Statistical Appendix for "The Distribution of World Happiness", John F. Helliwell, Haifang Huang and Shun Wang, Chapter 2, World Happiness Report Update 2016

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1   Data Sources and Variable Definitions

- Happiness score or subjective well-being (variable name *ladder*): The survey measure of SWB is from the Jan 22, 2016 release of the Gallup World Poll (GWP), which covers the years from 2005 to 2015. Unless stated otherwise, it is the national average response to the question of life evaluations. The English wording of the question is "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?" This measure is also referred to as *Cantril life ladder*, or just *life ladder* in our analysis.

- Inequality/distribution statistics of happiness scores by WP5-year (variables names *giniLadder* and more) from the GWP release. WP5 is GWP's coding of countries, including some sub-country territories such as Hong Kong. The statistics are named giniLadder, p95Ladder, p90Ladder, p75Ladder, p50Ladder, p25Ladder, p10Ladder, p05Ladder, maxLadder, minLadder, respectively the gini score, the various percentiles, the maximum and the minimum. They are all derived from the STATA command *ineqdec0* using observations in an individual country/territory in a given survey year with sample weights. According to Stephen P. Jenkins (May 2008, STATA Help), the command ineqdec0 "estimate[s] a range of inequality and related indices" using unit record or 'micro' level data, and that the calculations do not exclude observations whose value is equal to zero.

- Alternative measures of inequality in happiness scores by wp5-year (variable names *sdLadder* and *cvLadder*). These extra measures are sdLadder "Standard deviation of ladder by country-year" and cvLadder "Standard deviation/Mean of ladder by country-year".

- Gini of household income reported in the GWP (variable name *giniIncGallup*). The income variable, namely INC_001, is described in Gallup's "WORLDWIDE RESEARCH METHODOLOGY AND CODEBOOK" (Updated July 2015) as "Household Income International Dollars [...] To calculate income, respondents are asked to report their household income in local currency. Those respondents who have difficulty answering the question are presented a set of ranges in local currency and are asked which group they fall into. Income variables are created by converting local currency to International Dollars (ID) using purchasing power parity (PPP) ratios." The gini measure is generated using STATA command *ineqdec0* by WP5-year with sample weights.

- GINI index from the World Bank (variable name *giniIncWB* and *giniIncWBavg*) from the World Development Indicators (Last Updated: 22-Dec-2015). The variable labeled at the source as "GINI index (World Bank estimate)", series code "SI.POV.GINI". According to the source, the data source is "World Bank, Development Research Group. Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments." The variable *giniIncWB* is an unbalanced panel of yearly index. The data availability is patchy at the yearly frequency. The variable *giniIncWBavg* is the average of *giniIncWB* in the period 2000-2013. The average does not imply that a country has the gini index in all years in that period. In fact, most do not.

- The statistics of GDP per capita (variable name *gdp*) in purchasing power parity (PPP) at constant 2011 international dollar prices are from the December 22, 2015 release of the World Development Indicators (WDI). The GDP figures for Taiwan are from the Penn World Table 7.1. Syria, Angola and Argentina and a few others are missing the GDP numbers in the December 22, 2015 WDI but were present in earlier releases. We use the numbers from the earlier release, after adjusting their levels by a factor of 1.17 to take into account changes in the implied prices when switching from the PPP 2005 prices used in the earlier release to the PPP 2011 prices used in the latest release. The factor of 1.17 is the average ratio derived by dividing the US GDP per capita under the 2011 prices with their counterparts under the 2005 prices. The same 1.17 is used to adjust the Taiwanese numbers, which are originally PPP dollars at 2005 constant prices. For Somalia, we use the 2010 estimate of GDP per capita figure in the CIA World Factbook. New Zealand, Guyana and Yemen are missing the 2014 GDP in the WDI dataset. We compute the values with their 2013 base and OECD or World Bank forecasts of growth rates of real GDP, adjusted for population growth.

  - GPD per capita in 2015 are not yet available as of Dec 2015. We extend the GDP-per-capita time series from 2014 to 2015 using country-specific forecasts of real GDP growth in 2015 first from the OECD Economic Outlook No. 98 (Edition 2015/2) and then, if missing, forecasts from World Bank's Global Economic Prospects (Last Updated: 12/19/2014). The

GDP growth forecasts are adjusted for population growth with the subtraction of 2013-14 population growth as the projected 2013-14 growth. For another 12 countries that are missing figures of growth forecast, we compute their 2015 GDP per capita as the product of 2014 value and the 2013-2014 growth rate, essentially using the 2013-14 growth rates as if they were forecast of 2014 to 2015 growth rates.

- Healthy Life Expectancy (HLE). The time series of healthy life expectancy at birth are calculated by the authors based on data from the World Health Organization (WHO), the World Development Indicators (WDI), and statistics published in journal articles. The challenge is that the healthy life expectancy, unlike the simple life expectancy, is not widely available as time series. In the WHO's Global Health Observatory Data Repository, the statistics of healthy life expectancy are reported only for the years of 2000 and 2012. In our effort to derive the time series of healthy life expectancy for our sample period (2005 to 2015), we use WDI's non-health adjusted life expectancy, which is available as time series up to the year 2013, as the basis of our calculation. Using country-specific ratios of healthy life expectancy to total life expectancy in 2012, available from the WHO, we adjust the time series of total life expectancy to healthy life expectancy by simple multiplication, assuming that the ratio remains constant within each country over the sample period. Three countries/regions are missing due to the lack of health/total life expectancy ratio. One is Hong Kong. We calculate its ratio using relevant estimates in "Healthy life expectancy in Hong Kong Special Administrative Region of China," by C.K. Law, & P.S.F. Yip, published at the *Bulletin of the World Health Organization*, 2003, 81 (1). Another is Puerto Rico. We set its ratio to the U.S. ratio of 0.886. The third is Kosovo, we set its ratio to the world average 0.868. The estimated life expectancy for Taiwan and the Palestinian Territories are available in "Healthy life expectancy for 187 countries, 1990 - 2010: a systematic analysis for the Global Burden Disease Study 2010," by Joshua A Salomon et al, *The Lancet*, Volume 380, Issue 9859. Once we have the data, we use intrapolation and extrapolation to fill in the missing values (when necessary) and to extend the period to 2015.

- Social support (or having someone to count on in times of trouble) is the national average of the binary responses (either 0 or 1) to the GWP question "If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?"

- Freedom to make life choices is the national average of responses to the GWP question "Are you satisfied or dissatisfied with your freedom to choose what you do with your life?"

- Generosity is the residual of regressing national average of response to the GWP question "Have you donated money to a charity in the past month?" on GDP per capita.

- Corruption Perception: The measure is the national average of the survey responses to two questions in the GWP: "Is corruption widespread throughout the government or not" and "Is corruption widespread within businesses or not?" The overall perception is just the average of the two 0-or-1 responses. In case the perception of government corruption is missing, we use the perception of business corruption as the overall perception. The corruption perception at the national level is just the average response of the overall perception at the individual level.

- Positive affect is defined as the average of three positive affect measures in GWP: happiness, laugh and enjoyment in the Gallup World Poll waves 3-7. These measures are the responses to the following three questions, respectively: "Did you experience the following feelings during A LOT OF THE DAY yesterday? How about Happiness?", "Did you smile or laugh a lot yesterday?", and "Did you experience the following feelings during A LOT OF THE DAY yesterday? How about Enjoyment?" Waves 3-7 cover years 2008 to 2012 and a small number of countries in 2013. For waves 1-2 and those from wave 8 on, positive affect is defined as the average of laugh and enjoyment only, due to the limited availability of happiness.

- Negative affect is defined as the average of three negative affect measures in GWP. They are worry, sadness and anger, respectively the responses to "Did you experience the following feelings during A LOT OF THE DAY yesterday? How about Worry?", "Did you experience the following feelings during A LOT OF THE DAY yesterday? How about Sadness?", and "Did you experience the following feelings during A LOT OF THE DAY yesterday? How about Anger?"

- Variables in the expanded data set: Confidence in national government from the GWP. The English wording of the question is "Do you have confidence in each of the following, or not? How about the national government? (WP139)".

- Variables in the expanded data set: "Most people can be trusted" from the GWP. The question's English wording is "Generally speaking, would you say that most people can be trusted or that you have to be careful in dealing with people?" This indicator has a limited coverage.

- Variables in the expanded data set: "Most people can be trusted" from the 6-wave World Value Surveys. The question's English wording is "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" The measure is defined as the percentage of respondents saying that most people can be trusted, excluding those who did not provide an answer.

- Variables in the expanded data set: Democratic and delivery quality measures of governance are based on Worldwide Governance Indicators (WGI) project (Kaufmann, Kraay and Mastruzzi). The original data have six dimensions:

Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption. The indicators are on a scale roughly with mean zero and a standard deviation of 1. We reduce the number of dimensions to two using the simple average of the first two measures as an indicator of democratic quality, and the simple average of the other four measures as an indicator of delivery quality, following Helliwell and Huang (2008).

2 Coverage, Summary Statistics and Regression Tables

The Jan 22, 2016 release of the Gallup World Poll (GWP) covers a total of 1,275 WP5-year observations of happiness scores in the period from 2005 to 2015 involving 166 different WP5, GWP's coding of countries including some sub-country territories such as Hong Kong. Not all the countries and territories appear in all the years. Our analysis does not cover all of the country/territories that have valid happiness scores. Tables 1-3 show the WP5-year pairs that are covered.

The 2012-2015 ranking of happiness scores includes 153 countries/territories that have the happiness scores in the 2013-2015 period, plus 4 countries/territories that have the happiness score in 2012 but not in 2013-15. A later table has the list of those countries.

To appear in regression analysis that uses data from outside the GWP survey, a WP5-year needs to have the necessary external information (GDP, healthy life expectancy, etc). The regression analysis thus does not necessarily cover all of the countries/territories in the GWP. Nor does it necessarily cover all the countries/territories that are ranked by their happiness scores in this report. The underlying principle is that we always use the largest available sample. For different kind of analysis/ranking, the largest available samples can be different.

Regions: Some of the analysis includes dummy indicator for regions, namely Western Europe, Central and Eastern Europe, Commonwealth of Independent States, Southeast Asia, South Asia, East Asia, Latin America and Caribbean, North America and ANZ, Middle East and North Africa, and Sub-Saharan Africa.

Table 1: Number of ladder (WP16) observations for WP5-years - Part 1

Country/territory (wp5 ID)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
United States (1)		1001	1225	1004	1003	1005	1008	2094	1005	2048	1019
Egypt (2)	999		1024	1105	2112	2053	5296	4186	1149	1000	1000
Morocco (3)						1006	1001	3000	1007		998
Lebanon (4)	996	1000		1000	2010	2027	2007	2013	1000	1000	1000
Saudi Arabia (5)	1004		1006	1150	2052	2038	2022	1077	2036	2035	1012
Jordan (6)	1000		1016	1007	2016	2000	2000	2000	1000	1000	1000
Syria (7)				1209	2100	2035	2041	2043	1022		1002
Turkey (8)	995		1001	1004	999	1000	1001	2000	1000	2003	1002
Pakistan (9)	1001		1502	2484	3122	1030	1000	3012	1000	1000	1000
Indonesia (10)		1180	1000	1050	1080	1080	1000	3000	1000	1000	1000
Bangladesh (11)		1048	1200	1000	1000	1000	1000	3000	1000	1000	1000
United Kingdom (12)	1037		1204	1001	1002	1000	9239	13408	750	2000	1000
France (13)	1002	1220		1006	1000	1004	1001	2005	751	2000	1000
Germany (14)	1001		1221	3016	2010	1007	9105	13269	751	2014	1000
Netherlands (15)	1000		1000	1000		1001	1000	1000	751	2002	1003
Belgium (16)	1003		1022	1002		1003	1002	1001	1006	2004	1037
Spain (17)	1000		1004	1009	1005	1000	1006	2003	1004	2000	1000
Italy (18)	1002		1008	1008	1005	1000	1005	2007	1004	2000	1000
Poland (19)	1000		1000		1000	2000	1029	1000	1000	1000	1000
Hungary (20)	1025		1010		1008	1008	1014	1004	1019	1003	1000
Czech Republic (21)	1001		1072			2082	1000	1005	1001	1008	1000
Romania (22)	1022		1000		1000	1000	1008	1000	1000	998	1001
Sweden (23)	1000		1001	1000	1002	1002	1006	1000	750	2001	1000
Greece (24)	1002		1000		1000	1000	1000	1000	1003	1000	1000
Denmark (25)	1004		1009	1001	1000	1000	1005	1001	753	2002	1005
Iran (26)	1300		1004	1040			1003	3507	1000	2009	1001
Hong Kong (27)		800		751	755	756	1028	1006		2017	
Singapore (28)		1095	1000	2551	1005	1001	1000		1000	1000	1000
Japan (29)	1000		1150	3000	1000	1000	1000	2000	1001	2006	1003
China (30)		3730	3733	3712	3833	4151	4220	9413	4244	4696	4265
India (31)		2100	3186	2000	3010	6000	3518	10080	5540	3000	3000
Venezuela (32)	1000	1000		1000	1000	1000	1000	1000	1000	1000	1000
Brazil (33)	1029		1038	1032	1031	1043	1042	1002	2006	1007	1004
Mexico (34)	1007		999	1000	1000	1000	1000	2000	1000	1017	1031
Nigeria (35)		1000	1000	1000	1000	1000		2000	1002		1000
Kenya (36)		1000	1000	2200	1000	1000	1000	1000	1000	1000	1000
Tanzania (37)		1000	1000	1000	1000	1000	1000	1000	1008	1008	1000
Israel (38)		1002	1001	1001	1000	1000	1000	1000	1000	1000	1000
Palestinian Territories (39)		1000	1000	1000	2014	2000	2000	2000	1000	1000	1000
Ghana (40)		1000	1000	1000	1000	1000	1000	1000	1008	1000	1000
Uganda (41)		1000	1000	1000	1000	1000	1000	1000	1000		
Benin (42)		1000		1000			1000	1000	1000	1000	1000
Madagascar (43)		1000		1000			1000	1000	1008	1008	1000
Malawi (44)		1000	1000		1000		1000	1000	1000	1000	1000
South Africa (45)		1001	1000	1000	1000	1000	1000	2000	1000	1000	1000
Canada (46)	1355		1010	1005	1011	1007	1013	2003	1021	2025	1011
Australia (47)	1000		1205	1005		1000	1010	1002	1002	2002	1001
Philippines (48)		1200	1000	1000	1000	1000	1000	2000	1000	1000	1000
Sri Lanka (49)		1033	1000	1000	1000	1030	1000	2031	1030	1062	1062
Vietnam (50)		1023	1015	1016	1008	1000	1000	2000	1017	1000	1000
Thailand (51)		1410	1006	1038	1019	1000	1000	2000	1000	1000	1000
Cambodia (52)		1000	1000	1024	1000	1000	1000	1000	1000	1000	1000
Laos (53)		1001	1000	1000			1000	1000			
Myanmar (54)								1020	1020	1020	1020
New Zealand (55)		1028	750	750		750	1000	1008	500	2001	1007

Table 2: Number of ladder (WP16) observations for WP5-years - Part 2

Country/territory (wp5 ID)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Angola (56)							1000	1000	1000	1000	
Botswana (57)		1000		1000		1000	1000	1000	1000	1000	1000
Ethiopia (60)								1500	1000	1004	1000
Mali (61)		1000		1000	1000	1000	1000	1000	1000	1000	1000
Mauritania (62)			1000	1000	1984	2000	2000	1000	1008	1000	1000
Mozambique (63)	1000	1000	1000				1000				
Niger (64)		1000	1000	1000	1000	1000	1000	1000	1008	1008	1000
Rwanda (65)		1504		1000	1000		1000	1000	1000	1000	1000
Senegal (66)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Zambia (67)		1001	1000	1000	1000		1000	1000	1000	1000	
South Korea (68)		1100	1000	1000	1000	1000	1001	2000	1000	2000	1000
Taiwan (69)		1002		1000		1000	1001	1000	1000	2000	1000
Afghanistan (70)				1010	2000	1000	1000	2000	1000	1000	
Belarus (71)		1092	1114	1091	1077	1013	1007	1052	1032	1036	1034
Georgia (72)		1000	1000	1080	1000	1000	1000	1000	1000	1000	1000
Kazakhstan (73)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Kyrgyzstan (74)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Moldova (75)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Russia (76)		2011	2949	2019	2042	4000	2000	3000	2000	2000	2000
Ukraine (77)		1102	1066	1074	1081	1000	1000	1000	1000	1000	1000
Burkina Faso (78)		1000	1000	1000		1000	1000	1000	1008	1000	1000
Cameroon (79)		1000	1000	1000	1000	1200	1000	1000	1000	1000	1000
Sierra Leone (80)		1000	1000	1000		1000	1000		1008	1008	1000
Zimbabwe (81)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Costa Rica (82)		1002	1002	1000	1000	1006	1000	1000	1000	1000	1000
Albania (83)			981		1000	1000	1006	1029	1035	999	1000
Algeria (84)							1000	2001	2027	1002	
Argentina (87)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Armenia (88)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Austria (89)		1004		1001		2000	1004	1001	1000	2000	1000
Azerbaijan (90)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Bahrain (92)					2128	2032	2010	1000	1002	1005	2004
Belize (94)			502							504	
Bhutan (95)									1000	1020	1020
Bolivia (96)		1000	1000	1003	1000	1000	1000	1000	1000	1000	1000
Bosnia and Herzegovina (97)			2002		1002	1000	1009	1005	1010	1001	1000
Bulgaria (99)			1003			2000	1006	1000	1000	1000	
Burundi (100)				1000	1000		1000			1000	
Central African Republic (102)			1000			1000	1000				
Chad (103)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Chile (104)		1007	1023	1108	1009	1007	1009	1003	1001	1032	1040
Colombia (105)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Comoros (106)					2000	2000	2000	1000			
Congo (Kinshasa) (107)					1000		1000	1000	1000	1000	1000
Congo Brazzaville (108)				1000			1000	500	1000	1000	1000
Croatia (109)			1000		1009	1029	1029	1000	1000	1000	1000
Cuba (110)		1000									
Cyprus (111)		1000			502	1005	1005	500	500	2000	1029
Djibouti (112)				1000	2000	1000	1000				
Dominican Republic (114)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Ecuador (115)		1067	1061	1001	1000	1000	1003	1003	1000	1000	1000
El Salvador (116)		1000	1001	1000	1006	1001	1000	1000	1000	1000	1000
Estonia (119)		1003	1007	601	608		1007	1004	1010	1000	1000
Finland (121)		1010		1005		1000	1000	1000	750	2001	1000
Gabon (122)							1000	1000	1008	1008	1000
Guatemala (124)		1021	1000	1000	1015	1014	1000	1000	1000	1000	1000

Table 3: Number of ladder (WP16) observations for WP5-years - Part 3

Country/territory (wp5 ID)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Guinea (125)							1000	1000	1008	1000	1000
Guyana (127)			501								
Haiti (128)		505		500		504	504	504	504	504	504
Honduras (129)		1000	1000	1000	1002	1000	1002	1000	1000	1000	1000
Iceland (130)			502					1002	502		
Iraq (131)				990	2001	2000	2000	2000	1003	2010	1009
Ireland (132)		1000		1001	500	1001	1000	1000	1000	2000	1000
Ivory Coast (134)					1000				1008	1000	1000
Jamaica (135)		543					506		504	504	
Kuwait (137)		1000			2002	2004	2000	1000	1008	1013	2000
Latvia (138)		1000	1017	513	515		1006	1001	1000	1002	1001
Lesotho (139)							1000				
Liberia (140)			1000	1000		1000				1000	1000
Libya (141)								1002			1006
Lithuania (143)		1015	1007	506	500	1001	1000	1000	1000	1000	1000
Luxembourg (144)					500	1002	1000	1001	500	2000	1000
Macedonia (145)			1042		1008	1000	1018	1025	1020	1000	1024
Malaysia (146)		1012	1233	1000	1011	1000	1000	1000	1000	2008	1002
Malta (148)					508	1008	1004	1004	500	2013	1002
Mauritius (150)							1000			1000	
Mongolia (153)			1000	1000		1000	1000	1000	1000	1000	1000
Montenegro (154)			834		1003	1000	1000	1000	1000	1000	1000
Namibia (155)			1000							1000	
Nepal (157)		1002	1000	1003	1002	1000	1000	2000	1050	1050	1000
Nicaragua (158)		1001	1000	1000	1012	1000	1003	1000	1000	1000	1000
Norway (160)		1001		1000				1004		2000	1005
Oman (161)							2016				
Panama (163)		1005	1000	1004	1018	1000	1000	1001	1000	1000	1000
Paraguay (164)		1001	1000	1000	1000	1000	1000	1000	1000	1000	1000
Peru (165)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Portugal (166)		1007		1002		2002	1000	1001	1001	2020	1021
Puerto Rico (167)		500								500	
Qatar (168)					2028	1000	1032	2000			1000
Serbia (173)			1556		1008	1000	1001	1023	1030	1000	1000
Slovakia (175)		1018				1007	1012	1007	1004	1000	1000
Slovenia (176)		1009			500	1002	1001	1000	1001	2020	1002
Somalia (178)										1000	1000
Sudan (181)					1784	1808	2000	1000		1000	
Suriname (182)								504			
Swaziland (183)							1000				
Switzerland (184)		1000			1003			1000		2010	501
Tajikistan (185)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Togo (187)		1000		1000			1000			1000	1000
Trinidad & Tobago (189)		508		502			504		504		
Tunisia (190)					1006	2085	2034	2053	1053	1056	1000
Turkmenistan (191)					1000		1000	1000	1000	1000	1000
United Arab Emirates (193)		1013			2054	2066	2036	2016	1000	1002	2903
Uruguay (194)		1004	1004	1005	1000	1000	1000	1009	1000	1000	1000
Uzbekistan (195)		1000		1000	1000	1000	1000	1000	1000	1000	1000
Yemen (197)			1000		2000	2000	2000	2000	1000	1000	1000
Kosovo (198)			1046	1047	1000	1017	1047	1024	1000	1001	1000
Somaliland region (199)					2000	2000	2000	1000			
Northern Cyprus (202)								500	502	2004	1000
South Sudan (205)										1000	

Table 4: Summary statistics - Fullest sample

Variable	Mean	Std. Dev.	Min.	Max.	N
Life Ladder	5.44	1.12	2.69	8.02	1274
Positive affect	0.71	0.11	0.36	0.94	1257
Negative affect	0.26	0.08	0.08	0.70	1263
Log GDP per capita	9.19	1.18	6.35	11.81	1238
Social support	0.81	0.12	0.29	0.99	1262
Healthy life expectancy at birth	61.9	8.17	36.17	76.04	1266
Freedom to make life choices	0.72	0.15	0.26	0.98	1243
Generosity	0	0.16	-0.33	0.54	1186
Perceptions of corruption	0.76	0.19	0.04	0.98	1202

Table 5: Summary statistics - Period from 2005 to 2007

Variable	Mean	Std. Dev.	Min.	Max.	N
Life Ladder	5.46	1.12	3.2	8.02	219
Positive affect	0.72	0.1	0.43	0.89	217
Negative affect	0.25	0.07	0.09	0.47	217
Log GDP per capita	9.12	1.19	6.42	11.47	219
Social support	0.83	0.11	0.44	0.98	217
Healthy life expectancy at birth	60.83	8.80	36.17	74.28	219
Freedom to make life choices	0.72	0.15	0.28	0.97	213
Generosity	0.01	0.17	-0.32	0.49	185
Perceptions of corruption	0.77	0.18	0.06	0.98	207

Table 6: Summary statistics - Period from 2013 to 2015

Variable	Mean	Std. Dev.	Min.	Max.	N
Life Ladder	5.41	1.15	2.69	7.60	419
Positive affect	0.71	0.11	0.37	0.94	412
Negative affect	0.27	0.09	0.1	0.64	415
Log GDP per capita	9.23	1.16	6.51	11.43	392
Social support	0.81	0.12	0.43	0.99	415
Healthy life expectancy at birth	62.68	7.7	42.7	76.04	416
Freedom to make life choices	0.74	0.14	0.37	0.98	405
Generosity	0	0.16	-0.3	0.54	383
Perceptions of corruption	0.75	0.19	0.08	0.98	390

Table 7: Regression reported in Table 2.1 of WHR 2015, and replication using updated data

	WHR2015	WHR2016
	(1)	(2)
lngdp	0.326	0.338
	(0.062)***	(0.059)***
countOnFriends	2.385	2.334
	(0.462)***	(0.429)***
Health life expectancy	0.028	0.029
	(0.008)***	(0.008)***
freedom	1.054	1.056
	(0.341)***	(0.319)***
Generosity	0.787	0.82
	(0.273)***	(0.276)***
corrupt	-.632	-.579
	(0.291)**	(0.282)**
Year 2005	0.434	0.428
	(0.101)***	(0.097)***
Year 2006	-.038	-.029
	(0.072)	(0.06)
Year 2007	0.222	0.224
	(0.068)***	(0.06)***
Year 2008	0.299	0.296
	(0.07)***	(0.058)***
Year 2009	0.204	0.21
	(0.068)***	(0.058)***
Year 2010	0.122	0.127
	(0.058)**	(0.046)***
Year 2011	0.152	0.152
	(0.056)***	(0.048)***
Year 2012	0.122	0.121
	(0.053)**	(0.042)***
Year 2013	0.069	0.068
	(0.047)	(0.039)*
Year 2015		0.017
		(0.042)
Obs.	974	1118
e(N-clust)	156	156
R^2	0.743	0.745

Notes: 1) Column 1 reports estimates from a pooled OLS regression based on data used in the WHR 2015 (sample period 2005-2014). Column 2 replicates the regression with updated data that will be used for WHR 2016 (sample period 2005-2015). 2).Standard errors in parentheses. *, **, and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels. All standard errors are cluster-adjusted at the country level. The row "e(N-clust)" indicates the number of countries. 3). See section "Data Sources and Variable Definitions" for more information.

Table 8: (Replicating Table 2.1 in WHR2015 with the latest data, with year fixed effects): Regressions to Explain Average Happiness across Countries (Pooled OLS)

	Ladder	PosAffect	NegAffect	LadderAgain
	(1)	(2)	(3)	(4)
Log GDP per capita	0.338	-.002	0.011	0.341
	(0.059)***	(0.009)	(0.008)	(0.058)***
Social support	2.334	0.253	-.238	1.768
	(0.429)***	(0.052)***	(0.046)***	(0.417)***
Healthy life expectancy at birth	0.029	0.0002	0.002	0.028
	(0.008)***	(0.001)	(0.001)*	(0.008)***
Freedom to make life choices	1.056	0.328	-.089	0.315
	(0.319)***	(0.039)***	(0.045)**	(0.316)
Generosity	0.82	0.171	-.011	0.429
	(0.276)***	(0.032)***	(0.03)	(0.277)
Perceptions of corruption	-.579	0.033	0.092	-.657
	(0.282)**	(0.03)	(0.025)***	(0.271)**
Positive affect				2.297
				(0.443)***
Negative affect				0.05
				(0.506)
Year 2005	0.428	-.012	0.014	0.458
	(0.097)***	(0.008)	(0.008)	(0.093)***
Year 2006	-.029	0.008	-.003	-.038
	(0.06)	(0.009)	(0.008)	(0.058)
Year 2007	0.224	0.012	-.027	0.205
	(0.06)***	(0.008)	(0.007)***	(0.059)***
Year 2008	0.296	0.016	-.036	0.266
	(0.058)***	(0.007)**	(0.007)***	(0.062)***
Year 2009	0.21	0.012	-.025	0.187
	(0.058)***	(0.008)	(0.007)***	(0.058)***
Year 2010	0.127	0.008	-.031	0.114
	(0.046)***	(0.007)	(0.006)***	(0.049)**
Year 2011	0.152	0.0004	-.022	0.155
	(0.048)***	(0.007)	(0.006)***	(0.049)***
Year 2012	0.121	0.007	-.016	0.108
	(0.042)***	(0.006)	(0.006)***	(0.043)**
Year 2013	0.068	0.01	-.011	0.048
	(0.039)*	(0.005)**	(0.005)**	(0.039)
Year 2015	0.017	-.002	-.001	0.024
	(0.042)	(0.005)	(0.004)	(0.04)
Obs.	1118	1115	1117	1114
e(N-clust)	156	156	156	156
e(r2-a)	0.741	0.497	0.226	0.765

Notes: 1). Standard errors in parentheses. *, **, and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels. All standard errors are cluster-adjusted at the country level. The row "e(N-clust)" indicates the number of countries. 2). See section "Data Sources and Variable Definitions" for more information.

Table 9: (Replicating Table 2.1 in WHR2015 with the latest data, without year fixed effects): Regressions to Explain Average Happiness across Countries (Pooled OLS)

	Ladder	PosAffect	NegAffect	LadderAgain
	(1)	(2)	(3)	(4)
Log GDP per capita	0.347	-.001	0.01	0.35
	(0.059)***	(0.009)	(0.008)	(0.058)***
Social support	2.332	0.256	-.242	1.702
	(0.418)***	(0.05)***	(0.045)***	(0.41)***
Healthy life expectancy at birth	0.028	0.0002	0.002	0.028
	(0.008)***	(0.001)	(0.001)*	(0.008)***
Freedom to make life choices	0.951	0.321	-.075	0.203
	(0.311)***	(0.037)***	(0.044)*	(0.307)
Generosity	0.87	0.174	-.017	0.466
	(0.275)***	(0.031)***	(0.029)	(0.277)*
Perceptions of corruption	-.579	0.033	0.092	-.638
	(0.278)**	(0.029)	(0.025)***	(0.269)**
Positive affect				2.318
				(0.452)***
Negative affect				-.153
				(0.487)
year-1				
year-2				
year-3				
year-4				
year-5				
year-6				
year-7				
year-8				
year-9				
year-11				
Obs.	1118	1115	1117	1114
e(N-clust)	156	156	156	156
e(r2-a)	0.736	0.499	0.208	0.761

Notes: 1). Standard errors in parentheses. *, **, and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels. All standard errors are cluster-adjusted at the country level. The row "e(N-clust)" indicates the number of countries. 2). See section "Data Sources and Variable Definitions" for more information.

Table 10: Regressions with inequality measures

	c1	c2	c3	c4	c5	c6
	(1)	(2)	(3)	(4)	(5)	(6)
Log GDP per capita	0.442 (0.059)***	0.397 (0.06)***	0.356 (0.059)***	0.428 (0.073)***	0.371 (0.06)***	0.441 (0.073)***
Social support	1.782 (0.406)***	1.636 (0.381)***	1.715 (0.382)***	1.762 (0.377)***	1.612 (0.39)***	1.553 (0.386)***
Healthy life expectancy at birth	0.02 (0.007)***	0.013 (0.011)	0.01 (0.011)	0.011 (0.013)	0.012 (0.011)	0.012 (0.012)
Freedom to make life choices	0.723 (0.3)**	0.754 (0.296)**	0.819 (0.302)***	0.774 (0.303)**	0.827 (0.311)***	0.864 (0.308)***
Generosity	0.924 (0.267)***	0.709 (0.297)**	0.759 (0.303)**	0.869 (0.317)***	0.718 (0.299)**	0.82 (0.305)***
Perceptions of corruption	-.573 (0.279)**	-.289 (0.266)	-.424 (0.244)*	-.488 (0.283)*	-.310 (0.254)	-.318 (0.291)
Standard deviation of ladder by country-year	-.293 (0.118)**	-.300 (0.124)**			-.221 (0.133)*	-.294 (0.13)**
gini of household income reported in Gallup, by wp5-year			-1.610 (0.431)***		-1.276 (0.405)***	
GINI index (World Bank estimate), average 2000-13				-1.345 (0.83)		-1.251 (0.829)
Central and Eastern Europe		-.505 (0.165)***	-.586 (0.169)***	-.459 (0.174)***	-.559 (0.167)***	-.430 (0.169)**
Commonwealth of Independent States		-.432 (0.209)**	-.474 (0.21)**	-.325 (0.236)	-.467 (0.207)**	-.330 (0.227)
Southeast Asia		-.590 (0.155)***	-.492 (0.158)***	-.400 (0.225)*	-.539 (0.153)***	-.454 (0.223)**
South Asia		-.444 (0.405)	-.433 (0.413)	-.285 (0.431)	-.427 (0.414)	-.292 (0.435)
East Asia		-.789 (0.262)***	-.823 (0.27)***	-.738 (0.228)***	-.813 (0.269)***	-.761 (0.241)***
Latin America and Caribbean	0.672 (0.114)***	0.274 (0.185)	0.206 (0.182)	0.486 (0.262)*	0.286 (0.186)	0.589 (0.254)**
North America and ANZ		0.217 (0.091)**	0.276 (0.108)**	0.238 (0.108)**	0.28 (0.102)***	0.258 (0.104)**
Middle East and North Africa		-.394 (0.244)	-.463 (0.241)*	-.242 (0.323)	-.418 (0.238)*	-.193 (0.306)
Sub-Saharan Africa		-.587 (0.313)*	-.500 (0.32)	-.330 (0.359)	-.504 (0.315)	-.340 (0.35)
Obs.	1118	1118	983	1032	983	1032
e(N-clust)	156	156	156	135	156	135
e(r2-a)	0.773	0.793	0.792	0.789	0.794	0.795

Notes: 1). Standard errors in parentheses. *, **, and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels. All standard errors are cluster-adjusted at the country level. The row "e(N-clust)" indicates the number of countries. 2). See section "Data Sources and Variable Definitions" for more information.

Table 11: Replicating regressions in "Good governance and national well-being: What are the linkages?" Helliwell et al (2014), OECD Working Papers on Public Governance, No. 25, with the expanded dataset

	c1	c2	c3	c4	c5	c6	c7	c8	c9
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Democratic Quality	0.03	0.08	0.001	-.03	-.07	-.13	0.28	0.2	0.17
	(0.14)	(0.11)	(0.1)	(0.12)	(0.1)	(0.1)	(0.13)**	(0.12)	(0.12)
Delivery Quality	0.79	0.24	0.04	0.63	0.36	0.29	0.76	0.6	0.48
	(0.13)***	(0.14)*	(0.12)	(0.13)***	(0.13)***	(0.11)**	(0.18)***	(0.18)***	(0.18)***
Log GDP per capita		0.54	0.35		0.42	0.33		0.78	0.9
		(0.06)***	(0.06)***		(0.08)***	(0.07)***		(0.25)***	(0.24)***
Healthy life expectancy at birth			0.03			0.003			-.02
			(0.008)***			(0.01)			(0.03)
Freedom to make life choices			1.21			0.75			0.95
			(0.32)***			(0.29)**			(0.23)***
Generosity			0.91			0.66			0.32
			(0.27)***			(0.28)**			(0.19)*
Social support			2.21			1.87			1.15
			(0.42)***			(0.4)***			(0.33)***
Central and Eastern Europe				-82	-80	-52			
				(0.19)***	(0.19)***	(0.17)***			
Commonwealth of Independent States				-39	-37	-27			
				(0.33)	(0.29)	(0.23)			
Southeast Asia				-51	-37	-52			
				(0.22)**	(0.21)*	(0.16)***			
South Asia				-90	-55	-37			
				(0.27)***	(0.3)*	(0.4)			
East Asia				-81	-86	-77			
				(0.19)***	(0.19)***	(0.23)***			
Latin America and Caribbean				0.31	0.35	0.31			
				(0.22)	(0.22)	(0.19)			
North America and ANZ				0.33	0.39	0.22			
				(0.11)***	(0.12)***	(0.1)**			
Middle East and North Africa				-40	-55	-35			
				(0.25)	(0.23)**	(0.23)			
Sub-Saharan Africa				-1.26	-73	-60			
				(0.23)***	(0.24)***	(0.3)**			
Obs.	1130	1116	1040	1130	1116	1040	1130	1116	1040
e(N-clust)	163	161	159	163	161	159	163	161	159
R^2	0.5	0.63	0.73	0.71	0.76	0.79	0.11	0.12	0.19

Notes: 1). Columns (1) to (3) show estimates from pooled regressions with year fixed effects but without regional or country fixed effects. Columns (4) to (6) are from the same pooled regressions but with the addition of regional fixed effects. Columns (7) to (9) are from panel regressions with country fixed effects, in addition to the year fixed effects that are present in all the 9 regressions. For the last three columns, within country r-squared are reported. 2). Standard errors in parentheses. *, **, and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels. All standard errors are cluster-adjusted at the country level.

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Figure 1: Ranking of Happiness: 2013-15 (Part 1)
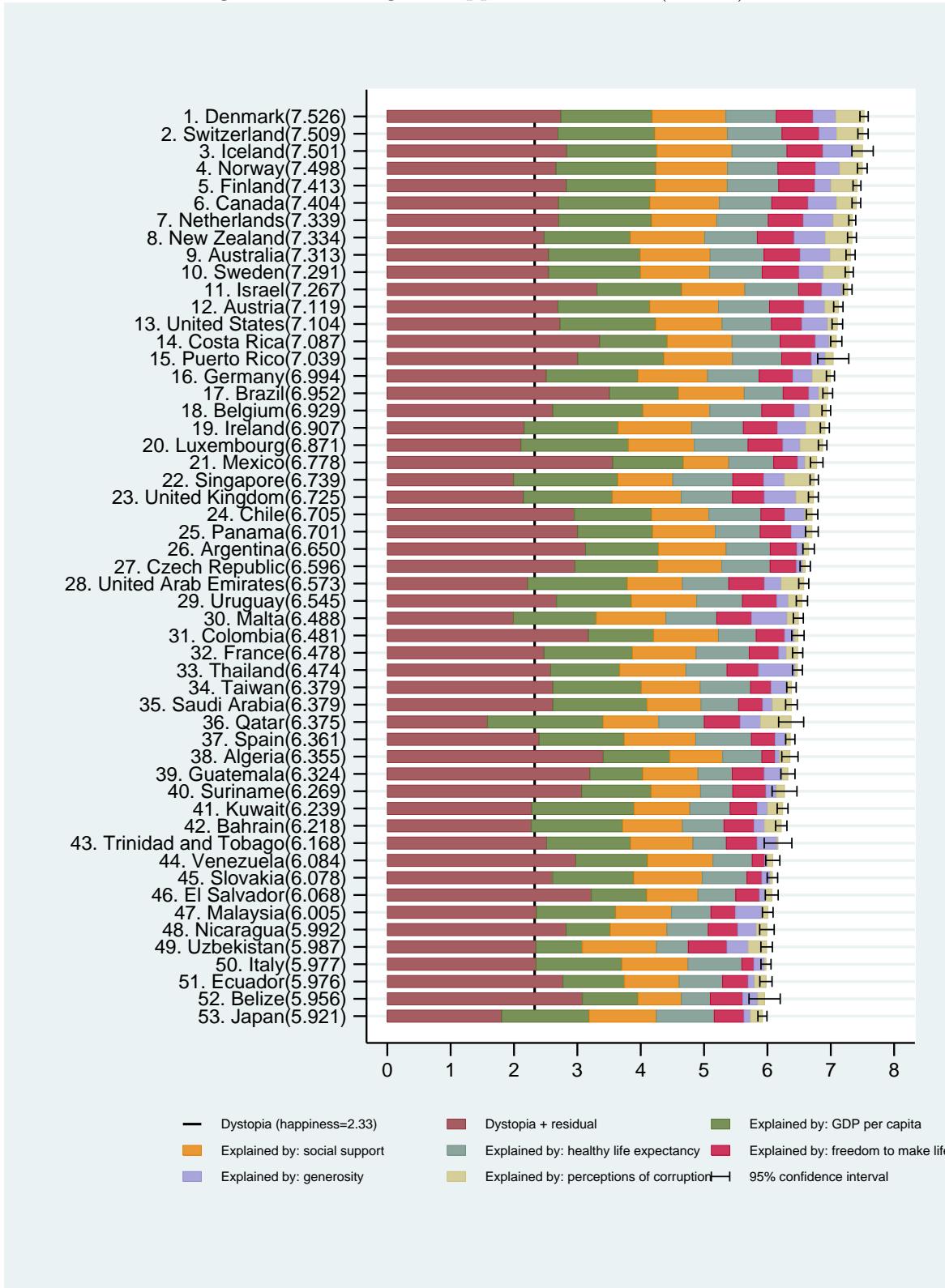
Figure 2: Ranking of Happiness: 2013-15 (Part 2)

- Dystopia (happiness=2.33)
- Dystopia + residual
- Explained by: GDP per capita
- Explained by: social support
- Explained by: healthy life expectancy
- Explained by: freedom to make life choices
- Explained by: generosity
- Explained by: perceptions of corruption
- 95% confidence interval
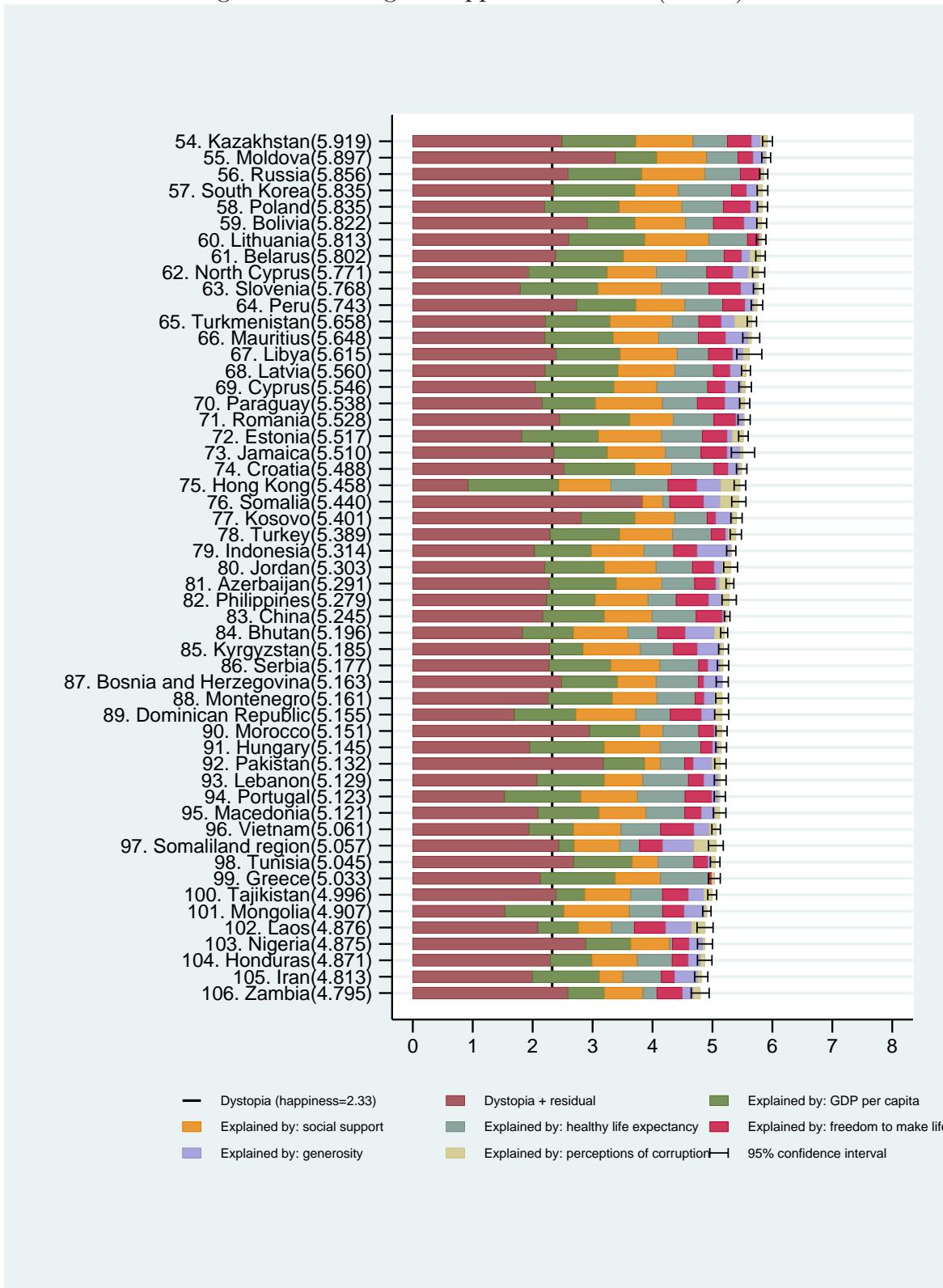
Figure 3: Ranking of Happiness: 2013-15 (Part 3)

107. Nepal(4.793)
108. Palestinian Territories(4.754)
109. Albania(4.655)
110. Bangladesh(4.643)
111. Sierra Leone(4.635)
112. Iraq(4.575)
113. Namibia(4.574)
114. Cameroon(4.513)
115. Ethiopia(4.508)
116. South Africa(4.459)
117. Sri Lanka(4.415)
118. India(4.404)
119. Myanmar(4.395)
120. Egypt(4.362)
121. Armenia(4.360)
122. Kenya(4.356)
123. Ukraine(4.324)
124. Ghana(4.276)
125. Congo (Kinshasa)(4.272)
126. Georgia(4.252)
127. Congo (Brazzaville)(4.236)
128. Senegal(4.219)
129. Bulgaria(4.217)
130. Mauritania(4.201)
131. Zimbabwe(4.193)
132. Malawi(4.156)
133. Sudan(4.139)
134. Gabon(4.121)
135. Mali(4.073)
136. Haiti(4.028)
137. Botswana(3.974)
138. Comoros(3.956)
139. Ivory Coast(3.916)
140. Cambodia(3.907)
141. Angola(3.866)
142. Niger(3.856)
143. South Sudan(3.832)
144. Chad(3.763)
145. Uganda(3.739)
146. Burkina Faso(3.739)
147. Yemen(3.724)
148. Madagascar(3.695)
149. Tanzania(3.666)
150. Liberia(3.622)
151. Guinea(3.607)
152. Rwanda(3.515)
153. Benin(3.484)
154. Afghanistan(3.360)
155. Togo(3.303)
156. Syria(3.069)
157. Burundi(2.905)

Dystopia (happiness=2.33)
Dystopia + residual
Explained by: GDP per capita
Explained by: social support
Explained by: healthy life expectancy
Explained by: freedom to make life choices
Explained by: generosity
Explained by: perceptions of corruption
95% confidence interval

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Table 12: Countries/territories that have valid happiness scores in 2012 but not in 2013-2015

	Sample size in 2012
Laos	941
Comoros	999
Suriname	490
Somaliland region	1000

Figure 4: Predicted happiness and actual happiness in 2013-15
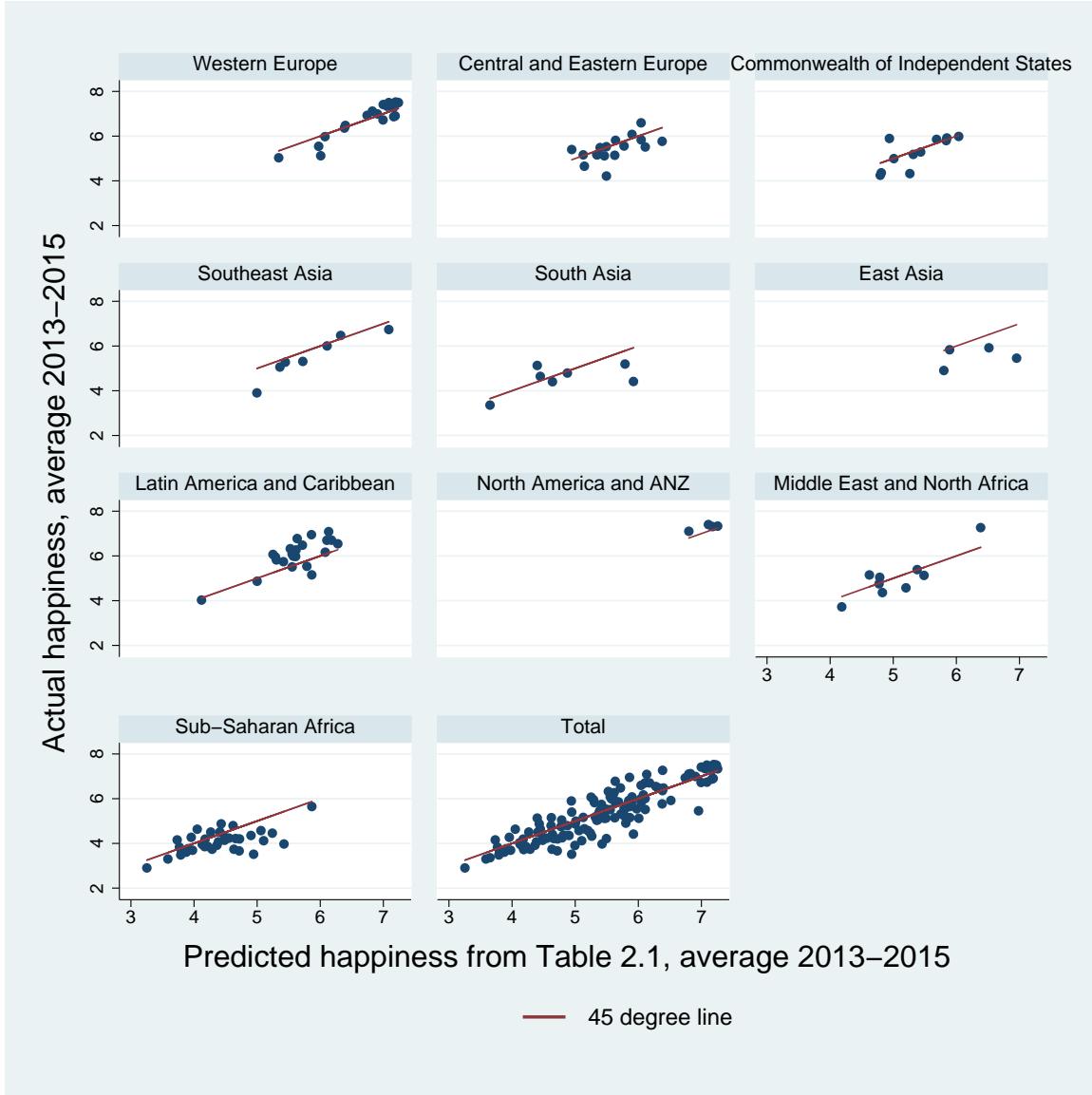
Note: These average actual (predicted) happiness scores by country/territory for the 2013-2015 period are weighted averages of the yearly averages by county/territory used in (predicted by) column (1)'s regression in Table 9. The yearly weights are the sums of Gallup-assigned individual weights by country/territory in that year.

Table 13: Decomposing the happiness difference between a hypothetical average country and Dystopia

	Average country	Dystopia	Explained excess happiness over Dystopia due to	Share of explained excess happiness over Dystopia due to
Happiness	5.38	2.33		
Logged GDP per capita	9.22	6.4	.95	.31
Social support	.8	.46	.79	.26
Healthy life expectancy	62.35	43.21	.56	.18
Freedom to make life choices	.74	.39	.37	.12
Generosity	.01	-.28	.24	.08
Perceptions of corruption	.73	.97	.14	.05
Sum of explained excess over Dystopia			3.06	1

Table 14: Decomposing the happiness difference between the group of top 10 countries/territories and the group of bottom 10 countries/territories in the ranking of happiness scores

	Top 10	Bottom 10	Difference in happiness due to	Share of explained difference due to
Happiness	7.41	3.42		
Logged GDP per capita	10.7	7.37	1.13	.36
Social support	.94	.6	.8	.25
Healthy life expectancy	71.65	53.11	.54	.17
Freedom to make life choices	.93	.63	.32	.1
Generosity	.21	.04	.13	.04
Perceptions of corruption	.36	.74	.22	.07
Total explained difference in happiness			3.14	1
Total difference in happiness			3.99	

Figure 5: Changes in Happiness: from 2005-07 to 2013-15 (Part 1)
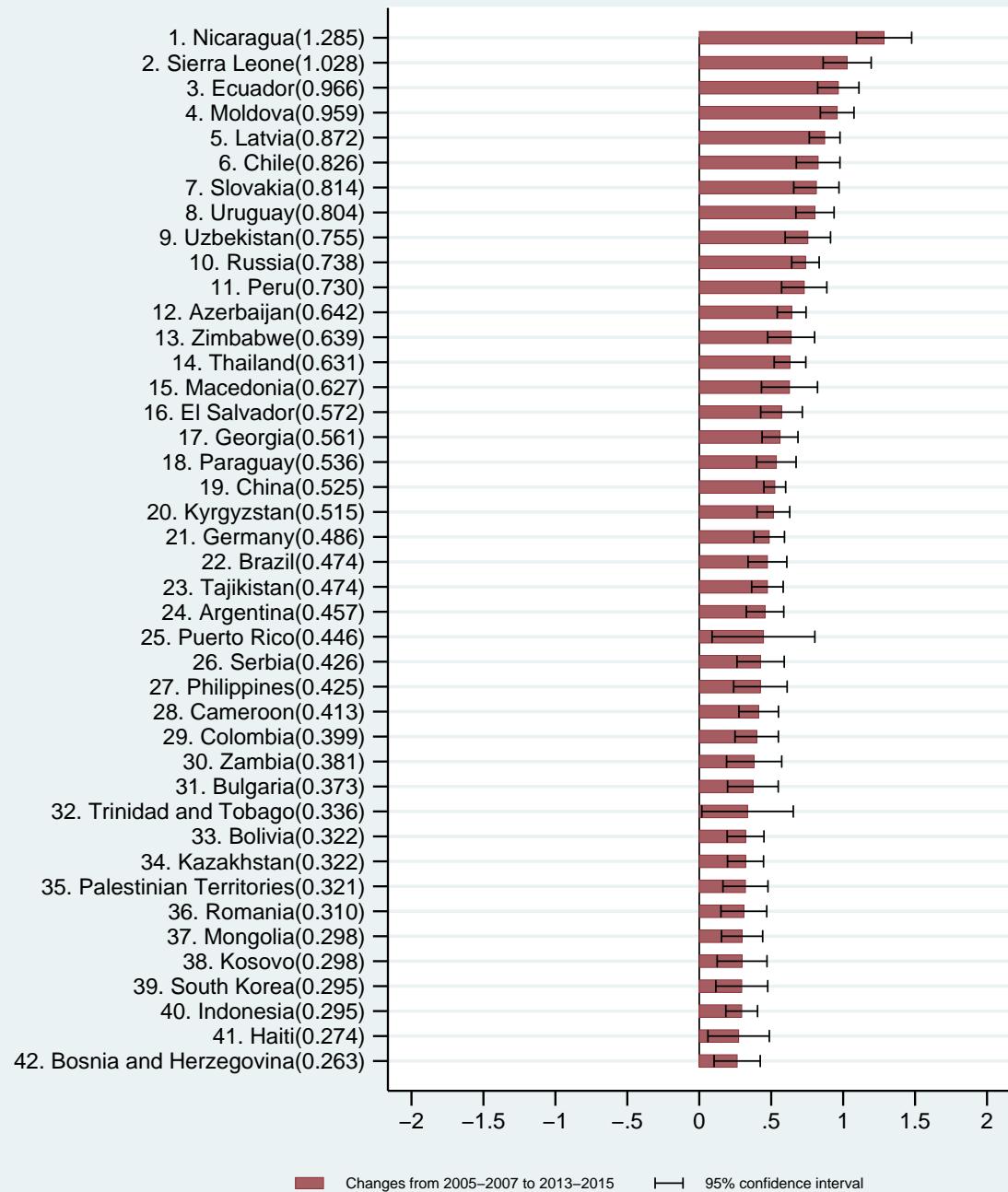
Figure 6: Changes in Happiness: from 2005-07 to 2013-15 (Part 2)
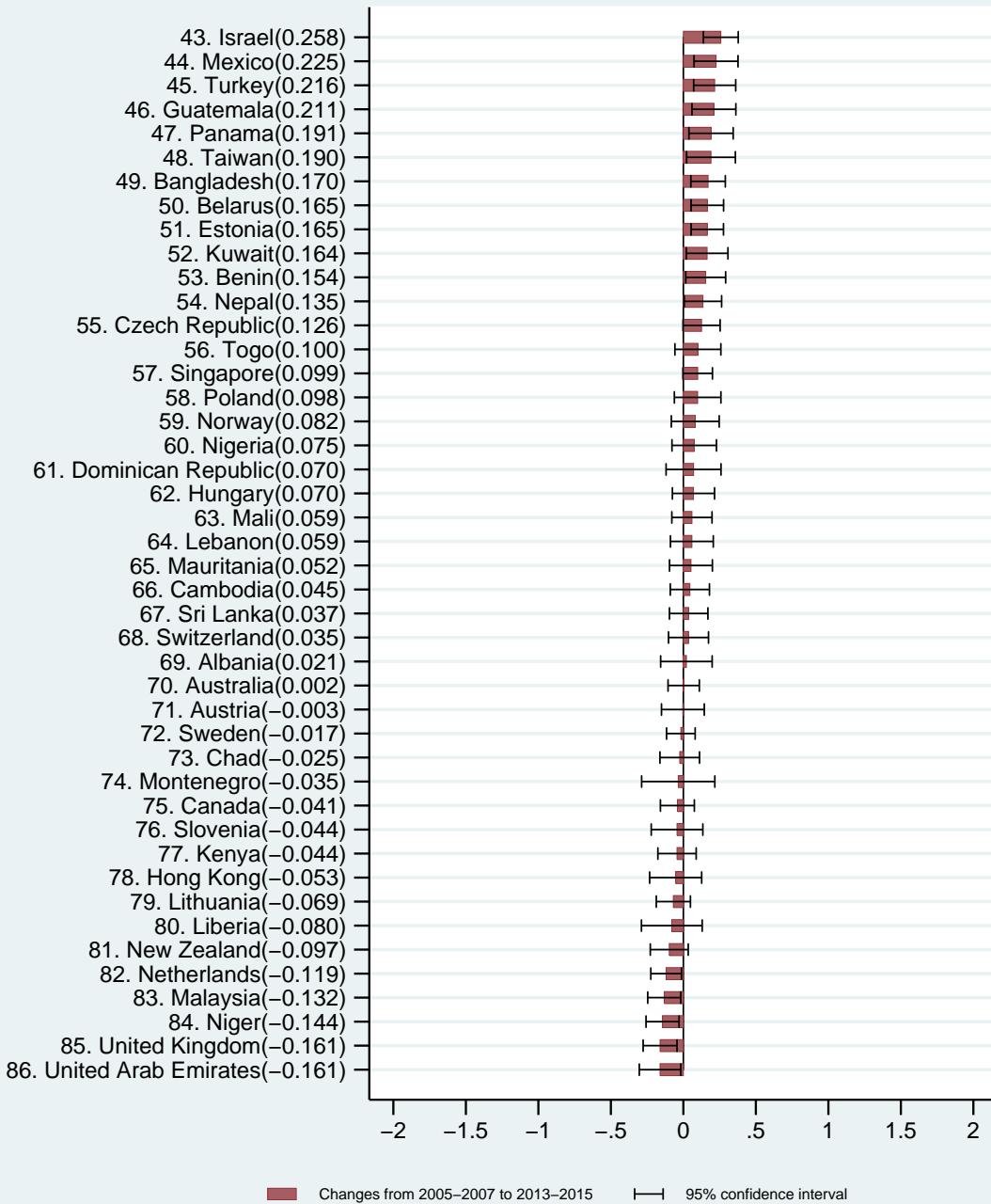
Figure 7: Changes in Happiness: from 2005-07 to 2013-15 (Part 3)
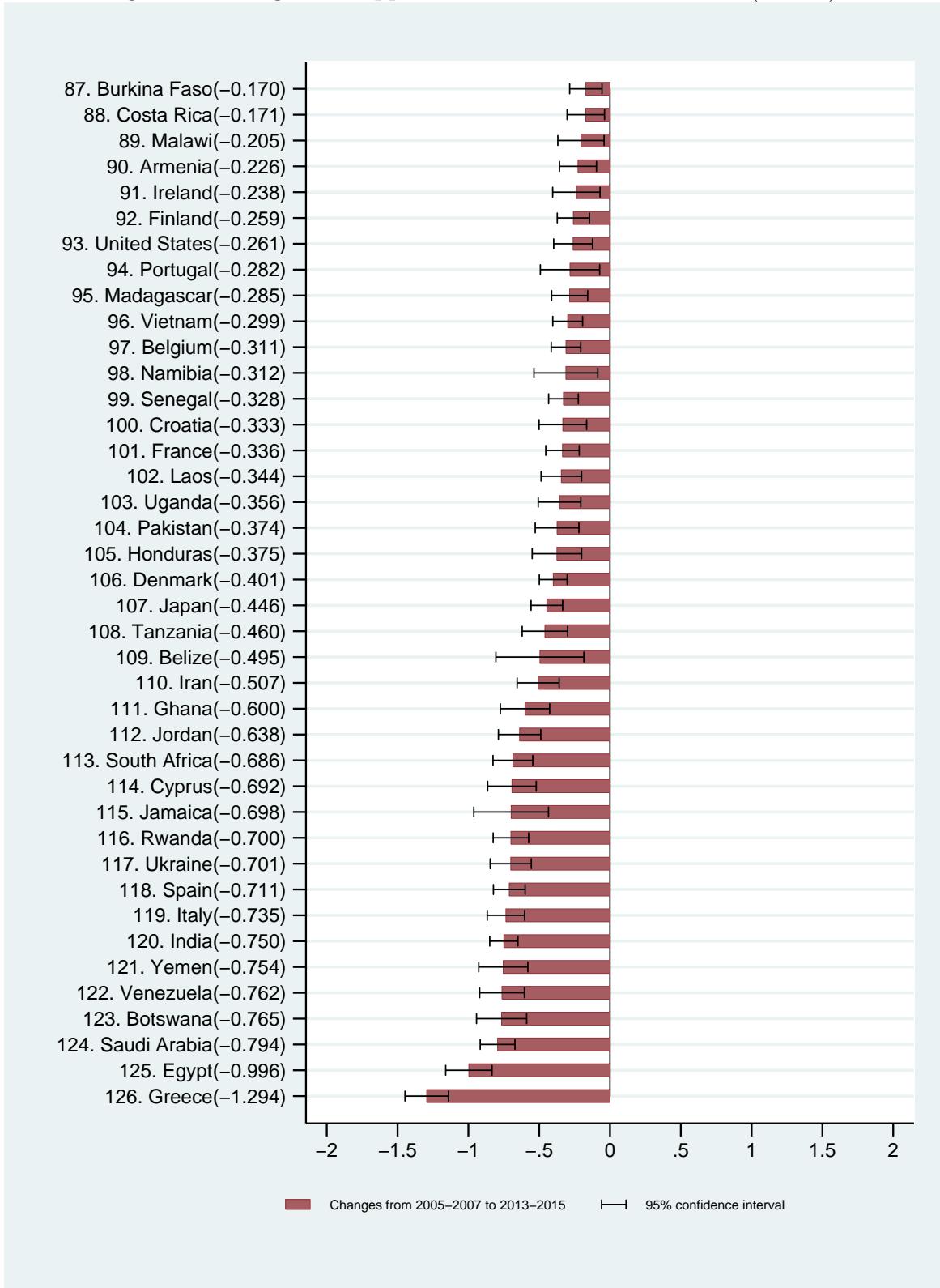
Table 15: Countries/territories that are in the 2013-2015 happiness ranking (including the 4 that use 2012 survey), but do not have ladder observations in the 2005-2007 period

Afghanistan
Algeria
Angola
Bahrain
Bhutan
Burundi
Comoros
Congo (Brazzaville)
Congo (Kinshasa)
Ethiopia
Gabon
Guinea
Iceland
Iraq
Ivory Coast
Libya
Luxembourg
Malta
Mauritius
Morocco
Myanmar
North Cyprus
Qatar
Somalia
Somaliland region
South Sudan
Sudan
Suriname
Syria
Tunisia
Turkmenistan

Table 16: Imputed missing values that are used for decomposing the 2013-2015 happiness scores

Country	GDP per capita	Social support	Perceptions of corruption	Generosity	Freedom	Healthy life expectancy
Argentina	2011 data			Predicted by donation-a-b*ln(gdp)[1]		
Bahrain				Predicted by donation-a-b*ln(gdp) (donation in 2012-14 is missing, thus 2011 value is used)		
China			Russia's data			
Iran			2008 data		2008 data	
Jordan			2009 data			
Kuwait			Corruption in business in 2011	Predicted by donation-a-b*ln(gdp) (donation in 2012-14 is missing, thus 2010 value is used)		
Laos	PPP in 2013 dollar (CIA estimated) adjusted to PPP in 2011 dollar		2011 data		2011 data	
Myanmar				Predicted by donation-a-b*ln(gdp)		
Northern Cyprus	Cyprus's data			Predicted by donation-a-b*ln(gdp)		Cyprus's data
Oman		Saudi Arabia's data	Saudi Arabia's data			
Qatar			2009 data			
Saudi Arabia			2009 data	Predicted by donation-a-b*ln(gdp)		
Somaliland Region	Ethiopia's data			Predicted by donation-a-b*ln(gdp)		Ethiopia's data
Taiwan	2010 data					
Turkmenistan			Uzbekistan's data			
United Arab Emirates			Corruption in business in 2010	Predicted by donation-a-b*ln(gdp) (donation in 2012-14 is missing, thus 2011 value is used)		

Table 17: Imputed missing values for the 2005-2007 period that are used for decomposing the happiness changes from 2005-2007 to 2013-15

| Country	Perceptions of corruption	Generosity	Freedom
China	Russia's data		2008 data
Egypt	2009 data		
Madagascar	2008 data		2008 data
Rwanda		Predicted by donation-a-b*ln(gdp) (donation in 2005-07 is missing, thus 2008 value is used)[1]	
Yemen	Corruption in government in 2007		

Notes: 1). The coefficients are generated by regressing national-level donations on log GDP per capita in a pooled OLS regression.

Figure 8: Actual and predicted changes in happiness from 2005-07 to 2013-15
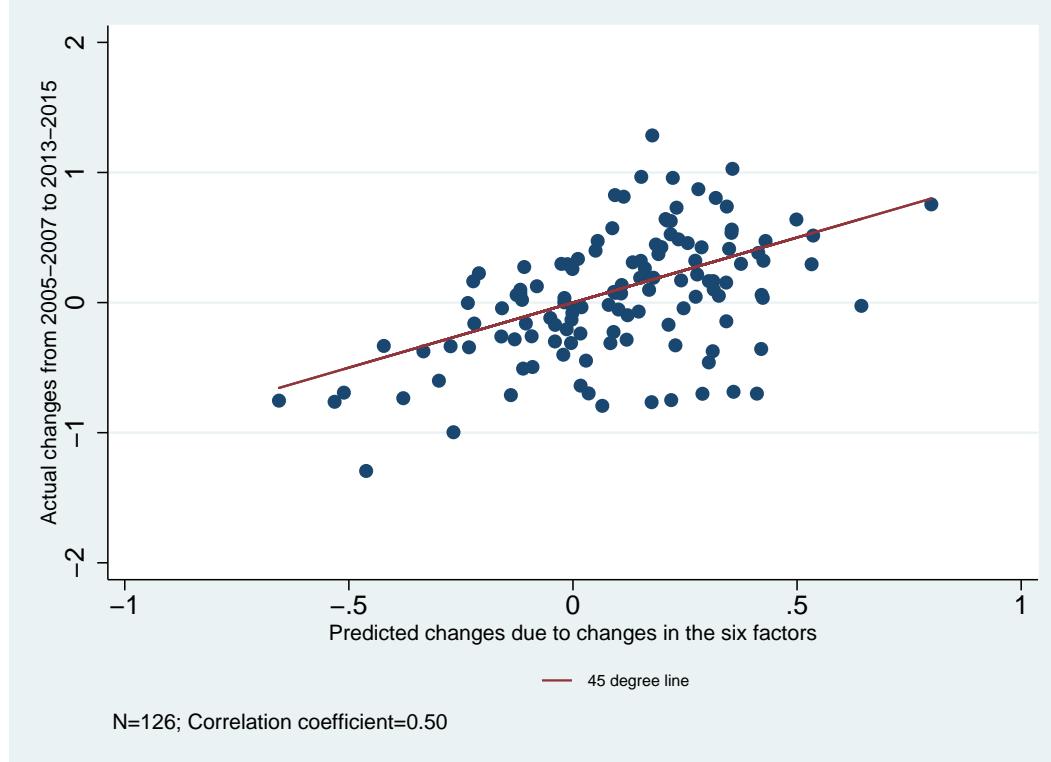
Note: Defining predicted changes in happiness due to changes in the six factors: Step 1.
Take periodical averages (2005-07 and 2013-15, respectively) of the six factors in the
survey data. Step 2. Take difference between the two periods for each of the factors. Step
3. Multiply the differences with corresponding coefficients on the factors in Table 2.1.
Step 4. Take the summation of the products from the previous step. The resulted sum is
predicted change in ladder due to changes in the six factors.

Figure 9: Actual and predicted changes in happiness from 2005-07 to 2013-15 at the regional level
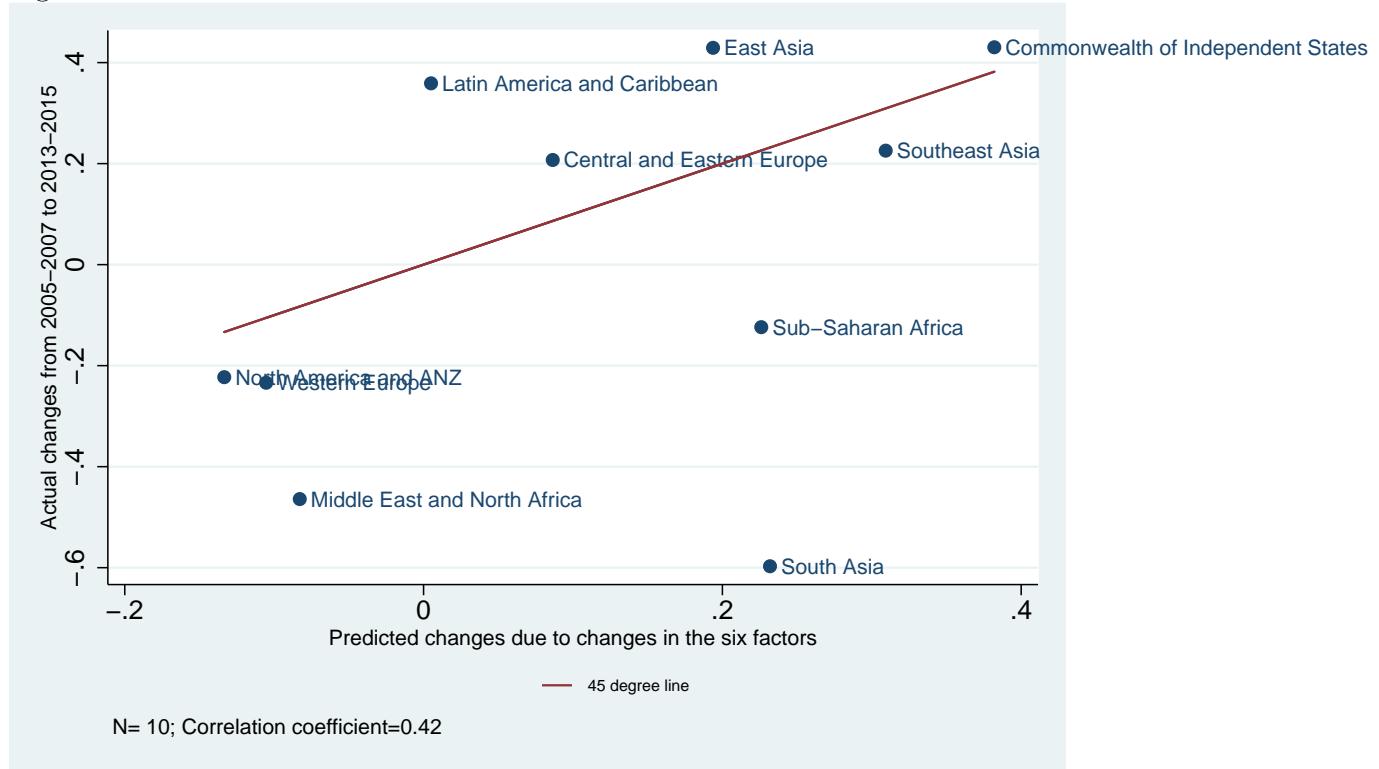
Note: This plot at the regional level shows weighted averages of the actual and predicted changes shown in figure 8. The weights for deriving the regional averages are average population from 2005 to 2014.

Table 18: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for the full world sample

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	5.489	5.448	
Logged GDP per capita	9.324	9.181	.048
Social support	.815	.833	-.041
Healthy life expectancy	63.328	61.102	.065
Freedom to make life choices	.749	.721	.029
Generosity	.002	.011	-.007
Perceptions of corruption	.744	.756	.007
Sum of explained changes in happiness			.101
Total changes in happiness			.041

Note:

Table 19: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for the top 10 countries/territories in terms of happiness changes

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	5.923	5.018	
Logged GDP per capita	9.235	8.991	.083
Social support	.864	.85	.032
Healthy life expectancy	63.243	61.047	.064
Freedom to make life choices	.747	.688	.062
Generosity	-.039	-.058	.016
Perceptions of corruption	.76	.81	.029
Sum of explained changes in happiness			.286
Total changes in happiness			.905

Note: The following countries/territories are in this group: Chile, Ecuador, Latvia, Moldova, Nicaragua, Russia, Sierra Leone, Slovakia, Uruguay, Uzbekistan,

Table 20: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for the bottom 10 countries/territories in terms of happiness changes

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	5.062	5.888	
Logged GDP per capita	9.597	9.56	.013
Social support	.803	.848	-.104
Healthy life expectancy	63.661	61.627	.059
Freedom to make life choices	.633	.722	-.094
Generosity	-.121	-.09	-.025
Perceptions of corruption	.816	.787	-.017
Sum of explained changes in happiness			-.168
Total changes in happiness			-.826

Note: The following countries/territories are in this group: Botswana, Egypt, Greece, India, Italy, Saudi Arabia, Spain, Ukraine, Venezuela, Yemen,

Table 21: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for Western Europe

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	6.692	6.984	
Logged GDP per capita	10.579	10.605	-.009
Social support	.909	.936	-.064
Healthy life expectancy	71.444	70.097	.039
Freedom to make life choices	.829	.879	-.052
Generosity	.061	.107	-.038
Perceptions of corruption	.559	.568	.006
Sum of explained changes in happiness			-.117
Total changes in happiness			-.291

Note: The following countries/territories are in this group: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom,

Table 22: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for Central and Eastern Europe

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	5.425	5.191	
Logged GDP per capita	9.799	9.684	.039
Social support	.829	.871	-.097
Healthy life expectancy	66.547	64.726	.053
Freedom to make life choices	.648	.607	.044
Generosity	-.083	-.095	.01
Perceptions of corruption	.877	.896	.011
Sum of explained changes in happiness			.06
Total changes in happiness			.234

Note: The following countries/territories are in this group: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia,

Table 23: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for Commonwealth of Independent States

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	5.261	4.879	
Logged GDP per capita	9.025	8.774	.085
Social support	.826	.811	.036
Healthy life expectancy	62.923	60.804	.062
Freedom to make life choices	.703	.658	.048
Generosity	-.073	-.193	.098
Perceptions of corruption	.756	.817	.036
Sum of explained changes in happiness			.364
Total changes in happiness			.382

Note: The following countries/territories are in this group: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Ukraine, Uzbekistan,

Table 24: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for Southeast Asia

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	5.457	5.367	
Logged GDP per capita	9.256	8.983	.092
Social support	.805	.827	-.05
Healthy life expectancy	63.175	61.524	.048
Freedom to make life choices	.859	.827	.034
Generosity	.202	.215	-.01
Perceptions of corruption	.725	.724	-.001
Sum of explained changes in happiness			.114
Total changes in happiness			.09

Note: The following countries/territories are in this group: Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, Vietnam,

Table 25: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for South Asia

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	4.678	4.834	
Logged GDP per capita	8.404	8.103	.102
Social support	.662	.683	-.048
Healthy life expectancy	60.403	58.345	.06
Freedom to make life choices	.733	.625	.115
Generosity	.107	.099	.006
Perceptions of corruption	.796	.841	.026
Sum of explained changes in happiness			.261
Total changes in happiness			-.156

Note: The following countries/territories are in this group: Bangladesh, India, Nepal, Pakistan, Sri Lanka,

Table 26: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for East Asia

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	5.624	5.489	
Logged GDP per capita	10.179	9.906	.092
Social support	.851	.849	.006
Healthy life expectancy	70.899	69.049	.054
Freedom to make life choices	.754	.782	-.029
Generosity	-.012	-.035	.018
Perceptions of corruption	.765	.769	.002
Sum of explained changes in happiness			.144
Total changes in happiness			.135

Note: The following countries/territories are in this group: China, Hong Kong, Japan, Mongolia, South Korea, Taiwan,

Table 27: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for Latin America and Caribbean

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	6.094	5.807	
Logged GDP per capita	9.325	9.169	.053
Social support	.848	.873	-.057
Healthy life expectancy	64.394	62.966	.042
Freedom to make life choices	.788	.737	.054
Generosity	-.028	.023	-.042
Perceptions of corruption	.788	.81	.013
Sum of explained changes in happiness			.062
Total changes in happiness			.288

Note: The following countries/territories are in this group: Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Trinidad and Tobago, Uruguay, Venezuela,

Table 28: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for North America and ANZ

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	7.289	7.388	
Logged GDP per capita	10.655	10.608	.016
Social support	.935	.962	-.062
Healthy life expectancy	71.431	70.261	.034
Freedom to make life choices	.91	.917	-.008
Generosity	.272	.258	.011
Perceptions of corruption	.449	.441	-.005
Sum of explained changes in happiness			-.014
Total changes in happiness			-.099

Note: The following countries/territories are in this group: Australia, Canada, New Zealand, United States,

Table 29: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for Middle East and North Africa

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	5.448	5.706	
Logged GDP per capita	9.794	9.761	.011
Social support	.775	.838	-.147
Healthy life expectancy	64.633	63.074	.045
Freedom to make life choices	.682	.668	.015
Generosity	-.057	-.053	-.004
Perceptions of corruption	.719	.684	-.02
Sum of explained changes in happiness			-.099
Total changes in happiness			-.258

Note: The following countries/territories are in this group: Egypt, Iran, Israel, Jordan, Kuwait, Lebanon, Palestinian Territories, Saudi Arabia, Turkey, United Arab Emirates, Yemen,

Table 30: Decomposing changes in happiness from 2005-2007 to 2013-2015, equal weight for each country/territory, for Sub-Saharan Africa

	Period 2013-2015	Period 2005-2007	Explained changes in happiness due to
Happiness	4.07	4.164	
Logged GDP per capita	7.797	7.622	.059
Social support	.728	.711	.039
Healthy life expectancy	51.283	46.529	.138
Freedom to make life choices	.714	.664	.053
Generosity	-.017	.012	-.024
Perceptions of corruption	.786	.784	-.001
Sum of explained changes in happiness			.264
Total changes in happiness			-.094

Note: The following countries/territories are in this group: Benin, Botswana, Burkina Faso, Cameroon, Chad, Ghana, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Uganda, Zambia, Zimbabwe,

Table 31: Decomposing changes in happiness from 2005-2007 to 2013-2015 by region, weighting countries/territories within a region with their population size

	Changes in average happiness	Total explained changes due to the six factors	Changes due to: GDP per capita	Changes due to: Social support	Changes due to: Healthy life expectancy	Changes due to: Freedom to make life choices	Changes due to: Generosity	Change due to: Perceptions of corruption
Western Europe	-.234	-.105	-.002	-.068	.041	-.039	-.07	.032
Central and Eastern Europe	.207	.086	.057	-.063	.052	.024	-.002	.018
Commonwealth of Independent States	.43	.382	.055	.065	.094	.053	.089	.026
Southeast Asia	.226	.309	.1	.085	.035	.059	.031	0
South Asia	-.597	.232	.12	-.066	.068	.042	.042	.026
East Asia	.429	.194	.184	.037	.033	-.046	-.027	.013
Latin America and Caribbean	.359	.005	.053	-.054	.044	-.003	-.049	.014
North America and ANZ	-.223	-.133	.01	-.117	.032	-.041	.026	-.043
Middle East and North Africa	-.464	-.083	.033	-.157	.055	-.012	.007	-.008
Sub-Saharan Africa	-.124	.226	.061	.02	.126	.049	-.019	-.01

Table 32: Number of countries/territories that experienced statistically significant changes in happiness scores from 2005-2007 to 2013-2015

	Total number of countries/territories in sample	Number of significant positive changes	Number of significant negative changes
Western Europe	17	1	12
Central and Eastern Europe	17	10	1
Commonwealth of Independent States	11	9	2
Southeast Asia	8	3	3
South Asia	5	2	2
East Asia	6	4	1
Latin America and Caribbean	23	17	5
North America and ANZ	4	0	1
Middle East and North Africa	11	4	6
Sub-Saharan Africa	24	5	12

Figure 10: County-by-country trajectory plots - part 1
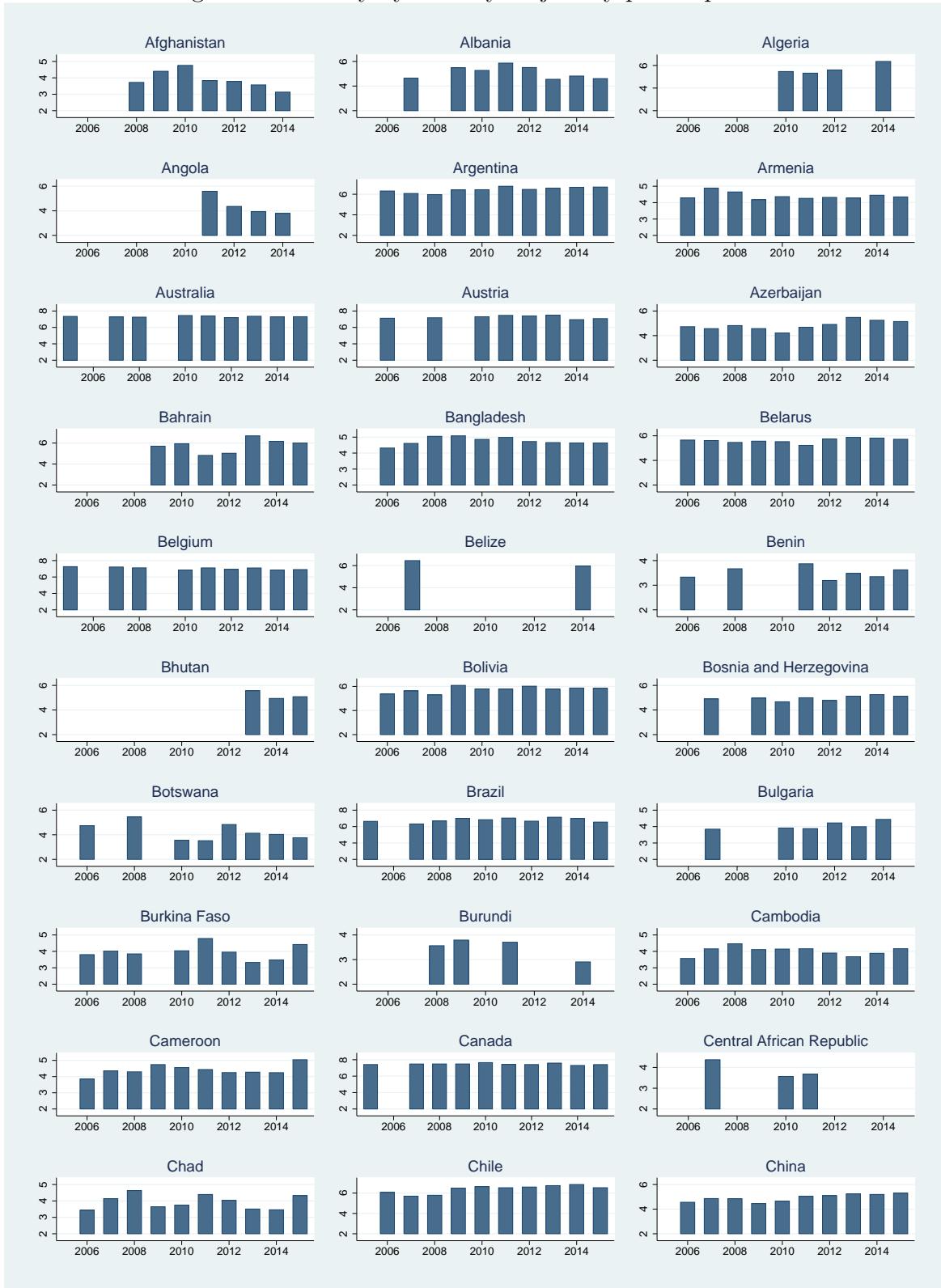
Figure 11: County-by-country trajectory plots - part 2
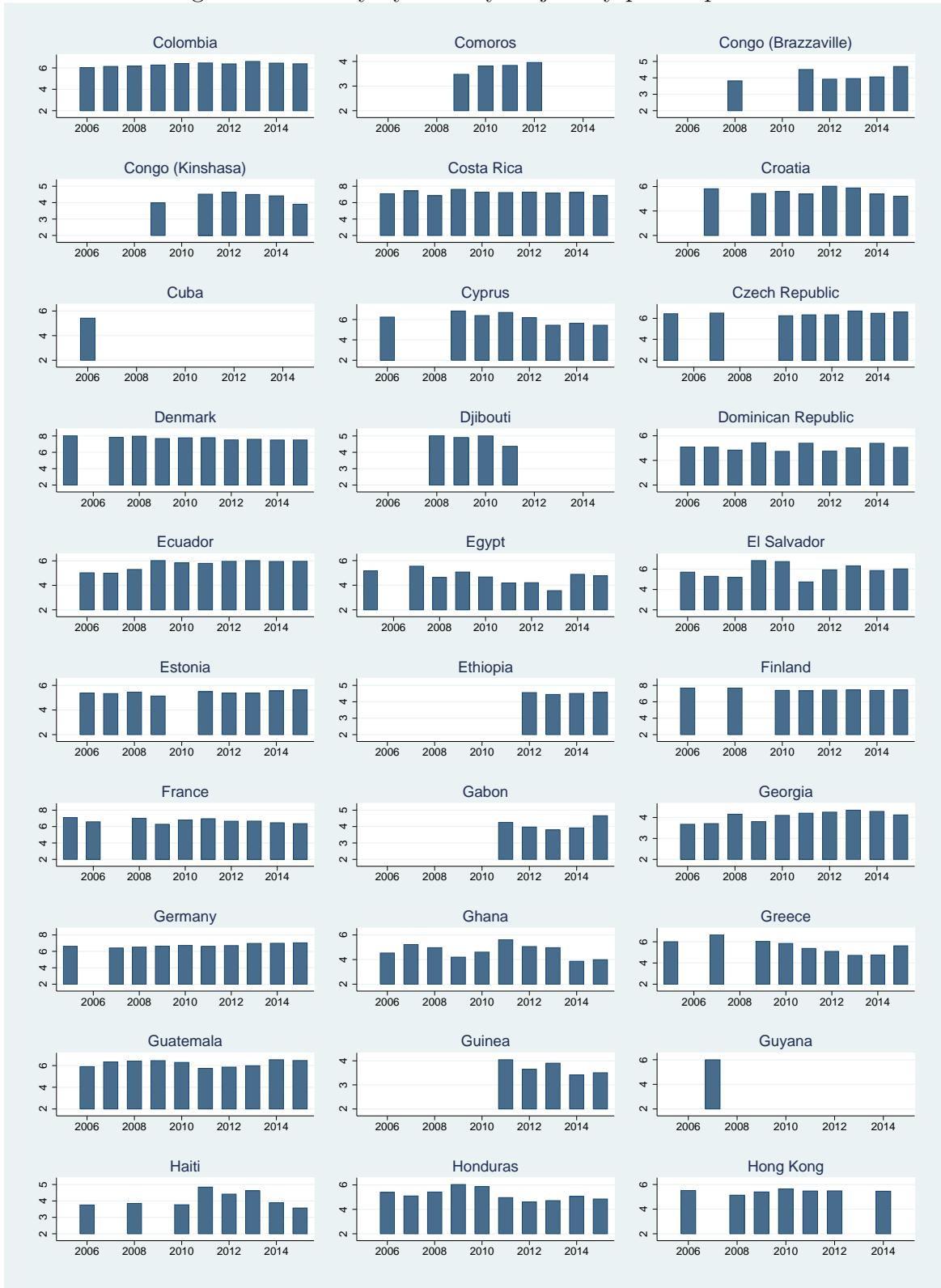
Figure 12: County-by-country trajectory plots - part 3
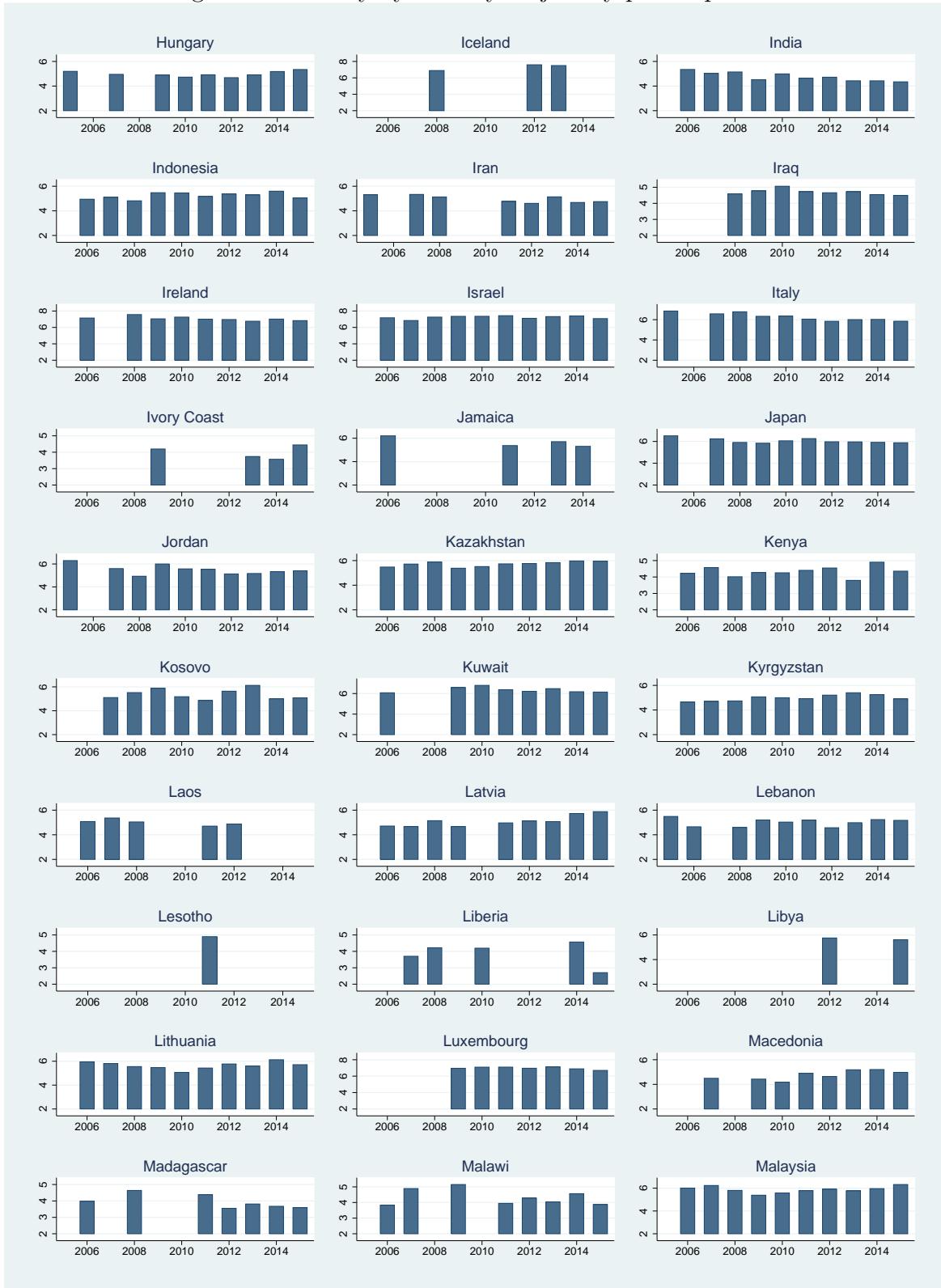
Figure 13: County-by-country trajectory plots - part 4

Figure 14: County-by-country trajectory plots - part 5
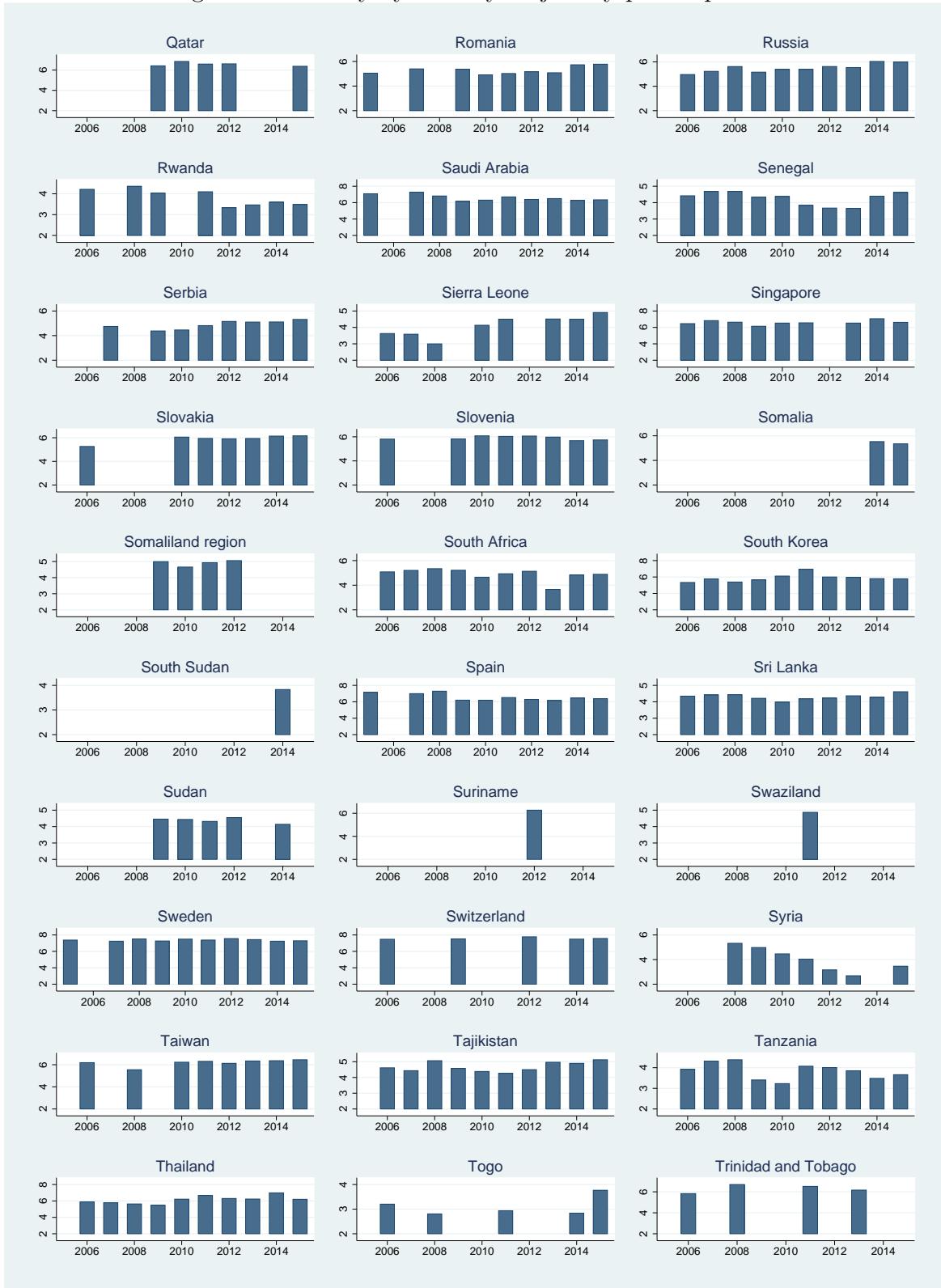
Figure 15: County-by-country trajectory plots - part 6