Piloting new social safety nets: Evaluation of a job guarantee program and of a basic income program

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New social safety nets

- Ideas for new social safety nets are generating much debate.
- Two leading contenders:
  - Job guarantee programs.
  - (Universal) basic income programs.
- Much variation in
  1. policy details, and
  2. motivating arguments.
- This talk: Evaluation of two pilot programs in Austria, Germany.
  - Mostly: Study design.
  - Some initial results for the job-guarantee pilot in Austria.

Two pilot programs

- **Employing the unemployed of Marienthal**
  (with Lukas Lehner)
  Marienthal/Gramatneusiedl, Austria, 2020-2024

- **Mein Grundeinkommen: Evaluation of a Basic Income Pilot in Germany**
  (with Susann Fiedler, Jürgen Schupp, and Frederik Schwerter)
  Multiple locations, Germany, 2021-2024

Possible advantages of such policies I

Both job guarantee and basic income:

- **Unconditional outside options**.
  Improving the bargaining position of those worst off,
  in employment, bureaucracies, and (romantic) relationships.
- **Covering uncovered populations**.
  Dropping conditionalities (e.g. past employment),
  diminishing problems of incomplete benefit takeup.
- **Automatic stabilizers**.
  Smoothing business cycles by stabilizing disposable income.

Possible advantages of such policies II

Job guarantee:

- Work as a source of **meaning**.
- Benefits of **social interactions** in the workplace (and beyond).
- Social **respect**.

Basic income:

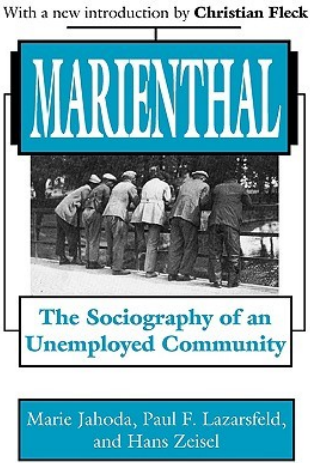
- Respecting individual **autonomy**.
- Avoiding the **distortions** ("deadweight loss") of forcing people into wage labor.
- Avoiding the **bureaucratic overhead** of welfare surveillance.

Basic income and job guarantee as
complementary components of a future safety net?

The Marienthal job guarantee pilot

- Starting October 2020, Gramatneusiedl.
  AMS Niederösterreich (public employment service agency)
  and *itworks* (service provider).
- Budget: 7.4 Million Euro.
- All longterm unemployed ($>$ 9 months) are eligible.
  Participation is voluntary. No sanction for declining jobs.
- Preparatory training for up to 8 weeks.
- Jobs are individually tailored. Options include:
  - Jobs in a newly founded social enterprise
    (childcare, gardening, renovation, carpentry).
  - Some of these: Projects created by participants themselves.
  - Subsidized jobs in the regular labor market.
- Emphasis on meaningful, productive employment,
  taking into account health constraints.

Precursors, and international media coverage



CNN BUSINESS

Job guarantees and free money: 'Utopian' ideas tested in Europe as the pandemic gives governments a new role

FINANCIAL TIMES

FT Alphaville FT Alphaville

INDEPENDENT

News > UK > UK Politics

Unconditional job guarantee to be trialled in Austria, in world first

Pilot designed by Oxford University economists

BUSINESS INSIDER

ZEIT ONLINE

Residents of a small Austrian town are being promised work for 3 years in the world's first universal jobs guarantee experiment

The german basic income pilot

- Starting June 2021, across Germany.
  Mein Grundeinkommen.
- Monthly payment of 1200 Euro, for 3 years, to 107 participants.
- Participation restrictions:
  - German residents between 21 and 40 years
  - living in single households,
  - not receiving social benefits for long term unemployment.
- Comprehensive baseline survey used for allocation to treatment.

Three evaluation challenges and possible solutions

1. **Small sample size**:
   Pairwise or blocked randomization.
   Matching on a rich set of baseline characteristics.

2. **Anticipation effects**:
   Staggered rollout.
   Contrasting earlier to later participants.

3. **Equilibrium effects**:
   Cross-location comparisons.
   Pre-registered synthetic control municipalities.

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Introduction
- Possible arguments for basic income and job guarantees
- Context and evaluation challenges

Study design
- Job guarantee
- Basic income
- Inference

Preliminary findings for the job guarantee pilot
- Pairwise comparisons

Conclusion

Study design job guarantee I

Pairwise matching and staggered roll-out:

- Baseline covariates (as of September 2020):
  Gender, age, "migration background", education, disability, level of benefits, days unemployed in the last 10 years.

$\Rightarrow$ Pairwise Mahalanobis distance.

- Pairwise matching minimizing sum of distances within pairs.
- Random assignment to one of two waves within pairs.
- Start of employment for the two waves:
  1. December 2020.
  2. April 2021.

Covariate balance for our matched pair design

Covariate	Mean wave 1	Mean wave 2	Difference	T-statistic	P-value
Male	0.581	0.581	0.000	0.000	1.000
Age	44.452	44.935	-0.484	-0.165	0.869
Migration Background	0.323	0.355	-0.032	-0.264	0.793
Education	0.452	0.452	0.000	0.000	1.000
Health condition	0.290	0.323	-0.032	-0.271	0.787
Benefit level	29.839	29.839	0.000	0.000	1.000
Days unemployed	1721.871	1600.839	121.032	0.483	0.631

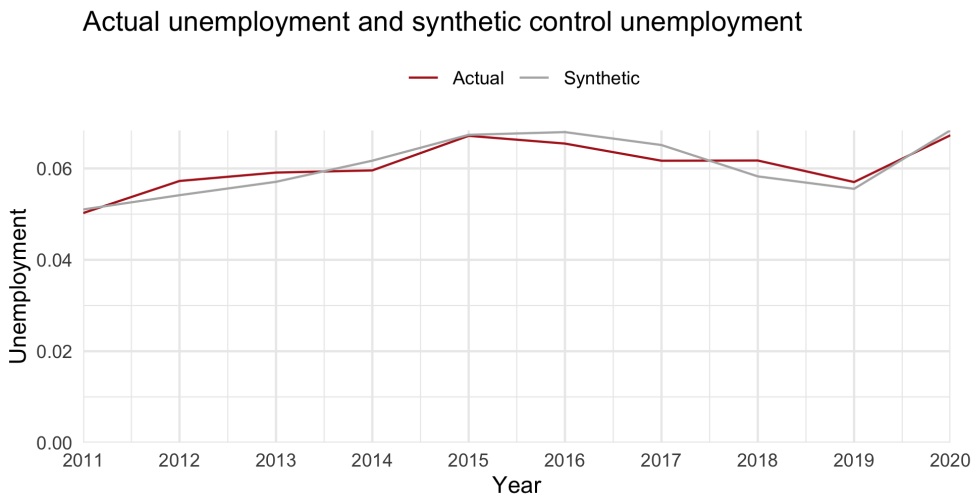
Study design job guarantee II

Synthetic control comparison:

- Multiple municipal-level data sources (as of December 2019):
  AMS Data Warehouse, AMS occupational-career monitoring,
  and the national statistical agency.
- Pick the 26 (5%) of municipalities in Lower Austria
  closest to Gramatneusiedl in terms of Mahalanobis distance.
- Find the synthetic control (convex combination) of these municipalities
  closest to Gramatneusiedl in terms of baseline covariates
  and in terms of the trajectory of unemployment 2011-2020.

Both parts of the design were pre-registered!

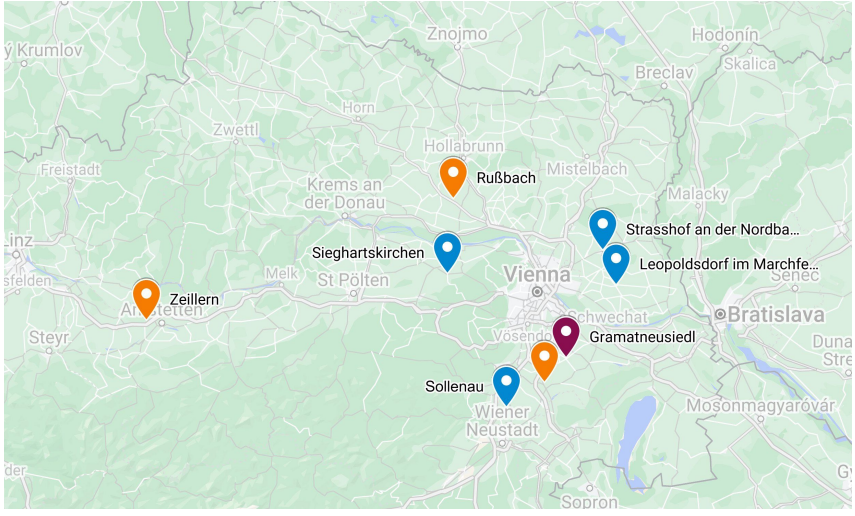
Synthetic control gap



Synthetic control weights

Weight	Municipality	Identifier
0.487	Ebreichsdorf	30607
0.203	Zeillern	30544
0.134	Rußbach	31224
0.079	Leopoldsdorf im Marchfelde	30831
0.046	Strasshof an der Nordbahn	30856
0.024	Sieghartskirchen	32131
0.023	Sollenau	32327

Synthetic control locations



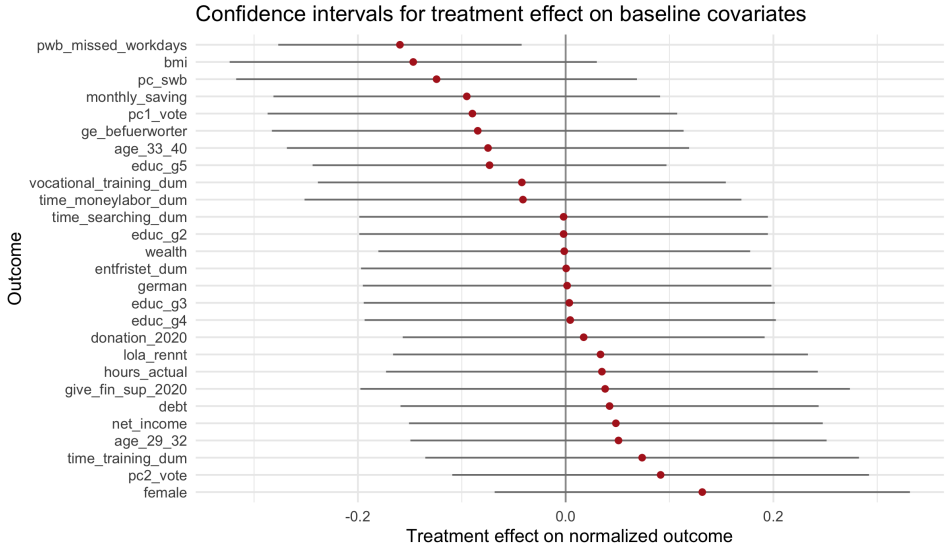
Study design basic income: Blocked assignment

- 8971 eligible study participants, 28 variables from baseline survey.

$\Rightarrow$ Pairwise Mahalanobis distance.

- Partition set of eligible participants into blocks of size 32
  to minimize the total sum of distances within blocks.
  $\Rightarrow$ 273 blocks.
- Budget allows for 53 blocks.
  Drop a few blocks with large maximum within-block distance.
  Sample from remaining blocks using weighted probabilities, to match demographic distribution of baseline survey.
- Within blocks, randomly assign
  - 2 units to treatment.
  - 26 units to control.
  - 4 units to a reserve, to be interviewed in case of attrition within block.

Covariate balance for our blocked assignment



Each row shows the point estimate and 95% confidence interval for each outcome, normalized by its standard deviation in the sample

Randomization / permutation inference

- Consider the null hypothesis that $Y_i^1 = Y_i^0$ for all i in the sample.
- Under this null, we can calculate test-statistics
  for any counterfactual treatment assignment.
- Randomization inference: Randomly reassign treatment.
  Re-calculate test-statistics.
- Fisher p-value: Share of times the re-calculated test-statistic
  is bigger than the actually realized one.
- Permutation inference: Similar idea for synthetic control.
  For each of our control municipalities, pretend it is the treated one.
  Re-calculate synthetic control estimates for this municipality.

Standard errors

- Basic income pilot: 2 treated and 26 control units per block

$\Rightarrow$ we can calculate standard errors for the **sample average treatment effect**.

$$\hat{\sigma}_b^{2d} = \frac{1}{n_b^d - 1} \sum_{i:\ b_i = b} \mathbf{1}(D_i = d) \cdot (Y_i - \bar{Y}_b^d)^2$$

$$\hat{\sigma}_b^2 = \frac{1}{n_b^1}\hat{\sigma}_b^{21} + \frac{1}{n_b^0}\hat{\sigma}_b^{20} \qquad \hat{\sigma}^2 = \frac{1}{N}\sum_b \hat{\sigma}_b^2.$$

- 95% confidence intervals for Δ are then calculated as

$$CI = [\hat{\Delta} - 1.96 \cdot \hat{\sigma}^2, \hat{\Delta} + 1.96 \cdot \hat{\sigma}^2].$$

Multiple testing corrections

- Multiple outcomes of interest for both studies.
- Benjamini-Hochberg procedure to control the **false discovery rate** (share of rejected hypotheses which in fact hold true).
- Sort the p-values, for each of m hypotheses resulting in ordered values $P_{(j)}$.
- For a critical value α, find the largest value k such that

$$P_{(k)} \leq \frac{k}{m}\alpha.$$

- Reject the null hypothesis for all $i = 1, \ldots, k$.

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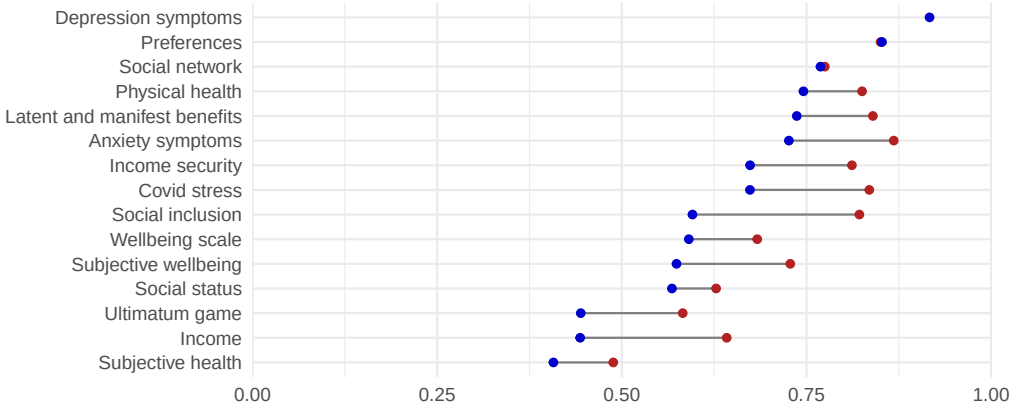
Preliminary findings for the job guarantee pilot

- Waiting for access to administrative data at the AMS.
- We conducted a survey among all participants in February 2021.
  - First wave started work in November/December 2020.
  - Second wave started work in March/April 2021.
- The following presents impacts on indices for several outcome categories.
- Index construction:
  - Sign each variable so that more is better.
  - Average all variables in each category.
  - Normalize index to range from 0 to 1.

Job guarantee participants at work

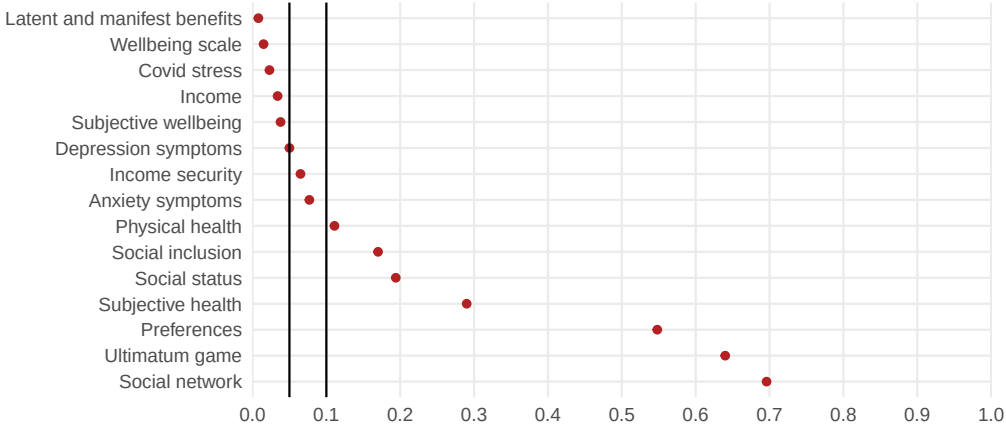
- Jobs in a newly founded social enterprise (carpentry, renovation, gardening, support for elderly, ...).
- Some of these: Projects created by participants themselves (incl. planning a bike trail, book, topotheque).
- Subsidized jobs in the regular labor market.

Average outcomes in treatment and control group



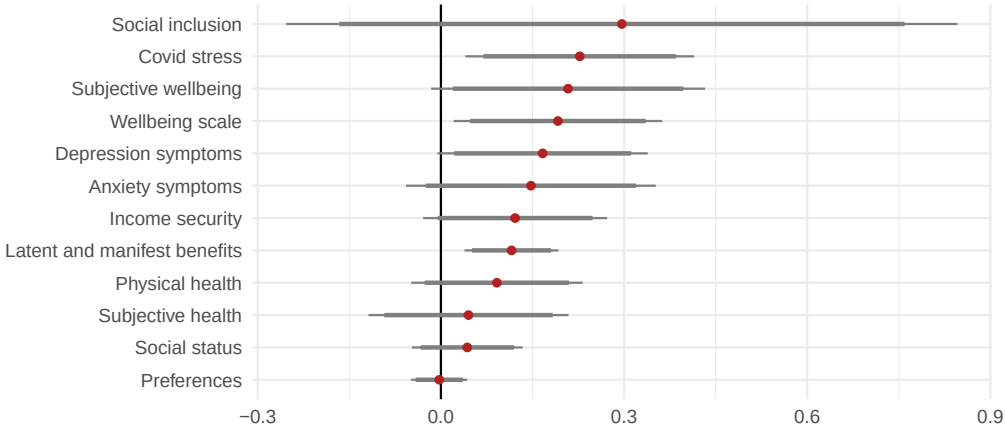
Red dots are averages for Group 1, those already treated.
Blue dots are averages for Group 2, those who will be treated later.
Higher values imply better outcomes. Outcomes are scaled to have range 0 to 1.

P-values for sample average treatment effects



The dots are p values, for tests of the null of negative effects of treatment. Small values imply positive effects of treatment. 1000 simulation draws.

Confidence intervals for population average treatment effects



This plot shows 95% confidence intervals (thin line) and 90% confidence intervals (thick line) for treatment effects, based on the sample of observed matched pairs.

Summary and conclusion

- Study designs for evaluating job guarantee / basic income pilots:
  1. Matched/blocked assignment (to increase precision).
  2. Staggered roll-out (to separate out anticipation effects).
  3. Synthetic controls (to estimate spillovers / equilibrium effects).
  4. Randomization inference; Benjamini Hochberg corrections for multiple testing.
- Next steps:
  - Getting access to administrative data (AMS Austria, German registry data).
  - Designing surveys for the next 3 years (Germany).
  - Integrating analysis with theoretical / conceptual / policy debates.
- Suggestions / thoughts?

Thank you!