Statistical Appendix for "World happiness, trust and social connections in times of crisis," Chapter 2 of *World Happiness Report* 2023

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1   Data Sources and Variable Definitions

- Happiness score or subjective well-being (variable name *ladder*): The survey measure of SWB is from the Jan 20, 2023 release of the Gallup World Poll (GWP) covering years from 2005 to 2022. Unless stated otherwise, it is the national average response to the question of life evaluations. The English wording of the question is "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?" This measure is also referred to as *Cantril life ladder*, or just *life ladder* in our analysis.

- The statistics of GDP per capita (variable name *gdp*) in purchasing power parity (PPP) at constant 2017 international dollar prices are from World Development Indicators (WDI, version 17, metadata last updated on Jan 22, 2023). The GDP figures for Taiwan, Syria, Palestine, Venezuela, Djibouti and Yemen are from the Penn World Table 10.01.

  - GDP per capita in 2022 are not yet available as of January 2023. We extend the GDP-per-capita time series from 2021 to 2022 using country-specific forecasts of real GDP growth in 2022 first from the OECD Economic Outlook No. 112 (November 2022) and then, if missing, forecasts from World Bank's Global Economic Prospects (Last Updated: 01/10/2023). The GDP growth forecasts are adjusted for population growth with the subtraction of 2020-21 population growth as the projected 2021-22 growth. A few countries/territories have their GDP figures from the Penn World Table that ends in 2019. We derive their 2020-2022 GDP values based on the 2019 values and the projected growth rates if they are available.

- Healthy Life Expectancy (HLE). Healthy life expectancies at birth are based on the data extracted from the World Health Organization's (WHO) Global

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Health Observatory data repository (Last updated: 2020-12-04). The data at the source are available for the years 2000, 2010, 2015 and 2019. To match this report's sample period (2005-2021), interpolation and extrapolation are used.

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

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

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

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

- Positive affect is defined as the average of three positive affect measures in GWP: laugh, enjoyment and doing interesting things in the Gallup World Poll waves 3-7. These measures are the responses to the following three questions, respectively: "Did you smile or laugh a lot yesterday?", and "Did you experience the following feelings during A LOT OF THE DAY yesterday? How about Enjoyment?", "Did you learn or do something interesting yesterday?"

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

- Gini of household income reported in the Gallup World Poll (variable name *giniIncGallup*). The income variable is described in Gallup's "WORLDWIDE RESEARCH METHODOLOGY AND CODEBOOK" (Updated July 2015) as "Household Income International Dollars *[...]* To calculate income, respondents are asked to report their household income in local currency. Those respondents who have difficulty answering the question are presented a set of ranges in local

currency and are asked which group they fall into. Income variables are created by converting local currency to International Dollars (ID) using purchasing power parity (PPP) ratios." The gini measure is generated using STATA command *ineqdec0* by WP5-year with sample weights. Observations whose recorded income value is 0 or 1 are dropped before the gini calculation.

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

- Institutional trust: The first principal component of the following five measures: confidence in the national government, confidence in the judicial system and courts, confidence in the honesty of elections, confidence in the local police force, and perceived corruption in business. This principal component is then used to create a binary measure of high institutional trust using the 75th percentile in the global distribution as the cutoff point; this way a country whose population tends to have a low level of institutional trust in the global distribution will have a low average institutional trust at the national level. This measure is not available for all countries since not all surveys in all countries ask all of the questions that are used to derive the principal component.

2 Coverage, Summary Statistics and Regression Tables

WP5 is GWP's coding of countries including some sub-country territories such as Hong Kong. Not all the countries and territories appear in all the years. Our analysis does not cover all of the country/territories that have valid happiness scores.

To appear in regression analysis that uses data from outside the GWP survey, a wp5-year pair needs to have the necessary external information (GDP, healthy life expectancy, etc). The regression analysis thus does not necessarily cover all of the countries/territories in the GWP. Nor does it necessarily cover all the countries/territories that are ranked by their happiness scores in this report. The underlying principle is that we always use the largest available sample. For different kind of analysis/ranking, the largest available samples can be different.

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