Determinants of employment destinations of PhD holders: industrial sectors and economic conditions.

Potential new title:

The destination employment of PhD holders: a better understanding of university-industries synergies.

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Topic and research question

- HE systems produce more PhD holders than HEIs may absorb
- Post-docs are relatively precarious and transitional, "limbo/transitional" employment
- PhD holders are arguably people in searching for the best matching
- The whole topic goes at odds with foundational assumptions of Human Capital Theory
- Hence, more findings to understand what causes the exit from academia/science are needed
- But also predictors of objective success are relevant to overcome the personal satisfaction motivation perspective as main factor

Source & dataset

- Secondary data from ISTAT (Italian national statistical agency) about career of PhD holders

- Large number of variables but:
  - Relatively poor description of events in timeline
  - No information about awarding institutions
  - 2018 survey not already available

Hypotheses

1. What may predict the exit from academic and Public Research Institutes (49%) against either:
   1. Other education and training sectors (9%) _or_ other sectors (42%) being the latter supposedly the gumption option
   2. Keeping constant the disciplinary field (multilevel)

2. What may predict better paid employment
   1. At PPP
   2. Discarding part-timers issues
   3. At parity of contractual forms
   4. At parity of disciplinary field (multilevel 1st layer)
   5. Distinguishing the main three sectors of Hp1 (multilevel 2nd layer)

3. All tests are run in robust S.E. to avoid heteroscedasticity in residual distributions

Variables 1/2

Group	Var	Label	Obs.	Average	SD	Min	Max
	hWPPP		7,622	64.46039	113.8304	6.070313	3000
biographical	age2	age^2	10,007	115.5992	69.89436	49	1225
	d5_10	education mother	10,007	3.094534	1.374309	1	6
	d5_5	education father	10,007	3.224943	1.403312	1	6
	d1_7	graduation mark	10,007	2.594884	0.717814	1	3
	d0_1	sex	10,007	1.518637	0.499678	1	2
	d5_4	child/ren	10,007	1.676327	0.4679	1	2
	d1_10	funding PhD (base is MIUR national scheme)					
	Altro ent..	other public	10,007	0.068152	0.25202	0	1
	Universit..	private organization	10,007	0.05666	0.231204	0	1
during PhD	Organism..)	international organization	10,007	0.01459	0.11991	0	1
	none	nil	10,007	0.183871	0.387399	0	1
	Mob_dur	mobility during PhD	10,007	0.459578	0.498388	0	1
	d1_20	overall satisfaction of PhD	10,007	6.97162	1.951643	2	10
	d1_15	duration of PhD	10,007	1.123414	0.328928	1	2
	d1_14	teaching during PhD	10,007	1.764865	0.820347	1	3
	d2_52	employment at end of PhD	9,301	1.583271	0.493044	1	2
	d2_46a	articles	10,007	7.594184	9.411236	0	50
	d2_46b	chapters	10,007	1.246527	2.479837	0	14
	d2_46c	books	10,007	0.29989	0.877292	0	10
	d2_46d	reviews	10,007	2.663536	7.197175	0	50
	d2_46e	proceedings	10,007	6.130309	9.943344	0	50
	d2_46f	encyc. entries	10,007	0.339263	2.373634	0	30
	d2_46g	edited books	10,007	0.166783	0.742384	0	10
post PhD	d2_46h	patents	10,007	0.11402	0.657443	0	10
	d2_47a	university	10,007	2.02818	0.819757	1	3
	d2_47b	public research institutes	10,007	1.577995	0.797437	1	3
	d2_47c	private research org.s	10,007	1.31408	0.646942	1	3
	d2_47d	research consortia	10,007	1.296293	0.637499	1	3
	d2_47e	companies	10,007	1.372739	0.672679	1	3
	d2_47f	international org.s	10,007	1.239532	0.634856	1	3
	expostdoc	finished a post-doc	10,007	0.205456	0.404055	0	1
	d2_57a	R&D intensity of first job	10,007	0.465574	0.498838	0	1
	d2_64a	R&D intensity of job in 2011	10,007	1.539822	0.498437	1	2
	Mob_post	mobility after PhD	10,007	0.275407	0.446742	0	1

Var 2/2

d2_36	channel in getting current job (base is "competition")					
d2_36b	personal acquintance of employer	10,007	0.069951	0.255077	0	1
d2_36c	endorsement from kins	10,007	0.048566	0.21497	0	1
d2_36d	endorsement from university or job agencies	10,007	0.030479	0.171909	0	1
d2_36e	after stage or intership	10,007	0.020786	0.142673	0	1
d2_36f	direct call from employer	10,007	0.044769	0.206806	0	1
d2_36g	job alerts	10,007	0.040672	0.197538	0	1
d2_36h	sending CV to employers	10,007	0.124813	0.330523	0	1
d2_36i	public job center	10,007	0.001099	0.033138	0	1
d2_36j	self-employment	10,007	0.046468	0.210506	0	1
d2_36k	private job matching agencies	10,007	0.010892	0.103802	0	1
d2_36l	other	10,007	0.053363	0.224767	0	1
d2_39	PhD essential criteria for current job	10,007	1.772759	0.759855	1	3
d2_40	PhD essential for current job	10,007	1.440092	0.496423	1	2
d2_42d	satisfaction for skills aquired during PhD	10,007	6.832717	2.52926	2	10
d2_44	doing R&D job currently	10,007	1.776656	0.81178	1	3
applying	applying for jobs (base is "no")					
1	yes, any job	10,007	0.275407	0.446742	0	1
2	yes, only R&D jobs	10,007	0.068152	0.25202	0	1

current employment

Results Hp1
omitting statistically not significant vars

	Other Education	Not-academic, not other education
lnage	0.489	0.624***
d5_10	-0.0898	0.0538*
d1_7	0.228*	0.0711
d0_1	0.0932	-0.213*
d1_20	0.0643	0.0511**
d1_15	0.065	-0.245*
d2_52	0.0805	-0.145**
d2_46a	-0.0343	-0.0181***
d2_46b	-0.0849	-0.0643**
d2_46d	-0.0318**	-0.00697
d2_46e	-0.00645	-0.00482
d2_46f	0.00302	0.0350**
d2_46h	-0.656*	0.0950*
d2_47a	-0.481***	-0.590***
d2_47c	0.158	0.364***
d2_47f	-0.213	0.206*
expostdoc	-0.0538	-0.253*
2.d2_36	0.556	1.723***
3.d2_36	1.655***	2.590***
4.d2_36	1.376*	2.258***
5.d2_36	1.248	2.794***
6.d2_36	2.370***	2.386***
7.d2_36	1.158	2.365***
8.d2_36	2.405***	2.610***
10.d2_36	2.267*	3.878***
12.d2_36	2.424***	1.945***
d2_39	1.162***	1.167***
d2_40	1.754***	1.083***
d2_44	1.782***	0.646***
d2_24	-1.510***	-0.328
1.applying	-0.433	-0.498**
2.applying	-0.439	-0.501**
_cons	-9.222***	-5.591***
var(_cons[d0_10])	0.146	0.129**
var(_cons[d0_10>d0_5])	0.266*	0.00182
N	5169	8272

Results Hp2

omitting statistically not significant vars

	ln_hWPPP
age2	0.000385**
d5_4	-0.0783***
book	-0.122*
proceeding	-0.0109*
ency	-0.0353*
patent	0.161*
d2_47a	-0.0395***
d2_47e	0.0307*
d2_47f	0.0195*
Mob_post	0.0716***
6.d2_36	0.117**
10.d2_36	1.259***
d2_39	-0.0389*
1.applying	-0.108***
2.applying	-0.126***
_cons	4.005***
N	7035

Preliminary conclusions

- Many possible predictors such as PhD funding agency or types of mobility are not significant or scarcely significant
- Scientific productivity does not appear to be a factor in any way
- Family burden emerge predominantly in salary; not necessarily gender pay gap
- Men more likely to leave academic/scientific world
- Experiences funded by privates or international agencies/organizations are more relevant in generating benefits for PhD holders and arguably for universities-external organizations relationship
  - This includes also self-employment (any endogeneity about that from projects funded by companies *vel* international organizations? YES)
- People with better salary also are much less likely to be active in the labour market, demonstrating some satisfaction once having left academia and a "only-way traffic" direction "from academic towards not-academic" and not other way round

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by "Depressing Mode"
March 29th 2019

Votes like violence
Break the silence
Come crashing into
your Little Britain
Painful to you
Pierce right through you
Can't you understand?
Oh my little May

Vows are spoken
To be broken
Feelings are intense
Votes are trivial
Pleasures ain't remain
But you got the pain
Votes are meaningless
And forgetful

All u ever wanted
All u ever needed
Is here in your ass
Votes are very unnecessary
They can only do fuss

All u ever wanted
All u ever needed
Is here in your arse
Votes are very unnecessary
They can only do fuss.