Long-term Effects of Start-up Subsidies in Germany

Marco Caliendo Steffen Künn
IZA Bonn

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Motivation (1)

- Turning unemployment into self-employment has become a major part of Germany's ALMP
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  - Start-up Subsidy (SUS), introduced in 2003
  - Bridging Allowance (BA), introduced in 1986
- Previous evidence: Baumgartner and Caliendo (2008)
  - Strong positive effects in the short- and medium-run
  - Problem: Majority of SUS recipients still received financial support within their observation window (28 months)

Motivation (2)

So, what is the contribution of our study?

We have an extended observation window up to nearly 5 years, i.e., beyond the period of financial support. Therefore, for the long-run we provide:

1. Descriptive evidence for participants (Control for panel attrition)
   - How many survived as self-employed in the long-run?
2. Causal effects (Propensity Score Matching)
   - Compare labor market outcomes of participants with other unemployed individuals.
   - Do the strong positive effects in terms of labor market outcomes persist in the long-run?

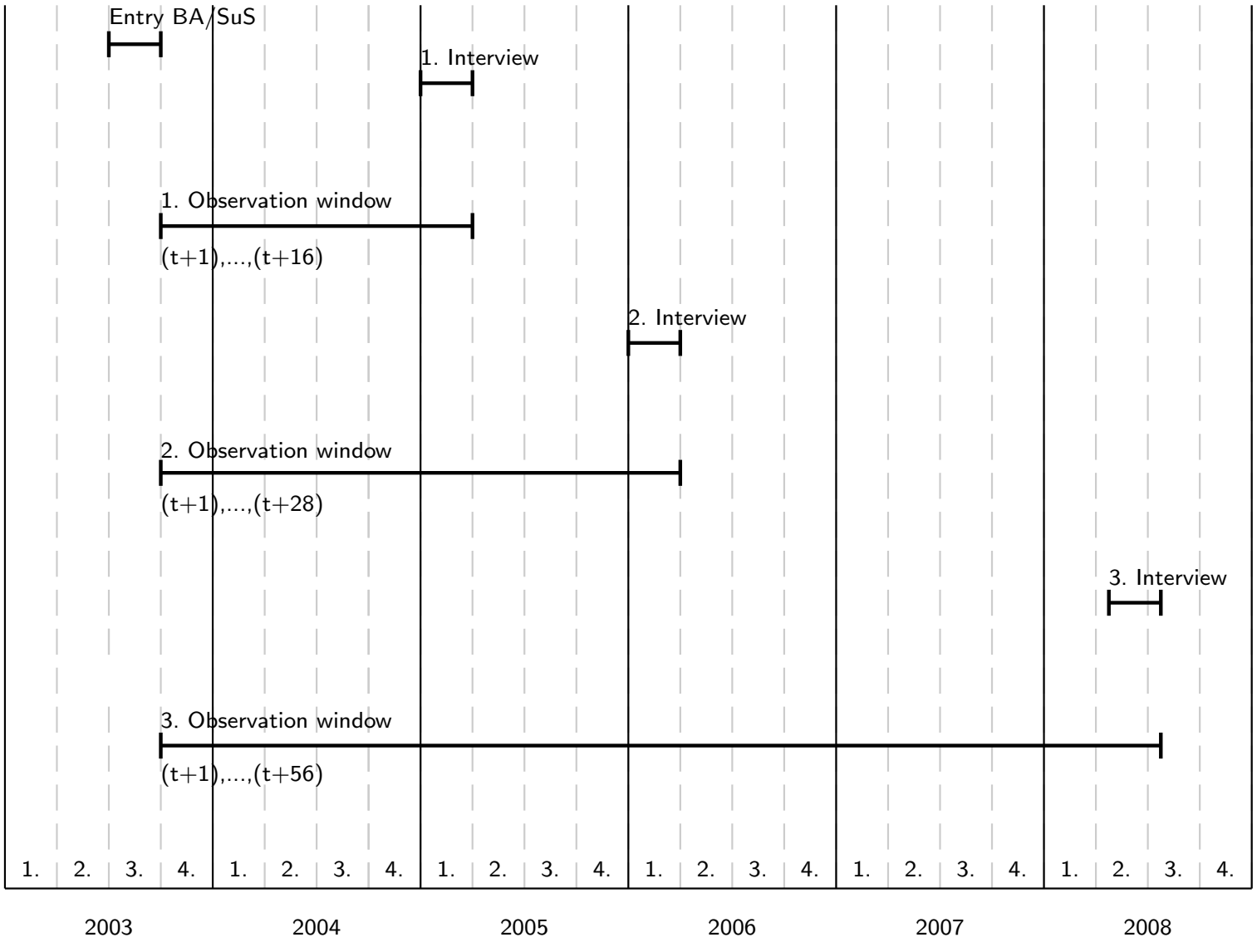
Related literature

Study	Country	Terms and conditions	Data and obs. period	Method	Main results
Almeida and Galasso (2008)	Argentina	-Financial and technical assistance	-Survey -12 months (2004/2005)	DID	-Increased labor supply -No income gains
Rodriguez-Planas (2008)	Romania	-Counseling and assistant -Short-term loans	-Survey -24 months (2000/2001)	PS Matching	-Increases employment prospects -No income effects
Carling and Gustafson (1999)	Sweden	-Start-up grants	-Admin. data -Around 3 years (1995/96 - 1999)	Duration analysis	Self-empl. subsidy recipients are at lower risk to reenter UE compared to empl. subsidy recipients

Data

- Treatment group: Entries from unemployment into SUS and BA in III/2003.
- Control group: Unemployed individuals in III/2003 who did not enter SUS or BA.
- Males in West Germany.
- Data source: 'Integrated Labour Market Biographies' and three surveys (Jan/Feb 2005 and 2006, May/Jun 2008).

Survey design



Panel attrition (1)

Table: Realized interviews

	SUS	BA	NP
Jan/Feb 2005	1,116 (100%)	1,665 (100%)	2,530 (100%)
Jan/Feb 2006	811 (73%)	1,207 (72%)	1,448 (57%)
May/Jun 2008	486 (44%)	780 (47%)	929 (37%)

- On average, only 40% of the initial sample participate at the third interview.
- We find positive selection, i.e., individuals that perform well in terms of labor market outcomes are more likely to respond.

Panel attrition (2)

- Problem: Observable sample after 56 months is no longer representative towards initial sample due to positive selection.
- Assumption: Selection process is due to observable characteristics.
- Solution: Weighting observable characteristics by the sequential inverse probability (p_i) of participating in all three interviews ($s_{i2} = 1$ and $s_{i3} = 1$):

$$\hat{y}_{i3} = \hat{w}_i(y_{i3}|s_{i2} = 1, s_{i3} = 1)$$

$$\textit{where} \quad \hat{w}_i = \frac{N\frac{1}{\hat{p}_i}}{\sum_{i=1}^{N}\frac{1}{\hat{p}_i}} \tag{1}$$

$$\textit{and} \quad \hat{p}_i = \prod_{t=2}^{3}\hat{P}_{it}(S_{it} = 1|X, S_{it-1} = 1)$$

- All descriptive results are weighted!

Descriptive results (1)

Table: Labor market status

	Start-up subsidy	Bridging allowance
After 16 months		
Self-employment	74.4	71.8
Unemployment	15.1	13.8
Regular employment	7.9	11.6
Others	2.7	2.8
After 28 months		
Self-employment	67.6	71.5
Unemployment	15.2	11.1
Regular employment	11.7	14.0
Others	5.6	3.4
After 56 months		
Self-employment	59.7	67.9
Unemployment	11.7	6.7
Regular employment	20.9	21.1
Others	7.6	4.3

Note: Results are for participants only.

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Descriptive results (2)

Table: Comparison with previous dependent employment

	Start-up subsidy	Bridging allowance
Type of activity	0.6	0.5
Income	0.2	0.2
Workload	-0.1	-0.1
Working time	-0.2	-0.3
Social security	-0.2	-0.3

Note: Results are for self-employed participants only. Scale: More attractive (1), Less attractive (-1).

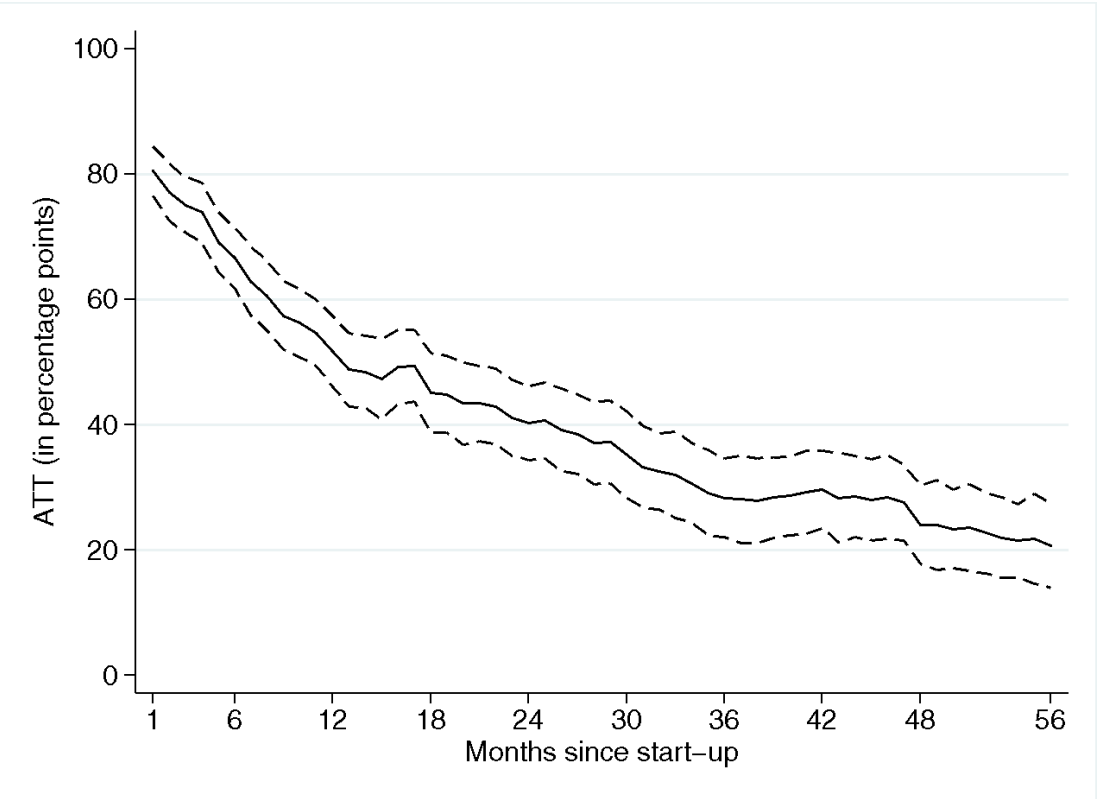
Identification and Implementation of PS Matching

- Average Treatment Effect on the Treated:
  $\tau_{ATT} = E(\tau \mid D = 1) = E(Y^1 \mid D = 1) - E(Y^0 \mid D = 1)$
- Selection Bias if: $E(Y^0 \mid D = 1) \neq E(Y^0 \mid D = 0)$
- Conditional Independence Assumption: $Y^0 \amalg D | P(X)$

- Outcome variables:
  - "Self-employment or regular employment"
  - "Working income" and "Total income"

Start-up Subsidy vs. Non-Participation

Outcome variable: "Self-employment or regular employment"



Cumulative effect:
$\sum_{t=1}^{56} \tau_i$ (in months) $= 22.6$

Note: Matching estimates are based on *kernel matching*. Bootstrapped standard errors with 200 replications; 5% confidence interval is depicted by dashed lines.

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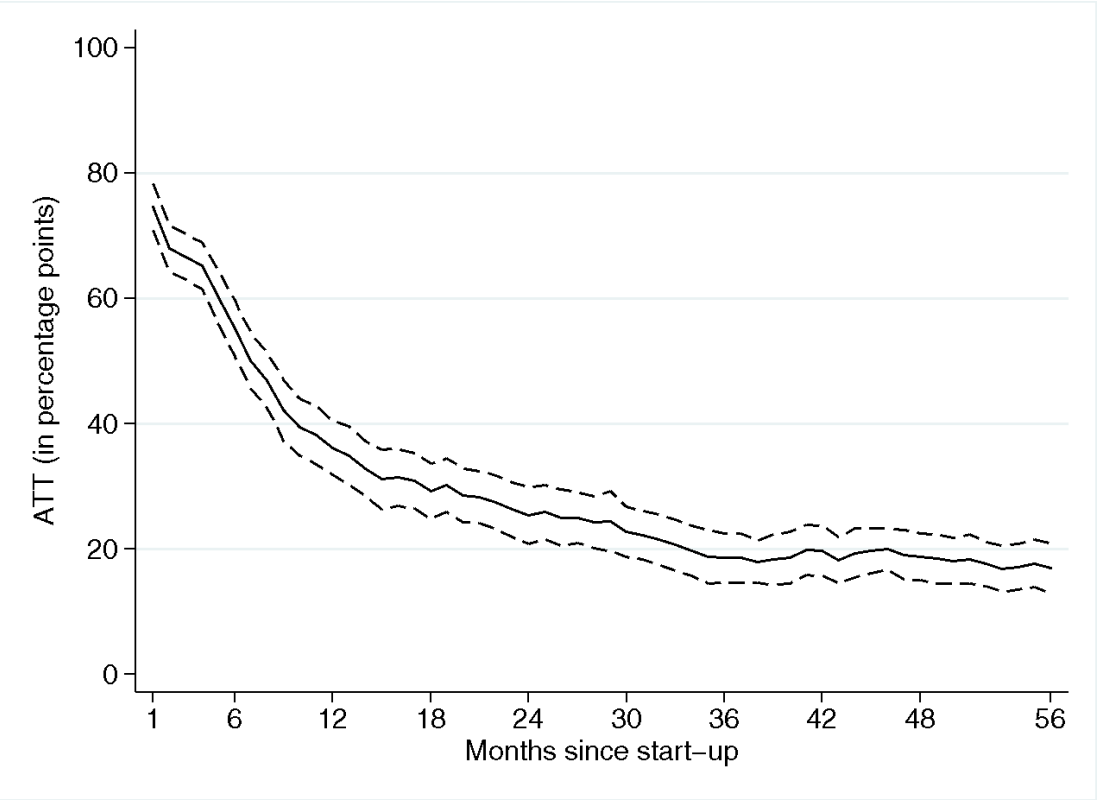
Bridging Allowance vs. Non-Participation

Outcome variable: "Self-employment or regular employment"



Cumulative effect:
$\sum_{t=1}^{56} \tau_i$ (in months) $= 16.4$

Note: Matching estimates are based on *kernel matching*. Bootstrapped standard errors with 200 replications; 5% confidence interval is depicted by dashed lines.

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Income effects

Table: Income effects 56 months after start-up

	SUS vs. NP	BA vs. NP
Working income	443	777
	(111)	(94)
Total income	291	650
	(100)	(125)

Note: Standard errors in parentheses.

Conclusion and Outlook

- What we find so far
  - High survival rates in self-employment for participants (60% of SUS; 68% of BA) after nearly 5 years since start-up.
  - Moreover, high and persistent labor market integration of participants (80% of SUS; 89% of BA).
  - Positive employment and income effects compared to non-participants in the long-run.

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- What we are working on
  - Relative effects between both programs.
  - Effect heterogeneity (High/low eduction etc).
  - Sensitivity checks with respect to unobserved heterogeneity (DID etc).