Human capital accumulation in temporary jobs: specific or general?

Work in progress

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Flexibilization

- Flexibilization has been the main labor market policy objective during the last 20 years
- pursued by allowing temporary hires under less and less binding conditions
- Labor market deregulation implies less **job security** (the capability to stay with a certain job and employer)
- And it demands more **employment security** (the capability to stay employed across jobs and employers) through:
  - higher arrival rate of job offers
  - easier entries on the labor market
  - easier transitions across employment relationships
  - shorter unemployment
  - accumulation of actual experience

External careers

- Emphasis has indeed been put on **external careers** across firms
- Limited to the initial period on the labour market or extending over time
  - In this perspective empirical research has been so far mostly devoted to evaluate the **port-of-entry hypothesis** (temporary jobs as stepping stones into open-ended ones with respect to unemployment), with mixed results
- But the POE hypothesis only tells a part of the story of external careers
  - it implicitly assumes the primary relevance of job security
  - it may well occur within firms and not across them

Human capital

- An underexplored issue is that of **human capital accumulation and portability** in temporary jobs

- Its existence is crucial in assessing the viability of an external career and hence the mere possibility of acquiring employment security

Specific or general

- The standard theory of human capital allows to make predictions about the kind of human capital accumulated by workers hired under different contracts:

    - Firms may invest in workers' specific HC;
    - The stricter the commitment in the work relationship, the larger the investment.
    - We thus expect permanent workers to get a larger amount of specific HC.
    - *There is evidence in the literature of permanent workers to be more likely to receive firm-financed training.*

    - We expect workers who enjoy a lower degree of job security to have a higher incentive to invest in their general HC

- Specific: "firm" and "occupation" specific, the second part being portable across firms

Transitions across firms

- If j and k are different occupations
    - $Pr\{trans(j,j)\} = f(SHC^+, GHC^+)$
    - $Pr\{trans(j,k)\} = g(GHC^+)$

- Hence we expect the relative probability to make a transition across different occupations to be higher for temporary workers than for permanent ones. In symbols:

$$Pr_{temp}\{trans(j,k)\} / Pr_{temp}\{trans(j,j)\} > Pr_{perm}\{trans(j,k)\} / Pr_{perm}\{trans(j,j)\}$$

- The possibility for temporary workers to reach employment security through external careers rests (also) on this hypothesis
- It can be empirically tested, what we aim to do in this contribution

Data

- We use WHIP data:
  - panel of individual work histories from administrative data
  - representative of the private sector of Italy's labor market
  - careers are observed monthly
  - the series covers now the period from 1985 to 2004
- Administrative data represent a convenient choice since careers can be observed in details and without measurement errors

Occupation

- However, occupation is observed only at a very aggregate level (blue/white collars)

- we thus *approximate it through 2-digit sector*

- In order for sector to be a good approximation of occupation we restrict the analysis to *blue collars of manufacturing and building sectors*

Sample selection

- In order for these workers to be a very homogeneous group and minimize unobserved heterogeneity we further select workers:
  - *entering the labor market* in the period 1998 - 2002
  - with either a *full-time open-ended contract or a full-time direct-hire temporary* one
  - aged *19-25 at entry*
  - at their *first involuntary unemployment spell* (i.e. lasting more than one month)
  - after a *unique employment relationship*

Descriptive statistics

- We end up with a sample of 1379 obs.:
  - 1126 males and 253 females
  - 975 open-ended contracts and 404 temporary contracts
  - median duration of the (unique) previous work experience: 5 months for open-ended-contract workers and 4 months for temporary ones

Exit U	Same sector	Different sector
Open-ended	25.8%	21.2%
temporary	19.8%	31.9%

The model

- We model the unemployment duration in a competing-risk setting in discrete time (mlogit)
- The **_dependent variable_** takes four values
  - 0 : no exit and censored spells (unemployment spells lasting more than 18 months are assumed to be censored)
  - 1 : exit to the same sector
  - 2 : exit to a different sector
  - 3 : other exits (free lance …)

Covariates

- The covariates aim at controlling for individual, firm and labor market conditions at entry and for the total amount of actual experience accumulated before separation:
  - matrix X: gender, age at entry, wage at entry
  - matrix Z: sector, firm size
  - matrix W: local youth unemployment rate, geo. area, entry year
  - experience: duration of the (unique) preceding work relationship
- We thus argue that conditional on X, Z, W and experience a worker is hired (and dismissed) under a temporary or a permanent arrangement randomly

Specification of HC

- In the baseline specification a dummy variable **D** takes value 1 when the preceding contract was temporary
- By using exits to the same sector as benchmark and relative risk ratios, the hypothesis we are testing holds if

$$\beta_{EXIT=2}\,(D) > 1$$

- Then we allow the effect to evolve over time:

$$\gamma_{EXIT=2}\,(Tk \mid D) > 1$$

where Tk is a dummy on U duration, k=1 to K

Results

- In the baseline specification:

Exit to a different sector	RRR	Robust s.e.	z	P>z
D	1.3794	0.27367	1.62	0.105

- The effect is driven by what happens during the first months of unemployment

	RRR	Robust SE	z	P > |z|
Open-ended contracts				
2 to 4 months		Coefficient normalized to 1		
5 to 7 months	0.8256	0.22283	-0.71	0.478
8 to 10 months	0.5304	0.14271	-2.36	0.018
11 to 14 months	0.5956	0.17726	-1.74	0.082
15 to 18 months	0.8502	0.27095	-0.51	0.611
Temporary contracts				
2 to 4 months	2.2368	0.80983	2.22	0.026
5 to 7 months	1.3487	0.52185	0.77	0.439
8 to 10 months	0.4831	0.15794	-2.23	0.026
11 to 14 months	0.9499	0.40063	-0.12	0.903
15 to 18 months	0.9992	0.55010	0.00	0.999

Results

Prob > chi2		0	Number of obs	14276			
Pseudo R2		0.0354	Wald chi2(66)	292.25			
Log pseudolikelihood	-3609.3334						
Exit to another sector	**RRR**		**Robust SE**	**z**	**P > |z|**	**95% Conf. Interval**	
Female	1.0153		0.22913	0.07	0.946	0.6523	1.5801
Age at entry	1.0574		0.04343	1.36	0.174	0.9756	1.1460
Wage at entry (hundreds of €)	0.9839		0.02132	-0.75	0.453	0.9430	1.0266
Builiding sector	0.4179		0.07993	-4.56	0.000	0.2873	0.6080
Firm size at entry	1.0000		0.00002	-0.73	0.466	0.9999	1.0000
Youth unemployment rate	1.0926		0.04892	1.98	0.048	1.0008	1.1928
Youth unemployment rate^2	0.9984		0.00064	-2.56	0.011	0.9971	0.9996
North East	1.0102		0.27404	0.04	0.970	0.5936	1.7191
Center	0.8439		0.22078	-0.65	0.517	0.5054	1.4093
South and main isles	0.7364		0.34276	-0.66	0.511	0.2958	1.8336
Entry in 1999	1.3562		0.32400	1.28	0.202	0.8491	2.1661
Entry in 2000	0.9186		0.23197	-0.34	0.737	0.5600	1.5069
Entry in 2001	0.8925		0.25353	-0.40	0.689	0.5115	1.5574
Entry in 2002	1.0756		0.32661	0.24	0.810	0.5932	1.9504
Actual experience	0.8523		0.05416	-2.51	0.012	0.7525	0.9653
Actual experience^2	1.0121		0.00447	2.73	0.006	1.0034	1.0209
Actual experience^3	0.9998		0.00009	-2.71	0.007	0.9996	0.9999
5 to 7 months	0.7510		0.17018	-1.26	0.206	0.4817	1.1709
8 to 10 months	0.4153		0.09023	-4.04	0.000	0.2712	0.6357
11 to 14 months	0.5423		0.13398	-2.48	0.013	0.3341	0.8801
15 to 18 months	0.6574		0.17959	-1.54	0.125	0.3849	1.1230
Dummy for temporary	1.3794		0.27367	1.62	0.105	0.9350	2.0350

Robustness check

- The effect disappears in sectors and for occupations with more horizontal skills (white collars in services)

	RRR	Robust SE	z	P > |z|
Open-ended contracts				
2 to 4 months		*Coefficient normalized to on*		
5 to 7 months	0.6313	0.31578	-0.92	0.358
8 to 10 months	0.5275	0.27536	-1.23	0.220
11 to 14 months	0.5092	0.27927	-1.23	0.218
15 to 18 months	0.8018	0.67284	-0.26	0.792
Temporary contracts				
2 to 4 months	0.7728	0.36779	-0.54	0.588
5 to 7 months	0.5736	0.28005	-1.14	0.255
8 to 10 months	0.2756	0.13743	-2.58	0.010
11 to 14 months	0.5843	0.32868	-0.96	0.339
15 to 18 months	2.1983	2.25889	0.77	0.443

Concluding remarks

- Consistently with the theory, we found evidence that temporary jobs entail a higher relative amount of general HC with respect to open-ended jobs
- This should indeed make temporary workers relatively more apt to external careers
- However, there is still a matter of absolute level of human capital, with respect to which temporary workers suffer from a negative gap compared to permanent ones [Bassanini 2007] and that makes transitions (even across employers) easier for workers with open-ended contracts [Berton et al. 2009]

Next steps

We plan to re-estimate our models using additional data sources in which:

(i) the occupation is observed at a very fine level;

(ii) workers laid-off by the same firm can be identified, allowing for firm-level effects in estimation;

(iii) it is possible to observe firms' closure events, as well as to define industry-wide demand shocks (on sales or value added), and therefore to better identify involuntary unemployment.