The relationship between job finding and deprivation: an empirical analysis

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Content of the lecture

- We present an empirical analysis on a specific topic.

- We start from some theoretical consideration and we then perform an empirical analysis.

- We take great care in the empirical issues that are present in our specific analysis

Unemployment and poverty

- The focus of our analysis is the relationship between unemployment and poverty.

- There is an obious relationship that goes from unemployment to poverty.

- What about the relationship from poverty to unemployment?

Poverty and deprivation

- In our analysis we refer to the situation of poverty using the term *deprivation*.

- The term *deprivation* indicates a "state of observable and demonstrable disadvantage relative to the local community or the wider society" (Townsend 1987).

- In the rest of the analysis we refer to *deprivation* at the *household level*.

Deprivation (poverty) and unemployment

- Are people in a state of deprivation more likely to stay unemployed?

- More precise question: are unemployed workers that are in a state of deprivation more likely to remain unemployed?

- So, we focus on unemployed workers and try to undersand if poverty has an effect on unemployment duration

Basic Questions

- Do poorer people take more or less time to find a job?

- Do **poverty/financial pressure/degree of need/deprivation** act as an incentive to find job more quickly?

- Does the effect of unemployment benefits on unemployment duration depends on the degree of need

Deprivation and unemployment duration

- In the presence of **deprivation** it is possible that individuals:

- **Search harder for a job.**
- **Accept any job they may find.**

- Therefore in the presence of deprivation we should observe unemployment duration to be lower.
- Equally, **re-employment probability should be higher**.

Benefits, deprivation and unemployment duration

- Benefits reduce the degree of need and could increase unemployment duration.

- This effect should be large if benefits are given where deprivation is large but should be negligible if deprivation is small.

- In other words, if benefits increases duration, there should also be positive interaction between benefits and deprivation.

- In terms of re-employment probability, the interaction should be negative.

Previous literature

- Past literature on the effect of wealth (as a proxy for deprivation) on duration.

- Wealth has a negative effect on re-employment (Bloemen and Stancanelli, 2001 and Bloemen, 2002) .

- Some analysis on the effect of unemployment benefits on different group of individuals (rich vs poor, people in need vs people not in need).
- The effect of benefits may be different (Card et al. 2007, Chetty, 2008 and Corsini, 2013).

- No direct use of "deprivation". No multi-country analysis.

Our Analysis

- First: we use a novel statistical methods (Item Response Theory) to determine deprivation (at the household level).

- We estimate the effect of deprivation on re-employment probability of unemploymed workers in several European Countries.

- We estimate the interaction between unemployment benefits and deprivation.

Country Selection

- We use data from EU-SILC database.

- Selecting countries it is a delicate matter (excluding certain countries may drive results).

- We select country only on the base of available observation. We select country for which we have at least 500 unemployed workers.

- France, Greece, Italy, Poland, Portugal and Spain.

Estimating deprivation

- We use ITEM RESPONSE THEORY

- We have variables describing several different aspect about living condition of households.

- These variables are obtained asking direct questions to households (e.g. how difficult is to make ends meet?). In other words our variables are answer given from head of households.

- Our assumption is that there exist a latent variable that is correlated to all those variables.

Estimating deprivation

- We assume that there exist a latent variable (deprivation in our case) that is correlated with all the previous variables (items).

- When deprivation (the so called score) increase, the answer to each item have a certain probability to assume an higher grade. This happens according to a logistic model.

- A simultaneus estimation of all the logistic model allows to estimates its parameter and to predict a "score" for each item.

Estimating deprivation

Variable	Metric	Notes
Do not have capacity to afford paying for one week annual holiday	Binary	
Do not have capacity to have meat/fish every other day	Binary	
Do not have capacity to face unexpected financial expenses	Binary	
Cannot afford a colour TV	Binary	
Cannot afford computer	Binary	
Cannot afford car	Binary	
Not able to keep home adequately warm (hh050)	Binary	
Has been on arrears on utility bills	Graded	0=no, 1=once, 2=more than once
Has been on arrears on mortgage or rent payments	Graded	0=no, 1=once, 2=more than once
Burden of housing costs	Graded	0= not burden, 1= slight burden, 2= heavy burden
Burden of debts from hire purchases or loans	Graded	0= not burden, 1= slight burden, 2= heavy burden
Ability to make ends meet	Graded	From 0 to 5, 0= very easily, 5=with great difficulty

Deprivation score

Country	Mean	Std. Dev.	Median	Min	Max
France	.0003367	.9104832	**-.0523948**	-2.123467	2.990573
Italy	.0002384	.9164799	**-.0211721**	-2.842005	3.256144
Poland	.0001249	. 9267007	**.026095**	-2.5508	3.172271
Spain	.000068	.9233668	**-.0367781**	-2.638893	2.961083
Greece	-.0002576	.9018471	**-.0038117**	-2.670282	2.342443
Portugal	.0000504	.9104499	**-.0143599**	-2.537794	2.79891

Data and Key Variables

- We focus on 2013. From EU-SILC we obtain:

- **Unemployed workers:** we identify workers that at the moment of interview were unemployed. This is our sample: we use observations from 9 countries.

- **Re-employment (dependent variable):** a dummy variable that is one if individuals find job within 4 months.

- **Deprivation:** the score obtained with the IRT estimation

- **Unemployment Benefits:** a dummy variable that is one if individuals received unemployment benefits in 2013

- **Interaction between benefits and deprivation**

- **Previous duration of unemployment**

- **All the other usual suspects:** age, education, gender, region fixed effect....

Determinants of unemployment duration

- We want to estimate the following regression:

$$J_i = \alpha + \beta_1 DEP_i + \beta_2 BEN_i + \beta_3 DEP_i * BEN_i + \beta_4 X_i + \varepsilon_i$$

Ji	Employment status after 4 months
$DEPi$	deprivation score of individual i
$BENi$	benefits: it is 1 if i receive benefits
$DEPi*BENi$	interaction between ben and dep
Xi	all the other characteristics
ε_i	unobservable random component (for sake of simiplicity this could measure how "smart" are individual

Specific aspect of our estimation

- Probit estimation.

- We focus on:
1) *the effect of deprivation*

2) *the interaction of benefits and deprivation*

- We perform estimation separately each country

Endogeneity issues

- Within the regression setup it is possible that the unobserved component (the unobserved characteristics that have an effect of re-employment) may be correlated with deprivation score.

- "Worse" individual may have more difficulties in finding a job and they are also more likely to suffer from deprivation.

- Unobserved component and deprivation score may be correlated.

Endogeneity issue

- We want to estimate the following regression:

$$J_i = \alpha + \beta_1 DEP_i + \beta_2 BEN_i + \beta_3 DEP_i * BEN_i + \beta_4 X_i + \varepsilon_i$$

If $E(DEP_i, \varepsilon_i) \neq 0$

it means that individuals with high deprivation are more likely to have a high (or low) value of ε_i.

This implies the existence (or the lack) of a relationship between J_i and DEP_i that is not caused by deprivation!

Our endogeneity issue

- People that are poorer are more likely to have worse unobservable component.

- Simplifying, it is more likely that people that are poorer are also less smart…

- This means that even if being poor increases the effort I put in the job search this effect do not show up in the regression because it is nullified by the presence of a negative unobserved component.

Instrumental variables

- To solve the endogeneity issue we resort to instrumental variable.

- We need to use an instrument that is (highly) correlated with deprivation and not correlated with the unobserved component that explains re-employment.

- The instrument is able to replicate the role of deprivation (because is highly correlated) without any problem of endogeneity.

Instrumental variables

- We need an instrument that:

- It is deeply related to the degree of deprivation (i.e. on the degree of financial pressure / poverty)

- It is not related to the unobserved component (i.e. how smart is the individual).

An example of wrong instrument

- The amount of money the worker has on the bank account.

- It is likely to be correlated to the degree of deprivation

- It is likely to be correlated also to the unobserved component (smarter individual accumulate more money!)

The instrument we use

- We resort to the share of individuals that within the household have an income (work income or pension).

- This share have an impact on the degree of deprivation of the household but should not affect the characteristics that are related to re-employment.

- If the share of income earners is high, I am less likely to suffer from deprivation.
- If the share of income earners is high I am not more likely to be smart (i.e. it leaves unaffected the unobservable component).

Results. Dependent Variable: Re-employment

	FRANCE		GREECE		ITALY		POLAND		Portugal		SPAIN	
	Probit	IV	Probit	IV	Probit	IV	Probit	IV	Probit	IV	Probit	IV
Deprivation	.052	-.477	.209 **	**.947** ***	-.128	0.205	.0639	**.542** **	-.030	.408	.173 *	.319
	(.304)	(.401)	(.089)	(.132)	(.158)	(0.334)	(.184)	(.242)	(.119)	(.428)	(.101)	(.232)
Unemp. Benefits	-.060	-.376	.227	.512**	.877 ***	**0.617** **	-.0631	.0110	-.657	-.333	.803 ***	.566 **
	(.428)	(.436)	(.199)	(.219)	(.245)	(0.254)	(.406)	(.310)	(.204)	(.432)	(.284)	(.224)
Interaction benefits and deprivation	.254	.539	-.212	**-.806** **	-.196	-0.242	.471	0.220	.123	-.292	-.178 *	-.428
	(.343)	(.509)	(.183)	(.335)	(.226)	(.353)	(.402)	(.489)	(.184)	(.683)	(.117)	(.293)

Probit estimation and IV probit estimation

Further research and conclusions

- Few things must still be developed:

- Robustness check

- Add more countries

- Try to check for a pattern for the effect of deprivation.