THE HAMILTON PROJECT

Technical Appendix

The National Health and Nutrition Examination Survey (NHANES) is a research program conducted by the Centers for Disease Control and Prevention (CDC) that measures the health and nutritional status of Americans through an interview and examination. The NHANES interview contains demographic, socioeconomic, dietary and health-related questions, while the examination component consists of physiological measurements and laboratory tests. Data for NHANES II, which spanned 1976-80, were provided by the National Bureau of Economic Research and data for NHANES waves F-H (2009-14) were provided by the CDC.

Because "Hispanic" is not provided as a separate designation in NHANES II, we restrict the sample to non-Hispanic African Americans and whites in NHANES waves F-H. Additionally, observations with missing values for age, family income, gender, or race, respondents above age 74 or below age 25, and women who are pregnant are excluded. Respondents from NHANES II and separately NHANES waves F-H are combined into single panels, respectively. Sampling weights are renormalized by dividing the weights by their totals within each panel.

The descriptive analysis examines three measures of health – self-reported health, obesity, and stress load – by age and income. Reported family income is adjusted for inflation by taking the midpoint of each income bin and adjusting it to 2014 dollars using the CPI-U.

Self-reported health is a categorical measure that captures the response to the question "would you say your health in general is…" as being excellent, very good, good, fair, or poor. Respondents can also refuse the question or respond that they do not know.

Body mass index is provided for 2009-14 and calculated using height and weight for 1976-80. A respondent is considered to be obese if his or her body mass index is greater than or equal to 30.

The components of the stress load index are listed below. They are consistently measured across both NHANES II and NHANES waves F-H.

Stress Load Component	Unit of Measurement	Function
Albumin	g/dL	Liver function
Creatinine	mg/dL	Kidney function
Diastolic blood pressure	mm Hg	Cardiovascular risk
Systolic blood pressure	mm Hg	Cardiovascular risk
Triglycerides	mg/dL	Cardiovascular risk
Total cholesterol	mg/dL	Cardiovascular risk

Each component of the stress index is standardized: centered around zero with a standard deviation of one using the renormalized sampling weights across both panels. The first and second readings of diastolic and systolic blood pressure are averaged, standardized, and then the two measures are averaged together for a combined blood pressure measure.

The stress load index summarizes the effect of the components on self-reported "fair" or "poor" health. Specifically, the index for a given respondent is the standardized predicted value (using a logistic regression) of the probability of reporting "fair" or "poor" health. Coefficients are estimated using a restricted sample that contains only non-missing values of the biomarker components; we then impute missing biomarker components by age, race, gender, and income. Finally, the stress load index is generated from the larger sample that includes imputed values.

Additionally, we adjust for demographic change over time by reweighting the 1976-80 panel to mimic the demographic composition of the 2009-14 panel, as defined by race, income, sex, and 5-year age bins. For example, in Figure 5 bin-specific stress load means from 1976-80 are multiplied by 2009-14 bin-specific population shares and then summed within income terciles, providing a population-reweighted stress load index by income group.