Chapter 2

International Migration and World Happiness

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Introduction

This is the sixth World Happiness Report. Its central purpose remains just what it was in the first Report in April 2012, to survey the science of measuring and understanding subjective well-being. In addition to presenting updated rankings and analysis of life evaluations throughout the world, each World Happiness Report has had a variety of topic chapters, often dealing with an underlying theme for the report as a whole. For the World Happiness Report 2018 our special focus is on migration. Chapter 1 sets global migration in broad context, while in this chapter we shall concentrate on life evaluations of the foreign-born populations of each country where the available samples are large enough to provide reasonable estimates. We will compare these levels with those of respondents who were born in the country where they were surveyed. Chapter 3 will then examine the evidence on specific migration flows, assessing the likely happiness consequences (as represented both by life evaluations and measures of positive and negative affect) for international migrants and those left behind in their birth countries. Chapter 4 considers internal migration in more detail, concentrating on the Chinese experience, by far the largest example of migration from the countryside to the city. Chapter 5 completes our migration package with special attention to Latin American migration.

Before presenting our evidence and rankings of immigrant happiness, we first present, as usual, the global and regional population-weighted distributions of life evaluations using the average for surveys conducted in the three years 2015-2017. This is followed by our rankings of national average life evaluations, again based on data from 2015-2017, and then an analysis of changes in life evaluations, once again for the entire resident populations of each country, from 2008-2010 to 2015-2017.

Our rankings of national average life evaluations will be accompanied by our latest attempts to show how six key variables contribute to explaining the full sample of national annual average scores over the whole period 2005-2017. These variables are GDP per capita, social support, healthy life expectancy, social freedom, generosity, and absence of corruption. Note that we do not construct our happiness measure in each country

using these six factors – the scores are instead based on individuals' own assessments of their subjective well-being. Rather, we use the variables to explain the variation of happiness across countries. We shall also show how measures of experienced well-being, especially positive emotions, supplement life circumstances in explaining higher life evaluations.

Then we turn to the main focus, which is migration and happiness. The principal results in this chapter are for the life evaluations of the foreign-born and domestically born populations of every country where there is a sufficiently large sample of the foreign-born to provide reasonable estimates. So that we may consider a sufficiently large number of countries, we do not use just the 2015-2017 data used for the main happiness rankings, but instead use all survey available since the start of the Gallup World Poll in 2005.

Life Evaluations Around the World

We first consider the population-weighted global and regional distributions of individual life evaluations, based on how respondents rate their lives. In the rest of this chapter, the Cantril ladder is the primary measure of life evaluations used, and "happiness" and "subjective well-being" are used interchangeably. All the global analysis on the levels or changes of subjective well-being refers only to life evaluations, specifically, the Cantril ladder. But in several of the subsequent chapters, parallel analysis will be done for measures of positive and negative affect, thus broadening the range of data used to assess the consequences of migration.

The various panels of Figure 2.1 contain bar charts showing for the world as a whole, and for each of 10 global regions,[1] the distribution of the 2015-2017 answers to the Cantril ladder question asking respondents to value their lives today on a 0 to 10 scale, with the worst possible life as a 0 and the best possible life as a 10. It is important to consider not just average happiness in a community or country, but also how it is distributed. Most studies of inequality have focused on inequality in the distribution of income and wealth,[2] while in Chapter 2 of World Happiness Report 2016 Update we argued that just as income is too limited an indicator for the overall quality of life, income inequality is too

limited a measure of overall inequality.[3] For example, inequalities in the distribution of health care[4] and education[5] have effects on life satisfaction above and beyond those flowing through their effects on income. We showed there, and have verified in fresh estimates for this report,[6] that the effects of happiness equality are often larger and more systematic than those of income inequality. Figure 2.1 shows that well-being inequality is least in Western Europe, Northern America and Oceania, and South Asia; and greatest in Latin America, sub-Saharan Africa, and the Middle East and North Africa.

In Table 2.1 we present our latest modeling of national average life evaluations and measures of positive and negative affect (emotion) by country and year.[7] For ease of comparison, the table has the same basic structure as Table 2.1 in World Happiness Report 2017. The major difference comes from the inclusion of data for 2017, thereby increasing by about 150 (or 12%) the number of country-year observations. The resulting changes to the estimated equation are very slight.[8] There are four equations in Table 2.1. The first equation provides the basis for constructing the sub-bars shown in Figure 2.2.

The results in the first column of Table 2.1 explain national average life evaluations in terms of six key variables: GDP per capita, social support, healthy life expectancy, freedom to make life choices, generosity, and freedom from corruption.[9] Taken together, these six variables explain almost three-quarters of the variation in national annual average ladder scores among countries, using data from the years 2005 to 2017. The model's predictive power is little changed if the year fixed effects in the model are removed, falling from 74.2% to 73.5% in terms of the adjusted R-squared.

The second and third columns of Table 2.1 use the same six variables to estimate equations for national averages of positive and negative affect, where both are based on answers about yesterday's emotional experiences (see Technical Box 1 for how the affect measures are constructed). In general, the emotional measures, and especially negative emotions, are differently, and much less fully, explained by the six variables than are life evaluations. Per-capita income and healthy life expectancy have significant effects on life evaluations, but not, in these national average

data, on either positive or negative affect. The situation changes when we consider social variables. Bearing in mind that positive and negative affect are measured on a 0 to 1 scale, while life evaluations are on a 0 to 10 scale, social support can be seen to have similar proportionate effects on positive and negative emotions as on life evaluations. Freedom and generosity have even larger influences on positive affect than on the ladder. Negative affect is significantly reduced by social support, freedom, and absence of corruption.

In the fourth column we re-estimate the life evaluation equation from column 1, adding both positive and negative affect to partially implement the Aristotelian presumption that sustained positive emotions are important supports for a good life.[10] The most striking feature is the extent to which the results buttress a finding in psychology that the existence of positive emotions matters much more than the absence of negative ones.[11] Positive affect has a large and highly significant impact in the final equation of Table 2.1, while negative affect has none.

As for the coefficients on the other variables in the final equation, the changes are material only on those variables – especially freedom and generosity – that have the largest impacts on positive affect. Thus we infer that positive emotions play a strong role in support of life evaluations, and that most of the impact of freedom and generosity on life evaluations is mediated by their influence on positive emotions. That is, freedom and generosity have large impacts on positive affect, which in turn has a major impact on life evaluations. The Gallup World Poll does not have a widely available measure of life purpose to test whether it too would play a strong role in support of high life evaluations. However, newly available data from the large samples of UK data does suggest that life purpose plays a strongly supportive role, independent of the roles of life circumstances and positive emotions.

Figure 2.1: Population-Weighted Distributions of Happiness, 2015–2017

World
Mean = 5.264
SD = 2.298

Northern America & ANZ
Mean = 6.958
SD = 1.905

Western Europe
Mean = 6.635
SD = 1.813

Latin America & Caribbean
Mean = 6.193
SD = 2.448

Central and Eastern Europe
Mean = 5.848
SD = 2.053

Commonwealth of Independent States
Mean = 5.460
SD = 2.178

East Asia
Mean = 5.343
SD = 2.106

Southeast Asia
Mean = 5.280
SD = 2.276

Middle East & North Africa
Mean = 5.003
SD = 2.470

Sub-Saharan Africa
Mean = 4.425
SD = 2.476

South Asia
Mean = 4.355
SD = 1.934

Table 2.1: Regressions to Explain Average Happiness Across Countries (Pooled OLS)

Independent Variable	Dependent Variable			
	Cantril Ladder	Positive Affect	Negative Affect	Cantril Ladder
Log GDP per capita	0.311	-.003	0.011	0.316
	(0.064)***	(0.009)	(0.009)	(0.063)***
Social support	2.447	0.26	-.289	1.933
	(0.39)***	(0.049)***	(0.051)***	(0.395)***
Healthy life expectancy at birth	0.032	0.0002	0.001	0.031
	(0.009)***	(0.001)	(0.001)	(0.009)***
Freedom to make life choices	1.189	0.343	-.071	0.451
	(0.302)***	(0.038)***	(0.042)*	(0.29)
Generosity	0.644	0.145	0.001	0.323
	(0.274)**	(0.03)***	(0.028)	(0.272)
Perceptions of corruption	-.542	0.03	0.098	-.626
	(0.284)*	(0.027)	(0.025)***	(0.271)**
Positive affect				2.211
				(0.396)***
Negative affect				0.204
				(0.442)
Year fixed effects	Included	Included	Included	Included
Number of countries	157	157	157	157
Number of obs.	1394	1391	1393	1390
Adjusted R-squared	0.742	0.48	0.251	0.764

Notes: This is a pooled OLS regression for a tattered panel explaining annual national average Cantril ladder responses from all available surveys from 2005 to 2017. See Technical Box 1 for detailed information about each of the predictors. Coefficients are reported with robust standard errors clustered by country in parentheses. ***, **, and * indicate significance at the 1, 5 and 10 percent levels respectively.

Technical Box 1: Detailed Information About Each of the Predictors in Table 2.1

1. GDP per capita is in terms of Purchasing Power Parity (PPP) adjusted to constant 2011 international dollars, taken from the World Development Indicators (WDI) released by the World Bank in September 2017. See Appendix 1 for more details. GDP data for 2017 are not yet available, so we extend the GDP time series from 2016 to 2017 using country-specific forecasts of real GDP growth from the OECD Economic Outlook No. 102 (Edition November 2017) and the World Bank's Global Economic Prospects (Last Updated: 06/04/2017), after adjustment for population growth. The equation uses the natural log of GDP per capita, as this form fits the data significantly better than GDP per capita.

2. The time series of healthy life expectancy at birth are constructed based on data from the World Health Organization (WHO) and WDI. WHO publishes the data on healthy life expectancy for the year 2012. The time series of life expectancies, with no adjustment for health, are available in WDI. We adopt the following strategy to construct the time series of healthy life expectancy at birth: first we generate the ratios of healthy life expectancy to life expectancy in 2012 for countries with both data. We then apply the country-specific ratios to other years to generate the healthy life expectancy data. See Appendix 1 for more details.

3. Social support is the national average of the binary responses (either 0 or 1) to the Gallup World Poll (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?"

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

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

6. Perceptions of corruption are the average of binary answers to two GWP questions: "Is corruption widespread throughout the government or not?" and "Is corruption widespread within businesses or not?" Where data for government corruption are missing, the perception of business corruption is used as the overall corruption-perception measure.

7. Positive affect is defined as the average of previous-day affect measures for happiness, laughter, and enjoyment for GWP waves 3-7 (years 2008 to 2012, and some in 2013). It is defined as the average of laughter and enjoyment for other waves where the happiness question was not asked.

8. Negative affect is defined as the average of previous-day affect measures for worry, sadness, and anger for all waves. See Statistical Appendix 1 for more details.

Ranking of Happiness by Country

Figure 2.2 (below) shows the average ladder score (the average answer to the Cantril ladder question, asking people to evaluate the quality of their current lives on a scale of 0 to 10) for each country, averaged over the years 2015-2017. Not every country has surveys in every year; the total sample sizes are reported in the statistical appendix, and are reflected in Figure 2.2 by the horizontal lines showing the 95% confidence regions. The confidence regions are tighter for countries with larger samples. To increase the number of countries ranked, we also include four that had no 2015-2017 surveys, but did have one in 2014. This brings the number of countries shown in Figure 2.2 to 156.

The overall length of each country bar represents the average ladder score, which is also shown in numerals. The rankings in Figure 2.2 depend only on the average Cantril ladder scores reported by the respondents.

Each of these bars is divided into seven segments, showing our research efforts to find possible sources for the ladder levels. The first six sub-bars show how much each of the six key variables is calculated to contribute to that country's ladder score, relative to that in a hypothetical country called Dystopia, so named because it has values equal to the world's lowest national averages for 2015-2017 for each of the six key variables used in Table 2.1. We use Dystopia as a benchmark against which to compare each other country's performance in terms of each of the six factors. This choice of benchmark permits every real country to have a non-negative contribution from each of the six factors. We calculate, based on the estimates in the first column of Table 2.1, that Dystopia had a 2015-2017 ladder score equal to 1.92 on the 0 to 10 scale. The final sub-bar is the sum of two components: the calculated average 2015-2017 life evaluation in Dystopia (=1.92) and each country's own prediction error, which measures the extent to which life evaluations are higher or lower than predicted by our equation in the first column of Table 2.1. These residuals are as likely to be negative as positive.[12]

It might help to show in more detail how we calculate each factor's contribution to average life evaluations. Taking the example of healthy life expectancy, the sub-bar in the case of Tanzania is equal to the number of years by which healthy life expectancy in Tanzania exceeds the world's lowest value, multiplied by the Table 2.1 coefficient for the influence of healthy life expectancy on life evaluations. The width of these different sub-bars then shows, country-by-country, how much each of the six variables is estimated to contribute to explaining the international ladder differences. These calculations are illustrative rather than conclusive, for several reasons. First, the selection of candidate variables is restricted by what is available for all these countries. Traditional variables like GDP per capita and healthy life expectancy are widely available. But measures of the quality of the social context, which have been shown in experiments and national surveys to have strong links to life evaluations and emotions, have not been sufficiently surveyed in the Gallup or other global polls, or otherwise measured in statistics available for all countries. Even with this limited choice, we find that four variables covering different aspects of the social and institutional context – having someone to count on, generosity, freedom to make life choices and absence of corruption – are together responsible for more than half of the average difference between each country's predicted ladder score and that in Dystopia in the 2015-2017 period. As shown in Table 19 of Statistical Appendix 1, the average country has a 2015-2017 ladder score that is 3.45 points above the Dystopia ladder score of 1.92. Of the 3.45 points, the largest single part (35%) comes from social support, followed by GDP per capita (26%) and healthy life expectancy (17%), and then freedom (13%), generosity (5%), and corruption (3%).[13]

Our limited choice means that the variables we use may be taking credit properly due to other better variables, or to other unmeasured factors. There are also likely to be vicious or virtuous circles, with two-way linkages among the variables. For example, there is much evidence that those who have happier lives are likely to live longer, be more trusting, be more cooperative, and be generally better able to meet life's demands.[14] This will feed back to improve health, GDP, generosity, corruption, and sense of freedom. Finally, some of the variables are derived from the same respondents as the life evaluations and hence possibly determined by common factors. This risk is less using national averages, because

individual differences in personality and many life circumstances tend to average out at the national level.

To provide more assurance that our results are not seriously biased because we are using the same respondents to report life evaluations, social support, freedom, generosity, and corruption, we tested the robustness of our procedure (see Statistical Appendix 1 for more detail) by splitting each country's respondents randomly into two groups, and using the average values for one group for social support, freedom, generosity, and absence of corruption in the equations to explain average life evaluations in the other half of the sample. The coefficients on each of the four variables fall, just as we would expect. But the changes are reassuringly small (ranging from 1% to 5%) and are far from being statistically significant.[15]

The seventh and final segment is the sum of two components. The first component is a fixed number representing our calculation of the 2015-2017 ladder score for Dystopia (=1.92). The second component is the 2015-2017 residual for each country. The sum of these two components comprises the right-hand sub-bar for each country; it varies from one country to the next because some countries have life evaluations above their predicted values, and others lower. The residual simply represents that part of the national average ladder score that is not explained by our model; with the residual included, the sum of all the sub-bars adds up to the actual average life evaluations on which the rankings are based.

What do the latest data show for the 2015-2017 country rankings? Two features carry over from previous editions of the World Happiness Report. First, there is a lot of year-to-year consistency in the way people rate their lives in different countries. Thus there remains a four-point gap between the 10 top-ranked and the 10 bottom-ranked countries. The top 10 countries in Figure 2.2 are the same countries that were top-ranked in World Happiness Report 2017, although there has been some swapping of places, as is to be expected among countries so closely grouped in average scores. The top five countries are the same ones that held the top five positions in World Happiness Report 2017, but Finland has vaulted from 5th place to the top of the rankings this year.

Although four places may seem a big jump, all the top five countries last year were within the same statistical confidence band, as they are again this year. Norway is now in 2nd place, followed by Denmark, Iceland and Switzerland in 3rd, 4th and 5th places. The Netherlands, Canada and New Zealand are 6th, 7th and 8th, just as they were last year, while Australia and Sweden have swapped positions since last year, with Sweden now in 9th and Australia in 10th position. In Figure 2.2, the average ladder score differs only by 0.15 between the 1st and 5th position, and another 0.21 between 5th and 10th positions.

Compared to the top 10 countries in the current ranking, there is a much bigger range of scores covered by the bottom 10 countries. Within this group, average scores differ by as much as 0.7 points, more than one-fifth of the average national score in the group. Tanzania, Rwanda and Botswana have anomalous scores, in the sense that their predicted values based on their performance on the six key variables, would suggest they would rank much higher than shown by the survey answers.

Despite the general consistency among the top countries scores, there have been many significant changes in the rest of the countries. Looking at changes over the longer term, many countries have exhibited substantial changes in average scores, and hence in country rankings, between 2008-2010 and 2015-2017, as shown later in more detail.

When looking at average ladder scores, it is also important to note the horizontal whisker lines at the right-hand end of the main bar for each country. These lines denote the 95% confidence regions for the estimates, so that countries with overlapping error bars have scores that do not significantly differ from each other. Thus, as already noted, the five top-ranked countries (Finland, Norway, Denmark, Iceland, and Switzerland) have overlapping confidence regions, and all have national average ladder scores either above or just below 7.5.

Average life evaluations in the top 10 countries are thus more than twice as high as in the bottom 10. If we use the first equation of Table 2.1 to look for possible reasons for these very different life evaluations, it suggests that of the 4.10 point difference, 3.22 points can be traced to differences in the six key factors: 1.06 points from the GDP

Figure 2.2: Ranking of Happiness 2015–2017 (Part 1)

1. Finland (7.632)
2. Norway (7.594)
3. Denmark (7.555)
4. Iceland (7.495)
5. Switzerland (7.487)
6. Netherlands (7.441)
7. Canada (7.328)
8. New Zealand (7.324)
9. Sweden (7.314)
10. Australia (7.272)
11. Israel (7.190)
12. Austria (7.139)
13. Costa Rica (7.072)
14. Ireland (6.977)
15. Germany (6.965)
16. Belgium (6.927)
17. Luxembourg (6.910)
18. United States (6.886)
19. United Kingdom (6.814)
20. United Arab Emirates (6.774)
21. Czech Republic (6.711)
22. Malta (6.627)
23. France (6.489)
24. Mexico (6.488)
25. Chile (6.476)
26. Taiwan Province of China (6.441)
27. Panama (6.430)
28. Brazil (6.419)
29. Argentina (6.388)
30. Guatemala (6.382)
31. Uruguay (6.379)
32. Qatar (6.374)
33. Saudi (Arabia (6.371)
34. Singapore (6.343)
35. Malaysia (6.322)
36. Spain (6.310)
37. Colombia (6.260)
38. Trinidad & Tobago (6.192)
39. Slovakia (6.173)
40. El Salvador (6.167)
41. Nicaragua (6.141)
42. Poland (6.123)
43. Bahrain (6.105)
44. Uzbekistan (6.096)
45. Kuwait (6.083)
46. Thailand (6.072)
47. Italy (6.000)
48. Ecuador (5.973)
49. Belize (5.956)
50. Lithuania (5.952)
51. Slovenia (5.948)
52. Romania (5.945)

Legend:
- 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
- Dystopia (1.92) + residual
- ⊢ 95% confidence interval

Figure 2.2: Ranking of Happiness 2015–2017 (Part 2)

53. Latvia (5.933)
54. Japan (5.915)
55. Mauritius (5.891)
56. Jamaica (5.890)
57. South Korea (5.875)
58. Northern Cyprus (5.835)
59. Russia (5.810)
60. Kazakhstan (5.790)
61. Cyprus (5.762)
62. Bolivia (5.752)
63. Estonia (5.739)
64. Paraguay (5.681)
65. Peru (5.663)
66. Kosovo (5.662)
67. Moldova (5.640)
68. Turkmenistan (5.636)
69. Hungary (5.620)
70. Libya (5.566)
71. Philippines (5.524)
72. Honduras (5.504)
73. Belarus (5.483)
74. Turkey (5.483)
75. Pakistan (5.472)
76. Hong Kong SAR, China (5.430)
77. Portugal (5.410)
78. Serbia (5.398)
79. Greece (5.358)
80. Tajikistan (5.352)
81. Montenegro (5.347)
82. Croatia (5.321)
83. Dominican Republic (5.302)
84. Algeria (5.295)
85. Morocco (5.254)
86. China (5.246)
87. Azerbaijan (5.201)
88. Lebanon (5.199)
89. Macedonia (5.185)
90. Jordan (5.161)
91. Nigeria (5.155)
92. Kyrgyzstan (5.131)
93. Bosnia and Herzegovina (5.129)
94. Mongolia (5.125)
95. Vietnam (5.103)
96. Indonesia (5.093)
97. Bhutan (5.082)
98. Somalia (4.982)
99. Cameroon (4.975)
100. Bulgaria (4.933)
101. Nepal (4.880)
102. Venezuela (4.806)
103. Gabon (4.758)
104. Palestinian Territories (4.743)

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
Dystopia (1.92) + residual
95% confidence interval

Figure 2.2: Ranking of Happiness 2015–2017 (Part 3)

105. South Africa (4.724)
106. Iran (4.707)
107. Ivory Coast (4.671)
108. Ghana (4.657)
109. Senegal (4.631)
110. Laos (4.623)
111. Tunisia (4.592)
112. Albania (4.586)
113. Sierra Leone (4.571)
114. Congo (Brazzaville) (4.559)
115. Bangladesh (4.500)
116. Sri Lanka (4.471)
117. Iraq (4.456)
118. Mali (4.447)
119. Namibia (4.441)
120. Cambodia (4.433)
121. Burkina Faso (4.424)
122. Egypt (4.419)
123. Mozambique (4.417)
124. Kenya (4.410)
125. Zambia (4.377)
126. Mauritania (4.356)
127. Ethiopia (4.350)
128. Georgia (4.340)
129. Armenia (4.321)
130. Myanmar (4.308)
131. Chad (4.301)
132. Congo (Kinshasa) (4.245)
133. India (4.190)
134. Niger (4.166)
135. Uganda (4.161)
136. Benin (4.141)
137. Sudan (4.139)
138. Ukraine (4.103)
139. Togo (3.999)
140. Guinea (3.964)
141. Lesotho (3.808)
142. Angola (3.795)
143. Madagascar (3.774)
144. Zimbabwe (3.692)
145. Afghanistan (3.632)
146. Botswana (3.590)
147. Malawi (3.587)
148. Haiti (3.582)
149. Liberia (3.495)
150. Syria (3.462)
151. Rwanda (3.408)
152. Yemen (3.355)
153. Tanzania (3.303)
154. South Sudan (3.254)
155. Central African Republic (3.083)
156. Burundi (2.905)

Legend:
- 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
- Dystopia (1.92) + residual
- 95% confidence interval

per capita gap, 0.90 due to differences in social support, 0.61 to differences in healthy life expectancy, 0.37 to differences in freedom, 0.21 to differences in corruption perceptions, and 0.07 to differences in generosity. Income differences are the single largest contributing factor, at one-third of the total, because, of the six factors, income is by far the most unequally distributed among countries. GDP per capita is 30 times higher in the top 10 than in the bottom 10 countries.[16]

Overall, the model explains quite well the life evaluation differences within as well as between regions and for the world as a whole.[17] On average, however, the countries of Latin America still have mean life evaluations that are higher (by about 0.3 on the 0 to 10 scale) than predicted by the model. This difference has been found in earlier work and been attributed to a variety of factors, including especially some unique features of family and social life in Latin American countries. To help explain what is special about social life in Latin America, and how this affects emotions and life evaluations, Chapter 6 by Mariano Rojas presents a range of new evidence showing how the social structure supports Latin American happiness beyond what is captured by the variables available in the Gallup World Poll. In partial contrast, the countries of East Asia have average life evaluations below those predicted by the model, a finding that has been thought to reflect, at least in part, cultural differences in response style.[18] It is reassuring that our findings about the relative importance of the six factors are generally unaffected by whether or not we make explicit allowance for these regional differences.[19]

Changes in the Levels of Happiness

In this section we consider how life evaluations have changed. In previous reports we considered changes from the beginning of the Gallup World Poll until the three most recent years. In the report, we use 2008-2010 as a base period, and changes are measured from then to 2015-2017. The new base period excludes all observations prior to the 2007 economic crisis, whose effects were a key part of the change analysis in earlier World Happiness Reports. In Figure 2.3 we show the changes in happiness levels for all 141 countries that have sufficient numbers of observations for both 2008-2010 and 2015-2017.

Of the 141 countries with data for 2008-2010 and 2015-2017, 114 had significant changes. 58 were significant increases, ranging from 0.14 to 1.19 points on the 0 to 10 scale. There were also 59 significant decreases, ranging from -0.12 to -2.17 points, while the remaining 24 countries revealed no significant trend from 2008-2010 to 2015-2017. As shown in Table 35 in Statistical Appendix 1, the significant gains and losses are very unevenly distributed across the world, and sometimes also within continents. For example, in Western Europe there were 12 significant losses but only three significant gains. In Central and Eastern Europe, by contrast, these results were reversed, with 13 significant gains against two losses. The Commonwealth of Independent States was also a significant net gainer, with seven gains against two losses. The Middle East and North Africa was net negative, with 11 losses against five gains. In all other world regions, the numbers of significant gains and losses were much more equally divided.

Among the 20 top gainers, all of which showed average ladder scores increasing by more than 0.5 points, 10 are in the Commonwealth of Independent States or Central and Eastern Europe, three are in sub-Saharan Africa, and three in Asia. The other four were Malta, Iceland, Nicaragua, and Morocco. Among the 20 largest losers, all of which showed ladder reductions exceeding about 0.5 points, seven were in sub-Saharan Africa, three were in the Middle East and North Africa, three in Latin America and the Caribbean, three in the CIS and Central and Eastern Europe, and two each in Western Europe and South Asia.

These gains and losses are very large, especially for the 10 most affected gainers and losers. For each of the 10 top gainers, the average life evaluation gains were more than twice as large as those that would be expected from a doubling of per capita incomes. For each of the 10 countries with the biggest drops in average life evaluations, the losses were more than twice as large as would be expected from a halving of GDP per capita.

On the gaining side of the ledger, the inclusion of six transition countries among the top 10 gainers reflects the rising average life evaluations for the transition countries taken as a group. The appearance of sub-Saharan African countries among the biggest gainers and the biggest
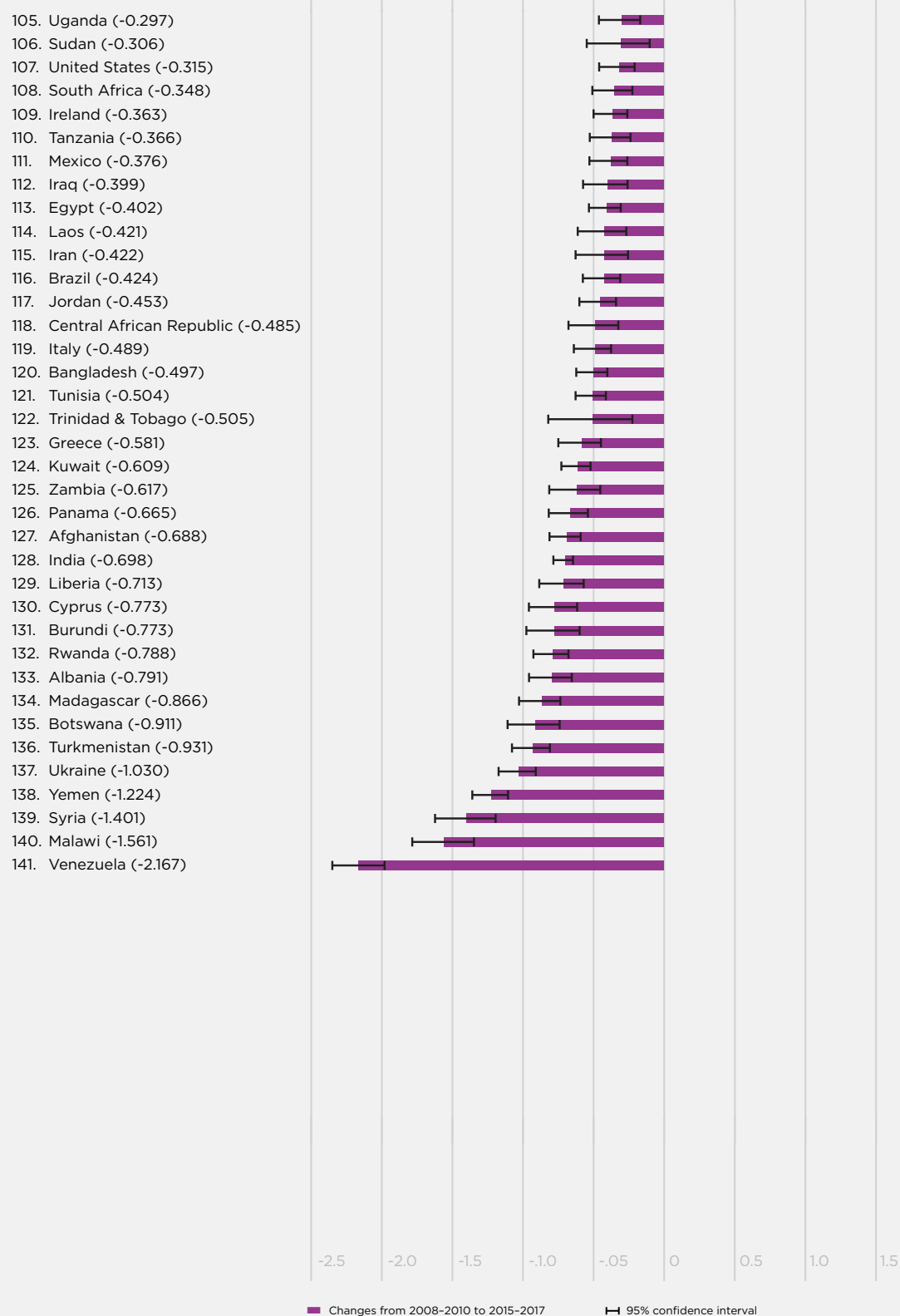
Figure 2.3: Changes in Happiness from 2008–2010 to 2015–2017 (Part 1)

1. Togo (1.191)
2. Latvia (1.026)
3. Bulgaria (1.021)
4. Sierra Leone (1.006)
5. Serbia (0.978)
6. Macedonia (0.880)
7. Uzbekistan (0.874)
8. Morocco (0.870)
9. Hungary (0.810)
10. Romania (0.807)
11. Nicaragua (0.760)
12. Congo (Brazzaville) (0.739)
13. Malaysia (0.733)
14. Philippines (0.720)
15. Tajikistan (0.677)
16. Malta (0.667)
17. Azerbaijan (0.663)
18. Lithuania (0.660)
19. Iceland (0.607)
20. China (0.592)
21. Mongolia (0.585)
22. Taiwan Province of China (0.554)
23. Mali (0.496)
24. Burkina Faso (0.482)
25. Benin (0.474)
26. Ivory Coast (0.474)
27. Pakistan (0.470)
28. Czech Republic (0.461)
29. Cameroon (0.445)
30. Estonia (0.445)
31. Russia (0.422)
32. Uruguay (0.374)
33. Germany (0.369)
34. Georgia (0.317)
35. Bosnia and Herzegovina (0.313)
36. Nepal (0.311)
37. Thailand (0.300)
38. Dominican Republic (0.298)
39. Chad (0.296)
40. Bahrain (0.289)
41. Kenya (0.276)
42. Poland (0.275)
43. Sri Lanka (0.265)
44. Nigeria (0.263)
45. Congo (Kinshasa) (0.261)
46. Ecuador (0.255)
47. Peru (0.243)
48. Montenegro (0.221)
49. Turkey (0.208)
50. Palestinian Territories (0.197)
51. Kazakhstan (0.197)
52. Kyrgyzstan (0.196)

-2.5   -2.0   -1.5   -1.0   -.05   0   0.5   1.0   1.5

■ Changes from 2008–2010 to 2015–2017   ⊢⊣ 95% confidence interval

Figure 2.3: Changes in Happiness from 2008–2010 to 2015–2017 (Part 2)

53.	Cambodia (0.194)
54.	Chile (0.186)
55.	Lebanon (0.185)
56.	Senegal (0.168)
57.	South Korea (0.158)
58.	Kosovo (0.136)
59.	Slovakia (0.121)
60.	Argentina (0.112)
61.	Portugal (0.108)
62.	Finland (0.100)
63.	Moldova (0.091)
64.	Ghana (0.066)
65.	Hong Kong SAR, China (0.038)
66.	Bolivia (0.029)
67.	New Zealand (0.021)
68.	Paraguay (0.018)
69.	Saudi Arabia (0.016)
70.	Guatemala (-0.004)
71.	Japan (-0.012)
72.	Colombia (-0.023)
73.	Belarus (-0.034)
74.	Niger (-0.036)
75.	Switzerland (-0.037)
76.	Norway (-0.039)
77.	Slovenia (-0.050)
78.	Belgium (-0.058)
79.	Armenia (-0.078)
80.	Australia (-0.079)
81.	El Salvador (-0.092)
82.	Sweden (-0.112)
83.	Austria (-0.123)
84.	Netherlands (-0.125)
85.	Israel (-0.134)
86.	Luxembourg (-0.141)
87.	United Kingdom (-0.160)
88.	Indonesia (-0.160)
89.	Singapore (-0.164)
90.	Algeria (-0.169)
91.	Costa Rica (-0.175)
92.	Qatar (-0.187)
93.	Croatia (-0.198)
94.	Mauritania (-0.206)
95.	France (-0.208)
96.	United Arab Emirates (-0.208)
97.	Canada (-0.213)
98.	Haiti (-0.224)
99.	Mozambique (-0.237)
100.	Spain (-0.248)
101.	Denmark (-0.253)
102.	Vietnam (-0.258)
103.	Honduras (-0.269)
104.	Zimbabwe (-0.278)

-2.5   -2.0   -1.5   -.1.0   -.05   0   0.5   1.0   1.5

■ Changes from 2008–2010 to 2015–2017   ⊢⊣ 95% confidence interval

Figure 2.3: Changes in Happiness from 2008–2010 to 2015–2017 (Part 3)

105. Uganda (-0.297)
106. Sudan (-0.306)
107. United States (-0.315)
108. South Africa (-0.348)
109. Ireland (-0.363)
110. Tanzania (-0.366)
111. Mexico (-0.376)
112. Iraq (-0.399)
113. Egypt (-0.402)
114. Laos (-0.421)
115. Iran (-0.422)
116. Brazil (-0.424)
117. Jordan (-0.453)
118. Central African Republic (-0.485)
119. Italy (-0.489)
120. Bangladesh (-0.497)
121. Tunisia (-0.504)
122. Trinidad & Tobago (-0.505)
123. Greece (-0.581)
124. Kuwait (-0.609)
125. Zambia (-0.617)
126. Panama (-0.665)
127. Afghanistan (-0.688)
128. India (-0.698)
129. Liberia (-0.713)
130. Cyprus (-0.773)
131. Burundi (-0.773)
132. Rwanda (-0.788)
133. Albania (-0.791)
134. Madagascar (-0.866)
135. Botswana (-0.911)
136. Turkmenistan (-0.931)
137. Ukraine (-1.030)
138. Yemen (-1.224)
139. Syria (-1.401)
140. Malawi (-1.561)
141. Venezuela (-2.167)

-2.5   -2.0   -1.5   -1.0   -.05   0   0.5   1.0   1.5

■ Changes from 2008–2010 to 2015–2017   ⊢⊣ 95% confidence interval

losers reflects the variety and volatility of experiences among the sub-Saharan countries for which changes are shown in Figure 2.3, and whose experiences were analyzed in more detail in Chapter 4 of World Happiness Report 2017. Togo, the largest gainer since 2008-2010, by almost 1.2 points, was the lowest ranked country in World Happiness Report 2015 and now ranks 17 places higher.

The 10 countries with the largest declines in average life evaluations typically suffered some combination of economic, political, and social stresses. The five largest drops since 2008-2010 were in Ukraine, Yemen, Syria, Malawi and Venezuela, with drops over 1 point in each case, the largest fall being almost 2.2 points in Venezuela. By moving the base period until well after the onset of the international banking crisis, the four most affected European countries, Greece, Italy, Spain and Portugal, no longer appear among the countries with the largest drops. Greece just remains in the group of 20 countries with the largest declines, Italy and Spain are still significantly below their 2008-2010 levels, while Portugal shows a small increase.

Figure 18 and Table 34 in the Statistical Appendix show the population-weighted actual and predicted changes in happiness for the 10 regions of the world from 2008-2010 to 2015-2017. The correlation between the actual and predicted changes is 0.3, but with actual changes being less favorable than predicted. Only in Central and Eastern Europe, where life evaluations were up by 0.49 points on the 0 to 10 scale, was there an actual increase that exceeded what was predicted. South Asia had the largest drop in actual life evaluations (more than half a point on the 0 to 10 scale) while predicted to have a substantial increase. Sub-Saharan Africa was predicted to have a substantial gain, while the actual change was a very small drop. Latin America was predicted to have a small gain, while it shows a population-weighted actual drop of 0.3 points. The MENA region was also predicted to be a gainer, and instead lost almost 0.35 points. Given the change in the base year, the countries of Western Europe were predicted to have a small gain, but instead experienced a small reduction. For the remaining regions, the predicted and actual changes were in the same direction, with the substantial reductions in the United States (the largest country in the NANZ group) being

larger than predicted. As Figure 18 shows, changes in the six factors are not very successful in capturing the evolving patterns of life over what have been tumultuous times for many countries. Eight of the nine regions were predicted to have 2015-2017 life evaluations higher than in 2008-2010, but only half of them did so. In general, the ranking of regions' predicted changes matched the ranking of regions' actual changes, despite typical experience being less favorable than predicted. The notable exception is South Asia, which experienced the largest drop, contrary to predictions.

Immigration and Happiness

In this section, we measure and compare the happiness of immigrants and the locally born populations of their host countries by dividing the residents of each country into two groups: those born in another country (the foreign-born), and the rest of the population. The United Nations estimates the total numbers of the foreign-born in each country every five years. We combine these data with annual UN estimates for total population to derive estimated foreign-born population shares for each country. These provide a valuable benchmark against which to compare data derived from the Gallup World Poll responses. We presented in Chapter 1 a map showing UN data for all national foreign-born populations, measured as a fraction of the total population, for the most recent available year, 2015. At the global level, the foreign-born population in 2015 was 244 million, making up 3.3% of world population. Over the 25 years between 1990 and 2015, the world's foreign-born population grew from 153 million to 244 million, an increase of some 60%, thereby increasing from 2.9% to 3.3% of the growing world population.

The foreign-born share in 2015 is highly variable among the 160 countries covered by the UN data, ranging from less than 2% in 56 countries to over 10% in 44 countries. Averaging across country averages, the mean foreign-born share in 2015 was 8.6%. This is almost two and a half times as high as the percentage of total world population that is foreign-born, reflecting the fact that the world's most populous countries have much lower shares of the foreign-born. Of the 12 countries with populations exceeding 100 million in 2015, only three had foreign-born

population shares exceeding 1% – Japan at 1.7%, Pakistan at 1.9% and the United States at 15%. For the 10 countries with 2015 populations less than one million, the foreign-born share averaged 12.6%, with a wide range of variation, from 2% or less in Guyana and Comoros to 46% in Luxembourg.

The 11 countries with the highest proportions of international residents, as represented by foreign-born population shares exceeding 30%, have an average foreign-born share of 50%. The group includes geographically small units like the Hong Kong SAR at 39%, Luxembourg at 45.7% and Singapore at 46%; and eight countries in the Middle East, with the highest foreign-born population shares being Qatar at 68%, Kuwait at 73% and the UAE at 87%.

How international are the world's happiest countries? Looking at the 10 happiest countries in Figure 2.2, they have foreign-born population shares averaging 17.2%, about twice that for the world as a whole. For the top five countries, four of which have held the first-place position within the past five years, the average 2015 share of the foreign-born in the resident population is 14.3%, well above the world average. For the countries in 6th to 10th positions in the 2015-2017 rankings of life evaluations, the average foreign-born share is 20%, the highest being Australia at 28%.

For our estimates of the happiness of the foreign-born populations of each country, we use data on the foreign-born respondents from the Gallup World Poll for the longest available period, from 2005 to 2017. In Statistical Appendix 2 we present our data in three different ways: for the 162 countries with any foreign-born respondents, for the 117 countries where there are more than 100 foreign-born respondents, and for 87 countries where there are more than 200 foreign-born respondents. For our main presentation in Figure 2.4 we use the sample with 117 countries, since it gives the largest number of countries while still maintaining a reasonable sample size. We ask readers, when considering the rankings, to pay attention to the size of the 95% confidence regions for each country (shown as a horizontal line at the right-hand end of the bar), since these are a direct reflection of the sample sizes in each country, and show where caution is needed in interpreting the rankings. As discussed in more detail in Chapter 3, the Gallup World Poll samples are designed to reflect the total resident

population, without special regard for the representativeness of the foreign-born population shares. There are a number of reasons why the foreign-born population shares may be under-represented in total, since they may be less likely to have addresses or listed phones that would bring them into the sampling frame. In addition, the limited range of language options available may discourage participation by potential foreign-born respondents not able to speak one of the available languages.[20] We report in this chapter data on the foreign-born respondents of every country, while recognizing that the samples may not represent each country's foreign-born population equally well.[21] Since we are not able to estimate the size of these possible differences, we simply report the available data.

We can, however, compare the foreign-born shares in the Gallup World Poll samples with those in the corresponding UN population data to get some impression of how serious a problem we might be facing. Averaging across countries, the UN data show the average national foreign-born share to be 8.6%, as we reported earlier. This can be compared with what we get from looking at the entire 2005-2017 Gallup sample, which typically includes 1,000 respondents per year in each country. As shown in Statistical Appendix 2, the Gallup sample has 93,000 foreign-born respondents, compared to 1,540,000 domestic-born respondents. The foreign-born respondents thus make up 5.7% of the total sample,[22] or two-thirds the level of the UN estimate for 2015. This represents, as expected, some under-representation of the foreign-born in the total sample, with possible implications for what can safely be said about the foreign-born. However, we are generally confident in the representativeness of the Gallup estimates of the number for foreign-born in each country, for two reasons. First, the average proportions become closer when it is recognized that the Gallup surveys do not include refugee camps, which make up about 3% of the UN estimate of the foreign-born. Second, and more importantly for our analysis, the cross-country variation in the foreign-born population shares matches very closely with the corresponding intercountry variation in the UN estimates of foreign-born population shares.[23]

Figure 2.4 ranks countries by the average ladder score of their foreign-born respondents in all of

the Gallup World Polls between 2005 and 2017. For purposes of comparison, the figure also shows for each country the corresponding average life evaluations for domestically born respondents.[24] Error bars are shown for the averages of the foreign-born, but not for the domestically born respondents, since their sample sizes from the pooled 2005-2017 surveys are so large that they make the estimates of the average very precise.

The most striking feature of Figure 2.4 is how closely life evaluations for the foreign-born match those for respondents born in the country where the migrants are now living. For the 117 countries with more than 100 foreign-born respondents, the cross-country correlation between average life evaluations of the foreign-born and domestically-born respondents is very high, 0.96. Another way of describing this point is that the rankings of countries according to the life evaluations of their immigrants is very similar to the ranking of Figure 2.2 for the entire resident populations of each country 2015-2017, despite the differences in the numbers of countries and survey years.

Of the top 10 countries for immigrant happiness, as shown by Figure 2.4, nine are also top-10 countries for total population life evaluations for 2015-2017, as shown in Figure 2.2. The only exception is Mexico, which comes in just above the Netherlands to take the 10th spot. However, the small size of the foreign-born sample for Mexico makes it a very uncertain call. Finland is in the top spot for immigrant happiness 2005-2017, just as it is also the overall happiness leader for 2015-2017. Of the top five countries for overall life evaluations, four are also in the top five for happiness of the foreign-born. Switzerland, which is currently in 5th position in the overall population ranking, is in 9th position in the immigrant happiness rankings, following several high-immigration non-European countries – New Zealand, Australia and Canada – and Sweden. This is because, as shown in Figure 2.4, Switzerland and the Netherlands have the largest top-10 shortfall of immigrant life evaluations relative to those of locally born respondents.

Looking across the whole spectrum of countries, what is the general relation between the life evaluations for foreign-born and locally born respondents? Figure 2.5 shows scatter plots of life evaluations for the two population groups, with life evaluations of the foreign-born on the vertical axis, and life evaluations for the locally born on the horizontal axis.

If the foreign-born and locally born have the same average life evaluations, then the points will tend to fall along the 45-degree lines marked in each panel of the figure. The scatter plots, especially those for sample sizes>100, show a tight positive linkage, and also suggest that immigrant life evaluations deviate from those of the native-born in a systematic way. This is shown by the fact that immigrants are more likely to have life evaluations that are higher than the locally born in countries where life evaluations of the locally born are low, and vice versa. This suggests, as does other evidence reviewed in Chapter 3, that the life evaluations of immigrants depend to some extent on their former lives in their countries of birth. Such a 'footprint' effect would be expected to give rise to the slope between foreign-born life evaluations and those of the locally born being flatter than the 45-degree line. If the distribution of migrants is similar across countries, recipient countries with higher ladder scores have more feeder countries with ladder scores below their own, and hence a larger gap between source and destination happiness scores. In addition, as discussed in Chapter 3, immigrants who have the chance to choose where they go usually intend to move to a country where life evaluations are high. As a consequence, foreign-born population shares are systematically higher in countries with higher average life evaluations. For example, a country with average life evaluations one point higher on the 0 to 10 scale has 5% more of its population made up of the foreign-born.[25] The combination of footprint effects and migrants tending to move to happier countries is no doubt part of the reason why the foreign-born in happier countries are slightly less happy than the locally born populations.

But there may also be other reasons for immigrant happiness to be lower, including the costs of migration considered in more detail in Chapter 3. There is not a large gap to explain, as for those 117 countries with more than 100 foreign-born respondents, the average life evaluations of a country's foreign-born population are 99.5% as large as those of the locally-born population in the same country. But this overall equality covers

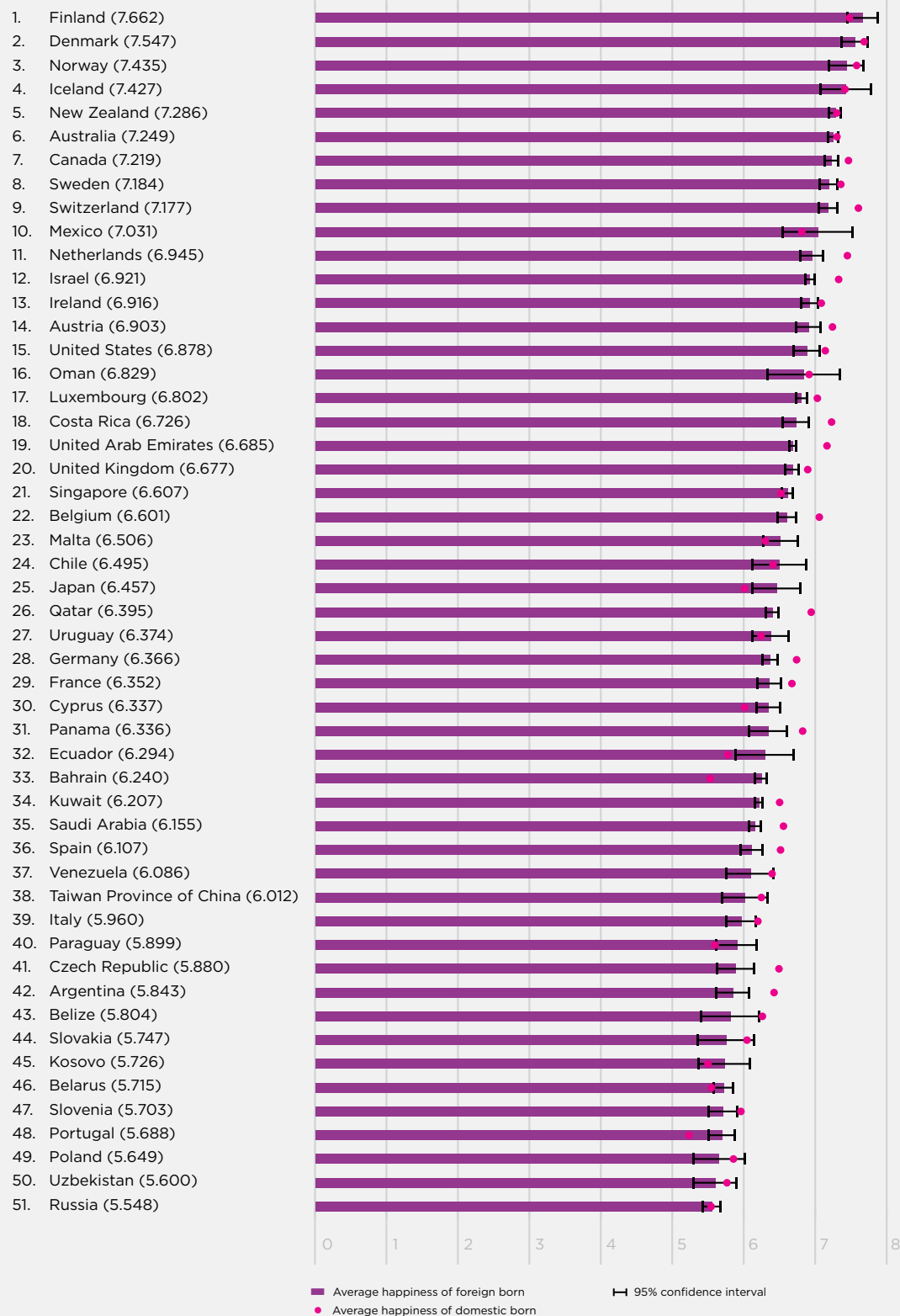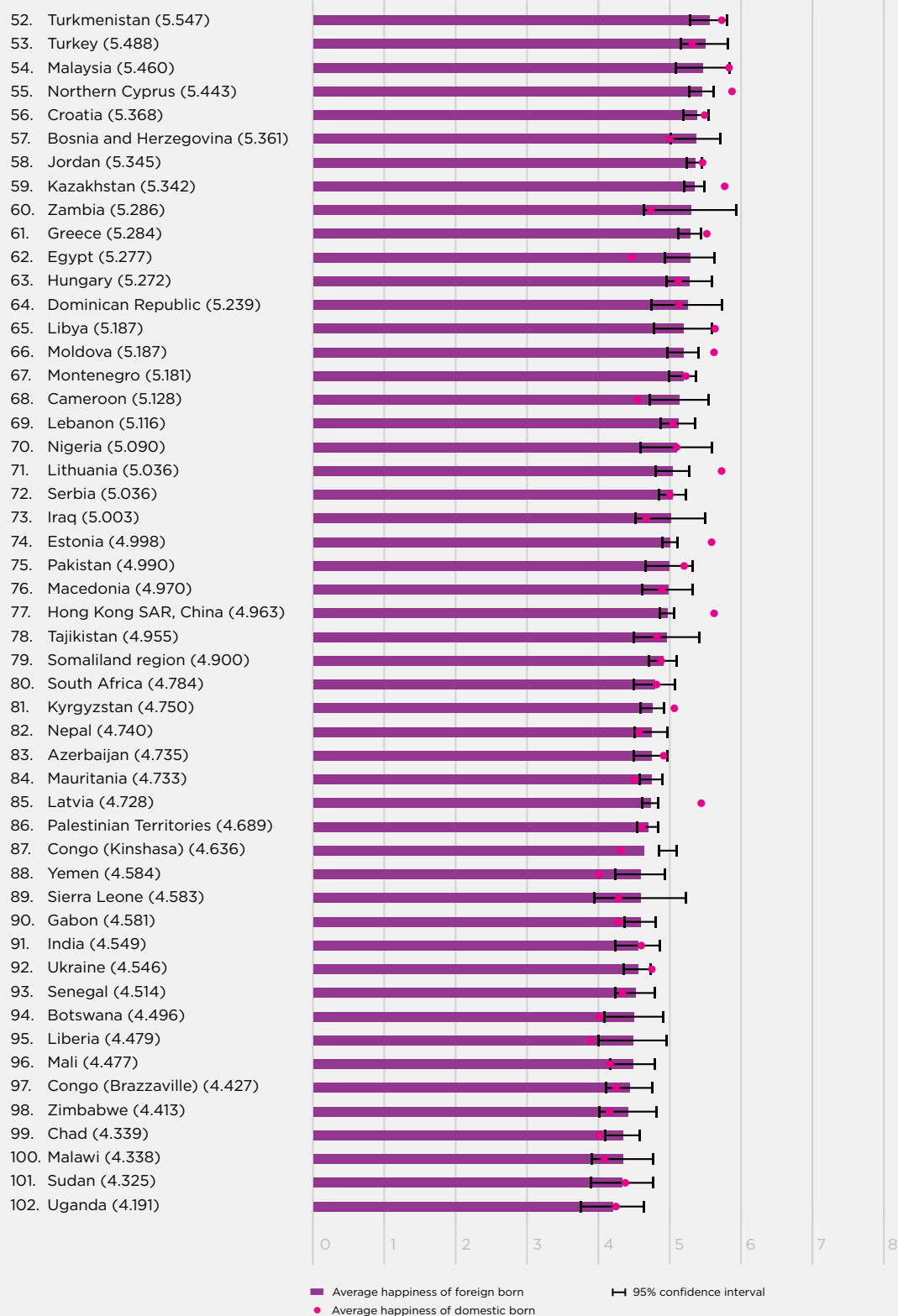## Figure 2.4: Happiness Ranking for the Foreign-Born, 2005–2017, sample>100
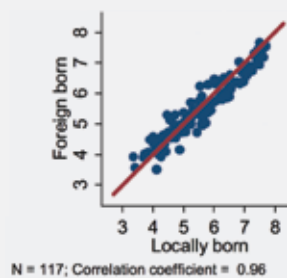 (Part 1)

1.	Finland (7.662)	
2.	Denmark (7.547)	
3.	Norway (7.435)	
4.	Iceland (7.427)	
5.	New Zealand (7.286)	
6.	Australia (7.249)	
7.	Canada (7.219)	
8.	Sweden (7.184)	
9.	Switzerland (7.177)	
10.	Mexico (7.031)	
11.	Netherlands (6.945)	
12.	Israel (6.921)	
13.	Ireland (6.916)	
14.	Austria (6.903)	
15.	United States (6.878)	
16.	Oman (6.829)	
17.	Luxembourg (6.802)	
18.	Costa Rica (6.726)	
19.	United Arab Emirates (6.685)	
20.	United Kingdom (6.677)	
21.	Singapore (6.607)	
22.	Belgium (6.601)	
23.	Malta (6.506)	
24.	Chile (6.495)	
25.	Japan (6.457)	
26.	Qatar (6.395)	
27.	Uruguay (6.374)	
28.	Germany (6.366)	
29.	France (6.352)	
30.	Cyprus (6.337)	
31.	Panama (6.336)	
32.	Ecuador (6.294)	
33.	Bahrain (6.240)	
34.	Kuwait (6.207)	
35.	Saudi Arabia (6.155)	
36.	Spain (6.107)	
37.	Venezuela (6.086)	
38.	Taiwan Province of China (6.012)	
39.	Italy (5.960)	
40.	Paraguay (5.899)	
41.	Czech Republic (5.880)	
42.	Argentina (5.843)	
43.	Belize (5.804)	
44.	Slovakia (5.747)	
45.	Kosovo (5.726)	
46.	Belarus (5.715)	
47.	Slovenia (5.703)	
48.	Portugal (5.688)	
49.	Poland (5.649)	
50.	Uzbekistan (5.600)	
51.	Russia (5.548)	

■ Average happiness of foreign born   ⊢⊣ 95% confidence interval
● Average happiness of domestic born

Figure 2.4: Happiness Ranking for the Foreign-Born, 2005–2017, sample>100
(Part 2)

52.	Turkmenistan (5.547)	
53.	Turkey (5.488)	
54.	Malaysia (5.460)	
55.	Northern Cyprus (5.443)	
56.	Croatia (5.368)	
57.	Bosnia and Herzegovina (5.361)	
58.	Jordan (5.345)	
59.	Kazakhstan (5.342)	
60.	Zambia (5.286)	
61.	Greece (5.284)	
62.	Egypt (5.277)	
63.	Hungary (5.272)	
64.	Dominican Republic (5.239)	
65.	Libya (5.187)	
66.	Moldova (5.187)	
67.	Montenegro (5.181)	
68.	Cameroon (5.128)	
69.	Lebanon (5.116)	
70.	Nigeria (5.090)	
71.	Lithuania (5.036)	
72.	Serbia (5.036)	
73.	Iraq (5.003)	
74.	Estonia (4.998)	
75.	Pakistan (4.990)	
76.	Macedonia (4.970)	
77.	Hong Kong SAR, China (4.963)	
78.	Tajikistan (4.955)	
79.	Somaliland region (4.900)	
80.	South Africa (4.784)	
81.	Kyrgyzstan (4.750)	
82.	Nepal (4.740)	
83.	Azerbaijan (4.735)	
84.	Mauritania (4.733)	
85.	Latvia (4.728)	
86.	Palestinian Territories (4.689)	
87.	Congo (Kinshasa) (4.636)	
88.	Yemen (4.584)	
89.	Sierra Leone (4.583)	
90.	Gabon (4.581)	
91.	India (4.549)	
92.	Ukraine (4.546)	
93.	Senegal (4.514)	
94.	Botswana (4.496)	
95.	Liberia (4.479)	
96.	Mali (4.477)	
97.	Congo (Brazzaville) (4.427)	
98.	Zimbabwe (4.413)	
99.	Chad (4.339)	
100.	Malawi (4.338)	
101.	Sudan (4.325)	
102.	Uganda (4.191)	

Average happiness of foreign born
95% confidence interval
Average happiness of domestic born

Figure 2.4: Happiness Ranking for the Foreign-Born, 2005–2017, sample>100 (Part 3)

103. Kenya (4.167)
104. Burkina Faso (4.146)
105. Djibouti (4.139)
106. Armenia (4.101)
107. Afghanistan (4.068)
108. Niger (4.057)
109. Benin (4.015)
110. Georgia (3.988)
111. Guinea (3.954)
112. South Sudan (3.925)
113. Comoros (3.911)
114. Ivory Coast (3.908)
115. Rwanda (3.899)
116. Togo (3.570)
117. Syria (3.516)

0 1 2 3 4 5 6 7 8

■ Average happiness of foreign born   ⊢—⊣ 95% confidence interval
● Average happiness of domestic born

Figure 2.5: Life Evaluations, Foreign-born vs Locally Born, with Alternative Foreign-born Sample Sizes

Foreign born sample size > 0

N = 162; Correlation coefficient = 0.91

Foreign born sample size > 100

N = 117; Correlation coefficient = 0.96

Foreign born sample size > 200

N = 87; Correlation coefficient = 0.96

quite a range of experience. Among these 117 countries, there are 64 countries where immigrant happiness is lower, averaging 94.5% of that of the locally born; 48 countries where it is higher, averaging 106% of the life evaluations of the locally born; and five countries where the two are essentially equal, with percentage differences below 1%.[26]

The life evaluations of immigrants and of the native-born are likely to depend on the extent to which residents in each country are ready to happily accept foreign migrants. To test this possibility, we make use of a Migrant Acceptance Index (MAI) developed by Gallup researchers[27] and described in the Annex to this Report.[28] Our first test was to add the values of the MAI to the first equation in Table 2.1. We found a positive coefficient of 0.068, suggesting that immigrants, local residents, or both, are happier in countries where migrants are more welcome. An increase of 2 points (about one standard deviation) on the 9-point scale of migrant acceptance was associated with average life evaluations higher by 0.14 points on the 0 to 10 scale for life evaluations. Is this gain among the immigrants or the locally-born? We shall show later, when we set up and test our main model for immigrant happiness, that migrant acceptance makes both immigrants and locally born happier, with the per capita effects being one-third larger for immigrants. But the fact that the foreign-born populations are typically less than 15%, most of the total happiness gains from migrant acceptance are due to the locally born population, even if the per-person effects are larger for the migrants.

Footprint effects, coupled with the fact that happier countries are the major immigration destinations, help to explain why immigrants in happier countries are less happy than the local population, while the reverse is true for immigrants in less happy countries. Thus for those 64 countries where immigrants have lower life evaluations than the locally born, the average life evaluation is 6.00, compared to 5.01 for the 48 countries where immigrants are happier than the locally born. When the OECD studied the life evaluations of immigrants in OECD countries, they found that immigrants were less happy than the locally born in three-quarters of their member countries.[29] That reflects the fact that most of the happiest countries are also OECD countries. In just over half of the non-OECD countries, the foreign-born are happier than the locally born.

Another way of looking for sources of possible life evaluation differences between foreign-born and locally born respondents is to see how immigrants fare in different aspects of their lives. All four of the social factors used in Table 2.1 show similar average values and cross-country patterns for the two population groups, although these patterns differ in interesting ways. The correlation is lowest, although still very high (at 0.91), for social support. It also has a lower average value for the foreign-born, 79% of whom feel they have someone to count on in times of trouble, compared to 82% for the locally born respondents. This possibly illustrates a consequence of the uprooting effect of international migration, as discussed in Chapter 3. The slope of the relation is also slightly less than 45%, showing that the immigrant vs locally born gap for perceived social support is greatest for those living in countries with high average values for social support. Nonetheless, there is still a very strong positive relation, so that immigrants living in a country where the locally born have internationally high values of social support feel the same way themselves, even if in a slightly muted way. When it comes to evaluations of the institutional quality of their new countries, immigrants rank these institutions very much as do the locally-born, so that the cross-country correlations of evaluations by the two groups are very high, at 0.93 for freedom to make life choices, and 0.97 for perceptions of corruption. There are on average no footprint effects for perceptions of corruption, as immigrants see less evidence of corruption around them in their new countries than do locally born, despite having come, on average, from birth countries with more corruption than where they are now living. Generosity and freedom to make life choices are essentially equal for immigrants and the locally born, although slightly higher for the immigrants.

To a striking extent, the life evaluations of the foreign-born are similar to those of the locally born, as are the values of several of the key social supports for better lives. But is the happiness of immigrants and the locally born affected to the same extent by these variables? To assess this possibility, we divided the entire accumulated individual Gallup World Poll respondents 2005-2017, typically involving 1,000

observations per year in each country, into separate foreign-born and domestically born samples. As shown in Table 10 of Statistical Appendix 2, immigrants and non-immigrants evaluate their lives in almost identical ways, with almost no significant differences.[30]

All of the evidence we have considered thus far suggests that average life evaluations depend first and foremost on the social and material aspects of life in the communities and countries where people live. Put another way, the substantial differences across countries in average life evaluations appear to depend more on the social and material aspects of life in each community and country than on characteristics inherent in individuals. If this is true, then we would expect to find that immigrants from countries with very different average levels of life evaluations would tend to have happiness levels much more like those of others in their new countries than like those of their previous friends, family and compatriots still living in their original countries.

We can draw together the preceding lines of evidence to propose and test a particular model of immigrant happiness. Immigrant happiness will be systematically higher in countries where the local populations are happier, but the effect will be less than one for one because of footprint effects. Footprints themselves imply a positive effect from the average happiness in the countries from which the migrants came. Finally, immigrant happiness will be happier in countries where migrant acceptance is higher. All three propositions are tested and confirmed by the following equation, where average immigrant life evaluations 2005-2017 (ladderimm) are explained by average happiness of the locally born population (ladderdom), weighted average happiness in the source countries (laddersource),[31] and each country's value for the Gallup Migrant Acceptance Index as presented in the Annex. The life evaluation used is the Cantril ladder, as elsewhere in this chapter, with the estimation sample including the 107 countries that have more than 100 immigrant survey responders and a value for the Migrant Acceptance Index.

$$\text{Ladderimm} = 0.730 \text{ ladderdom} +$$
$$(0.033)$$
$$0.243 \text{ laddersource} +$$
$$(0.057)$$
$$0.049 \text{ migrant acceptance}$$
$$(0.014)$$

Adjusted R^2=0.941 n=107

All parts of the framework are strongly supported by the results. It is also interesting to ask what we can say about the effects of immigration on the locally-born population. We have already seen that immigrants more often move to happier countries, as evidenced by the strong positive simple correlation between immigrant share and national happiness (r=+0.45). We cannot simply use this to conclude also that a higher immigrant share makes the domestic population happier. To answer that question appropriately, we need to take proper account of the established sources of well-being. We can do this by adding the immigrant share to a cross-sectional equation explaining the life evaluations of the locally-born by the standard variables used in Table 2.1. When this is done, the estimated effect of the immigrant population share[32] is essentially zero.

A similar test using the same framework to explain cross-country variations of the life evaluations of immigrants also showed no impact from the immigrant share of the population. The same framework also showed that GDP per capita has no effect on the average life evaluations, once the effect flowing through the average life evaluations of the locally born is taken into account.[33]

We can use the same framework to estimate the effects of migrant acceptance on the happiness of the host populations, by adding the index to a cross-sectional equation explaining the average life evaluations of the host populations 2005-2017 by the six key variables of Table 2.1 plus the Migrant Acceptance Index. The Migrant Acceptance Index attracts a coefficient of 0.075 (SE=0.028), showing that those who are not themselves immigrants are happier living in societies where immigrant acceptance is higher. The total effect of the Migrant Acceptance Index on immigrants is slightly larger, as can be seen by combining the direct effect from the equation shown above (0.049) plus that flowing indirectly through the life evaluations of the locally born (0.73*0.075),[34] giving a total effect of 0.103.

Does this same framework apply when we consider migration from a variety of source countries to a single destination? If the framework is apt, then we would expect to find migrants from all countries having happiness levels that converge toward the average for the locally born, with the largest gains for those coming from the least happy origin countries. The existence of footprint effects would mean that immigrants coming from the least happy countries would have life evaluations slightly below those of immigrants from happier source countries. To compare life evaluations of immigrants from many source countries within a single destination country requires much larger samples of migrants than are available from the Gallup World Poll. Fortunately, there are two countries, Canada and the United Kingdom, that have national surveys of life satisfaction large enough to accumulate sufficient samples of the foreign-born from many different source countries. The fact that we have two destination countries allows us to test quite directly the convergence hypothesis presented above. If convergence is general, we would expect it to apply downward as well as upward, and to converge to different values in the two destination countries.

The Canadian data on satisfaction with life (SWL) for immigrants from many different countries have been used to compare the life evaluations of immigrants from each source country with average life evaluations in the source countries, using SWL data from the World Values Survey (WVS), or comparable data from the Gallup World Poll.[35] If source country SWL was a dominant force, as it would be if international SWL differences were explained by inbuilt genetic or cultural differences, then the observations would lie along the 45-degree line if Canadian immigrant SWL is plotted against source-country SWL. By contrast, if SWL depends predominantly on life circumstances in Canada, then the observations for the SWL of the immigrant groups would lie along a horizontal line roughly matching the overall SWL of Canadians. The actual results, for immigrants from 100 different source countries, are shown in Figure 2.6.

The convergence to Canadian levels of SWL is apparent, even for immigrants from countries

Figure 2.6 Life Satisfaction Among Immigrants to Canada from 100 Countries

Observed satisfaction with life among immigrant in the Canada (0 to 40 years since arrival) from 100 countries and predicted SWL in their countries
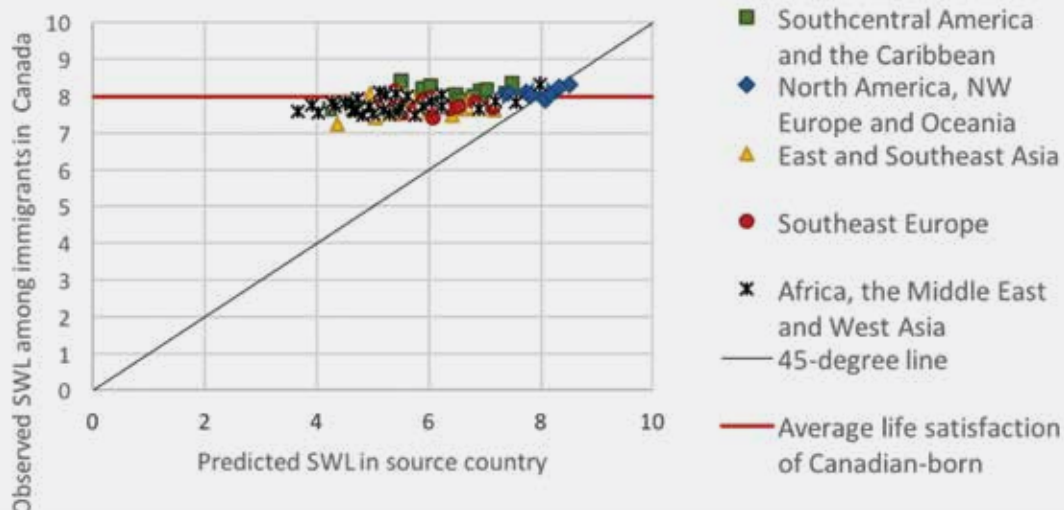
with very low average life evaluations. This convergence can be seen by comparing the country spread along the horizontal axis, measuring SWL in the source countries, with the spread on the vertical axis, showing the SWL of the Canadian immigrants from the same source countries. For the convergence model to be generally applicable, we would expect to find that the variation of life evaluations among the immigrant groups in Canada would be significantly less than among the source country scores. This is indeed the case, as the happiness spread among the immigrant groups is less than one-quarter as large as among the source countries.[36] This was found to be so whether or not estimates were adjusted to control for possible selection effects.[37] Most of the immigrants rose or fell close to Canadian levels of SWL even though migrations intentions data from the Gallup World Poll show that those wishing to emigrate, whether in general or to Canada, generally have lower life evaluations than those who had no plans to emigrate.[38] There is, as expected, some evidence of a footprint effect, with average life evaluations in the source country having a carry-over of 10.5% into Canadian life evaluations.[39] If the convergence model applies strictly, and if the footprint effects are sufficiently large, then we would expect to find most or all of the points falling in the north-east and south-west quadrants, with life satisfaction increases for those coming from less happy countries, and decreases for those from more happy countries. This is confirmed by Figure 2.6, the only qualification being that immigrants from some countries less happy than Canada find themselves happier in Canada than the average of the native-born population – convergence plus overshoot.

It is possible that the Canadian results reported above might relate specifically to conditions facing immigrants to Canada, or to depend on the specific source countries from which Canadian migrants are drawn. Thus it is very helpful to be able to undertake a similar analysis for SWL data for immigrants to the United Kingdom, making use of the very large samples of well-being responses available from the UK Annual Population Survey. With the assistance of the UK Office for National Statistics, we have obtained, and present here, comparable data for the SWL of immigrants to the United Kingdom.[40] The pattern of results,

as shown in Figure 2.7, is strikingly similar to that found for Canada. As with Canada, there is strong evidence of convergence to the UK average, with a corresponding reduction in the vertical spread of the country points. There is also a footprint effect, averaging 12.6% in the UK case.

Bringing the Canadian and UK experiences together, perhaps the most interesting result is the extent to which convergence is not just generally up, but is towards the national averages in the destination countries. To show this most clearly, it is probably best to consider migration to Canada and the UK from countries sending sufficiently great numbers of migrants to enable them to appear in both the Canada and UK samples above. This is a smaller number of countries than either in the UK or Canadian groups, since Canada and the UK draw from differing mixes of source countries. Looking just at the 63 countries that have sufficiently large numbers of migrants to both countries to provide representative samples, we can compare the average SWL in the 63 source countries with the average SWL of the same immigrant groups in Canada and the United Kingdom. The average SWL across the source countries is 6.08 (SE=0.15), while migrants to the UK have a mean SWL of 7.57 (SE=0.038), and those to Canada have a mean SWL of 7.81 (SE=0.028). The three means are strikingly different from each other in statistical terms. The immigrant happiness scores have converged to local averages to such an extent that they form two quite different groups. This is perhaps the strongest evidence in this chapter that it is local conditions that determine how people value their lives. Migrants who move to the UK tend to value their lives like others in the UK, while migrants from the same countries to Canada have life evaluations converging towards those of other Canadians.

The data from the United Kingdom and Canada can be used to shed more light on the Chapter 5 finding that emigrants from Latin America to other countries have not had large happiness gains relative to other migrants. How does that relate to the evidence presented above that migrant happiness is determined primarily by the happiness in their destination countries? That evidence would suggest that if Latin American migrants came from happy countries and did not move to happier countries, they would not be

Figure 2.7 Life Satisfaction Among Immigrants to the UK from 70 Countries

Observed satisfaction with life among immigrant in the UK (0 to 40 years since arrival) from 70 countries and predicted SWL in their countries
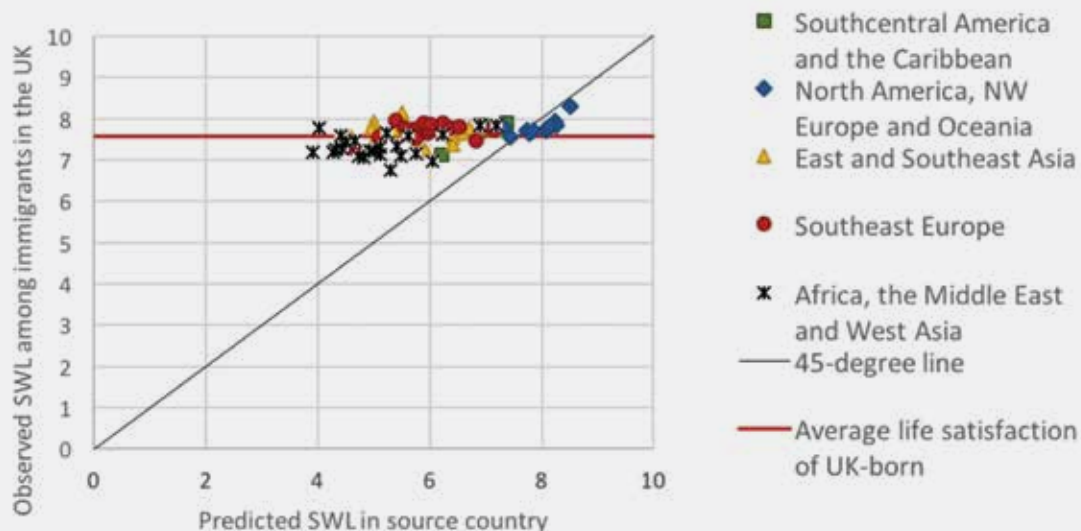
likely to gain. The way to test how well Latin American migrants fare, relative to migrants from other countries, would be to compare immigrants from different source countries while holding the destination country fixed. This we can do by using the large samples from the UK and Canadian national surveys. What do they show? For both the United Kingdom and Canada, the Latin American source countries have higher life evaluations than the average of source countries. That gives the Latin migrants less to gain compared to migrants from less happy countries. But in both countries, the happiness levels of immigrants from Latin America exceeds that of other immigrants, suggesting that at least some of the Latin happiness bulge described in Chapter 6 is brought along as part of the migrant's posses-sions. Putting the two bits together, immigrants from Latin America have life satisfaction of 7.71 in the United Kingdom and 8.01 in Canada, a difference very similar to the difference between average life satisfaction in the two countries. This compares to Latin American source country life satisfaction of about 7.0 for the eight countries with sufficient numbers of migrants to both

countries. Thus Latin migrants to the United Kingdom show happiness gains of about 0.7 points, compared to 1.0 points for those bound for Canada.

In both cases, the migrants from Latin America fare slightly better than other migrants in their destinations, having life satisfaction 0.10 points higher in the UK and 0.17 points higher in Canada, compared to other migrants. But their happiness gains from migration are smaller, reflecting the fact that they were already in happy countries. The average gain for all migrants to the UK was about 1.3 points, and 1.8 points for migrants to Canada. This reflects that Latin American countries are happier than most other source countries, and not that Latin Americans in the UK or Canada are less happy than other immigrants. Indeed, as shown by the positions of the symbols for Latin American countries in both Figures 2.6 and 2.7, immigrants from Latin America often have life evaluations that are higher than those of the locally born.

Any study of migration, especially one that focuses on the happiness of both migrants and

non-migrants, leads naturally to considerations of the possible linkages between migration and world happiness. We have done our best to assemble the available data on the life evaluations of migrants and non-migrants alike. Many countries, especially those where people evaluate their lives highly, have many would-be migrants, on top of the humanitarian need to somehow accommodate those whose lives in their birth countries have become impossibly difficult. Is migration making the world as a whole happier or unhappier? Is there any pre-ferred level of migration that will best serve to provide opportunities for newcomers, to build positive linkages among countries, and accom-modate the need to find new homes for refu-gees, while still maintaining and improving the quality of the social fabric that supports better lives? There is no easy answer to this question.

Are countries with higher immigration rates thereby happier places to live, for migrants and non-migrants alike? We have already seen that most migration is from less happy to happier places, so we expect to find that happier countries do tend to have higher foreign-born population shares. But that does not answer the question, since in this case the migration is responding to the differences in happiness and other aspects of life, and is probably not responsible for creating the differences. One limited way of answering the question might be to add the foreign-born population share for each country to the equation we used in Table 2.1 to explain annual observations of life evaluations in the sample of 157 countries using data from 2005 through 2017. We did this, and there was no significant effect. Alternatively, and preferably, we repeated that analysis using country fixed effects, so that any influence we found would be free of country effects, and would instead look for happiness changes within countries in response to changes in their shares of foreign-born population. We found an insignificant negative effect that remained both negative and insignificant under several alternative specifications.[41] There are only limited data for changes in each country's shares of foreign-born population, and many other factors that might be in play, so there can be no firm conclusions drawn from these limited experiments. As described previously, we also tested whether international differences in accumulated net immigration (as measured by the foreign-born

population share) had any impact in explaining cross-country variations in the average 2005-2017 life evaluations for either the immigrant or locally born populations, once account is taken of the six main determinants of life evaluations. We found no effect, either positive or negative.

Conclusions

This chapter, as usual, has a double focus. The first half of the chapter presented our latest ranking of countries according to their average life evaluations over the previous three years, followed by a ranking of changes in life evaluations from 2008-2010 to 2015-2017. The second half turned the focus to international migration, ranking countries by the average life evaluations of all the foreign-born respondents to the Gallup World Poll between 2005 and 2017.

The rankings of country happiness are based this year on the pooled results from Gallup World Poll surveys from 2015-2017, and show both change and stability. There is a new top ranking country, Finland, but the top ten positions are held by the same countries as in the last two years, although with some swapping of places. Four different countries have held top spot since 2015 – Switzerland, Denmark, Norway and now Finland.

All the top countries tend to have high values for all six of the key variables that have been found to support well-being: income, healthy life expectancy, social support, freedom, trust and generosity, to such a degree that year to year changes in the top ranking are to be expected.

This year the happiness changes reported are those from 2008-2010, in the immediate aftermath of the financial crisis of 2007-2008; to the most recent years, covering 2015-2017. The winner of the change category was Togo, as it posted the largest gain since 2008-2010, almost 1.2 points. It was the lowest ranked country in World Happiness Report 2015 and now ranks 17 places higher. Other signal success stories, countries with average life evaluation gains of more than a full point on the 0 to 10 scale since 2008-2010, include Latvia, Bulgaria and Sierra Leone. The largest happiness losses since 2008-2010 were in Ukraine, Yemen, Syria, Malawi and Venezuela, with drops over 1 point in each case, the largest fall being almost 2.2 points in Venezuela.

Five of this report's seven chapters deal primarily with migration. Perhaps the most striking finding of the whole report is that a ranking of countries according to the happiness of their immigrant populations is almost exactly the same as for the rest of the population. The immigrant happiness rankings are based on the full span of Gallup data from 2005 to 2017, which is sufficient to have 117 countries with more than 100 immigrant respondents. Finland picks up a second gold medal here, as home to the world's happiest immigrants.

The closeness of the two rankings shows that immigrant happiness depends predominantly on the quality of life where they now live, illustrating a general pattern of convergence. Happiness can change, and does change, according to the quality of the society in which people live. Immigrant happiness, like that of the locally born depends on a range of features of the social fabric, extending far beyond the higher incomes traditionally thought to inspire and reward migration. Once the overall quality of life is taken into account (with income given its due weight as one of the six factors), there is no happiness gain from moving to a higher income country. That has been tested, but is already suggested by the countries with the happiest immigrants are not the richest countries, but instead the countries with a more balanced set of social and institutional supports for better lives.

While convergence to local happiness levels is quite rapid, it is not complete, as there is a 'footprint' effect based on the happiness in each source country. This effect ranges from 10% to 25%. This footprint effect, coupled with the fact that most migration is from less happy to happier countries, explains why, although on average across the world immigrant happiness is very close to that of the locally born, it is less than that of the locals in the happiest countries and greater in the less happy countries.

Since immigrants tend on average to have life evaluations close to those of people already living in destination countries, does this suggest that world happiness would be higher if there were more migration from unhappy to happy places? Although this question underlies many current political debates, the available evidence is not yet good enough to provide anything like definitive conclusions. What does seem apparent,

as will be shown in more detail in Chapter 3, is that every migration pathway, and each migration flow, has its own story, with often diverging well-being outcomes for the migrants, their new communities, and the communities left behind. We have shown that the happiest counties have higher than world average shares of foreign-born population. The top 10 countries in the Figure 2.2 rankings of 2015-2017 life evaluations had foreign-born population shares averaging 18% in 2015, more than twice the global country average of 8.7%, and covering a wide range, from 6% to 30%. These same countries also had the happiest foreign-born populations. Based on the average life evaluations 2005-2017 for foreign-born respondents (in Figure 2.4), the same countries dominated the top spots in the world rankings, with all of the top 10 countries in the overall happiness rankings 2015-2017 being in the top 11 countries for 2005-2017 happiness of their foreign-born populations. This is due to a combination of factors: their attractiveness to international migrants, their willingness to accept migrants, and their ability to achieve integration in ways that maintain life evaluations for both immigrants and the locally born.

Helsinki, Copenhagen and Reykjavik are already very international places. What is for them, and for the world, the right scale and pattern of future migration to help support and build international cooperation of a sort that will help the billions of people still living in misery? These are not the world's happiest cities because of where they are, but because their residents have over many decades built levels of trust, connections, cooperation and innovation sufficient to deliver satisfying lives for themselves, and to be in a position to help others do the same. What is needed is to look behind the average life evaluations to see what makes for better lives, and to help others to make progress in improving their own lives. International migration, with its increasing two-way flows, is likely to continue to provide international human linkages and shared sympathies sufficient to support knowledge transfers of the sort that are needed. But migration flows not properly managed and digested have the potential for destroying trust and inflaming anti-immigrant views.

Similar questions arise when city-level happiness is ranked in countries that have sufficiently great samples of data to make such comparisons

feasible. One immediate response among readers and commentators is to suggest that people should move to a happier community in order to make themselves happier. On reflection, when they see the nature of the social connections, and the quality of communities, governments and workplaces that underlie these happier lives, they see that the right answer is not to move to the happier communities but instead to learn and apply the lessons and inspirations that underlie their happiness. Happiness is not something inherently in short supply, like gold, inciting rushes to find and much conflict over ownership. My gold cannot be your gold. But happiness, unlike gold, can be created for all, and can be shared without being scarce for those who give. It even grows as it is shared.

Endnotes

1   Gallup weights sum up to the number of respondents from each country. To produce weights adjusted for population size in each country for the period of 2015-2017, we first adjust the Gallup weights so that each country has the same weight (one-country-one-vote) in the period. Next we multiply total population aged 15+ in each country in 2016 by the one-country-one-vote weight. To simplify the analysis, we use population in 2016 for the period of 2015-2017 for all the countries/regions. Total population aged 15+ is equal to the total population minus the amount of population aged 0-14. Data are mainly taken from WDI released by the World Bank in September 2017. Specifically, the total population and the proportion of population aged 0-14 are taken from the series "Population ages 0-14 (percent of total)" and "Population, total" respectively from WDI. There are a few regions lack of data in WDI, such as Somaliland, Kosovo, and Taiwan. In this case, other sources of data are used if available. The share of population aged 0-14 is missing in WDI, we thus use the data from CIA's World Fact Book, 25.01% to calculate the amount of adult population. The total population in Taiwan in 2016 is 23,540,000, and the aged 15+ is 20,398,000 in 2015 (Statistical Yearbook of the Republic of China 2016, Table 3). There are no reliable data on population and age structure in Somaliland region, therefore it is not included in the calculation of world or regional distributions.

2   See, for example, Atkinson (2015), Atkinson and Bourguignon (2014), , Kennedy, Lochner, and Prothrow-Stith (1997), Keeley (2015), OECD (2015), Neckerman and Torche (2007), and Piketty (2014).

3   See Helliwell, Huang, and Wang (2016). See also Goff, Helliwell, and Mayraz (2016), Gandelman and Porzekanski (2013), Kalmijn and Veenhoven (2005).

4   See, for example, Evans, Barer, and Marmor (1997), Marmot, Ryff, Bumpass, Shipley, and Marks (1994), and Marmot (2005).

5   See Corak (2013).

6   See Table 17 in Statistical Appendix 1.

7   The statistical appendix contains alternative forms without year effects (Table 14 of Appendix 1), and a repeat version of the Table 2.1 equation showing the estimated year effects (Table 9 of Appendix 1). These results confirm, as we would hope, that inclusion of the year effects makes no significant difference to any of the coefficients.

8   As shown by the comparative analysis in Table 8 of Appendix 1.

9   The definitions of the variables are shown in Technical Box 1, with additional detail in the online data appendix.

10 This influence may be direct, as many have found, e.g. De Neve, Diener, Tay, and Xuereb (2013). It may also embody the idea, as made explicit in Fredrickson's broaden-and-build theory (Fredrickson, 2001), that good moods help to induce the sorts of positive connections that eventually provide the basis for better life circumstances.

11 See, for example, Danner, Snowdon, and Friesen (2001), Cohen, Doyle, Turner, Alper, and Skoner (2003), and Doyle, Gentile, and Cohen (2006).

12 We put the contributions of the six factors as the first elements in the overall country bars because this makes it easier to see that the length of the overall bar depends only on the average answers given to the life evaluation question. In World Happiness Report 2013 we adopted a different ordering, putting the combined Dystopia+residual elements on the left of each bar to make it easier to compare the sizes of residuals across countries. To make that comparison equally possible in subsequent World Happiness Reports, we include the alternative form of the figure in the online Statistical Appendix 1 (Appendix Figures 7-9).

13 These calculations are shown in detail in Table 19 of the online Statistical Appendix 1.

14 The prevalence of these feedbacks was documented in Chapter 4 of World Happiness Report 2013, De Neve, Diener, Tay, and Xuereb (2013).

15 The coefficients on GDP per capita and healthy life expectancy are affected even less, and in the opposite direction in the case of the income measure, being increased rather than reduced, once again just as expected. The changes are tiny because the data come from other sources, and are unaffected by our experiment. However, the income coefficient does increase slightly, since income is positively correlated with the other four variables being tested, so that income is now able to pick up a fraction of the drop in influence from the other four variables. We also performed an alternative robustness test, using the previous year's values for the four survey-based variables. This also avoids using the same respondent's answers on both sides of the equation, and produces similar results, as shown in Table 13 of the Statistical Appendix 1. The Table 13 results are very similar to the split-sample results shown in Tables 11 and 12, and all three tables give effect sizes very similar to those in Table 2.1 in reported in the main text.

16 The data and calculations are shown in detail in Table 20 of the Statistical Appendix 1. Annual per capita incomes average $46,000 in the top 10 countries, compared to $1,500 in the bottom 10, measured in international dollars at purchasing power parity. For comparison, 95% of respondents have someone to count on in the top 10 countries, compared to 58% in the bottom 10. Healthy life expectancy is 72 years in the top 10, compared to 53 years in the bottom 10. 93% of the top 10 respondents think they have sufficient freedom to make key life choices, compared to 62% in the bottom 10. Average perceptions of corruption are 34%in the top 10, compared to 73% in the bottom 10.

17 Actual and predicted national and regional average 2015-2017 life evaluations are plotted in Figure 16 of the Statistical Appendix 1. The 45-degree line in each part of the Figure shows a situation where the actual and predicted values are equal. A predominance of country dots below the 45-degree line shows a region where actual values are below those predicted by the model, and vice versa. East Asia provides an example of the former case, and Latin America of the latter.

18 For example, see Chen, Lee, and Stevenson (1995).

19 One slight exception is that the negative effect of corruption is estimated to be slightly larger, although not significantly so, if we include a separate regional effect variable for Latin America. This is because corruption is worse than average in Latin America, and the inclusion of a special Latin American variable thereby permits the corruption coefficient to take a higher value.

20 The number of languages used in a country includes all those spoken by more than 5% of the population.

21 As noted in Technical Box 3 in Chapter 2 of World Happiness Report 2017, the Gulf Cooperation Council (GCC) countries are a special case in three ways. First they have very high foreign-born population shares. Second, their overall country estimates are adjusted to reflect outside estimates of the non-national population, and third, Gallup Polls in those countries were offered in Arabic only prior to 2014, so that their non-national respondents in the earlier years were almost entirely drawn from other Arab-speaking countries. In Figure 2.4 we report the foreign-born ladder scores using all available years for all countries, while in Technical Box 3 of WHR 2017 the figures are based only on 2014 and later, permitting a comparison of the two procedures. For most of the GCC countries the estimates are quite similar, differences presumably resulting from the relative evaluations and numbers of the Arab-speaking and English-speaking respondents.

22 5.7%=100*(93/(93+1540)).

23 The correlation is 0.9 between the two country-level estimates of foreign-born population shares.

24 There is a similar ranking of immigrant life evaluations for the OECD countries in Figure 3.21 of OECD (2017).

25 Regressing the immigrant share, as a proportion, on the average ladder score of the locally born gives a coefficient of 0.058 (t=5.5).

26 This is based on the ratios of foreign-born to locally born life evaluation averages for the 117 countries where there are more than 100 foreign-born respondents in the 2005-2017 data period. The ratios are averaged for each country to the nearest percentage point – hence the equality for five countries.

27 The Migrant Acceptance Index is a proprietary index developed by Gallup, based on items it asks in its Gallup World Poll surveys. Their initial analysis of the data may be found at: http://news.gallup.com/poll/216377/new-index-shows-least-accepting-countries-migrants.aspx. The definition of the index, and its values for the most accepting and non-accepting countries, are shown in the Annex to this report by Esipova, Ray, Fleming, and Pugliese (2018).

28 There is only a single value of the index for each country, which then has to be repeated for each country-year in the panel.

29 See OECD (2017), Figure 3.21.

30 A similar conclusion follows, as also shown in Statistical Appendix 2, if we use national average data in separate cross-sectional equations for the foreign-born and locally born sub-populations. In this instance we need to do a pure cross section rather than the panel approach used in Table 2.1, because the samples of the foreign-born in each annual sample of 1,000 respondents are much too small to enable regressions using country-year data.

31 The average life evaluations of the locally born and the weighted average source country life evaluations also make use of the entire 2005-2017 sample. The Migrant Acceptance Index is a single value for each country, as described in Esipova et al. (2018).

32 The simple correlation between the ratio and the immigrant share of the population is significantly negative, but disappears when the happiness of the locally born is controlled for. This is because, as we have already shown, foreign-born population shares are higher in countries with happier locally born populations.

33 This is consistent with Hendriks and Bartram (2016), who find economic conditions to be incomplete as explanations of migrant happiness. Our results are testing whether national income is more important for migrant than for non-migrant happiness, and we find that it is not, since there is a zero coefficient on log GDP per capita when added to an equation explaining immigrant happiness by native-born happiness and the happiness in their source countries. Hence the non-economic sources of life evaluations are equally important for both immigrant and locally born respondents.

34 The effect flowing through domestic happiness is equal to the effect in the domestic happiness equation (0.075) times the effect of domestic happiness on immigrant happiness (0.73). The total effect on immigrants is the sum of the direct and indirect elements (0.049 + 0.73*.075 = 0.103).

35 The use of the Gallup World Poll data permits more countries to be considered, as it covers many more countries than does the World Values Survey. Helliwell, Bonikowska, and Shiplett (2018) show comparable results using WVS and Gallup estimates for source country life evaluations. An empirically estimated conversion factor is used to convert Gallup ladder data to SWL equivalents, based on Gallup data from the year when ladder and SWL questions were both asked of all respondents.

36 More precisely, the standard deviation across countries is 1.17 among the source countries, and 0.24 among the immigrant groups. The Canadian distribution is about a higher mean, as the average SWL in the 100 source countries is 6.06, compared to 7.84 among the immigrant groups.

37 See Helliwell et al. (2018). A similar matching process, with similar results, is available for a smaller number of countries in Frank, Hou, and Schellenberg (2016).

38 See Helliwell et al. (2018, Figure 1).

39 That is, if the average SWL of immigrants from each of the 100 source countries is regressed on the average estimated SWL in those 100 countries, the estimated coefficient is 0.105 (t=5.8).

40 The ONS has posted the data for public use on: https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/adhocs/007955estimatesofpersonalwellbeing-brokendownbycountryofbirthfromtheukannualpopulation-surveyaps

41 For example, regressing country averages of immigrant life evaluations on the corresponding averages for the locally born and each country's share of foreign-born population shows a slight but insignificant negative effect for the foreign-born population share.

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