Social capital Predicts Happiness over Time: Evidence from Macro and Micro Data

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The evolution over time of subjective well-being

- Time series seem likely to provide an answer to what people want to know:

- “How far is general income growth likely to increase average happiness? This is a question about time series relationships” (Layard 2009)
Well-being trends across countries

• There are international differences in long-term trends of subjective well-being (SWB)

• For instance: SWB increased in several EU countries and decreased in the US in the last 30 years
Declining Trend in US happiness

Source: Stevenson and Wolfers 2008, GSS data
Trend in European Well-Being

Year fixed effects, from an ordered probit regression of well-being on country and year fixed effects


Source: Stevenson and Wolfers 2008
What does predict the international differences in the trends of well-being?

- Income trends do not: The Easterlin paradox
- People do not become happier when a country’s income increases.
The Easterlin paradox

• The trends of happiness and income are unrelated in the long run in:
  – developed countries
  – developing countries
  – all countries together

(Easterlin and Angelescu 2009)
Correlation between trends (10 years)

Happiness & GDP in Developed Countries

N = 14
R² = 0.24

\[ Y = 0.008 - 0.0056X \]

(3.38) (-1.89)
t-stat in parentheses
Happiness & GDP in Developing Countries

Correlation between trends (10 years)

N = 5
R² = 0.42

Y = 0.024 - 0.0104X

(1.86) (-1.85)
t-stat in parentheses

average growth rate of GDP per capita (constant 2000 US$)

Correlation between trends (10 years)
Happiness & GDP in all countries

Correlation between trends (10 years)

N = 19
R2 = 0.16
Y = 0.011 - 0.0063X
(2.80)  (-2.11)
t-stat in parentheses

average growth rate of GDP per capita (constant 2000 US$)

Ehapr Linear prediction

Correlation between trends (10 years)
Social capital predicts happiness over the long-run

- **What happens** in this kind of regressions when income is substituted by *social capital* as the independent variable? (Bartolini, Bilancini and Sarracino (2009))

- The measure of social capital: share of the population *member in at least one group or association*

- Data: World Values Survey
Groups and associations

- Social welfare service for elderly
- Religious organizations
- Education, arts, or cultural activities
- Labour unions
- Political parties
- Human rights
- Conservation, the environment, ecology, animal rights

- Youth work
- Professional associations
- Sports or recreation
- Women’s group
- Peace movement
- Organizations concerned with health
- Consumer groups
- Other groups
Correlation among trends

Happiness & Social Capital

Developed countries (10 years)

Correlation between trends

It
uk
Fr
Swe
Esp
Net
USA
Jap
Ger
Den
Fin
Ire
Bel
Can

0.002
0.004
0.006
0.008

annual change in happiness

(absolute amount on a 1 - 4 scale)

-.005
0
.005
.01
.015
.02

annual change in group membership

Ehapr

Linear prediction

N = 14
R2 = 0.60
Y = 0.0012 + 0.381X

(2.40) (7.40)

t-stat in parentheses

Correlation between trends
Correlation between trends
Happiness & Social Capital
All countries (10 years)

N = 19
R² = 0.53
Y = 0.0001 + 0.740X

(0.09) (2.30)
t-stat in parentheses

Correlation between trends
Results

• Happiness and GDP are unrelated in the long run while happiness and sociability are strongly and positively related.
Evidence from micro data

Can micro data give us a more detailed picture of what predicts the changes in well-being over time?

The trend of US happiness is predicted by 4 forces that drive such a trend in opposite directions (Bartolini, Bilancini and Pugno 2008, GSS data)

- Increase in income
- Social comparisons
- Decline of relational goods
- Decline of trust in institutions

Relational goods and trust in institutions: components of social capital
Social comparisons

- Mrs. Jones compares what she owns with what is owned by other persons, said reference groups.

- Having a lot may seem little to Mrs. Jones if those she compares herself to, have more.

- An increase in income has a positive impact on the well-being of Mrs. Jones but an increase of the same size in the income of her reference group, offsets about 2/3 of such an impact.

- Growth raises happiness if what matters for happiness is to have a bigger car, not if what matters is to have a bigger car than your neighbour.
The trends of the various indicators document:

- An increase in: loneliness, sense of isolation, instability of families, generational cleavages, mistrust

- A decrease in social contacts, honesty, solidarity, social participation, civic engagement
Predictors of the decline in US happiness

The predicted negative impact of:

- Social comparisons
- Decline of relational goods
- Decline of trust in institutions

more than offset the predicted positive impact of the increase in income
Social capital matter

• If social capital had remained at its 1975 level, happiness might have substantially increased

About 10%!
This is the growth rate of household income needed to compensate for the happiness loss due to the decline in relational measures
The German case confirms these results: the trend of social capital is a major predictor of the long-term trend of subjective well-being 1994-2007 (Bartolini, Bilancini and Sarracino 2009, GSOEP data)
Lessons for measuring well-being

• The purchasing power, measured by GDP, is one component of well-being but is not all that matters

• The quality of relational experience cannot be purchased but is important for well-being

• A credible indicator of well-being must also take into account social capital
Social capital and happiness in European countries

- In many European countries happiness and social capital increased in 1980-2005 (Sarracino 2009, WVS data)
Trends of relational goods 1980-2005
Germany: trust
Trends of relational goods 1980-2005
Germany: Putnam Groups

Trend of membership in putnamian groups

- Overall trend
- Trend by wave
- Trend by wave (controls)
- 90% CI
- Confidence interval
- Confidence interval (controls)
Happiness trends 1980-2005
Germany
Trends of relational goods 1980-2005

Italy: trust
Trends of relational goods 1980-2005

Italy: Putnam Groups
Happiness trends 1980-2005
Italy
Trends of relational goods 1980-2005

Sweden: trust

![Graph showing trends of trust in other people, with data points and trend lines indicating growth over time.](image-url)
Trends of relational goods 1980-2005
Sweden: Putnam groups

Trend of membership in Putnamian groups

- Overall trend
- Trend by wave
- Trend by wave (controls)
Happiness trends 1980-2005
Sweden
Trends of relational goods 1980-2005
Denmark: trust

trend of trust in other people

- average annual growth
- per wave growth

year survey

overall trend
- trend by wave
- trend by wave (controls)
90% CI
confidence interval
confidence interval (controls)
Trends of relational goods 1980-2005
Denmark: Putnam groups
Happiness trends 1980-2005
Denmark
Trends of relational goods 1980-2005
Norway: trust
Trends of relational goods 1980-2005
Norway: Putnam groups
Happiness trends 1980-2005
Norway
Trends of relational goods 1980-2005
Netherlands: trust
Trends of relational goods 1980-2005
Netherlands: Putnam groups
Happiness trends 1980-2005
Netherlands
Trends of relational goods 1980-2005
Belgium: trust
Trends of relational goods 1980-2005
Belgium: Putnam groups

trend of membership in putnamian groups

- overall trend
- trend by wave
- trend by wave (controls)

90% CI

confidence interval

confidence interval (controls)
Happiness trends 1980-2005 Belgium
Trends of relational goods 1980-2005

France: trust
Trends of relational goods 1980-2005
France: Putnam groups
Happiness trends 1980-2005
France
Trends of relational goods 1980-2005

UK: trust

trend of trust in other people

year survey

average annual growth

per wave growth

overall trend

90% CI

trend by wave

confidence interval

trend by wave (controls)

confidence interval (controls)
Trends of relational goods 1980-2005
UK: Putnam groups
Happiness trends 1980-2005
UK
Conclusion 1

This picture of EU countries is consistent with relational goods playing a large role in shaping long-term trends in happiness.

Prudence:
- only descriptive statistics
- low quality of social capital data
Conclusion 2

• Social capital trends are major predictors of happiness trends while GDP has a weak predictive potential
• An increase in income is hardly a realistic perspective for substantial growth in well-being in rich countries
• Developed countries - currently focused on growth - should reorient their efforts towards some other priority.
• This priority is sociability.
Conclusion 3

- Policies for social capital: urban, educational, job, health system, media (Bartolini 2010).

- Developing countries can expect more in terms of well-being from economic growth compared to developed ones, but only if this growth is obtained with a great attention to the containment of its costs in terms of sociability.
Happiness questions
(World Values Survey)

Taking all things together, would you say you are:

• 1 'Very happy'
• 2 'Quite happy'
• 3 'Not very happy'
• 4 'Not at all happy'
Life satisfaction questions
(World Values Survey)

All things considered, how satisfied are you with your life as a whole these days?

• 1 'Dissatisfied'
• 2
• 3
• 4
• 5
• 6
• 7
• 8
• 9
• 10 'Satisfied'
Reliability of SWB

SWB is well correlated to:

• Assessment of the person’s happiness by friends and family members
• Assessment of the person’s happiness by her/his spouse
• Duration of authentic smiles (so called Duchenne smiles: this latter occur when the zygomatic major and obicularus orus facial muscles fire, and humans identify this as ‘genuine smiles’).
• Heart rate and blood pressure measures responses to stress, and psychosomatic illnesses such as digestive disorders and headaches
• Skin resistance measures of responses to stress
• Electroencephalogram measures of pre-frontal brain activity
• Suicides
The decline of relational goods and trust in institutions


<table>
<thead>
<tr>
<th>Probit (# is OLS)</th>
<th>Time Coeff.</th>
<th>Probit (# is OLS)</th>
<th>Time Coeff.</th>
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</thead>
<tbody>
<tr>
<td>Married</td>
<td>-.030***</td>
<td>Other Groups</td>
<td>-.004**</td>
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<tr>
<td>Separated</td>
<td>.038***</td>
<td>#other Groups</td>
<td>-.001**</td>
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<td>Divorced</td>
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<td></td>
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<tr>
<td>General trust</td>
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<td>Confident in banks</td>
<td>-.024***</td>
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<tr>
<td>People unfair</td>
<td>.010***</td>
<td>Confident in companies</td>
<td>-.006***</td>
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<tr>
<td>People helpful</td>
<td>-.006***</td>
<td>Confident in org. religion</td>
<td>-.023***</td>
</tr>
<tr>
<td>Monthly with relatives</td>
<td>-.001</td>
<td>Confident in education</td>
<td>-.024***</td>
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<tr>
<td>Monthly with neighbors</td>
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<td>Confident in executive</td>
<td>-.007***</td>
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<tr>
<td>Monthly with friends</td>
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<td>Confident in universities</td>
<td>-.010***</td>
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<tr>
<td>Monthly at bar</td>
<td>-.009***</td>
<td>Confident in press</td>
<td>-.045***</td>
</tr>
<tr>
<td>1-2 Putnam's Group</td>
<td>-.010***</td>
<td>Confident in medicine</td>
<td>-.020***</td>
</tr>
<tr>
<td>3+ Putnam's Groups</td>
<td>.002</td>
<td>Confident in television</td>
<td>-.030***</td>
</tr>
<tr>
<td>#Putnam's Groups</td>
<td>-.003**</td>
<td>Confident in sup. court</td>
<td>.0002</td>
</tr>
<tr>
<td>1 Olson's Group</td>
<td>-.008***</td>
<td>Confident in in science</td>
<td>-.003***</td>
</tr>
<tr>
<td>2+ Olson's Groups</td>
<td>.004</td>
<td>Confident in congress</td>
<td>-.020***</td>
</tr>
<tr>
<td>#Olson's Groups</td>
<td>-.001**</td>
<td>Confident in military forces</td>
<td>.016***</td>
</tr>
</tbody>
</table>
## Multivariate Happiness Regression: Happiness and Relational Goods

<table>
<thead>
<tr>
<th>Type of SC</th>
<th>OLS Estimation</th>
<th>Coefficient</th>
<th>t-stat</th>
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<tbody>
<tr>
<td>Non-Instrumental Relational SC</td>
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<tr>
<td>Married</td>
<td>0.1870</td>
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<td>2nd+ Marriage</td>
<td>0.0274</td>
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<tr>
<td>Separated</td>
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<td>Divorced</td>
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<td>Widowed</td>
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<tr>
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<td>2.34</td>
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<td>Monthly with friends</td>
<td>0.0421</td>
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<td>Monthly at bar</td>
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<tr>
<td>Others can be trusted</td>
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<td>Others are helpful</td>
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<td>Others are unfair</td>
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<td>Member of 3+ P-Groups</td>
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<tr>
<td>Member of 1 O-Group</td>
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<td>0.70</td>
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</tr>
<tr>
<td>Member of 2+ O-Groups</td>
<td>-0.0485</td>
<td>-1.69</td>
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</table>
### Multivariate Happiness Regression

#### Happiness and Trust in Institutions

<table>
<thead>
<tr>
<th>Type of SC</th>
<th>OLS Estimation</th>
<th>Coefficient</th>
<th>t-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Relational SC</strong></td>
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<tr>
<td>Very confident in banks</td>
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<td>0.0777</td>
<td>3.74</td>
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<tr>
<td>Very confident in companies</td>
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<td>0.0937</td>
<td>4.68</td>
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<tr>
<td>Very confident in org. religion</td>
<td></td>
<td>0.0158</td>
<td>0.82</td>
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<tr>
<td>Very confident in education</td>
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<td>4.01</td>
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<td>Very confident in executive</td>
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<td>2.19</td>
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<td>Very confident in org. labor</td>
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<td>1.49</td>
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<tr>
<td>Very confident in press</td>
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<td>Very confident in medicine</td>
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<td>Very confident in television</td>
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<td>Very confident in supreme court</td>
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<td>Very confident in scientific</td>
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<td>Very confident in congress</td>
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<td>Very confident in military forces</td>
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<td>0.0116</td>
<td>0.62</td>
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<tr>
<td><strong>Year Dummies</strong></td>
<td></td>
<td>YES</td>
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</tr>
</tbody>
</table>
Accounting for the happiness trend

Results: **SC is BENEFICIAL to happiness and it is DECLINING**
How much change in happiness does its decline predict?

Questions:
- How much happiness change is predicted by the variation over time of each regressor?
- What is the total predicted change?
Accounting for the happiness trend

- Next step: to compute the predicted impact on happiness of each variable over the period 1975-2004, i.e.

\[ \Delta h = \alpha(X_{2004} - X_{1975}) \]

- For each regressor \( \alpha \) is the coefficient of the happiness regression, \( X_{2004} \) and \( X_{1975} \) contain the average values of the regressor in year 2004 and 1975.
### Accounting for the Happiness Trend

#### Disaggregation of Happiness Variation in 1975-2004

<table>
<thead>
<tr>
<th>Groups of Regressors</th>
<th>Impact on (h)</th>
<th>Partial Sums</th>
<th>Type of SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>-0.0075</td>
<td>-0.0075</td>
<td>Demographics</td>
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<tr>
<td>Absolute Income</td>
<td>0.0910</td>
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<td>Income</td>
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<tr>
<td>Relative Income</td>
<td>-0.0620</td>
<td>0.0290</td>
<td>All non-SC</td>
</tr>
<tr>
<td>Other Socio-economics</td>
<td>0.0135</td>
<td>0.0350</td>
<td>Non-Instr.</td>
</tr>
<tr>
<td>Marital Status &amp; Children</td>
<td>-0.0309</td>
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<td>RSC</td>
</tr>
<tr>
<td>Social Contacts</td>
<td>-0.0003</td>
<td></td>
<td>RSC</td>
</tr>
<tr>
<td>Trust in Individuals</td>
<td>-0.0091</td>
<td></td>
<td>RSC</td>
</tr>
<tr>
<td>Putnam's Group</td>
<td>-0.0025</td>
<td>-0.0428</td>
<td>All SC</td>
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<td>Olson's Group</td>
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<tr>
<td>Confidence in institutions</td>
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<td>Predicted variation</td>
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<tr>
<td>Observed Variation</td>
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