Determinants of Well-Being: *Applying the Easterlin Paradox, Life Expectancy, Carbon Emissions, and Education Across Countries*

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Abstract

This study estimates well-being as a function of Gross Domestic Product per capita, life expectancy, primary education completion rates, and carbon dioxide emissions per capita using panel data from 78 countries in time periods 2006 and 2009. We find that well-being increases at a decreasing rate as GDP per capita increases, which is consistent with the Easterlin Paradox. We also find a statistically significant, positive relationship between well-being and life expectancy and a negative relationship between well-being and carbon dioxide emissions.

Theory

$$WB_{it} = \beta_0 + \beta_1 \ln(GDP_{it}) + \beta_2 LIFE_{it} + \beta_3 PCR_{it} + \beta_4 CO2_{it} + \epsilon_{it}$$

WB: Well-being, 0 represents the worst possible life and 10 the best possible life

GDP: Gross Domestic Product per capita, measures the market value of all final goods and services produced within the boundaries of a county in a given calendar year

LIFE: Life expectancy, measures the average number of years that a person may expect to live

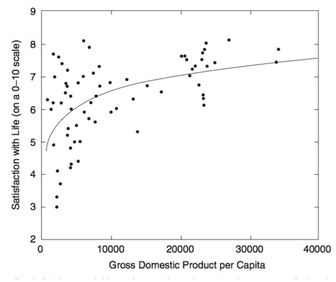
PCR: Primary completion rate, measures the percentage of the total population entering the last grade of primary education

CO2: Carbon dioxide emissions, measures the burning of fossil fuels in metric tons per capita

"i" designates countries i = 1…78; "t" designates years t = 2006, 2009

The Easterlin Paradox

Diener and Seligman



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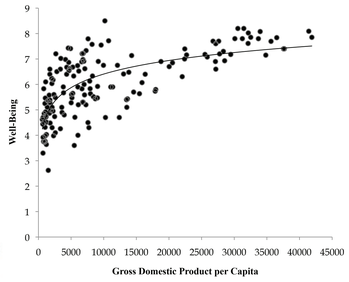

Data

Sample Size: 156

Panel Data Set: captures changes in well-being explained by both cross sectional and time sensitive variables as indicated by the subscript "it"

Sources

WB: gathered by the Gallup World Poll through a survey called the "Ladder of Life"

GDP: obtained by the International Human Development Indicators of the United Nations Development Programme

LIFE: obtained by the International Human Development Indicators of the United Nations Development Programme

PCR: obtained from the World Bank, gathered by UNESCO

CO2: gathered from the World Bank

Empirical Results

Explanatory Variables	Equation 1	P-Value	Equation 2	P-Value
LOG(GDP)	0.477*	0.000	0.473*	0.000
LIFE	0.039*	0.000	0.038*	0.000
PCR	-0.001	0.831	n/a	n/a
CO2	-0.014	0.162	-0.014	0.162
Adusted R-Squared	0.545		0.547	
n = 78				

*Indicates Statistically significant at 5% level

Interpretation of Results

- Every 1% increase in GDP is correlated with a 0.47 increase on the well-being scale, holding all else constant
- Every 1 year increase in LIFE is correlated with a 0.03 increase on the well-being scale, holding all else constant
- Every increase of 1 metric ton per capita of CO2 is correlated with a 0.01 decrease on the well-being scale, holding all else constant – But the result is not statistically significant

Summary & Implications

Well-being may seem more relevant to psychologists than economists. However, understanding economic factors that relate to individual well-being is crucial when making policy decisions. Well-being is also very similar to economic utility – a concept economists have so far been unable to measure in a meaningful way. This study was inspired by a desire to understand how levels of well-being are determined on the macroeconomic level.

We set out to test the Easterlin Paradox and we found that in fact, it does appear to exist. While we find that the Easterlin Paradox holds true, we question whether it is truly a paradox. Economic theory suggests that the marginal utility of income diminishes, which is directly in line with the Easterlin Paradox. We therefore assert that the Easterlin Paradox is no paradox at all.