

Active Labour Market Programmes and Poverty Dynamics

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- This research is work in progress, and neither our results nor our conclusions are definitive. Please do not quote without contacting us (brendan.halpin@ul.ie or john.hill@ul.ie)



The research problem

- Research Question: *Do Active Labour Market Programmes have an effect on poverty?*
- The Irish Welfare State is usually characterised as "liberal" (means-tested, minimalist)
- Deviates in some respects from liberal model: Active Labour Market Programme spending is high
- A great deal of research exists on ALMPs
 - Focus on employment status outcomes, wage
 - Mixed results: specific skills training better than employment subsidy



Our approach

- ALMPs focus on the labour market but have direct poverty implications
 - Persons needing ALMPs will be disproportionately poor
 - If they are effective, they should protect from poverty
- Persons participating will continue to have worse-than-average poverty risk, due to characteristics and circumstances
- Therefore difficult to detect contribution of programme
- We use Living in Ireland household panel survey
 - Info before, during and after
 - Info on whole household
- Two key questions:
 - Do what extent to ALMPs target those in poverty?
 - Do what extent do ALMPs protect against poverty in the medium term?



Outline

- 1 ALMPs & outcomes
- 2 Data and descriptives
- 3 Propensity score matching
- 4 Preliminary results
- 5 Discussion



- Aims: Macroeconomic
 - Improving the matching process between jobseekers & vacancies
 - Raising the productivity of the workforce (human capital effect)
 - Maintaining levels of labour supply by reducing withdrawals (wage competition effect)
- Aims: Microeconomic
 - Redistribution of employment opportunities
 - Raising employment & earnings outcomes
- Objectives: job creation; job redistribution; skill & human capital acquisition; attitudinal changes; increase earnings; macroeconomic; social objectives (promoting health; combating criminality; enhancing social cohesiveness)

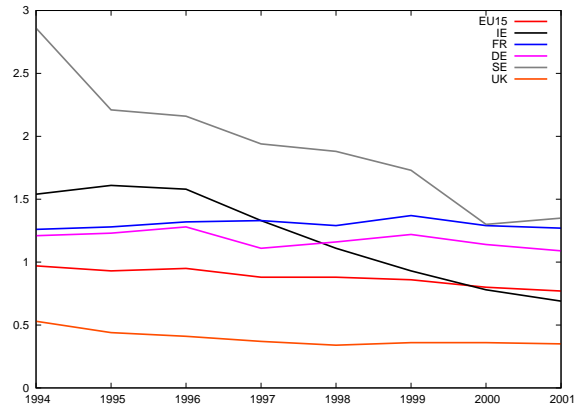


Expenditure Commitment: ALMP

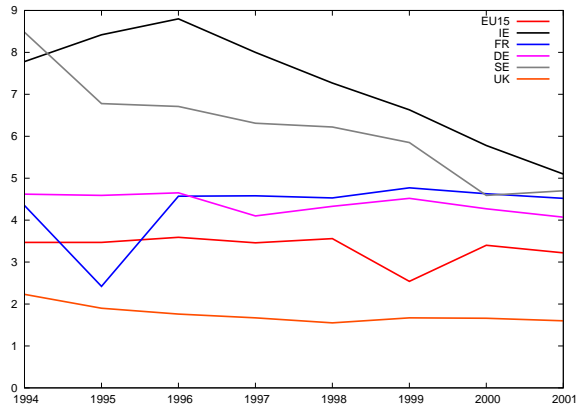
- OECD Social Expenditure Database 1985-01, Eurostat 2001-current
- ALMP/Public Social Expenditure, 1994-2001
 - Average: 7.2% Ireland, 3.3% EU15
 - Relative weight of ALMP expenditure: 8% to 5% Irl; 3.3% EU15
- ALMP/GDP, 1994-2001
 - Average: 1.2% Ireland, 0.88% EU15



ALMP as proportion of GDP



ALMP as proportion of social spending



Typology of ALMP in Ireland

Typology of ALMP		
Leverage	Market Orientation	
	Weak	Strong
Supply	General Training	Specific Skills Training
Demand	Direct Employment Schemes	Employment Subsidies

Source: O'Connell & McGinnity



Schemes by Classification

Training	Apprenticeship; Bridging Foundation; Community Training Workshops; Linked Work Experience; Return to Work; Specific Skills; Traineeship; Job Training; Community Training; Specialist Training; Adaptability; VTOS.
Employment	Community Employment; Jobs Initiative; Job Start; Work Place; Employment Support Scheme; Pilot Employment; Supported Employment.
Emp. Subsidy	BTWA, BTWEA, Jobs Assist, Part-time Job Incentive Scheme.

Source: Indecon, 2002



Evaluation of ALMP: Ireland

- O'Connell & McGinnity 1997 & 2002
 - Study of employment outcomes, 1994-1996, n=1413
 - Treatment Group: 1996 FÁS Follow-up Surveys
 - Controls: UE during 1994 wave of LIS; 'at risk of treatment'
 - Specific-Skills Training & Emp'tment Subsidies: +ve, significant
 - General Training: weak effect
 - CE: 'no discernible impact on... employment prospects.'
- Denny, Harmon & O'Connell, 2000
 - Comprehensive evaluation of Employment & Earnings outcomes for 1994 scheme exits
 - Combines 1996 FÁS Follow-up and LIS
 - Employment Effect: Emp Incentive(+), Emp Subsidy(+), Enterprise Allowance(+), CE(-), Specific Skills Training(+), Job Training(+).
 - Wage Effect: Specific Skills Training (+)
 - Reinforces O'Connell & McGinnity on importance of labour market linkages



Data: Living in Ireland panel survey

- Living in Ireland household panel survey 1994–2001
 - A large, nationally representative sample
 - Good household info (all adults in household interviewed)
 - All individuals followed annually until 2001 (in theory)
- Key advantage is the individually longitudinal focus: observe medium term outcomes, observe *risk* of poverty (or other condition), observe transition patterns
- Also temporal order: variables at $t - 1$ predicting outcome at t avoids direction-of-causality problems of cross-sectional data
- Relatively good information on household and individual income
- Some limitations to detail on ALMP participation: can distinguish employment schemes from training schemes



Income and poverty

- We look at equivalised household net income
- The ESRI “A” equivalence scale used (1 : 0.66 : 0.33)
- Poverty line of 60 percent of median
- Strong growth in income is accompanied by growth in relative income poverty
- Our rates parallel but are slightly lower than ESRI estimates (Whelan et al, 2003)



Poverty rates

Income and poverty by wave, 1994–2001 (weighted data)

Wave	Equivalised net monthly income		% poor
	Mean	Median	
1994	138.01	115.23	14.7
1995	148.58	125.00	17.4
1996	155.76	128.19	17.5
1997	166.11	142.81	17.5
1998	186.72	159.47	18.0
1999	200.70	181.32	20.3
2000	227.43	200.89	18.8
2001	255.85	234.03	20.2



Participation in ALMPs (weighted percentages)

Year	Employed	Unemployed	ALMP		Non-employed
			employment	training	
1995	46.46	7.52	1.31	0.51	44.19
1996	46.32	7.73	1.45	0.48	44.02
1997	48.22	6.60	1.61	0.48	43.09
1998	49.84	4.88	2.17	0.37	42.74
1999	53.88	3.10	1.79	0.24	40.98
2000	54.67	2.56	1.31	0.23	41.23
Total	49.93	5.38	1.61	0.39	42.69



Participation in ALMPs (raw numbers)

Year	Employed	Unemployed	ALMP		Non-employed	Total
			employment	training		
1995	3,263	446	103	33	3,108	6,953
1996	2,973	391	91	26	2,881	6,362
1997	2,912	292	84	22	2,566	5,876
1998	2,598	220	86	23	2,272	5,199
1999	2,181	149	66	16	1,814	4,226
2000	3,206	177	81	21	2,633	6,118
Total	17,133	1,675	511	141	15,274	34,734



Schemes and poverty

- Current employment status is associated with poverty now (stock) and the risk of entering poverty (non-poor now, poor next year)

Employment status	Poverty %age	
	Stock	Entering
Employed	5.23	4.69
Unemployed	43.45	18.04
Employment scheme	20.15	14.38
Training scheme	19.73	11.68
Non-employed	29.18	11.69
Total	18.02	8.09



Entrants to schemes

- Poverty is associated with participation in ALMPs
- and entry to ALMPs

Employment status	Proportion poor at $t - 1$	
	All	Enter scheme at t
Employed	7.14	
Unemployed	36.95	
Employment scheme	31.53	41.21
Training scheme	22.99	24.03
Non-employed	26.86	
Total	17.49	



Modelling participation in schemes

- What predicts participation in a programme?
- Logistic regression with covariates at $t - 1$, outcome being participation at t
 - Gender
 - Marital status
 - Age
 - Presence of children
 - Education
 - Employment status and history
 - Current poverty
- ALM programmes differ in orientation: skills versus subsidised employment
- Outcomes potentially different
- Selection into programmes different also: skills training only for those who may benefit?
- We model entry to training and employment schemes separately, but can't match O'Connell and McGinnity's four-way classification due to data limitations



Training vs employment: Logistic model 2

	Employment	Training
Female	0.122	0.238
Marital status (ref=married)		
Separated	0.302	0.966
Divorced	0.992*	
Widowed	-1.247	0.395
Never married	0.706**	0.607*
Age group (ref=<20)		
20-29	0.819**	-0.606**
30-39	1.635**	-1.497**
40-49	1.761**	-0.915**
50-59	1.667**	-1.873**
Pre-schooler (main effect)	0.111	-16.054**
by female	0.391	15.564
Number of children (main)	0.124*	0.227
by female	-0.111	-0.123



Modelling participation in schemes (contd)

	Employment	Training
Education (ref=none/primary)		
Incomplete 2ndry	-0.023	0.276
LC and similar	0.003	0.430
Dip/Degree	-0.733*	0.285
Employment status (ref=employed)		
Unemployed	2.355**	1.781**
Emp. scheme	5.474**	1.804**
Training scheme	2.578**	3.793**
Non-employed	0.665	1.437**
Occupational score	-0.014*	-0.004
Unemployment history		
linear	3.352**	3.369**
squared	-3.768**	-3.285**
Poor	0.341**	0.301



Logistic model – key results

- Gender and childcare seem to matter relatively little
- Never-married, age, education and employment status/history matter
- Big differences in age profile
- Tendency for persistence (stay on same type of scheme)
- Very similar employment history effect (non-linear)
- However, net effect of poverty for employment but not training schemes



Poverty: entry and exit

- How is participation in ALMPs associated with entry to and exit from poverty, controlling for other effects?
- We fit logistic models of entry and exit (covariates at $t - 1$, outcome at t)
- Controlling for
 - Gender
 - Marital status
 - Age
 - Presence of children
 - Education
 - Occupation and
 - Unemployment history
- ALMP participation as an element of employment status



Modelling entry and exit (1)

	Entry	Exit
Female	0.064	-0.013
Marital status (ref=married)		
Separated	0.688**	-0.007
Divorced	0.730*	-0.504
Widowed	0.126	-0.362**
Never married	0.217**	-0.022
Age group (ref=<20)		
20-29	-0.047	-0.301*
30-39	0.206	-0.815**
40-49	0.278*	-0.688**
50-59	0.004	-0.650**
60-69	0.241	-0.915**
70 plus	0.355**	-1.040**

(contd)



Modelling entry and exit (2)

	Entry	Exit
Pre-schooler (main effect)	0.313**	-0.389**
by female	0.093	0.074
Number of children (main)	0.056*	0.079*
by female	-0.080*	0.107**
Education (ref=none/primary)		
Incomplete 2ndry	-0.324**	-0.009
LC and similar	-0.792**	0.565**
Dip/Degree	-1.330**	0.876**
Occupational score	-0.012**	0.015**
Unemployment history		
linear	1.936**	1.516**
squared	-0.902*	-2.554**
Employment status (ref=employed)		
Unemployed	-0.001	0.214
Emp. scheme	-0.720**	-1.222**
Training scheme	0.398	-0.565
Non-employed	0.314**	-0.585**
Intercept	-2.392**	0.133



Summarising descriptives

- Poverty is significantly associated with entering employment schemes, but not training schemes, controlling for demographics and history
- Employment schemes, but not training schemes, are associated with a greater risk of entry to poverty, and a lower chance of exiting poverty
- However, these associations, even when controlling for relevant variables, are not unambiguous proof that employment schemes are bad, or training schemes neutral
- Characteristics of participants (including those not measured) make them more likely to suffer poverty and it may still be the case that they are better off than if they had not participated
- We now move on to an analysis which makes a preliminary attempt to measure this "counterfactual" difference



The Evaluation 'Problem'

- Our aim is to evaluate post-treatment incomes/relative poverty, but
- Our true counterfactual is 'missing'/unobserved, since
- Any individual will either participate, or not – we will never observe both states simultaneously
- We approximate the counterfactual by using the outcomes of 'matched' non-participants
 - Matching is well-established in biomedical research
 - Emerging popularity in applied social research & labour economics
 - An attempt to approximate experimental control with observational data



Matching

- Matching aims to find individuals in the population with similar pre-programme covariates
- With so many covariates, matching would be an impossible task: 'Curse of Dimensionality'
- Rosenbaum & Rubin show that matching on 'propensity to participate' is equally consistent, $P(X)$
- Propensity scores (PS) are estimated from a logit model of selection into ALMP
 - Only variables jointly affecting both participation & outcomes should be included
- Conditional Independence Assumption:
 - Controlling for observed difference, the outcomes of both groups (in the absence of treatment) would have been identical
 - Any difference in outcomes between treatment/control groups = programme effect



Conducting the Match

- Conceptually, we have two separate distributions for the PS
 - the total population, and the treatment group (sample)
 - Intuitively, the mean PS of the treatment group is likely to be higher
- The area of overlap of both distributions is termed 'Common Support'
- Choice of matching algorithms
 - Nearest Neighbour: conceptually straightforward; matches on proximity of PS
 - Alternative methods average over ranges of PS: caliper, kernel



Structure of analysis

- We consider the process of selection to participation on ALMPs at time t using explanatory variables from $t - 1$
- The outcome is poverty status at $t + 1$
- Simple difference in outcome for cases versus controls is the focus (future work will model with other determinants of outcome as well)
- First analysis presented is for all scheme types
- We also run analyses for employment schemes and training schemes separately



Selection model

- Additional variables used in the selection model include
 - Medical card status
 - Self reported health
 - Housing tenure
 - Social class (Goldthorpe scheme)
 - Logged relative income
 - Regional (NUTS3) unemployment time-series



Treatment effect of ALMPs in aggregate

Outcome	Treated	Controls		t statistic
		Unmatched	Matched	
at $t + 1$				
Poverty	27.65	17.65	28.52	-0.27
Employed	28.70	38.72	40.52	-3.56

- Participants are much more likely to be poor than unmatched controls (27.7% vs 17.7%) but matched controls are also at higher risk (28.5%, not significantly different)
- However, looking at employment probability (as a sanity check), participants are much less likely than matched controls to be employed at $t + 1$



Treatment effect of employment schemes

Outcome	Treated	Controls		t statistic
		Unmatched	Matched	
at $t + 1$				
Poverty	29.91	17.65	27.72	0.58
Employed	25.98	38.72	33.84	-2.08

- Picture is broadly the same as for all schemes: on poverty, no significant difference between cases and matched controls; on employment, matched controls more likely in work



Treatment effect of training schemes

Outcome	Treated	Controls		t statistic
		Unmatched	Matched	
at $t + 1$				
Poverty	18.80	16.11	29.91	-1.95
Employed	39.32	39.71	29.91	1.47

- The results for training schemes are markedly different:
 - Participants are only slightly more at risk of poverty than unmatched controls
 - However, matched controls have much higher poverty risk than unmatched, and the case/control difference approaches significance
 - On employment, matched controls probability is depressed somewhat



Conclusions

- Propensity score analysis confirms employment/training scheme differences
- Employment schemes seem to have no effect on poverty, and a negative effect on employment
- In the descriptive analysis they seemed to increase the risk of poverty, but we can now attribute this to a selection effect
- The descriptive analysis suggested training schemes are neutral in effect, while the propensity score matching hints that they might have a beneficial effect
- The PS analysis also shows that the two sorts of participants are very different, with employment scheme participants much more at risk of poverty and with lower unemployment chances than the population at large, while training scheme participants are much less different



Future directions

- Do we believe the PS models, that the conditional independence assumption is met?
- Add more relevant variables to selection model – e.g. household structure
- Use additional information from monthly employment status histories to pick up additional ALMP participation between interviews
- Likely that better differentiation between types of schemes would yield a clearer picture – data limitations with LII
- Possibility of fitting more adequate models of poverty risk – LII data is more than adequate to include a range of other variables affecting poverty but not affecting ALMP participation (e.g., change in structure of household, change in employment status of other members, etc.)

