Lecture 7: Mental Health

EC2303: Intermediate Development Economics

Johannes Haushofer

Stockholm University

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Context for this lecture

- Last week, we discussed the possibility that poor health contributes to a poverty trap. We saw that health service delivery in low-income contexts is often poor, and (perhaps as a result), demand is often low. Simple interventions such as community monitoring, deworming, and water chlorination can have large impacts on health and economic outcomes, including income. At the same time, the impact of simple income changes on health outcomes is often weak, suggesting that infrastructure (including "choice architecture") plays an important role in generating good health outcomes.
- Today we'll continue our discussion on the relationship between poverty and health, and focus on one specific kind of health: mental health.
- Mental health has recently received a lot of attention in development economics as a possible cause and consequence of poverty. As before, the question researchers ask is: Does being poor lead to bad mental health outcomes, such as depression? Does improving mental health have economic benefits?

Context for this lecture

- We'll start by looking at the correlational evidence: Are people with low incomes less happy and more depressed than richer people? (Yes.)
- We'll see that increases in income lead to large improvements in mental health.
- We'll then discuss the evidence on the economic impacts of interventions to improve mental health, such as psychotherapy. Here the evidence is a bit more mixed; some studies show effects, others don't. No impacts on income/consumption so far.
- Notice that we are studying these relationships "in reverse": if a poverty reduction improves psychological well-being, we'll conclude that a poverty increase would decrease psychological well-being. May not be an innocuous assumption, but let's run with it for now.
  - Why we need to do this: It's not ethical to experimentally increase poverty or decrease psychological well-being.

Correlational evidence: Is there a relationship between income and psychological well-being?

The Easterlin Paradox

The Easterlin Paradox

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The Easterlin Paradox

What do the data show on the comparative happiness of income groups within a country at a given time? Does greater happiness go with higher income? The answer is, quite clearly, yes. This does not mean that there are no unhappy people among the rich and no happy people among the poor. On the average, however, higher-income people are happier than the poor. For example, in a December 1970

The Easterlin Paradox

The repeated evidence of a positive point-of-time relation between happiness and income within countries suggests that if incomes increase generally in the population, there will be a rise in the average level of happiness. Is this in fact the case?

To answer this, we have available two types of data. One shows the historical trend for a given country in the average level of happiness as average income grows. On this, there is evidence for only one nation, the United States, since 1946. The other is point-of-time data for countries at different income levels. Since the populations of more developed nations have higher average incomes than those of less developed nations, we can ask whether their average level of happiness is also greater. Such international comparisons are available for several dates in the postwar period, the most comprehensive and intensive study by far being that done by Hadley Cantril for the period around 1960.

The showing of both sets of data—international and historical—does *not* conform to what one would expect on the basis of the positive relation between happiness and income prevailing *within* countries. Richer countries are not typically happier than poorer ones.

The Easterlin Paradox

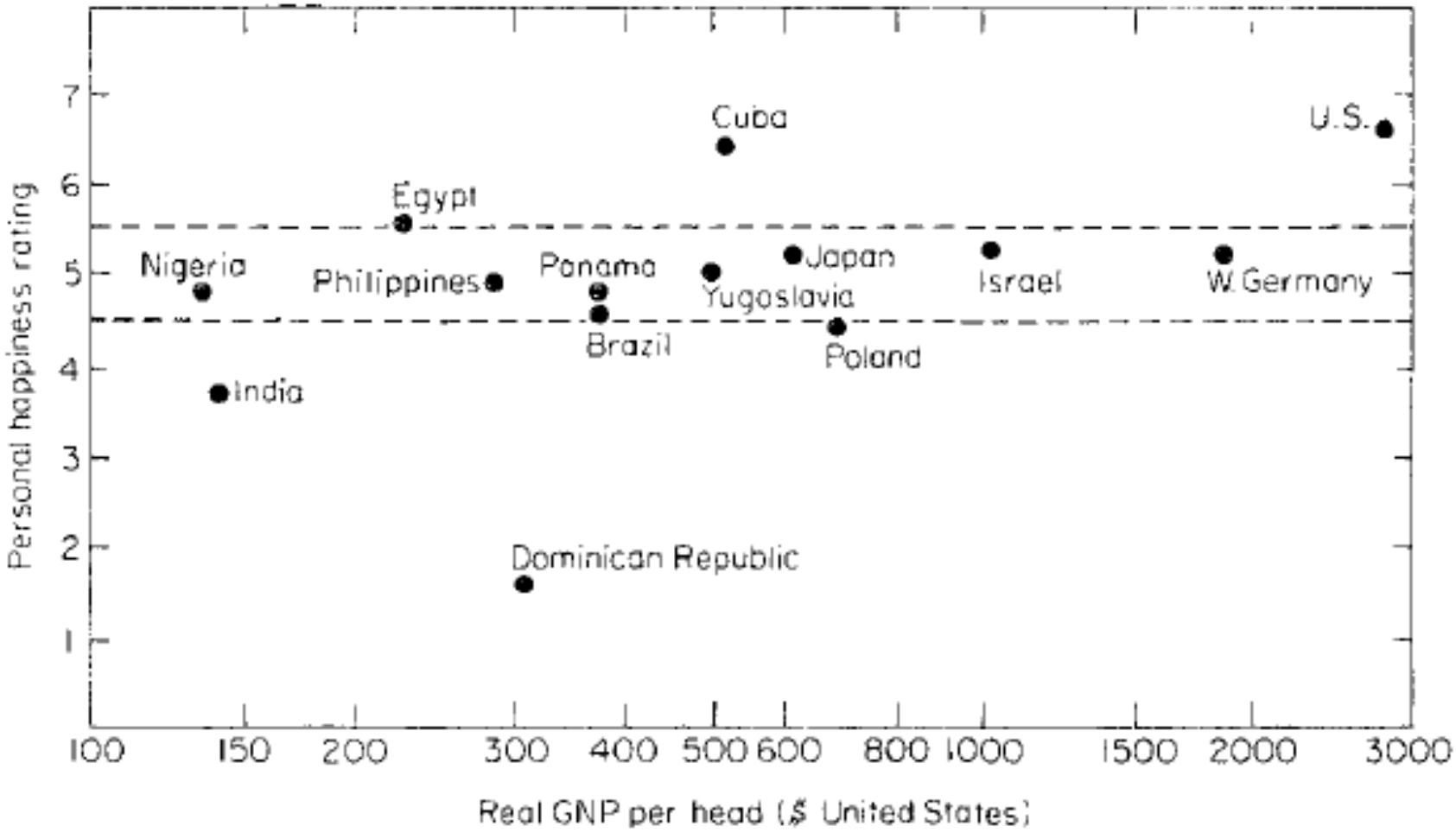


FIG. 1. Personal happiness rating and GNP per head, 14 countries, ca. 1960. (Source: Table 6.)

The Easterlin Paradox

Easterlin's claims:

1. There is a correlation between income and happiness within countries; i.e., rich people in a country are happier than poor people in the same country.
2. But: there is no correlation between income and happiness across countries: people in rich countries are not on average happier than people in poor countries.
3. And: there is no relationship between *changes* in income and *changes* in happiness: as incomes grow, happiness does not grow.

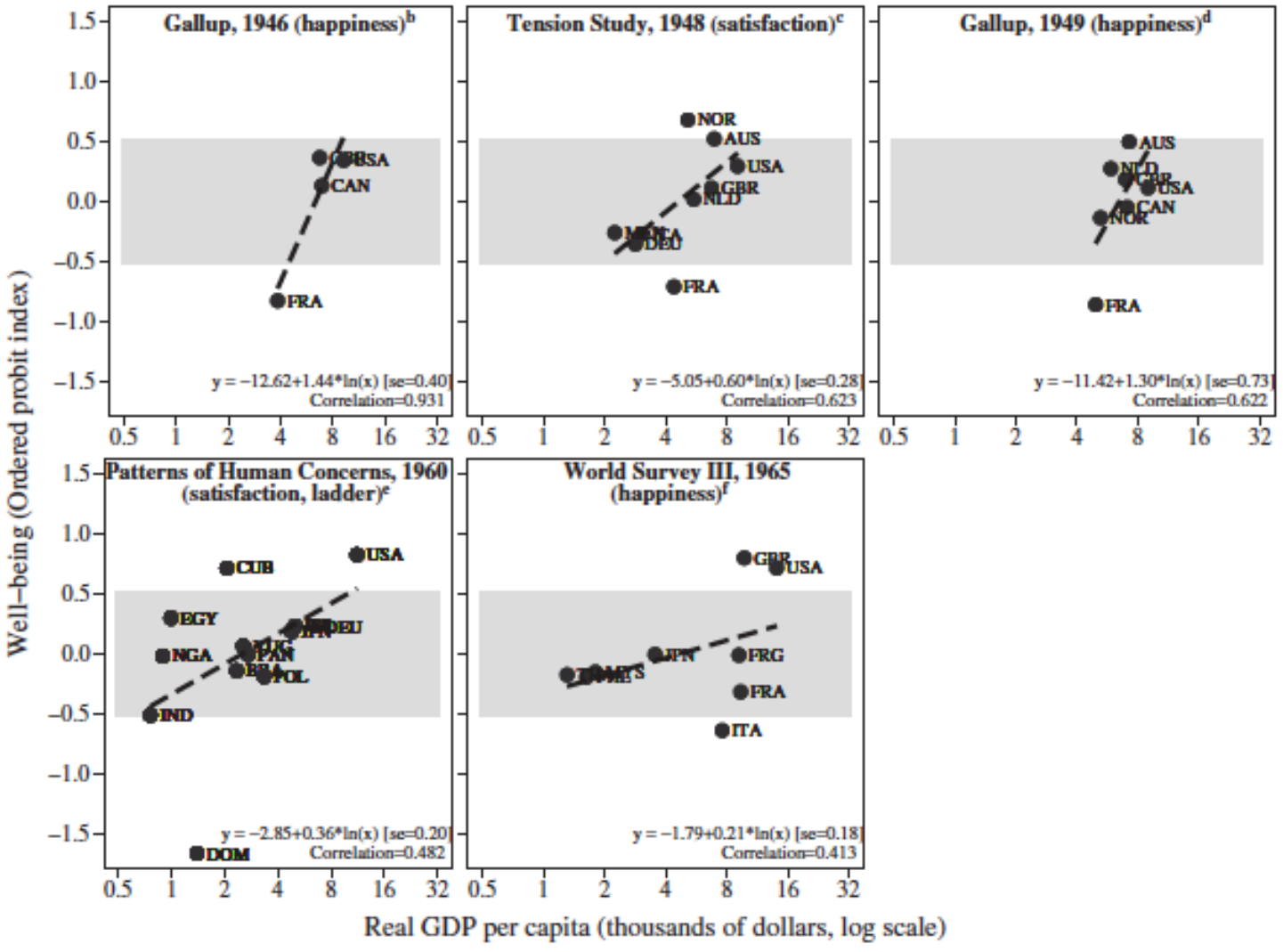
Is there really a paradox?

Stevenson & Wolfers, 2008

Revisiting Easterlin's original data

Stevenson & Wolfers, 2008

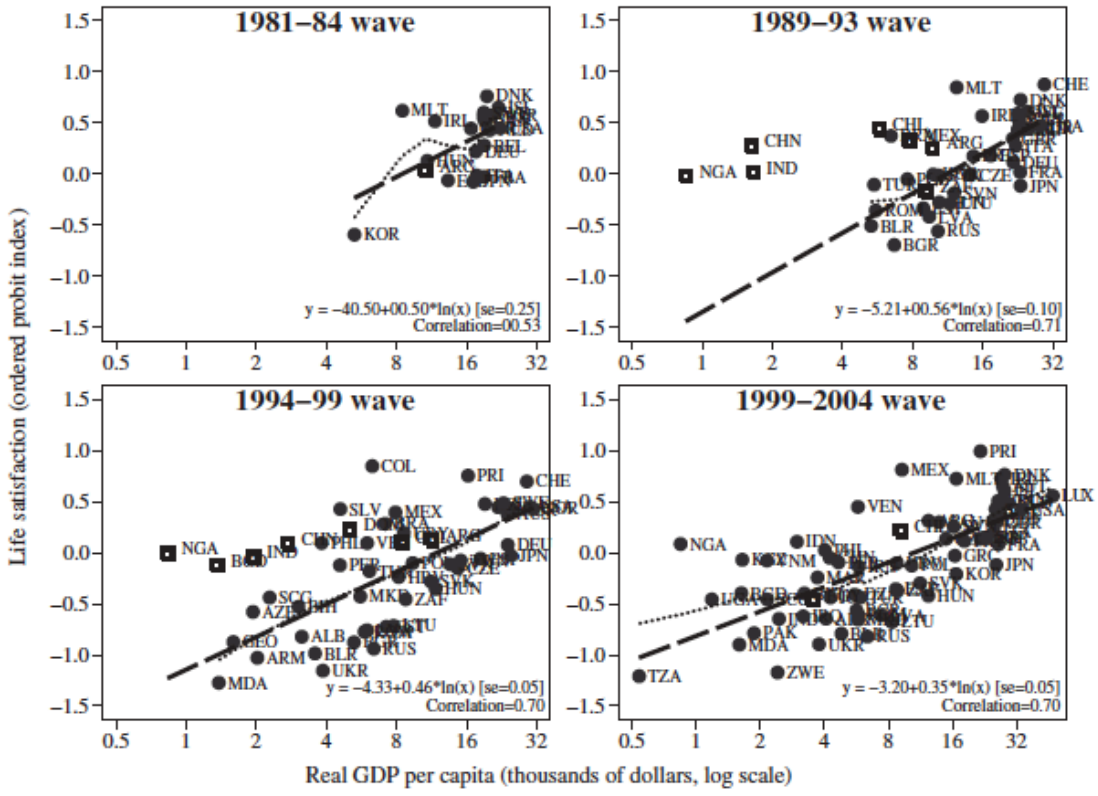
Figure 1. Early Cross-Country Surveys of Subjective Well-Being[a]



New and more data from the World Values Survey

Stevenson & Wolfers, 2008

Figure 2. Life Satisfaction and Real GDP per Capita: World Values Survey[a]



Sources: World Values Survey; authors' regressions. Sources for GDP per capita are described in the text.

a. Sample includes twenty (1981–84), forty-two (1989–93), fifty-two (1994–99), or sixty-nine (1999–2004) countries; see text for details of the sample. Observations represented by hollow squares are drawn from countries in which the World Values Survey sample is not nationally representative; see appendix B for further details. Respondents are asked, "All things considered, how satisfied are you with your life as a whole these days?" and asks respondents to choose a number from 1 (completely dissatisfied) to 10 (completely satisfied). Data are aggregated into a satisfaction index by running an ordered probit regression of satisfaction on country × wave fixed effects. Dashed lines are fitted from an OLS regression; dotted lines are fitted from lowess regressions. These lines and the reported regressions are fitted only from nationally representative samples. Real GDP per capita is at purchasing power parity in constant 2000 international dollars.

Re-assessing the Easterlin Paradox

Stevenson & Wolfers, 2008

- In new and much larger datasets, the evidence for a correlation between income and psychological well-being is very strong, both within countries and across countries.
- Does this mean there is no paradox?
- Easterlin didn't think so: he now says the essence of the "paradox" is that there *is* a correlation in the cross-section (i.e. rich countries are happier than poor countries), but there is no correlation between income *changes* (i.e., economic growth) and well-being *changes.*

Easterlin's response

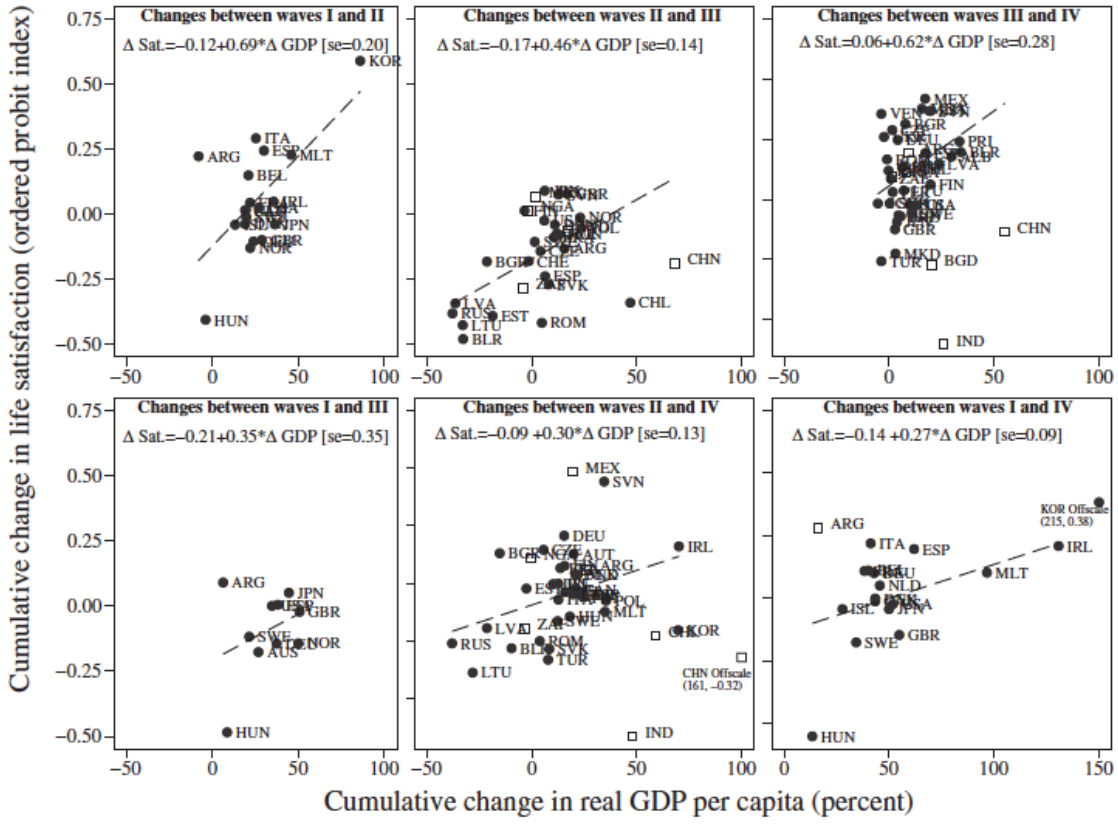
Recent Critiques of the Paradox. Two types of evidence are claimed to contradict the time series findings of no relation between economic growth and happiness. The first, which is puzzling, to say the least, is cross-section (point of time) evidence of a positive happiness–income relationship. In the economics of happiness literature this positive relationship has been well accepted for several decades (1–10), but it is a graph based on country data from the 2006 Gallup World Poll in a 2008 article by Angus Deaton, that seems to have registered with the economics profession in general (11). This graph, which is headed "Each Doubling of GDP Is Associated with a Constant Increase in Life Satisfaction" has been cited by both economists and noneconomists as disproof of the happiness–income paradox (12–14). It is even cited in this vein in the recent Sarkozy Report (15), a landmark study, most notably in the advocacy by a group of renowned economists of the use of subjective measures of well-being such as life satisfaction for designing public policies and assessing social progress.

The essential meaning of "paradox," however, is the seeming contradiction between the first clause and the second—in this case, between the cross-section and time series results. That scholars would cite Deaton's cross-section results as disproving the time series finding is to ignore the very meaning of paradox.

Economic growth and life satisfaction

Stevenson & Wolfers, 2008

Figure 15. Change in Life Satisfaction and Economic Growth: World Values Survey[a]



Source: World Values Surveys, waves 1 (1981-84), 2 (1989-93), 3 (1994-99), and 4 (1999-2004); authors' regressions. Sources for GDP per capita are described in the text.

a. Solid circles show changes in life satisfaction and real GDP per capita between various waves of the World Values Survey; hollow squares reflect changes based on noncomparable sampling frames (see appendix B). Dashed lines show the fit from the reported OLS regression of changes in the life satisfaction index on the percent change in GDP, based only on comparable changes in life satisfaction. Graphs in the first row show nineteen, ten, and seventeen comparable short first differences, and those in the second row twenty-five, thirty-two, and thirty-three long first differences. GDP per capita is at purchasing power parity in constant 2000 international dollars.

Re-assessing the Easterlin Paradox

Stevenson & Wolfers, 2008

- Stevenson & Wolfers show that there is both a within-country and across-country correlation between income and well-being, *and* that there is a correlation between economic growth and changes in well-being.
- So the correlational evidence for a relationship between income and well-being is very strong.
- But perhaps there is *satiation?* I.e., is there a level of income where the relationship between income and well-being disappears?

Dimensions of well-being

Kahneman & Deaton (2010)

Happiness vs. life satisfaction

Kahneman & Deaton (2010)

Kahneman & Deaton suggest that there are (at least) two dimensions of well-being:

- Emotional well-being (also called hedonic well-being, or simply happiness): experienced positive emotions
  "[E]motional quality of an individual's everyday experience—the frequency and intensity of experiences of joy, fascination, anxiety, sadness, anger, and affection that make one's life pleasant or unpleasant"
  Measured by asking about emotions ("did you experience joy").
- Evaluative well-being (also called life evaluation or life satisfaction): bird's-eye assessment of one's life
  "[R]efers to a person's thoughts about his or her life"
  Measured with the "Cantril ladder" (0–10): "worst/best possible life for you"

Is there satiation in the income–well-being relationship, and if yes, for which dimension of well-being?

Dimensions of well-being

Kahneman & Deaton (2010)

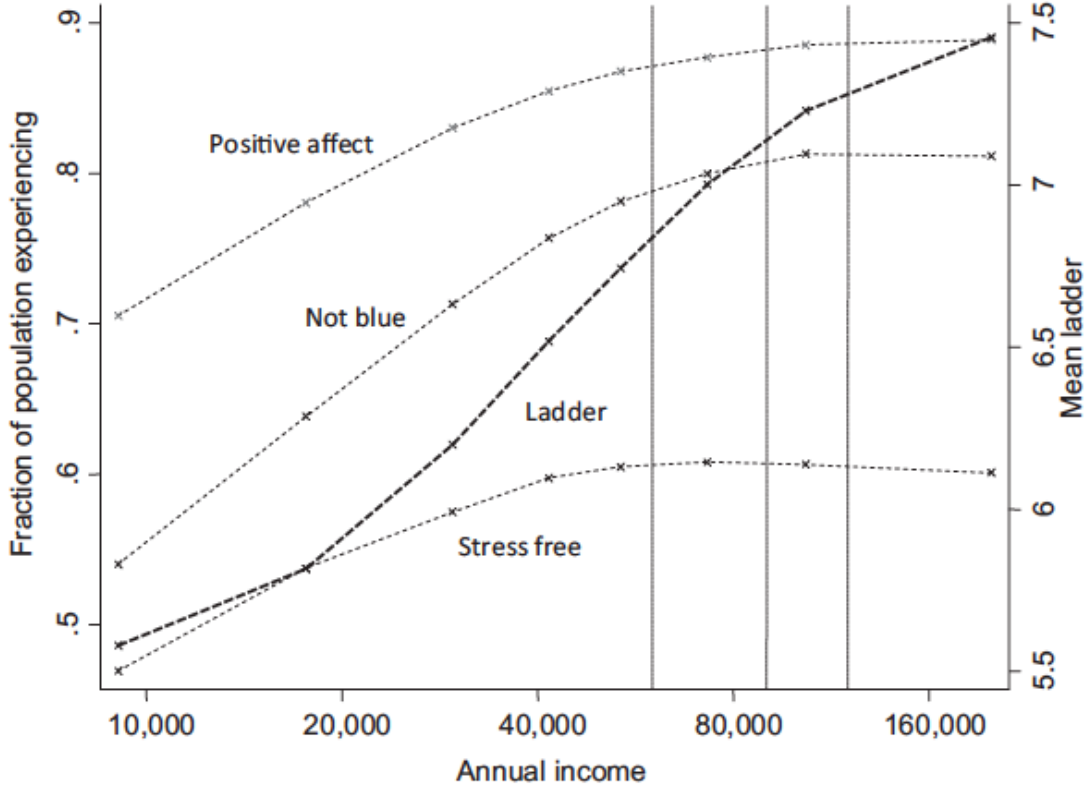


Fig. 1. Positive affect, blue affect, stress, and life evaluation in relation to household income. Positive affect is the average of the fractions of the population reporting happiness, smiling, and enjoyment. "Not blue" is 1 minus the average of the fractions of the population reporting worry and sadness. "Stress free" is the fraction of the population who did not report stress for the previous day. These three hedonic measures are marked on the left-hand scale. The ladder is the average reported number on a scale of 0–10, marked on the right-hand scale.

Dimensions of well-being

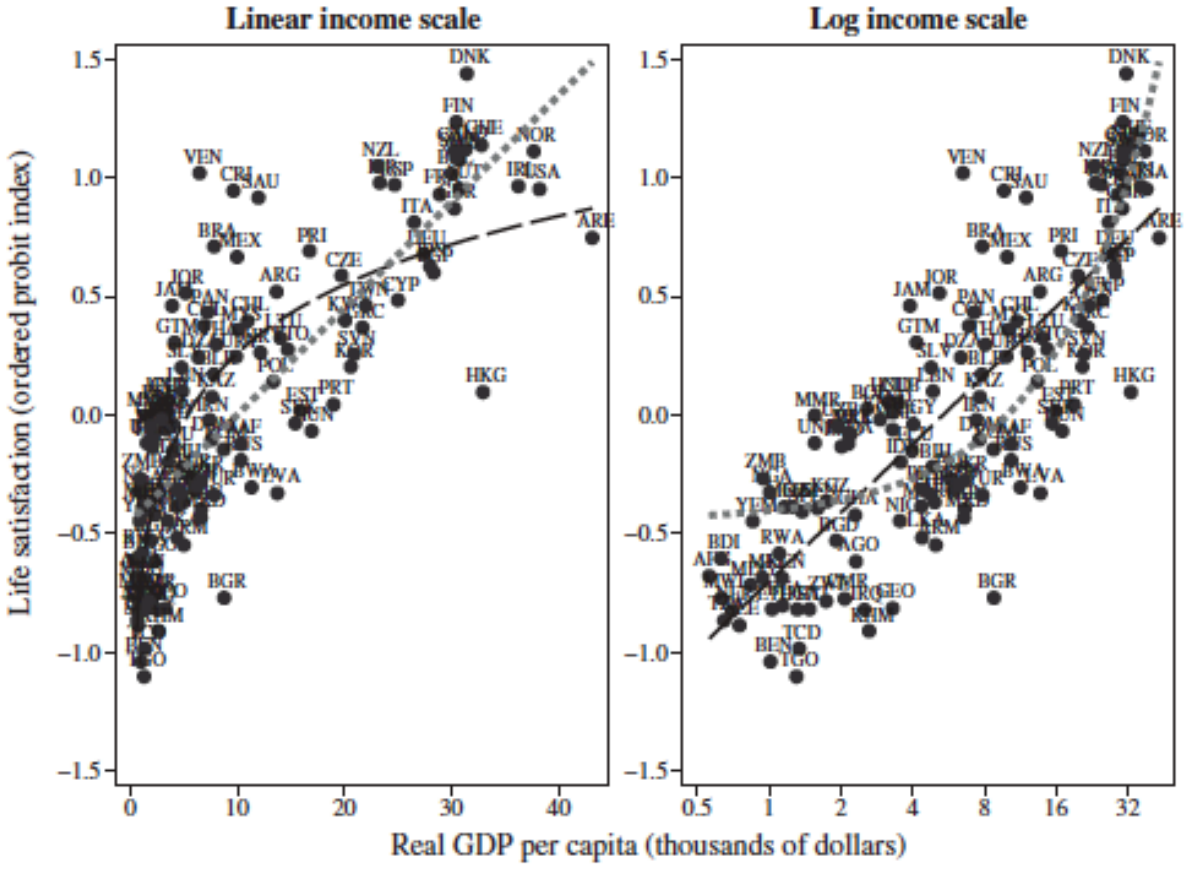
Kahneman & Deaton (2010)

- Kahneman & Deaton conclude that there is satiation in the relationship between income and happiness: it flattens out at income levels around USD 75,000 per year in US data.
- In contrast, the relationship between income and life satisfaction is positive even beyond USD 75,000 per year.
- Another possibility is that even happiness keeps growing even beyond USD 75,000 per year, but more slowly (e.g. it might grow linearly with the *logarithm* of income, rather than linearly with income). Stevenson & Wolfers address this possibility in their paper.

No satiation of life satisfaction

Stevenson & Wolfers (2008)

Figure 7. Assessing the Functional Form of the Life Satisfaction–GDP Gradient: Gallup World Poll[a]



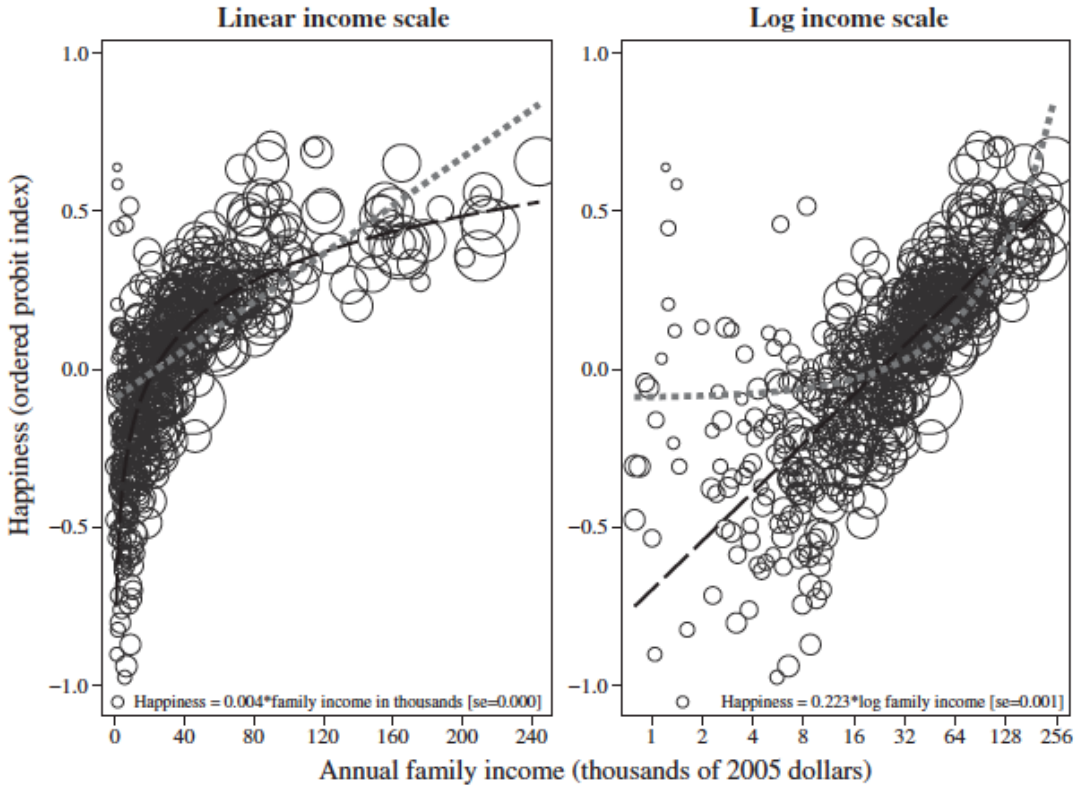
Source: Gallup World Poll, 2006; authors' regressions. Sources for GDP per capita are described in the text.

a. Sample includes 131 developed and developing countries. See figure 4 for wording of the question. In each panel the short- and long-dashed lines are fitted from regressions of satisfaction on GDP per capita and the log of GDP per capita, respectively. Real GDP per capita is at purchasing power parity in constant 2000 international dollars.

No satiation of happiness either

Stevenson & Wolfers (2008)

Figure 8. Assessing the Functional Form of the Happiness-Family Income Gradient: General Social Survey[a]



Source: General Social Survey (USA), 1972–2006; authors' regressions.

a. Each circle aggregates income and happiness for one GSS income category in one year, and its diameter is proportional to the population of that income category in that year. The vertical axis in each panel plots the coefficients from an ordered probit regression of happiness on family income category × year fixed effects; the horizontal axis plots real family income, deflated by the CPI-U-RS. In each panel the short- and long-dashed lines are fitted from regressions of happiness on family income and the log of family income, respectively, weighting by the number of respondents in each income category × year. Survey question asks, "Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?"

Resolution: measurement?

- So we have a puzzle: Kahneman & Deaton find that the relationship between income and happiness levels off around USD 75,000 per year in the US. Stevenson & Wolfers find that it keeps growing even beyond that level (in the log of income).
- Possible resolution: happiness is measured differently in the two papers.
- Happiness:
  - Kahneman/Deaton: Questions about the presence of various emotions in the experience of yesterday (e.g., enjoyment, happiness, anger, sadness, stress, worry)
  - Stevenson/Wolfers: "Taken all together, how would you say things are these days: would you say that you are 'very happy,' 'pretty happy,' [or] 'not too happy?'"
- Life satisfaction
  - Kahneman/Deaton: Cantril's Self-Anchoring Scale: Ladder; 0 = "the worst possible life for you", 10 = "the best possible life for you"
  - Stevenson/Wolfers: "All things considered, how satisfied are you with your life as a whole these days?"
- The the Stevenson/Wolfers paper, happiness and life satisfaction are measured in very similar ways. In particular, happiness is also measured by asking for a general evaluation of life ("all things considered"). That might be why they find similar relationships between income and happiness and life satisfaction.

From correlation to causality

- The correlational evidence is very strong: Income is strongly positively associated with psychological well-being
- What about causal evidence? Do changes in income affect psychological wellbeing?
- We can again turn to evidence from cash transfers: does an income increase improve psychological well-being?
- I've previously shown you evidence from a single study. But there are many studies on cash transfers! How can we aggregate results across them?
  Systematic review and meta-analysis

The impact of unconditional cash transfers on psychological well-being

- Systematic review: develop a systematic search strategy across databases to identify relevant studies. For example, use the search terms "unconditional cash transfer", "happiness", and "randomized controlled trial" in the JSTOR, PubMed, and IDEAS/RePEc databases. Screen the abstracts of the resulting studies and keep the relevant ones; read the full-text of these and extract the treatment effects, in standard deviation units. (Remember, this is a good way of making effects comparable across studies.)
- Meta-analysis: Then you have a big dataset of treatment effects of cash transfers on well-being, from many studies. Now you can conduct a meta-analysis on them. For example, the average of all the treatment effects is the overall effect of the interventions on the outcome. Or you can regress the treatment effects on transfer magnitude to understand how impact of a cash transfer varies with how large the transfer is.

Unconditional cash transfers, well-being, and mental health

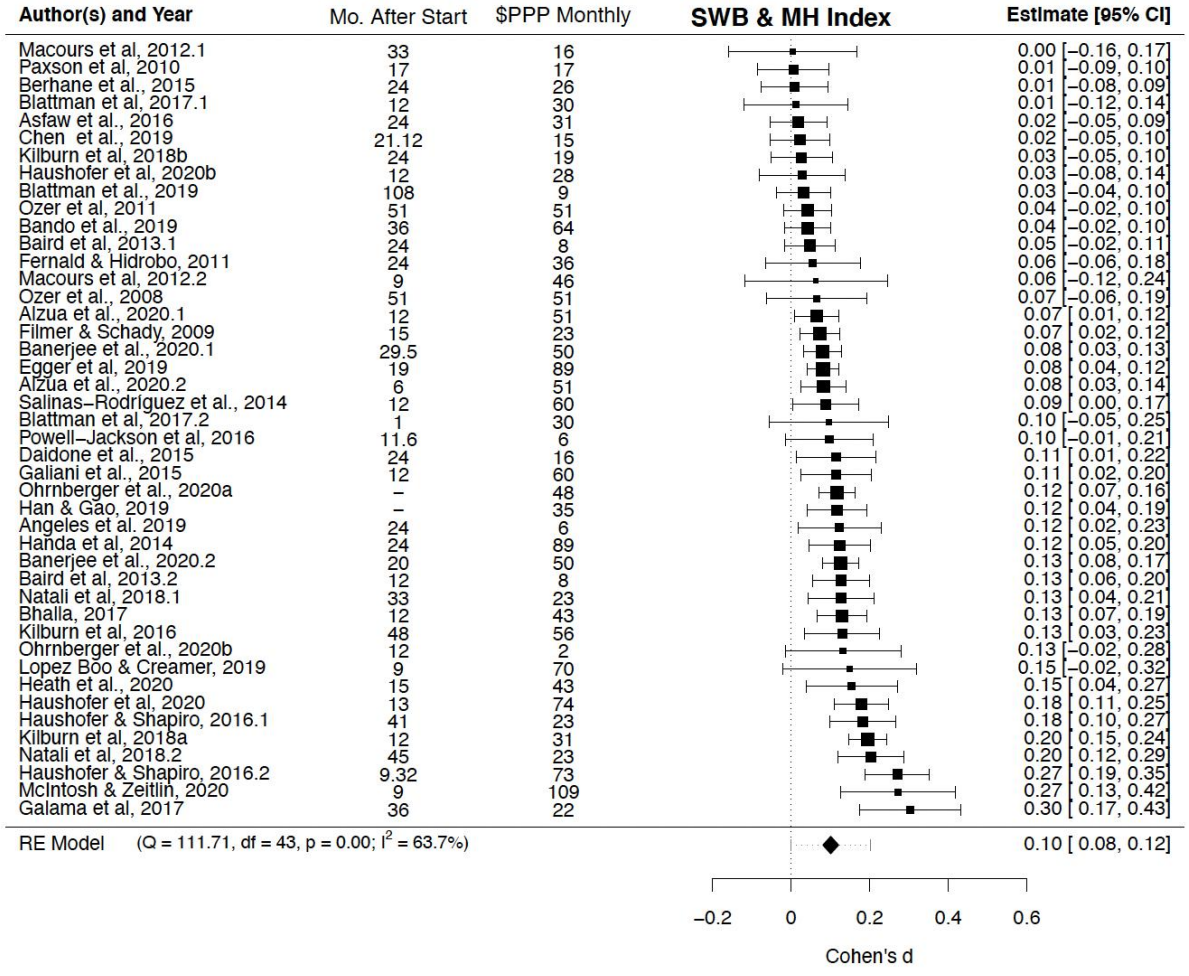
McGuire et al., 2020

- Joel McGuire and colleagues at the Oxford "Happier Lives Institute" conducted such a systematic review and meta-analysis for the impact of unconditional cash transfers on psychological well-being and mental health in low- and middle-income countries
- They screened 1,147 abstracts, and retained 37 studies for the meta-analysis.
- They focus on studies that allow causal claims, such as randomized controlled trials or regression discontinuity designs.
- The average intervention is worth USD 664 PPP for lump-sum transfers, and USD 995 PPP for monthly transfers. Psychological well-being is measured on average 2 years after the transfer.

Cash transfers improve well-being and mental health

McGuire et al., 2020

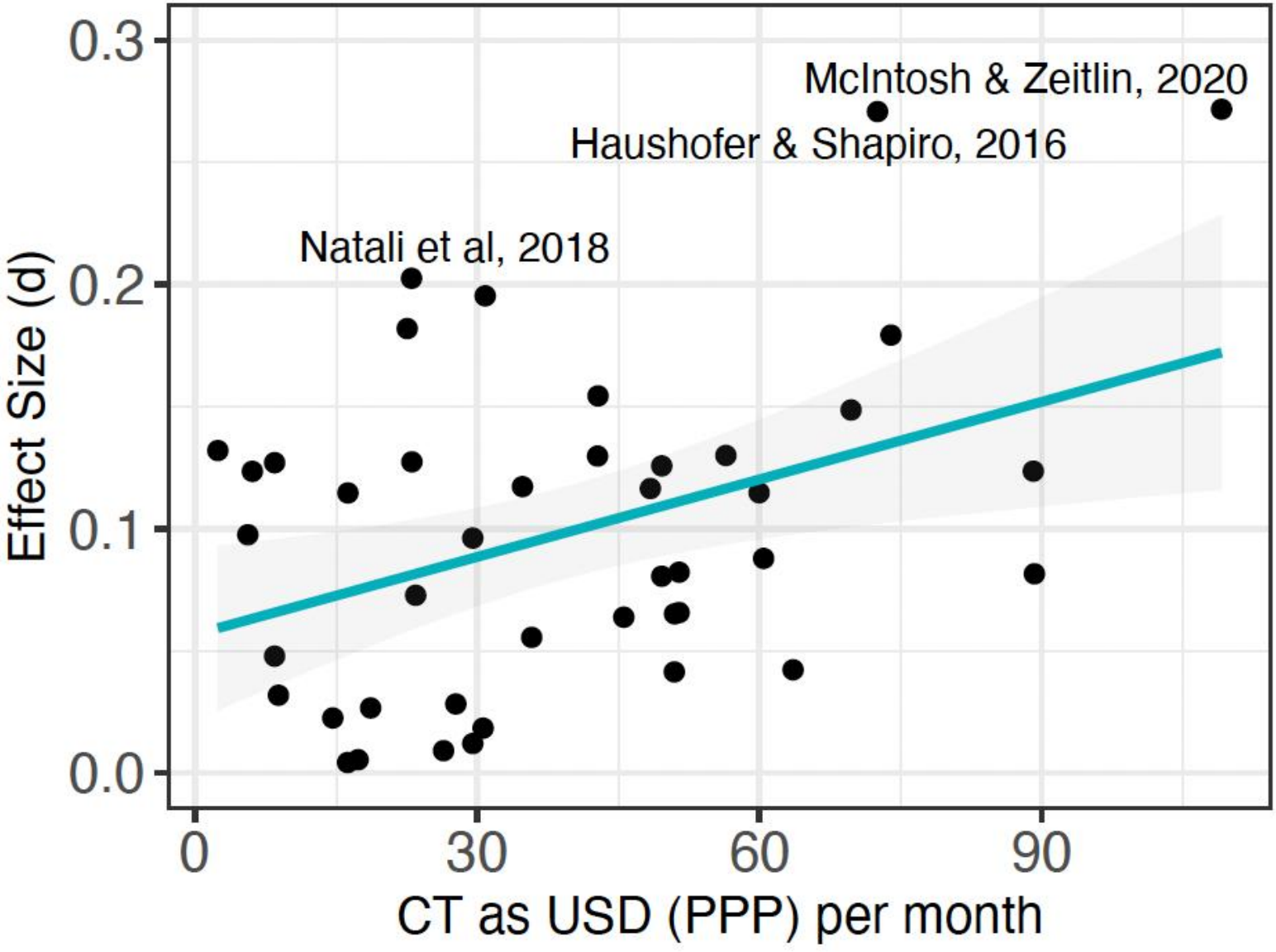
Figure 2. Forest Plot



Note: Forest plot of the 37 included studies. Subjective wellbeing (SWB) and mental health (MH) outcomes in each study are aggregated with equal weight. Mo. after start is the average number of months since the cash transfer began. $PPP Monthly is the average monthly value of a CT in purchasing power parity adjusted US 2010 dollars. Lump sum cash transfers were converted to monthly value by dividing by 24 months, the mean follow-up time.

Larger transfers have larger effects

McGuire et al., 2020



Unconditional cash transfers, well-being, and mental health

McGuire et al., 2020

- The average effect of unconditional cash transfers on psychological well-being/mental health is a 0.10 standard deviation improvement 2 years after the transfer
- The larger the transfer, the larger the effect

What is the effect of psychotherapy on economic outcomes?

- The positive effect of income changes on mental health opens the possibility that there may be a mental health-based poverty trap. What's required for this to be true?
- We would need a large effect of mental health on income.
- We can look at the effect of psychotherapy interventions on economic outcomes. The Baranov et al. paper you read is an example of that.
- We'll now look at a different example that compares the impact of psychotherapy to that of cash transfers.

The effect of psychotherapy and cash transfers on economic outcomes

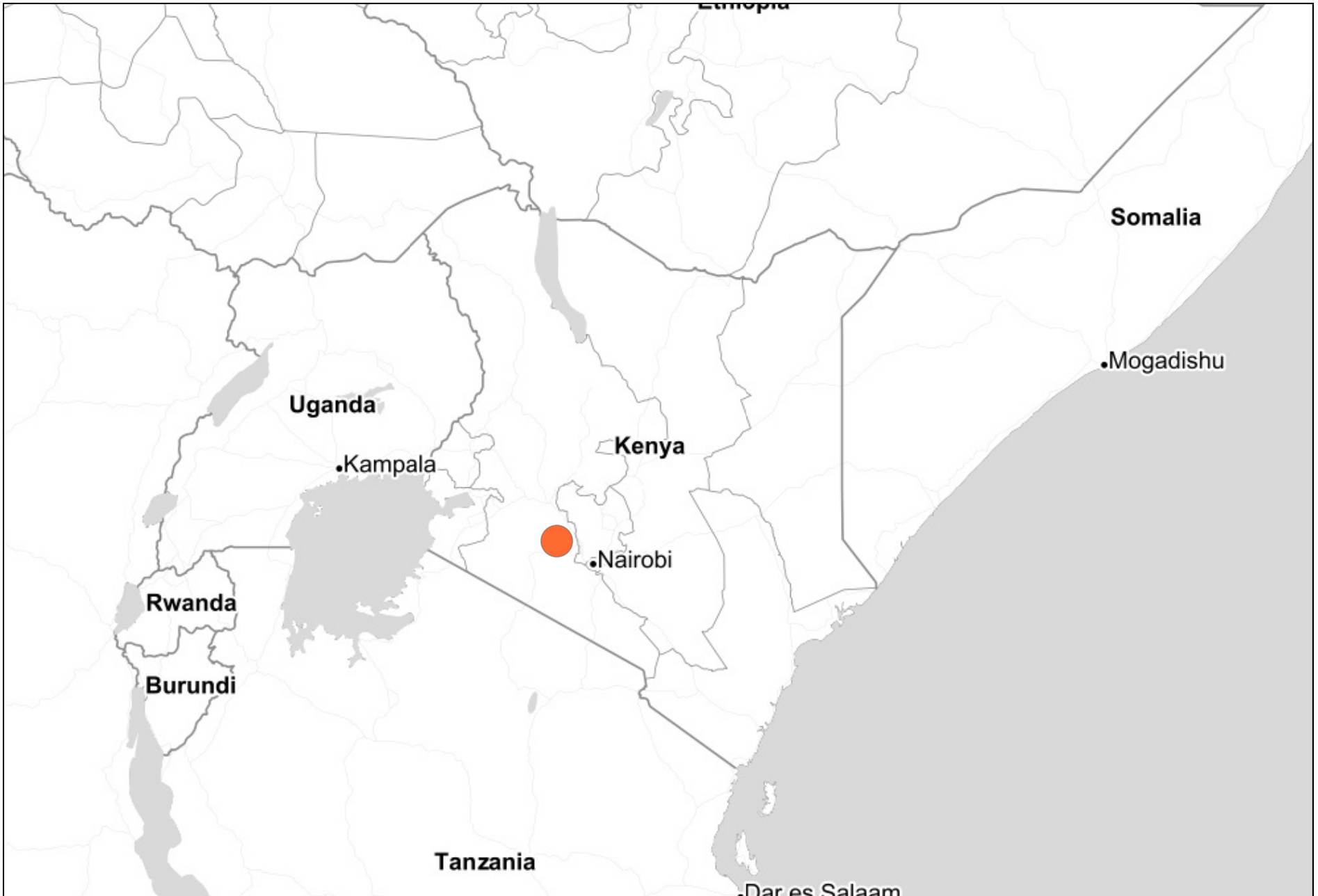
Haushofer, Mudida, Shapiro 2020

Randomized controlled trial in a sample of low-income farmers in Kenya, $N = 5,756$

1. Psychotherapy treatment (5 weeks) developed by WHO ($N = 525$)
2. Unconditional cash transfer (USD 1076 PPP; $N = 540$)
3. Both ($N = 493$)
4. Pure control ($N = 1703$)

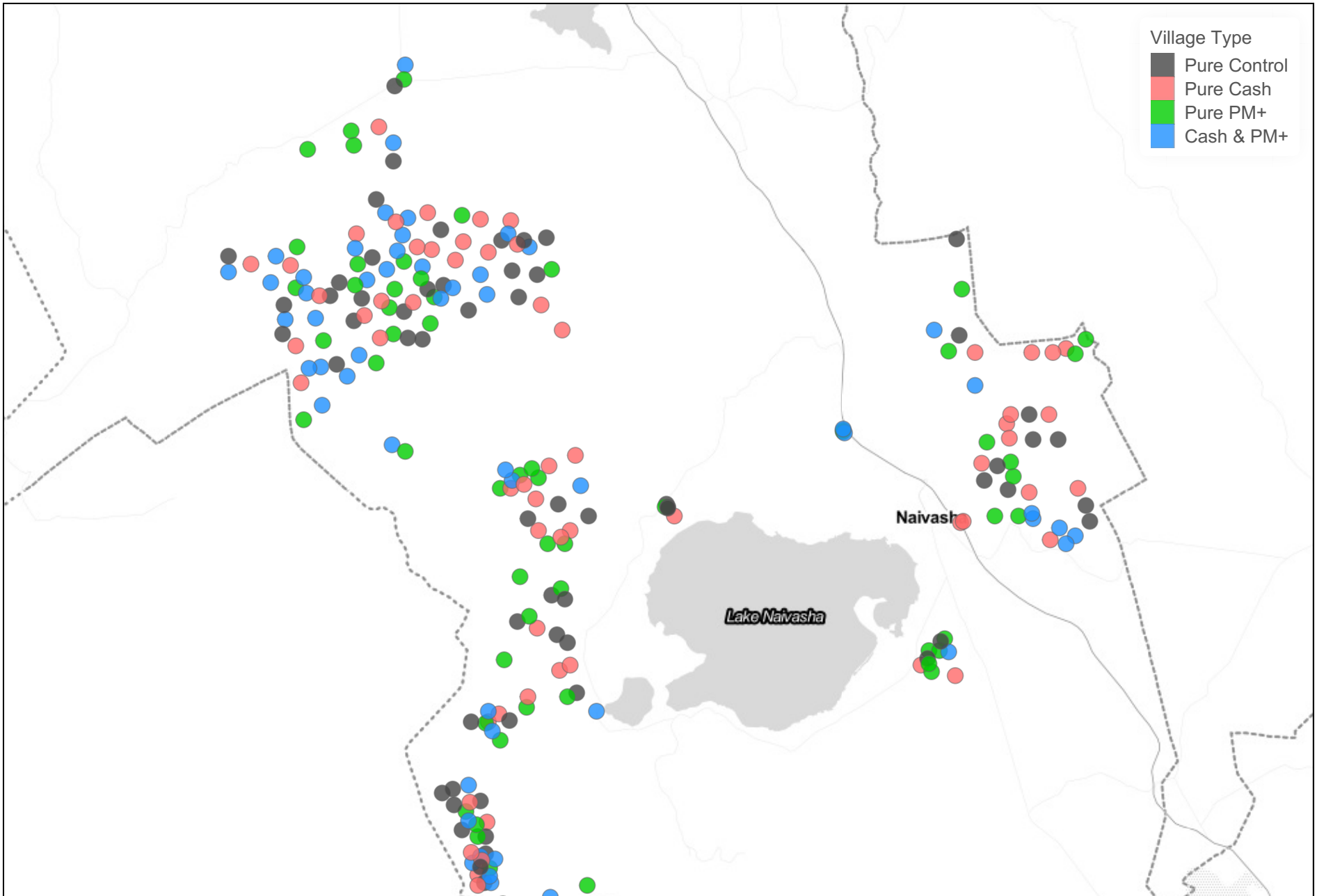
Study area

Haushofer, Mudida, Shapiro 2020



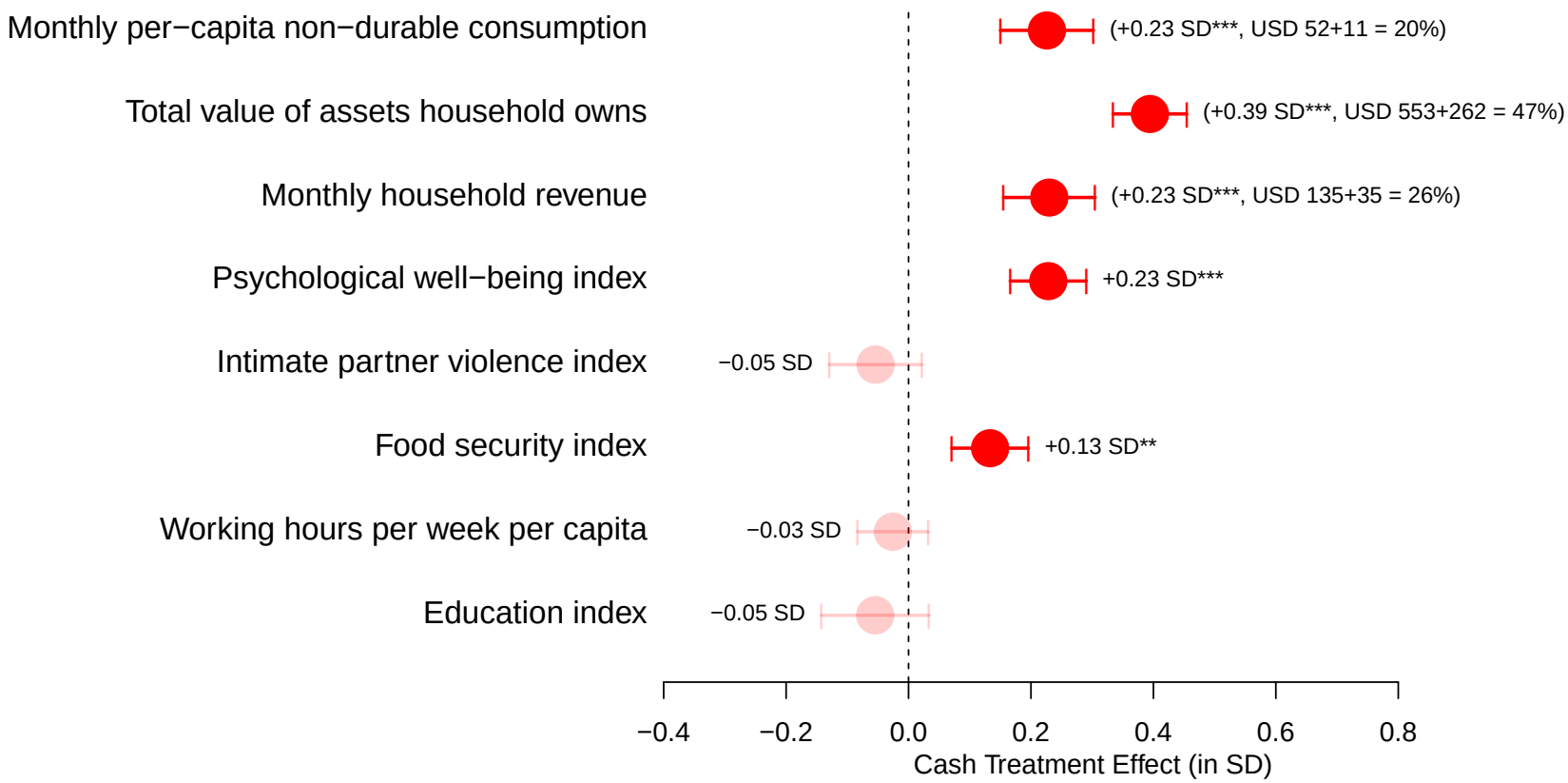
Study area

Haushofer, Mudida, Shapiro 2020



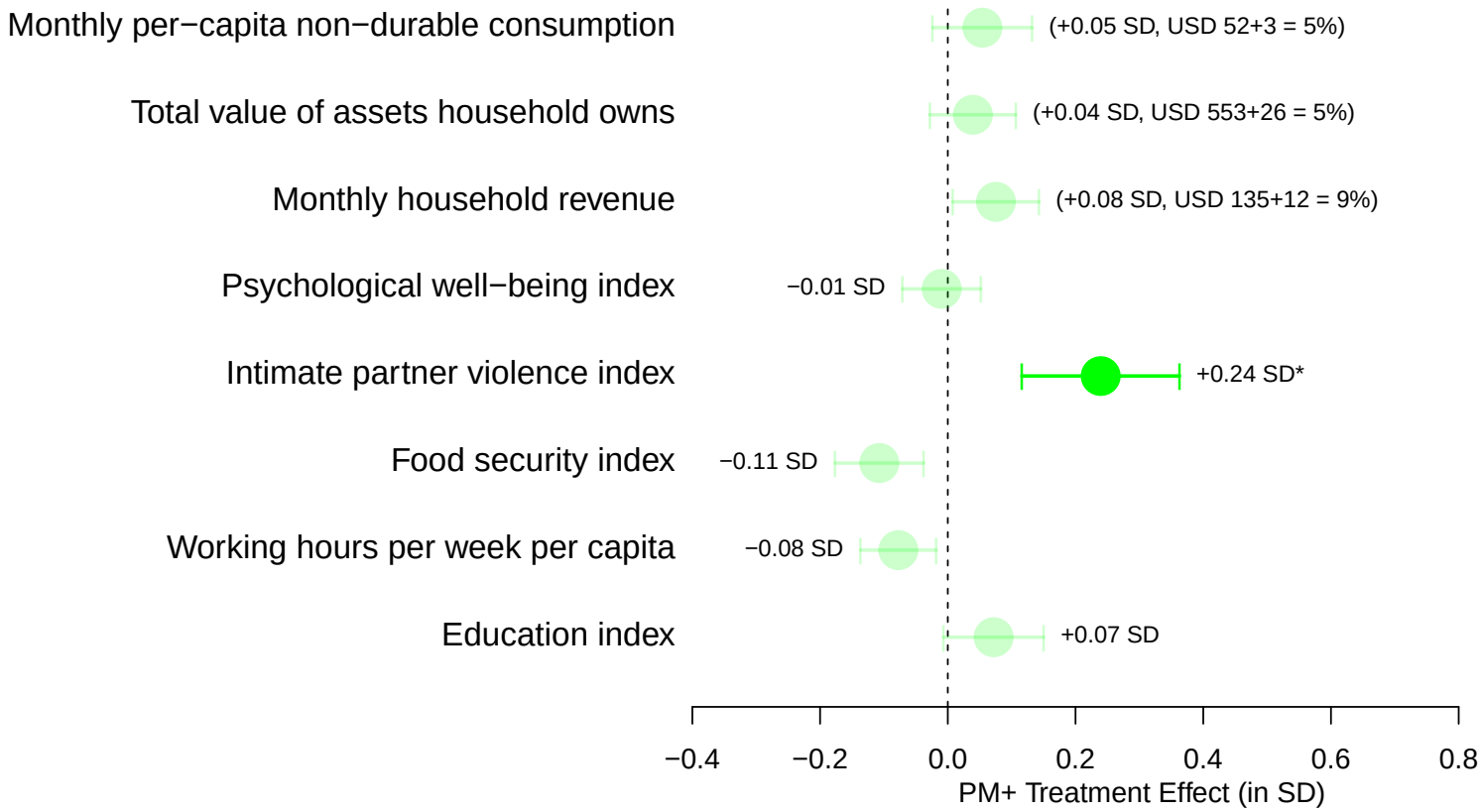
Cash Treatment Effects: Index Variables

Haushofer, Mudida, Shapiro 2020



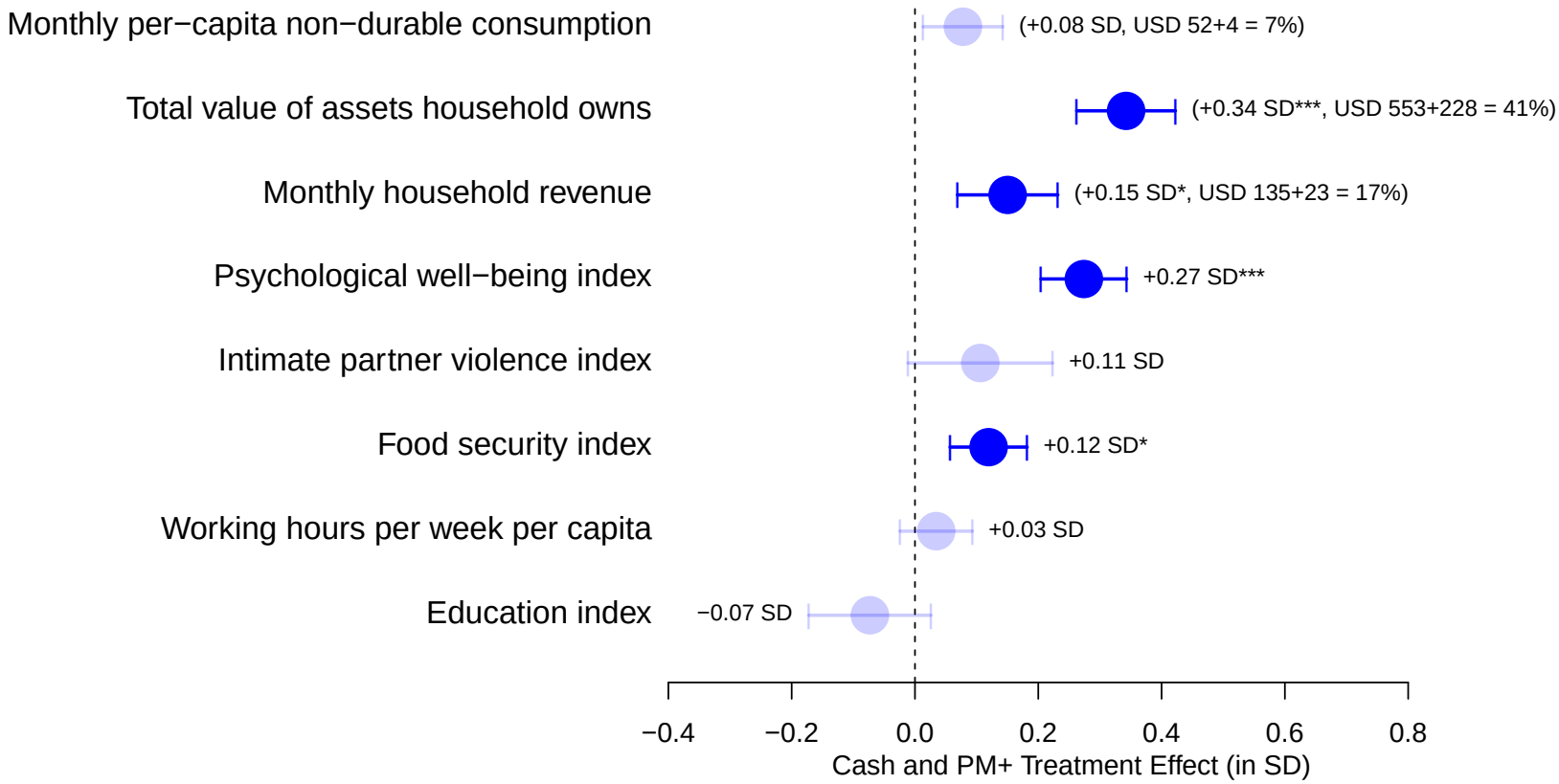
PM+ Treatment Effects: Index Variables

Haushofer, Mudida, Shapiro 2020



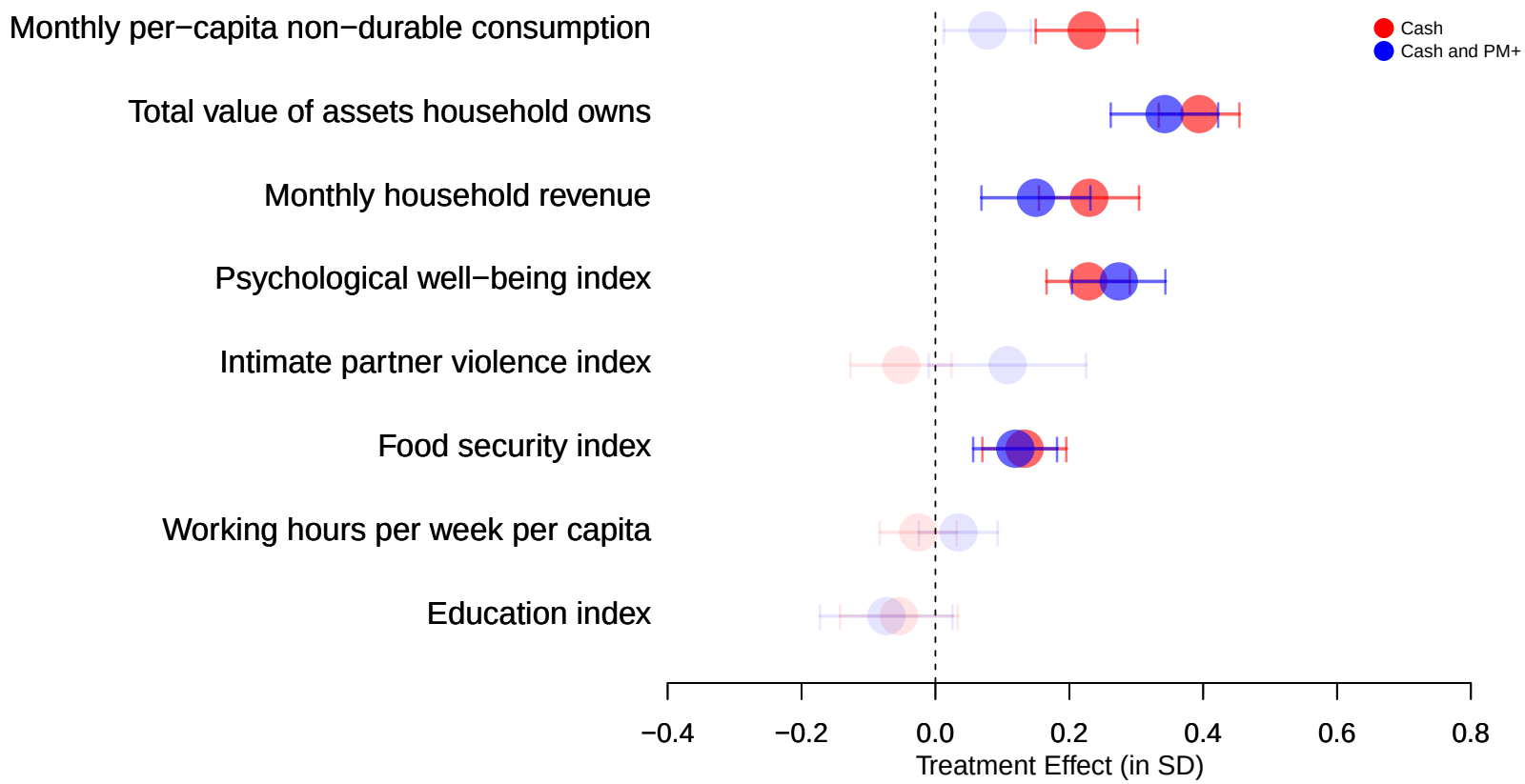
Cash and PM+ Treatment Effects: Index Variables

Haushofer, Mudida, Shapiro 2020



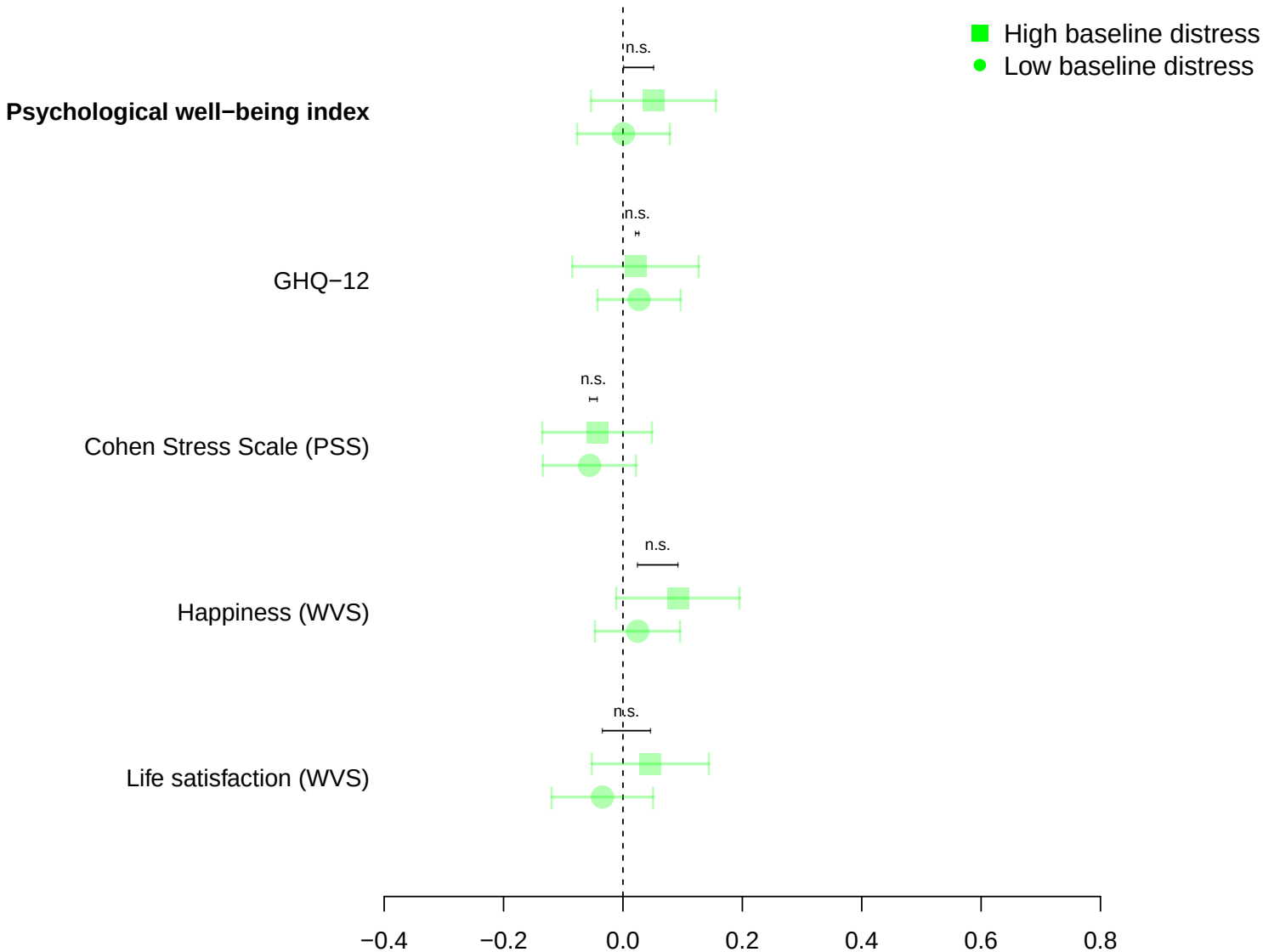
Pure Cash vs. Cash and PM+

Haushofer, Mudida, Shapiro 2020



Does PM+ work for those with poor mental health?

Haushofer, Mudida, Shapiro 2020



Summary

Haushofer, Mudida, Shapiro 2020

- Again, robust causal evidence that cash transfers improve psychological well-being
- No evidence that psychotherapy improves mental health for a general population sample; and in this case, even for a depressed sample. Brekaout rooms: Think about why this may have been the case—psychotherapy works well elsewhere.

So, is there a mental health poverty trap?

- There's robust causal evidence that poverty causes unhappiness and depression
- There's some, but inconsistent evidence that treating depression improves economic outcomes
- Remember we said at the beginning that you need very strong relationships between poverty and psychological outcomes for there to be a trap
- Too early to say that the relationships we discussed constitute a trap
- My guess: probably not a trap in the technical sense; but still a feedback loop. That's still important for policy.

Tomorrow & next week

- Lecture 8: Fri 8/10 16:00–18:00, Auditorium 4, Södra huset hus B
- Lecture 9: Wed 13/10 10:00–12:00, Auditorium 8, Södra huset hus D