Does pension policy make older women work more?

The effect of increasing the retirement age on the labour market position of ageing women in Hungary

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10-11 April 2015

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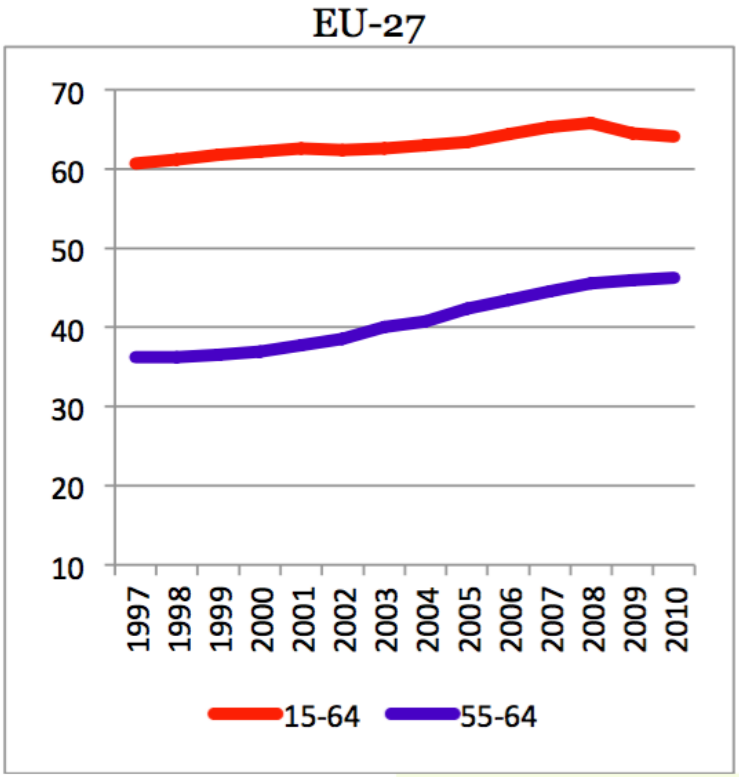
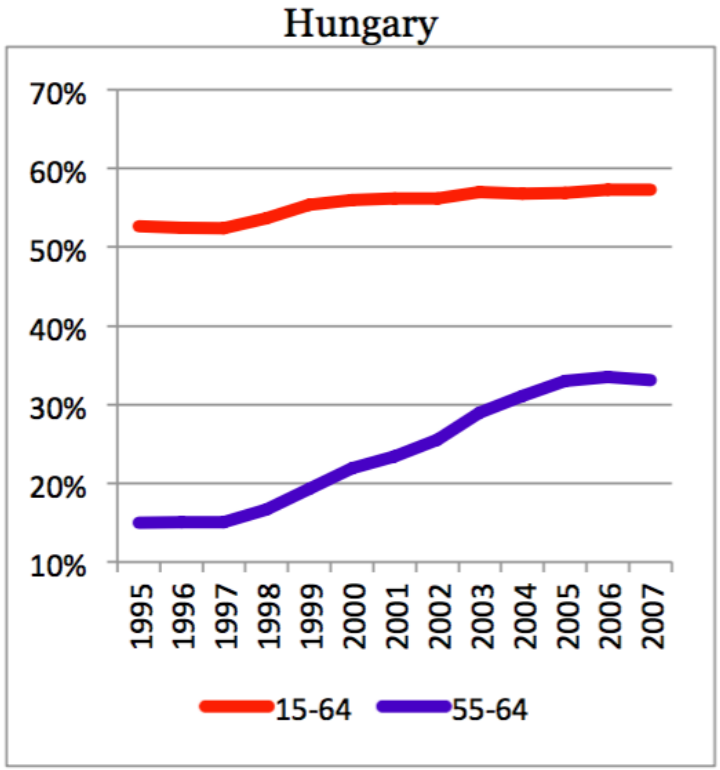
Employment rate up! Retirement?





Source: EUROSTAT data, tps00180 and tsdde100

Elements of the talk and results

Plan

1. Results on the topic
2. Institutional background and retirement behaviour
3. DiD motivation and logic
4. Estimation results from regressions

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1. Estimates from relatively large increases in Hungary broadly in line with available estimates at 5-9%point
2. Important to look at exit routes from the labour market and the heterogeneity of the effect

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What do we know so far? Methods and results

The exact question: what increase in the emplyoment rate results from increasing the retirement age by one year?
International:

- Staubli and Zweimüller (2013) – one year increase = 3.5%point local increase in emplyoment rate
- Cribb-Emerson-Tetlow (2013) – one year increase = 7%point increase in employment rate

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Hungary:

- Benczúr-Kátay-Kiss (2012) microsimulation using general equlibrium component – 55-65 year-olds: 4,26 %points
- Major - Varga (2013) calibrated life-cycle model - 55-65 year olds: average 10 %point (around 4 %point)
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Hungary: Institutional background

Normal retirement ages (NRA) and early retirement ages (ERA) in Hungary between 1995 and 2012

Birth cohort	Women				Men			
	NRA		ERA		NRA		ERA	
	Age	Implied year	Age	Implied year	Age	Implied year	Age	Implied year
1937	55	1992	-	-	60	1997	-	-
1938	55	1993	-	-	61	1999	60	1998
1939	55	1994	-	-	62	2001	60	1999
1940	55	1995	-	-	62	2002	60	2000
1941	55	1996	-	-	62	2003	60	2001
1942	57	1999	55	1997	62	2004	60	2002
1943	58	2001	55	1998	62	2005	60	2003
1944	59	2003	55	1999	62	2006	60	2004
1945	60	2005	55	2000	62	2007	60	2005
1946	61	2007	56	2002	62	2008	60	2006
1947	62	2009	57	2004	62	2009	60	2007

Source: retirement ages: II of 1975. and act LXXXI. of 1997 on social security pensions. The acts specify eligibility based on birth-year and age, not based on calendar year and age.

Retirement behaviour of women born in 1945 and 1946

1945	Count	Share	Initial pension (at 2000 prices)	Service years Average	Sdt. Dev.
52	2	0%	19525	35	2
53	492	1%	23873	32	7
54	1376	4%	27582	32	7
55	**20971**	**57%**	**35479**	**37**	**3**
56	4101	11%	37504	35	5
57	2094	6%	37238	34	5
58	157	0%	39977	34	5
59	141	0%	49355	35	7
60	**6478**	**17%**	**34912**	**28**	**7**
61	711	2%	58749	34	10
62	454	1%	63035	32	11
63	79	0%	33015	23	9
64	54	0%	36911	23	10
∑	37110	100%			

1946	Count	Share	Initial pension (at 2000 prices)	Service years Average	Std. Dev.
52	502	1%	22878	31	7
53	1618	4%	27340	32	6
54	2027	4%	30680	33	6
55	2656	6%	29289	31	7
56	**20007**	**44%**	**40715**	**38**	**3**
57	4654	10%	44982	36	4
58	3042	7%	51811	36	5
59	2134	5%	55848	36	5
60	1745	4%	58256	37	5
61	**6427**	**14%**	**36532**	**28**	**7**
62	278	1%	30243	25	8
63	94	0%	37039	24	10
64	23	0%	42037	24	13
∑	45207	100%			

Source: administrative records of the Pension Directorate

Motivating DiD: employment profiles

Q: will the women born in 1946 work more after the retirement age than those born in 1945? Treated: 1946.
Treatment: option removed for NR at 59 in 2006, for ER at 55 in 2001.

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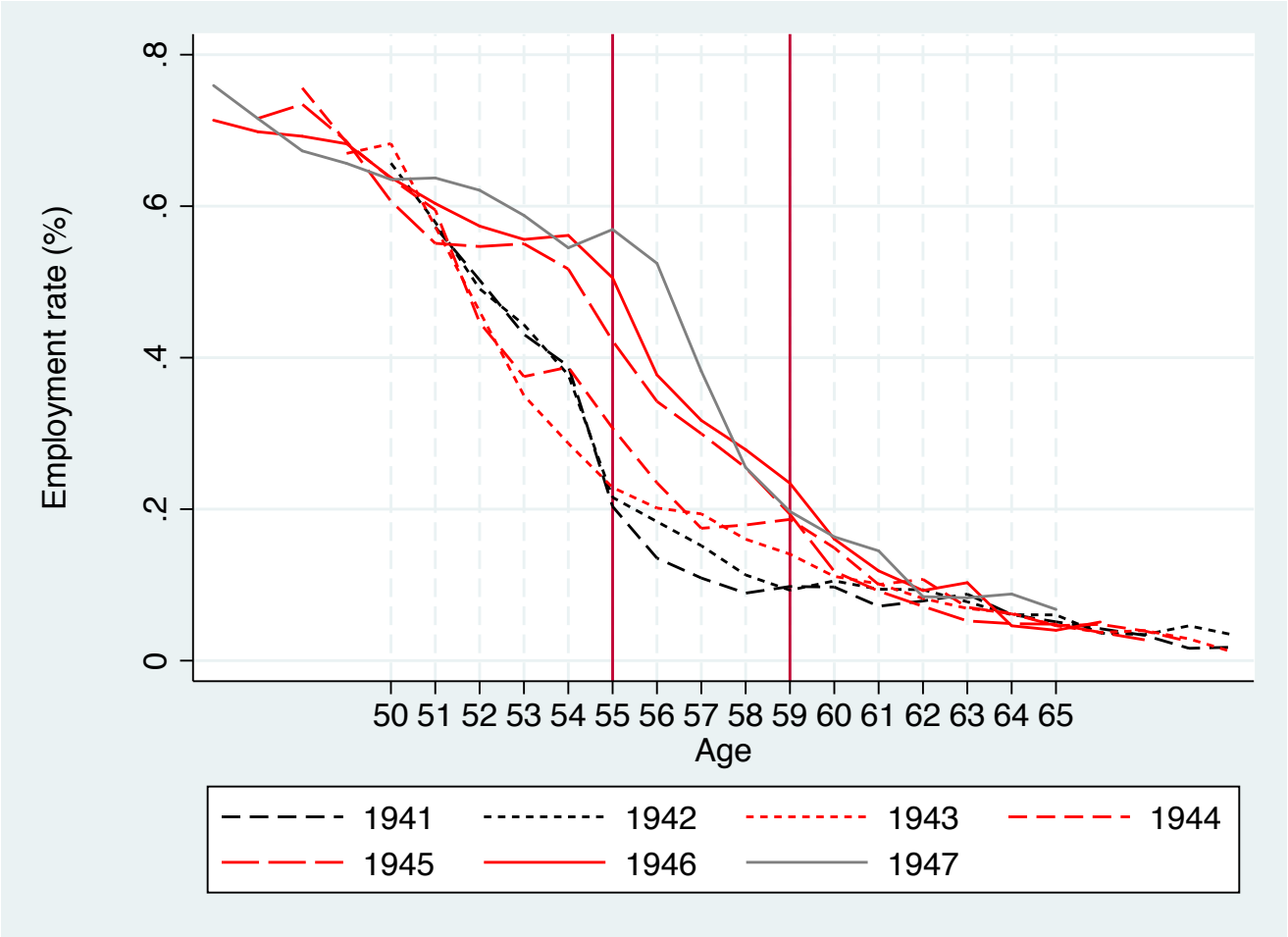
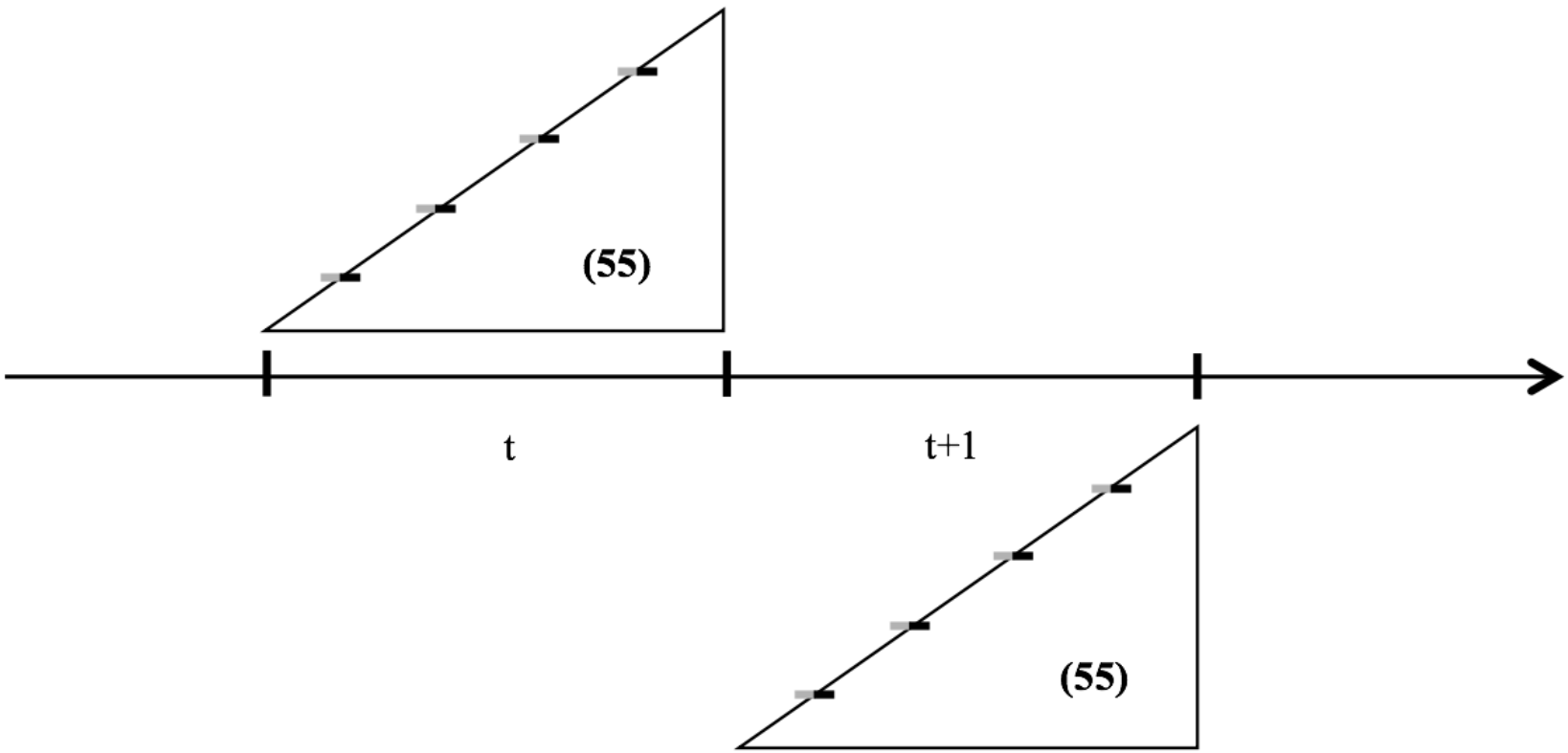


Source: calculations from the Hungarian Labour Force Survey

DiD logic



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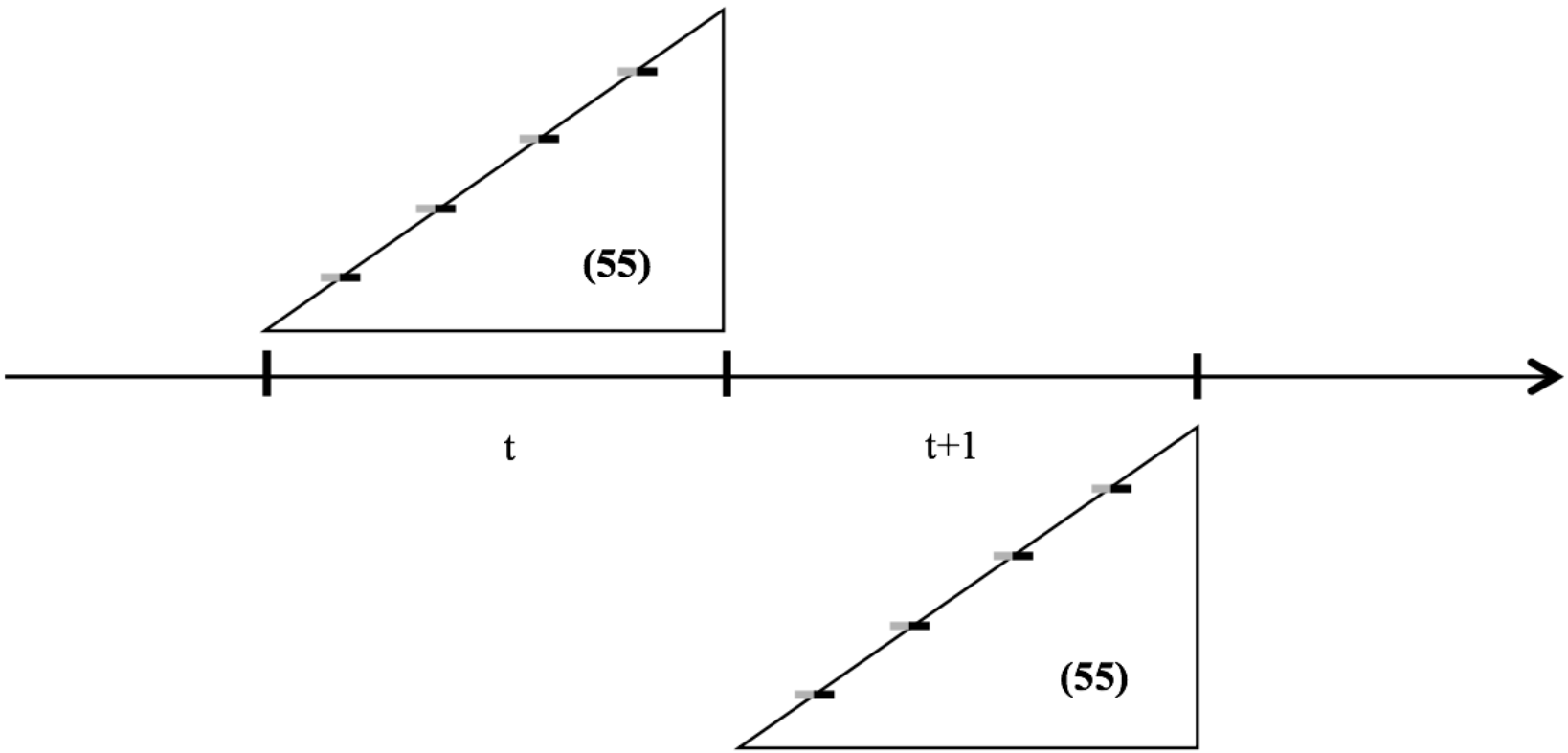

Use data from the Labour Force Survey: 80000 individuals in each quarter with exact birth date and demographic information.

Estimating equation

$$
\begin{aligned}
\phi(y_{tci}) &= \alpha + \delta p_{it} m_i + \gamma l_c p_{it} m_i + \theta l_c \\
&+ \vartheta b_{tci} + q_t + y_c + \beta_1 X_{1ti} + \beta_2 s_i \\
&+ \iota l_c p_{it} c_i \\
&+ \epsilon_{tci}
\end{aligned}
$$

Covariates:

1. DiD variables: belowRA, belowRA*treated, treated
2. + quarter-, year-, county indicators; education and family status
3. + interaction of schooling with the treatment variable
4. + restriction to those with partner and inserting partner's characteristics

Sample: treated and control cohorts within 4 quarter vicinity of the previous RA.

NRA results

Estimation results for the NRA hike episodes with employment as the outcome (women only, weighted ordinary linear regression estimates; window = 4 quarter)

	(1)	(2)	(3)	(4)	(5)
Impact (Treated*Above)	-0.0192	0.0225	0.0137	0.0484*	-0.0266
	(0.0190)	(0.0232)	(0.0230)	(0.0259)	(0.0269)
Impact*education: lower secondary				0.0164	
				(0.0483)	
Impact*education: upper secondary				-0.0178	
				(0.0373)	
Impact*education: higher				-0.195***	
				(0.0617)	
Treated (cohort with higher NRA)	0.0295***	0.0273**	0.0257**	0.0271**	0.0260**
	(0.0106)	(0.0109)	(0.0101)	(0.0118)	(0.0115)
Above (the pre-treatment NRA)	-0.0299***	-0.0340***	-0.0288***	-0.0288***	-0.0159
	(0.00960)	(0.00990)	(0.00927)	(0.00926)	(0.0102)
Education: lower secondary			0.0519***	0.0510**	0.0201
			(0.0171)	(0.0210)	(0.0182)
Education: upper secondary			0.111***	0.116***	0.0539***
			(0.0128)	(0.0156)	(0.0162)
Education: higher			0.376***	0.385***	0.291***
			(0.0220)	(0.0271)	(0.0309)
Partner works					0.170***
					(0.0185)
Observations	28,861	28,861	28,861	28,861	19,700

Robust (clustered) standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Specifications include the following variables beside those shown: (2) a full set of year, month and county dummies (for place of residence), (3) in addition to (2): indicators of family status, (4) same as in (3) plus interaction of Treated and Education, (5) same as in (3), plus education, age, employed or unemployed status of the partner

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Note: 4-7 %point increase in disability pension claims.

ERA results

Estimation results for the two ERA episodes with employment as the outcome (women only, weighted ordinary linear regression estimates; window = 4 quarter)

	(1)	(2)	(3)	(4)	(5)
Impact (Treated*Above)	0.0620**	0.0743**	0.0707**	0.0904**	0.0937***
	(0.0255)	(0.0295)	(0.0283)	(0.0365)	(0.0330)
Impact*education: lower secondary				0.0254	
				(0.0628)	
Impact*education: upper secondary				-0.0446	
				(0.0468)	
Impact*education: higher				-0.0781	
				(0.0587)	
Treated (cohort with higher ERA)	0.0494***	0.0543***	0.0600***	-0.00722	0.0679***
	(0.0185)	(0.0196)	(0.0184)	(0.0258)	(0.0212)
Above (the pre-treatment ERA)	-0.101***	-0.100***	-0.0946***	-0.0950***	-0.112***
	(0.0163)	(0.0177)	(0.0167)	(0.0167)	(0.0192)
Education: lower secondary			0.108***	0.0427	0.0832***
			(0.0268)	(0.0359)	(0.0312)
Education: upper secondary			0.226***	0.176***	0.161***
			(0.0211)	(0.0279)	(0.0271)
Education: higher			0.449***	0.442***	0.332***
			(0.0253)	(0.0320)	(0.0375)
Partner works					0.168***
					(0.0227)
Observations	15,624	15,624	15,624	15,624	10,971

Robust (clustered) standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
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- Varying window - monotonic increase in effect
- Look only at those born before and after 1 January - too few observations
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Results

1. Estimates from relatively large increases in Hungary broadly in line with available estimates at 5-9%point
2. Results coming from multiple events and large changes in eligibility
3. Important to look at exit routes to understand the lack of effect
4. Important to look at heterogeneity of the effect