | 200002 | 200002 | 1999 |
| | | | | | 200104 | 200104 | 2000 |
| | | | | | 200204 | 200205 | 2001.5 |
| | | | | | 200307 | 200308 | 2002.5 |
| | | | | | 200405 | 200406 | 2003.5 |
| | | | 200508 | 200509 | 2005 | | |

| | Life satisfaction | | | | Financial satisfaction | | | |
|------------------|---|--------|--|--------|------------------------|--------|-------------------------|------|
| | Survey dates | | Paired with GDP for: | | Survey dates | | Paired with GDP for: | |
| | start | end | | | start | end | | |
| Asia | | | | | | | | |
| <u>China</u> | | | | | | | | |
| WVS 10 | 199007 | 199012 | 1990 | WVS 10 | 199007 | 199012 | 1990 | |
| | 1995 | 1995 | 1995 | | 1995 | 1995 | 1995 | 1995 |
| | 200103 | 200106 | 2000.5 | | 200103 | 200106 | 2000.5 | |
| | 2007 | 2007 | 2007 | | 2007 | 2007 | 2007 | |
| G 4 | 1997 | 1997 | 1997 | | | | | |
| | 199905 | 199905 | 1998.5 | | | | | |
| | 200411 | 200411 | 2004 | | | | | |
| <u>India</u> | | | | | | | | |
| WVS 10 | 199007 | 199012 | 1990 | | | | | |
| | 1995 | 1995 | 1995 | | | | | |
| | 2006 | 2006 | 2006 | | | | | |
| WVS 4 (Happy) | 1995 | 1995 | 1995 | | | | | |
| | 200108 | 200110 | 2001 | | | | | |
| | 2006 | 2006 | 2006 | | | | | |
| <u>Japan</u> | | | | | | | | |
| WVS 10 | 1981 | 1981 | 1981 | WVS 10 | 1981 | 1981 | 1981 | |
| | 199009 | 199009 | 1990 | | 199009 | 199009 | 1990 | |
| | 1995 | 1995 | 1995 | | 1995 | 1995 | 1995 | |
| | 200007 | 200007 | 2000.5 | | 200007 | 200007 | 2000.5 | |
| | 2005 | 2005 | 2005 | | 2005 | 2005 | 2005 | |
| K 5 | 1978, 1981, 1984, 1987, 1990, 1993, 1996, 1999, 2002, 2005 | | 1978, 1981, 1984, 1987, 1990, 1993, 1996, 1999, 2002, 2005 | | | | | |
| SW 4(a) | | | 1958-1963 | | | | | |
| SW 4(b) | | | 1964-1969 | | | | | |
| SW 4(c) | | | 1970-1991 | | | | | |
| SW4(d) | | | 1992-2007 | | | | | |

| | Life satisfaction | | | | Financial satisfaction | | |
|---------------------|-------------------|--------|-------------------------|--------|------------------------|--------|-------------------------|
| | Survey dates | | Paired with GDP for: | | Survey dates | | Paired with GDP for: |
| | start | end | | | start | end | |
| <u>South Korea</u> | | | | | | | |
| WVS 10 | 198103 | 198103 | 1980 | WVS 10 | 198103 | 198103 | 1980 |
| | 199006 | 199007 | 1989.5 | | 199006 | 199007 | 1989.5 |
| | | | | | 1996 | 1996 | 1996 |
| | 200111 | 200111 | 2001 | | 200111 | 200111 | 2001 |
| | 2005 | 2005 | 2005 | | 2005 | 2005 | 2005 |
| | | | | | | | |
| <u>Turkey</u> | | | | | | | |
| WVS 10 | 199011 | 199101 | 1990 | WVS 10 | 199011 | 199101 | 1990 |
| | 199612 | 199701 | 1996 | | 199612 | 199701 | 1996 |
| | 200109 | 200201 | 2001 | | 200109 | 200201 | 2001 |
| | 2007 | 2007 | 2007 | | 2007 | 2007 | 2007 |
| EB 10 | 200501 | 200502 | 2004 | | | | |
| | | | | | | | |
| Africa | | | | | | | |
| <u>Nigeria</u> | | | | | | | |
| WVS 10 | 199005 | 199006 | 1989.5 | WVS 10 | 199005 | 199006 | 1989.5 |
| | 1995 | 1995 | 1995 | | 1995 | 1995 | 1995 |
| | 200010 | 200011 | 2000 | | 200010 | 200011 | 2000 |
| <u>South Africa</u> | | | | | | | |
| WVS 10 | 198110 | 198110 | 1981 | WVS 10 | | | |
| | 199010 | 199011 | 1990 | | 199010 | 199011 | 1990 |
| | 1996 | 1996 | 1996 | | 1996 | 1996 | 1996 |
| | 200103 | 200105 | 2000.5 | | 200103 | 200105 | 2000.5 |
| | 2007 | 2007 | 2007 | | 2007 | 2007 | 2007 |
| M | | | 1983, 1988, 1994-95 | | | | |

Key

WVS = World Values Survey

LB = Latinobarometer

G = Gallup

SW = 'Life in Nation' survey as reported in Stevenson-Wolfers (2008)

EB = Eurobarometer

M = Mark Data

Numbers following data source are number of response categories. Letters a, b, c, d indicate change in wording of response options. We did not include life satisfaction in the Latinobarometer for 1997 and 2000 because the question differs from that for later dates.