

THE LONG-RUN IMPACT OF CASH TRANSFERS TO POOR FAMILIES

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DO CASH TRANSFERS HELP POOR FAMILIES?

- More than 20% of children in the United States were living in poverty as recently as 2010.
- Welfare programs were established to help children.
- It is important to evaluate the program effects in both the short-run and the long-run.

WHY AMBIGUOUS?

- The amounts given may not be sufficient.
- Parents might not use transfers in ways that benefit their children, or might use the transfers inefficiently due to poor information.
- The programs could induce parental behavioral responses that are potentially detrimental to the child.
 - Labor supply, fertility, or probability of remarriage.

THIS PAPER: MOTHER'S PENSION

- 1911-1935, the first US government-sponsored welfare program for poor mothers with dependent children.
- Size of the transfers: 12-25% of the family income.
- Duration: about 3 years.
- Outcome of children born between 1900 and 1925.
 - Longevity, height, weight, BMI, etc.
 - Education
 - Income

HOW TO EVALUATE THE EFFECT

- Should we compare the people who **received** the pension vs. the ones who **did not receive**?

HOW TO EVALUATE THE EFFECT

- Should we compare the people who **received** the pension vs. the ones who **did not receive**?
 - The people who received the pension are in worse socio-economic conditions.
 - Eligibility rules: mother to be poor (income threshold not clear)
 - husband missing or incapacitated (vary by states)

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- Should we compare the people who **received** the pension vs. the ones who **applied but were rejected**?

HOW TO EVALUATE THE EFFECT

- Should we compare the people who **received** the pension vs. the ones who **applied but were rejected**?
 - They are more comparable in term of motivation and knowledge of the program.
 - They can be different due to rejection rules.

WE WILL PROCEED IN TWO STEPS

- **Step I:** Use baseline characteristics of accepted and rejected applicants to check the comparability of the two groups.
- **Step II:** Check the difference between the outcomes of the two groups.

PAPER AND DATA

- <http://www.tianyuanekon.com/teaching.html>
- Two datasets:
 - MP_data.dta
 - MP_1940.dta

TESTS OF BASELINE DIFFERENCES

- Learning the dataset
- `describe`
- List of variables:
 - ID, state ID, accepted
 - Family characteristics: year of application, year of birth, child age, birth date missing, number of kids in the family, max and min age of children, length of name, if the mother is widowed, divorced, if the husband is away, if the marital status is missing, family income...

TESTS OF BASELINE DIFFERENCES

- Econometrics model:
- $$\text{Outcome} = a + b * \text{Accepted} + e$$
- Outcome is one of the baseline characteristics.
- Accepted is a dummy variable indicating whether the application is accepted or not.
- Estimated **a** is the mean of the outcome variable for the **rejected**.
- Estimated **b** is the **difference** between the mean of the accepted and the rejected.

TESTS OF BASELINE DIFFERENCES (TABLE 2A)

- `keep if idtag==1`
- `regress year accepted`
- `regress year accepted, cluster(fips)`

- `childageyears, datemiss, numkids, maxage, minage, length_name, widow, divorced, husbandaway, marst_miss, famearn.`

TABLE 2A—SUMMARY STATISTICS FOR ESTIMATION SAM

| | Full sample | |
|--|------------------|-----------------------------------|
| | Mean rejected | Difference (accepted–rejected) |
| <i>Panel A. Individual characteristics</i> | | |
| Year of application | 1,920.81 | 0.87 [0.694] |
| Year of birth of child | 1,912.05 | 1.397** [0.693] |
| Child age (years) | 8.74 | –0.508*** [0.124] |
| Day or month of birth missing | 0.02 | 0.014 [0.011] |
| Number of children in family | 3.598 | 0.171 [0.133] |
| Age of oldest child in family | 11.868 | –0.38 [0.246] |
| Age of youngest child in family | 5.623 | –0.799*** [0.170] |
| Length of family name | 6.385 | 0.06 [0.054] |
| Widow | 0.512 | 0.023 [0.041] |
| Divorced | 0.034 | –0.005 [0.011] |
| Husband abandoned/prison/hospital | 0.178 | 0.007 [0.024] |
| Mother’s marital status unknown | 0.277 | –0.026 [0.048] |
| Predicted family income | 412.528 | –28.335** [13.886] |

TESTS OF BASELINE DIFFERENCES

- How to interpret the results?
 - Rejected families are slightly worse off than the accepted ones.
 - This is in-line with some administrative records.
 - The rejected ones should serve as an **upper bound** of the performance of the accepted ones in the absence of the treatment.
 - We might **underestimate** the effect of the treatment.

PROGRAM EFFECT: LONGEVITY

- A first look: histograms
- `hist ageatdeath2 if accepted==1 & nmatches==1 & ageatdeath2>20`
- `kdensity ageatdeath2 if accepted==1 & nmatches==1 & ageatdeath2>20`
- `kdensity ageatdeath2 if accepted==1 & nmatches==1 & ageatdeath2>20, addplot(kdensity ageatdeath2 if accepted==0 & nmatches==1 & ageatdeath2>20) legend (order(1 "Accepted" 2 "Rejected"))`

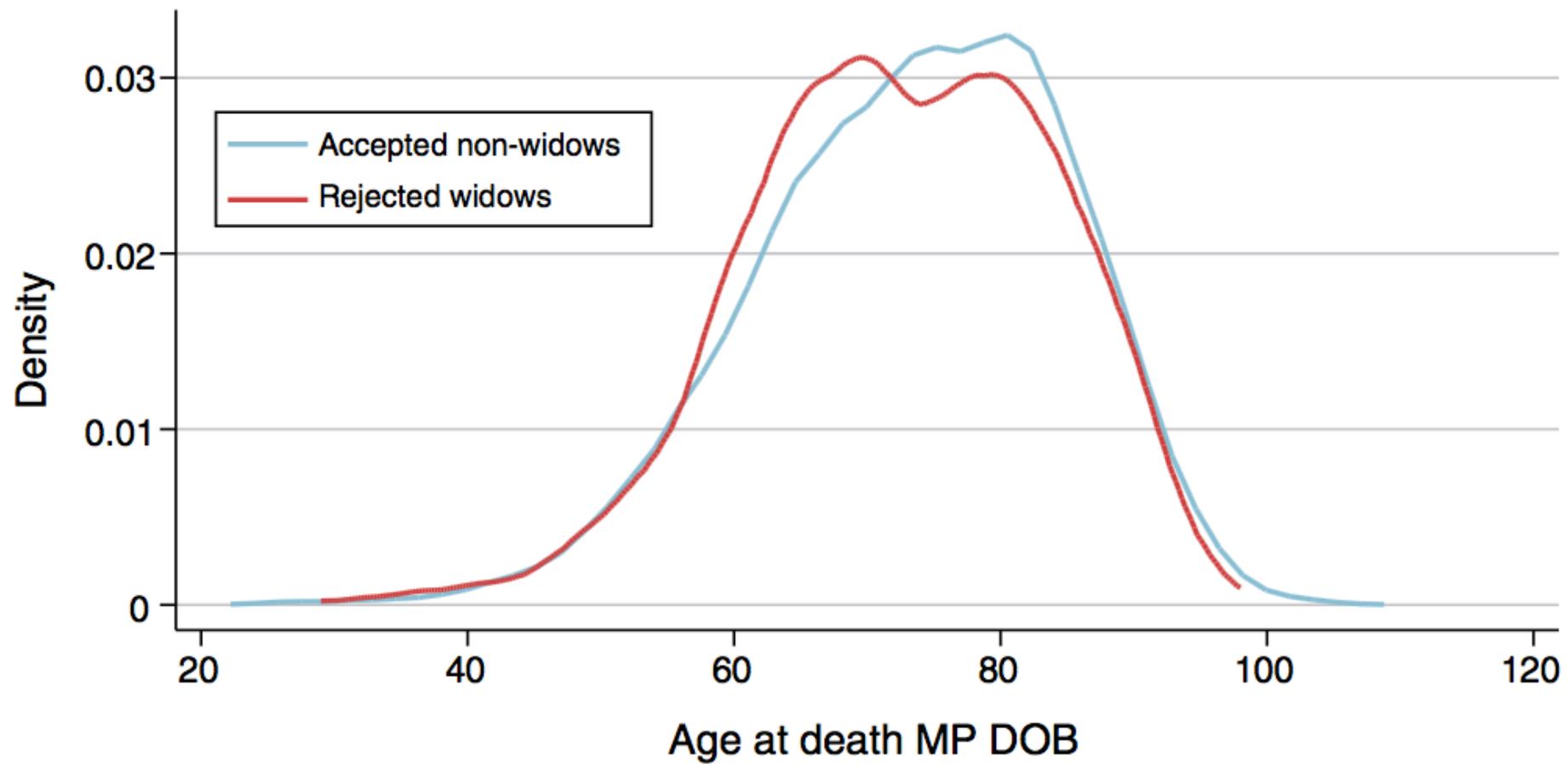


FIGURE 1. DISTRIBUTION OF AGE AT DEATH

PROGRAM EFFECT: LONGEVITY

- Econometrics model:
 - $\log(\text{Age at death})_{ifts} = a + b * \text{Accepted}_f + c * X_{if} + \dots + e$
- Individual i , family f , born in year t , living in state s .
- Estimated b is the **difference** between the mean of the accepted and the rejected.
- X is a vector of relevant family characteristics.
- We may also want to control for county-level and state-level characteristics.

PROGRAM EFFECT: LONGEVITY

- keep if nmatches==1
- reg logageatdeath accepted S2-S11 BY2-BY26, cluster(fips)

PROGRAM EFFECT: LONGEVITY

- A useful trick if you want to add a long list of controls
- `global kid "childageyears length_name sib2-sib8 maxage minage"`
- `reg logageatdeath accepted S2-S1 | BY2-BY26 $kid, cluster(fips)`

TABLE 4—CASH TRANSFERS AND LONG-TERM MORTALITY

| | (1) | (2) | (3) | (4) | (5) |
|----------------------------------|---------------------|---------------------|---------------------|---------------------|-------|
| <i>Panel A. log age at death</i> | | | | | |
| Accepted | 0.0157** [0.006] | 0.0158** [0.007] | 0.0182** [0.007] | 0.0167** [0.007] | |
| Mean of rejected | 72.44 | 72.44 | 72.44 | 72.44 | |
| Effect in years | 1.14 | 1.16 | 1.32 | 1.2 | |
| Observations | 7,860 | 7,860 | 7,860 | 7,860 | |
| Observations | 16,069 | 16,069 | 16,069 | 16,069 | 7,858 |
| State fixed effects | X | | | | |
| Cohort fixed effects | X | X | X | X | X |
| Individual controls | | X | X | X | X |
| State characteristics | | X | X | X | X |
| County 1910 characteristics | | X | | | |
| County fixed effects | | | X | X | X |

PROGRAM EFFECT: LONGEVITY

- How to interpret the results?
- Estimated b is 0.0157 in Column (1).
- Exponential of 0.0157 is about 1 year.

PROGRAM EFFECT: EDUCATION

- `use MP_1940, clear`
- `proportion educ if accepted==1`
- `estimates store accepted`
- `proportion educ if accepted==0`
- `estimates store rejected`
- `coefplot accepted rejected, vertical recast(bar) barwidth(0.2) fcolor(*.5)
citop xtitle("Education distribution in 1940 census") ytitle("Proportion")`

PROGRAM EFFECT: EDUCATION

- What if the command you use are not found in STATA?
- `ssc install grfreq`
- `ssc install coefplot`

Panel B. Education distribution in 1940 census

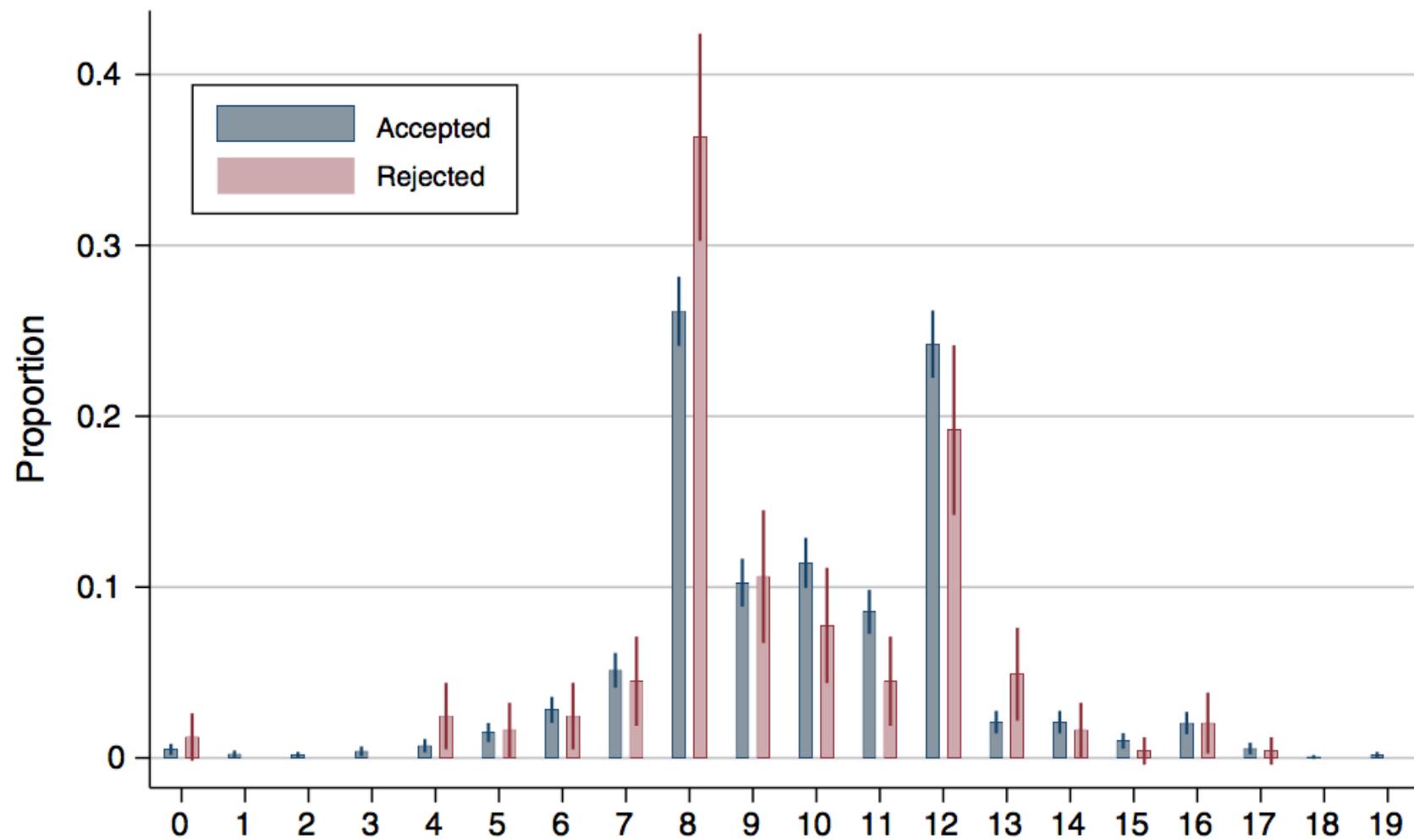


FIGURE 7. EFFECT OF MP ON OUTCOMES FROM 1949 CENSUS RECORDS

SUMMARY OF RESULTS

- We find that:
 - Male children of accepted applicants **lived one year longer** than those of rejected mothers.
 - They also obtained **one-third more years of schooling**, were less likely to be underweight, and had higher income in adulthood than children of rejected mothers.

CHALLENGES IN THIS STUDY

- **Can we track all individuals?**
 - To track everyone, we need to have **unique identifiers** that appear in different datasets.
 - Program administrative data + death records + census data + additional datasets. (**Where to find all these data??**)
 - Full name + date of birth used to match records.
 - Females may change names after marriage — hard to track.
 - Death records not systematically available before 1970 — data attrition.

CHALLENGES IN THIS STUDY

- **What should we do if the rejection rules are not clear?**
 - **Factual records.**
 - **Statistical analysis** of baseline characteristics recorded in the application files.
 - **Additional data** from some states on household characteristics before the application.

CHALLENGES IN THIS STUDY

- **How should we interpret the results?**
 - Combining **different outcome variables** — what are the determinants of longevity?
 - Combining **medium-run** outcomes with **long-run** outcomes.
 - Comparing the estimated coefficients with **other studies**.

CHALLENGES IN THIS STUDY

- **Why do we care? And why do we care about this study?**
 - Governments are still actively conducting welfare programs.
 - Most results are on the short-run impacts, and some people argue that the effects do not last.
 - Contemporarily, poor families usually receive aids in different forms: schooling, medical care, cash transfers, etc. Historical context is simpler.
 - This study shows the **long-run** impact of a **cash-transfer** program that is **still relevant today**.

POLICY EVALUATION

- **Institutional background**
- **Data availability**
- **Study design**
- **Results interpretation**

ADDITIONAL EXERCISES AND THOUGHTS

- Do effects vary by group? (**Heterogeneous effects**)
- Are some states driving the results? (**Source of variation**)
- Does the size of the transfer matter? (**Intensive vs. extensive margin**)
- Are the counties that implemented the program different from the ones that did not? (**Representativeness**)
- Are these estimates U.S.-specific? (**External validity**)