

# The Targeted Negative Income Tax (TNIT) in Germany: Evidence from a quasi-experiment

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2004: „Most important labour-market reform since the war“  
in Germany (Economist)

- Since 2005: about 2.5 millions mostly long-term unemployed receive tax financed and means-tested unemployment benefit II
- Furthermore: TNIT (time-restricted earnings supplement) may be granted by case managers

This paper is about field experiments with TNIT between 1999 and 2002 in Germany:

- 7 social experiments with randomized control groups (e.g. Freiburg, Fulda, Kassel):
  - first social experiments in Germany
- 3 quasi-experiments with site-randomized comparison groups in the same local labour market (Frankfurt, Boeblingen and Mannheim)
- 6 field experiments without control groups

1. Harrison/List: Field experiments (JEL 2004) are somewhat unclear with respect to social experiments and do not mention quasi-experiments

2. TNIT avoids disadvantages of NIT by targeting on means-tested (long-term) unemployed and time-restriction:

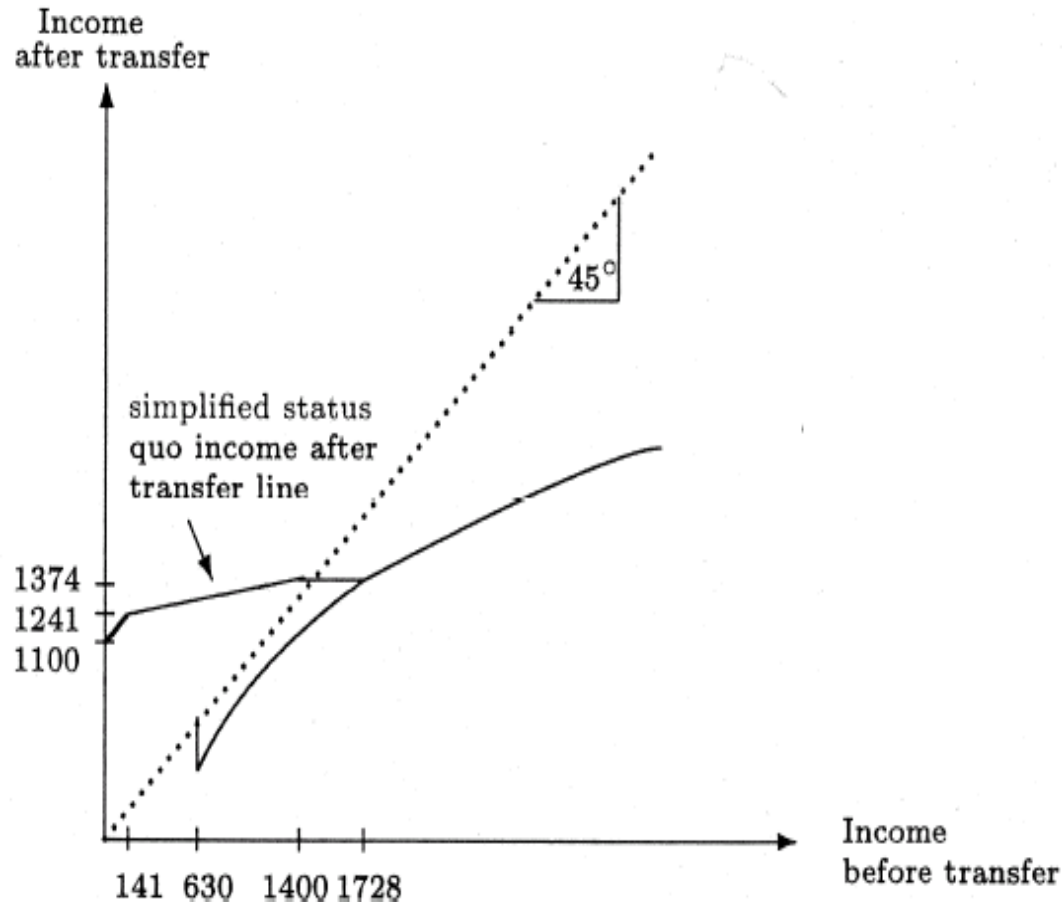
In fact, TNIT is a time-restricted earnings supplement,

→ i.e. a means-tested in-work benefit with time restriction with a deadweight, displacement and entry effect minimizing design

→ implemented within the German welfare system

Note: TNIT works via wage progression and human capital investment (see Blundell 2002)

## 2. Poverty trap in the German public assistance system



Note: break-even gross income up to 5,105 Deutschmarks for families with two and more children

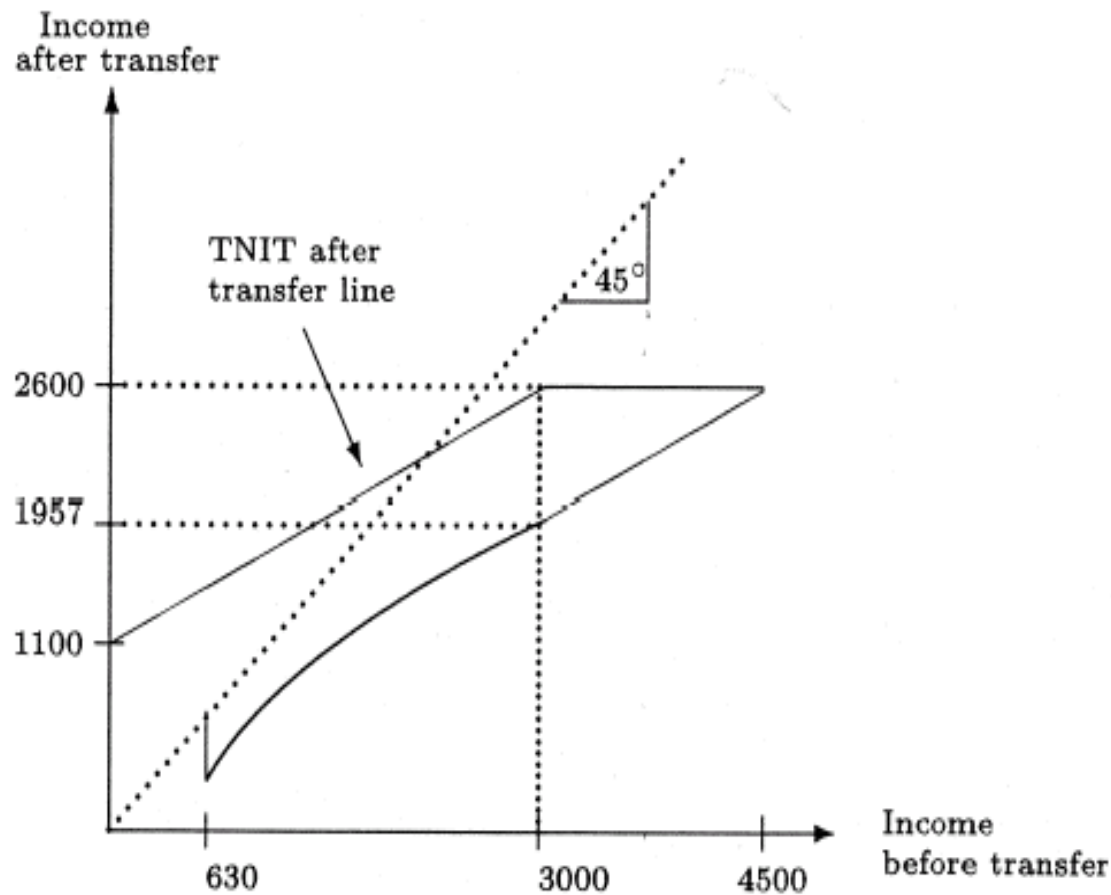
### 3. How TNIT worked in the city of Mannheim



#### Main features:

1. Target group: Means-tested unemployed
2. Employee subsidy (earnings supplement)
3. Time-restriction which varies between household types

# The Targeted Negative Income Tax (TNIT) in Mannheim 2000





# Transfers and Taxes under the WFTC Reform



- High, but maybe still too low incentives for participation
- Note that the German means-test is very tough so that entry effects should be low
- Note that the 50 % Benefit Reduction Rate (BRR) is the effective BRR due to the within-welfare-system design

## 4. Implementation, Experimental Design and Data



- Non-random site selection
- Some sites were truly a positive selection which causes problems for external validity
- Focus on quasi-experiment in Mannheim where data quantity and quality was sufficient for a microeconomic analysis

- Site-randomized control group in the same local labour market
- Program district in the northern part of Mannheim
- Comparison district in a comparable southern part on Mannheim
- Program and comparison group are comparable due to t-tests on important observables

Administrative data complemented by some survey data

## 5. Treatment, Outcome, and Identification



Treatment:

Information about the potential earnings supplement in case of participation in the private labour market

Check by survey:

Did the program group understand the program  
(proxy for receipt of treatment)

Result: Program group understood the basic idea

## 5. Treatment, Outcome, and Identification



### Outcome:

- Participation: available
- Income: available
- Hours of work: not available
- Duration of jobs after time limit: not available

# 5. Treatment, Outcome, and Identification



Identification:

Fundamental evaluation problem:

Not observable counterfactual

Treatment effect

$$(1) \Delta_i = Y_{1i} - Y_{0i}$$

Average treatment effect on the treated (ATT)

$$(2) ATT = E(Y_1 - Y_0 | D=1) = E(Y_1 | D=1) - E(Y_0 | D=1)$$

# 5. Treatment, Outcome, and Identification



## Selection bias

$$(3) E(Y_0|D=1) \neq E(Y_0|D=0)$$

## Identification due to selection-on-observables assumption

Conditional Independence Assumption

$$(4) Y_0 \perp D|X$$

common support condition

$$(5) \Pr(D=1|X) < 1$$



# Is the assumption plausible?



HIT (1997) and HIST (1998) set up criteria for comparison group data quality:

- Same data source for program and comparison group: fulfilled
- Program and comparison group reside in the same local labour market: fulfilled
- Data contain a rich set of covariates: only partly fulfilled, do not observe individual employment history and pre-program data

Quality checks for matching are not feasible

**Solution:** We restrict to Probit and Tobit, PSM confirmed results

- If one accepts the plausibility of the selection-on-observables assumption,  
  
→ Then average marginal effect Probit estimation of the program dummy could be interpreted as ATE

## 6. Results: Descriptive Statistics

Variable	N	mean	sd	min	max
Take up of employment ( 1=yes)	914	.159	.366	0	1
Sex ( 1 = male)	914	.565	.496	0	1
Nationality ( 1 = foreign)	914	.290	.454	0	1
Age in years	914	39.612	11.635	19	64
Duration of unemployment in months	914	31.244	12.951	14	60
Vocational training					
Unqualified (ref. group)	914	.584	.493	0	1
Apprenticeship or the like	914	.376	.485	0	1
University of Applied Sciences or university	914	.039	.195	0	1
School education					
No education	903	.163	.369	0	1
Low, medium secondary and comprehensive school	903	.616	.487	0	1
Highest Secondary school	903	.221	.415	0	1
Type of household					
Single	914	.556	.497	0	1
Lone parent (ref. group)	914	.152	.359	0	1
Pair without children	914	.118	.323	0	1
Pair with children	914	.174	.379	0	1
Group					
Program group (1 = yes)	700	.437	.496	0	1
Program Group (incl. special districts) (1=yes)	914	.569	.495	0	1

# Probit Models for overall employment (average marginal effects)



	(1) Model with standard program group	(2) Model with program group including special districts
Sex ( 1 = male)	-0.0076 (0.8)	-0.0082 (0.764)
Nationality ( 1 = foreign)	0.064 (0.065)*	0.0707 (0.015)**
Age in years	-0.0017 (0.171)	-0.0021 (0.069)*
Duration of unemployment in months	-0.0028 (0.009)***	-0.0033 (0.001)***
Vocational training		
Unqualified (ref. group)		
Apprenticeship or the like	0.0275 (0.346)	0.022 (0.408)
University of Applied Sciences or university	0.0151 (0.838)	0.1131 (0.111)
Type of household		
Lone parent (ref. group)		
Single	-0.0642 (0.129)	-0.0615 (0.116)
Pair without children	-0.0442 (0.318)	-0.0537 (0.116)
Pair with children	-0.0235 (0.589)	-0.0206 (0.182)

Group		
Control group (ref. group - no offer of TNIT)		
Program group	0.066 (0.016)**	
Program Group (incl. Special districts)		0.068 (0.003)***
Observations	700	914
Log-likelihood	-276.94	-375.59
Wald-test	30.03 (0.001)***	49.09 (0.000)***
Pseudo- $R^2$	0.047	0.061

Notes: Administrative data, Mannheim 2000, p-values in parentheses. \*\*\*/\*\*/\* indicate statistical significance at the 1.5 and 10 percent level, respectively.

# Marginal effects for model (1) – Results from ML Tobit estimations



	Probability of being uncensored	Marginal effect on the latent variable	Marginal effect: Unconditional Expected Value
Sex ( 1 = male)	-0.013 (0.632)	-111.939 (0.635)	-12.419 (0.632)
Nationality ( 1 = foreign)	.0555 (0.042)**	438.144 (0.061)*	54.288 (0.042)**
Age in years	-0.001 (0.443)	-7.738 (0.443)	-0.851 (0.443)
Duration of unemployment in months	-0.002 (0.026)**	-18.855 (0.026)**	-2.074 (0.026)**
Vocational training			
Unqualified (ref. group)			
Apprenticeship or the like	.0140 (0.595)	118.568 (0.600)	13.261 (0.595)
University of Applied Sciences or university	.0259 (0.674)	206.028 (0.695)	25.098 (0.674)

Type of household			
Lone parent (ref. group)			
Single	-0.056 (0.111)	-470.017 (0.119)	-53.537 (0.111)
Pair without children	-0.062 (0.203)	-646.050 (0.123)	-55.182 (0.203)
Pair with children	-0.021 (0.612)	-189.539 (0.594)	-19.480 (0.612)
Group			
Control group (ref. group - no offer of TNIT)			
Program group	.062 (0.010)***	519.596 (0.000)***	59.735 (0.010)***
Constant	-0.1209318 (0.034)**	-1,034.576 (0.035)**	-113.820 (0.034)**
Observations		679	

Notes: p-values in parentheses. \*\*\*/\*\*/\* indicate statistical significance at the 1, 5 and 10 percent level, respectively.

# 7. Conclusion



- Incentives matter – even in Germany
- Paradigm change is observable
- “Job summit meeting” in March: Red-green coalition and opposition agreed to improve incentives for 2.5 (long-term) unemployed
- But Germany is still far from a convincing basic income scheme
- → Still work for labour market economists 😊