

LABOR MARKET FOR YOUNG GRADUATES: OCCUPATION AND WAGE

Antonio Proietti

21/12/2022

I NUMERI

Donne & lavoro: le 9 disparità ancora da colmare

di Rita Querzè | 9 marzo 2022



6/11



Pay gap: nel privato stipendi più bassi del 17%

Gender gap: le donne guadagnano il 20% in meno degli uomini

Anche la ripresa avvantaggia gli uomini: nel quarto trimestre 2021 le richieste di curricula sono state 193mila per i laureati e 152mila per le laureate

di Eugenio Bruno

28 gennaio 2022

In Italia pochi laureati (ma con la laurea si migliorano occupazione e salario)

Tra i 25 e i 34 anni solo il 28% ha un titolo terziario. Nei paesi Ocse in media un laureato guadagna il doppio di chi si ferma al diploma; in Italia questo vantaggio è del 76%

di Eugenio Bruno e Claudio Tucci

3 ottobre 2022

Literature

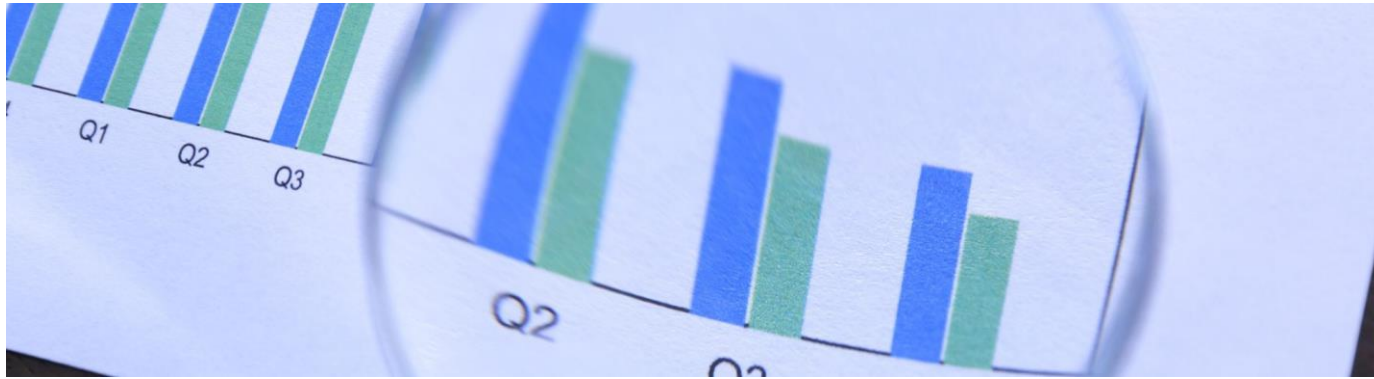
- **Gender pay gap** - Two main phenomena: *sticky floor* and *glass ceiling*; Males benefit more from their level of education than female.
- **Wage Inequality** - Differences in wage policies, need for high skilled worker
- **Educational Wage Premia (EWP)** - In Italy the EWP has historically been higher in public sector; Higher at highest quantiles of wage distribution; The EWP are lower than in other OECD countries



The Survey

- Representative sample dataset collected by ISTAT in 2015, that goes under the name of “*Inserimento professionale dei laureati*”
- Observations of men and women who graduated in 2011.
- Observations in the sampled dataset are 58.400.
- Divided in 5 sections: *Curriculum, Work, Job search, Mobility, Family context.*





Results

Dependent Variable:
*“employment status 4
 years after
 graduation”*

Coefficients	Probit Model				
	Estimate	Std. Error	z value	Pr(> z)	
(Intercept)	0.4167252	0.1416071	2.943	0.00325	**
Cittadinanza	0.0936502	0.0858112	1.091	0.27512	
Zona Ateneo Nord	0.5213898	0.0143760	36.268	< 2,00E-16	***
Zona Ateneo Centro	0.2868031	0.0158938	18.045	< 2,00E-16	***
Laurea Triennale	-0.0739944	0.0165304	-4.476	7.60e-06	***
Laurea Professionale (economia, giurisprudenza etc.)	0.0373922	0.0167958	2.226	0.02600	*
Laurea Scientifica (ingegneria, medicina, chimica etc.)	-0.1443166	0.0170731	-8.453	< 2,00E-16	***
Laurea Ingegneria	0.5251371	0.0241802	21.718	< 2,00E-16	***
Sesso	0.0793203	0.0125705	6.310	2.79e-10	***
Età alla laurea 23 - 24	0.0492124	0.0228456	2.154	0.03123	*
Età alla laurea 25 - 29	0.1381752	0.0254149	5.437	5.43e-08	***
Età alla laurea ≥ 30	0.4681201	0.0310363	15.083	< 2,00E-16	***
Liceo	-0.1930961	0.0306364	-6.303	2.92e-10	***
Tecnico	-0.0154077	0.0317008	-0.486	0.62694	
Voto Diploma	-0.0057059	0.0005283	-10.801	< 2,00E-16	***
Erasmus	-0.0063172	0.0205947	-0.307	0.75904	
Laureato In Corso	0.2328766	0.0135296	17.212	< 2,00E-16	***
Voto Laurea	0.0016419	0.0009385	1.750	0.08019	.
Master di I livello	0.2570753	0.0240008	10.711	< 2,00E-16	***
Master di II livello	0.0540383	0.0336660	1.605	0.10847	.
Interazione I e II livello	-0.1304998	0.1009179	-1.293	0.19597	
Conseguimento Nuova Laurea (triennale o a ciclo unico)	-0.1231112	0.0536156	-2.296	0.02167	*
Dottorato (conseguito)	-0.3209607	0.0417189	-7.693	1.43e-14	***
Specializzazione Post Lauream	-0.1225601	0.0266352	-4.601	4.20e-06	***
Master Extrauniversitario	0.0698581	0.0336274	2.077	0.03776	*
Liv. Istruzione Padre = Scuola Media	-0.0264209	0.0240324	-1.099	0.27160	
Liv. Istruzione Padre = Scuola Superiore	-0.0097022	0.0246219	-0.394	0.69355	
Liv. Istruzione Padre = Scuola Laurea	-0.0455908	0.0496070	-0.919	0.35807	
Liv. Istruzione Padre = Scuola Post-Lauream	-0.1287337	0.0307003	-4.193	2.75e-05	***
Liv. Istruzione Madre = Scuola Media	0.0404709	0.0236256	1.713	0.08671	.
Liv. Istruzione Madre = Scuola Superiore	0.0011089	0.0240733	0.046	0.96326	
Liv. Istruzione Madre = Scuola Laurea	-0.0806997	0.0415071	-1.944	0.05187	.
Liv. Istruzione Madre = Scuola Post- Lauream	-0.0472803	0.0324516	-1.457	0.14513	
Interazione Liv.Istruzione (Padre laurea + post-lauream) x (Madre laurea + post- lauream)	-0.0585469	0.0339948	-1.722	0.08503	.

Probability models results

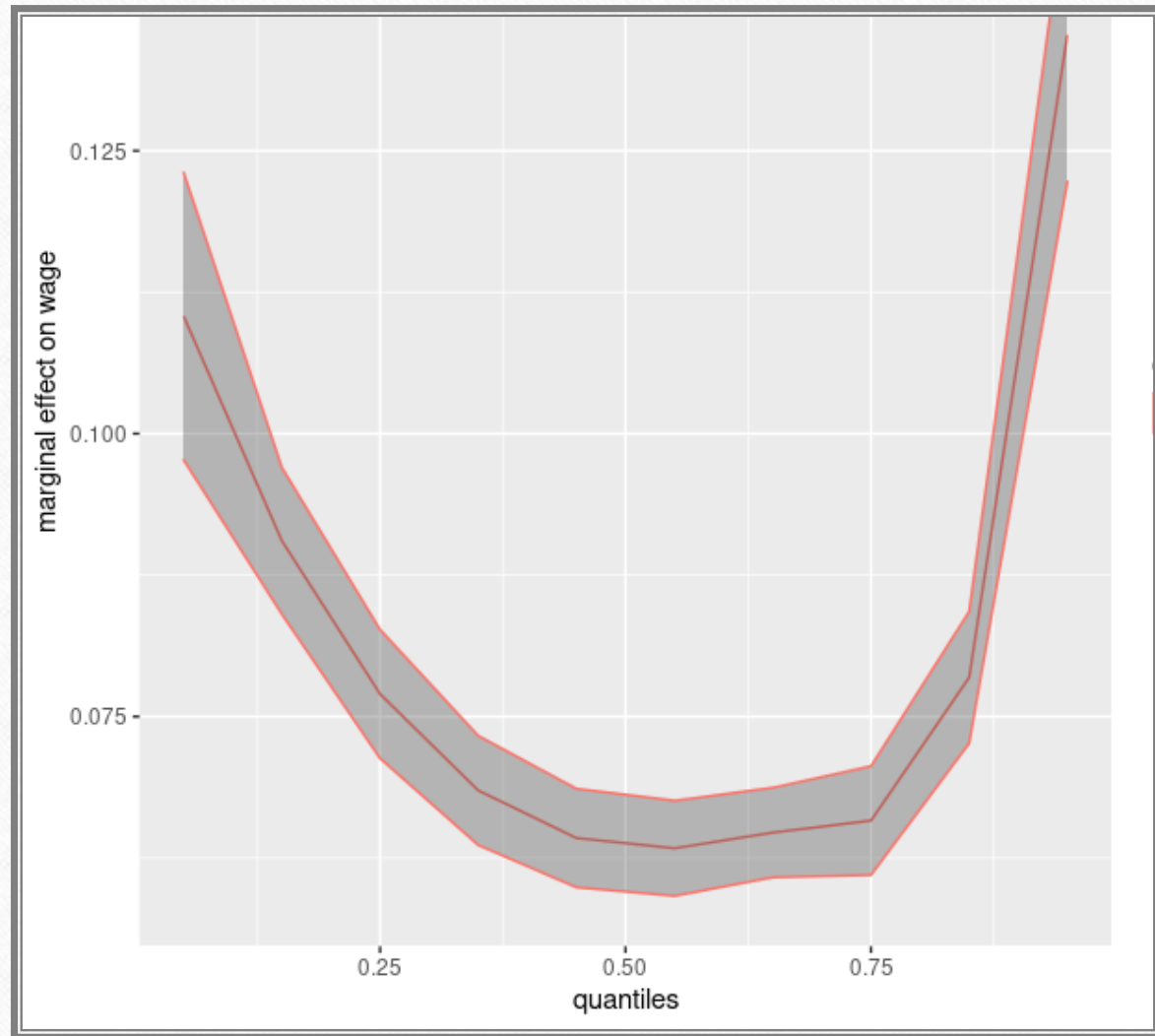
- **University Location:** The north coefficient is greater than central, which is greater than south
- **Degree's duration:** Bachelor's degree coefficient is negative, so it is lower than five-year degree, or Master's degree
- **Type of degree:** Professional's degree coefficient is higher than humanistic, which is higher than scientific (with the exception of engineering)
- **Master of science:** I level coefficient is higher than II level

Dependent Variable:
"log-wage, 4 years
after graduation at
different quantiles"

Coefficients:	tau 0.1		tau 0.25		tau 0.50		tau 0.75		tau 0.9	
	Value	Pr(> t)	Value	Pr(> t)	Value	Pr(> t)	Value	Pr(> t)	Value	Pr(> t)
(Intercept)	5.76943	0	6.5137	0	6.90131	0	6.94171	0	7.31676	0
zona_ateneo_nord	0.28855	0	0.14019	0	0.07857	0	0.06448	0	0.06662	0
zona_ateneo_centro	0.21909	0	0.08788	0	0.04788	0	0.04637	0	0.05292	0
laurea_triennale	-0.10771	0	-0.07795	0	-0.05863	0	-0.04142	0	-0.03568	0.00008
laurea_professionale	0.19092	0	0.19198	0	0.14799	0	0.15788	0	0.1536	0
laurea_scientifica	0.30714	0	0.22452	0	0.16318	0	0.15859	0	0.15031	0
laure_scientificainge	0.06292	0	0.0706	0	0.04727	0	0.0574	0	0.0737	0
sesso_dummy	0.0969	0	0.07609	0	0.06414	0	0.06637	0	0.0892	0
cittadinanza	-0.03667	0.63943	-0.03535	0.05863	-0.00407	0.89771	0.01291	0.67981	-0.20531	0.03437
Età ≤ 22	0.08647	0.07313	0.03616	0.00865	0.0198	0.09748	0.03695	0.00042	0.01814	0.40287
Età 23 - 24	0.09486	0.03109	0.02181	0.06245	0.01076	0.29635	0.03448	0.00015	0.01518	0.4462
Età 25 - 29	0.06173	0.15532	-0.0054	0.61652	-0.0027	0.77626	0.00985	0.21309	-0.01246	0.50315
liceo	-0.00839	0.73141	0.03731	0.00836	0.02819	0.00178	0.02118	0.02704	0.03032	0.0468
tecnico	-0.03082	0.21457	0.02759	0.05954	0.01058	0.26551	0.01029	0.30076	0.0097	0.54478
voto_diploma	-0.00002	0.96439	0.0005	0.02785	0.00071	0.00012	0.00044	0.02641	0.0004	0.17367
erasmus_dummy	0.07999	0	0.06597	0	0.05861	0	0.10818	0	0.18565	0
in_corso_dummy	0.02145	0.03078	0.03534	0	0.01404	0.00589	0.00249	0.62966	0.00102	0.8979
voto_laurea	0.00412	0.00005	0.00121	0.01066	0.00019	0.55906	0.00095	0.00343	0.00066	0.27499
master_1_dummy	0.03862	0.29139	0.05148	0	0.02784	0.00002	0.01756	0.0372	0.00986	0.48104
master_2_dummy	0.01631	0.38465	0.03233	0.05329	0.04057	0.00077	0.05052	0.00057	0.08361	0
interazione_master	-0.07016	0.74584	-0.12366	0	-0.12174	0.00087	-0.11273	0.08434	0.02541	0.84709
nuova_laurea_dummy	-0.11087	0.30575	-0.00168	0.96911	-0.01319	0.49294	-0.02855	0.00482	-0.05878	0.47455
dottorato_dummy	0.003	0.90603	-0.03099	0.08708	-0.02708	0.28093	0.10157	0.00001	0.17724	0.00231
spec_post_dummy	-0.14257	0.00206	-0.04867	0.04757	-0.01947	0.05237	-0.00804	0.44235	-0.01554	0.29221
master_extra_dummy	-0.0461	0.00972	-0.01505	0.48375	-2	0.8946	0.01809	0.24136	0.02103	0.45386
dirigente	0.31207	0.01494	0.26456	0.00004	0.29555	0	0.44174	0	0.50013	0
apprendista	-0.07566	0.54987	0.05312	0.30182	0.0398	0.1542	-0.01248	0.42132	-0.07024	0.02836
quadro	0.042	0.74102	0.09718	0.04574	0.09782	0.00047	0.1181	0	0.14261	0.00006
impiegato_high	0.28013	0.02399	0.19559	0.00002	0.13178	0	0.09614	0	0.06504	0.03778
impiegato_low	0.16958	0.17598	0.11143	0.01818	0.05293	0.05618	0.03094	0.03811	-0.00535	0.8654
privato	-0.14743	0	-0.11884	0	-0.07661	0	-0.03354	0	-0.01531	0.15219
indeterminato	0.23175	0	0.12527	0	0.07803	0	0.06888	0	0.07649	0
richiesta_laurea_specifica_dummy.si.	-0.02292	0.21302	-0.01759	0.00116	-0.01101	0.05489	-0.00551	0.3639	0.00392	0.65088
richiesta_vot_min_dummy.si.	0.07699	0	0.06645	0	0.04751	0	0.02393	0.00006	-0.00227	0.76362
p_medie	-0.02951	0.36049	0.00618	0.40132	-0.0047	0.59041	-0.00786	0.27626	-0.01408	0.25911
p_superiori	-0.01343	0.66877	0.01274	0.09352	0.00512	0.56723	0.00313	0.6826	0.0053	0.69138
p_laurea	-0.05772	0.15501	0.0024	0.9358	0.01214	0.55347	0.00489	0.84838	0.03886	0.3826
p_post.laurea	0.00399	0.90192	0.01598	0.18174	0.01097	0.30072	0.02104	0.09002	0.03875	0.06264
m_medie	0.03088	0.22611	0.00853	0.4057	0.01434	0.09677	0.00769	0.3187	0.01661	0.10924
m_superiori	0.02178	0.39513	8	0.43045	0.01205	0.1587	0.01584	0.04732	0.03536	0.00268
m_laurea	0.04705	0.23622	0.05808	0.00063	0.03374	0.0298	0.03939	0.00308	0.01826	0.58884
m_post.laurea	0.01938	0.61151	0.02868	0.02645	0.01434	0.20787	0.02094	0.09233	0.02422	0.19157
Interaction_pm	0.00141	0.96481	-0.01554	0.2894	0.00414	0.72265	0.00037	0.98047	0.03464	0.20372

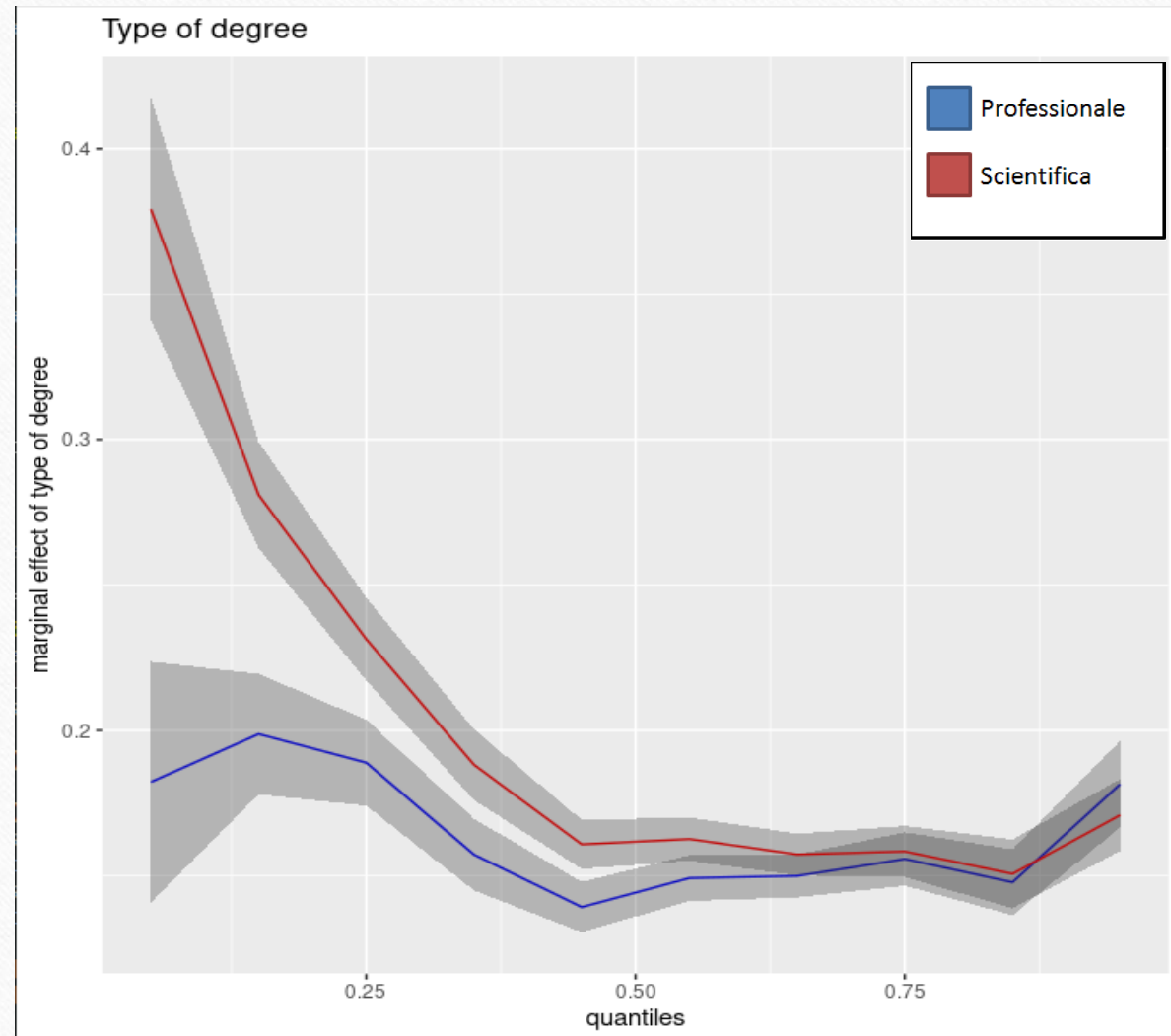
Gender Pay Gap

Even if our sample is made by observations of individuals, four years after graduation, we can already see the sticky floor and glass ceiling phenomena



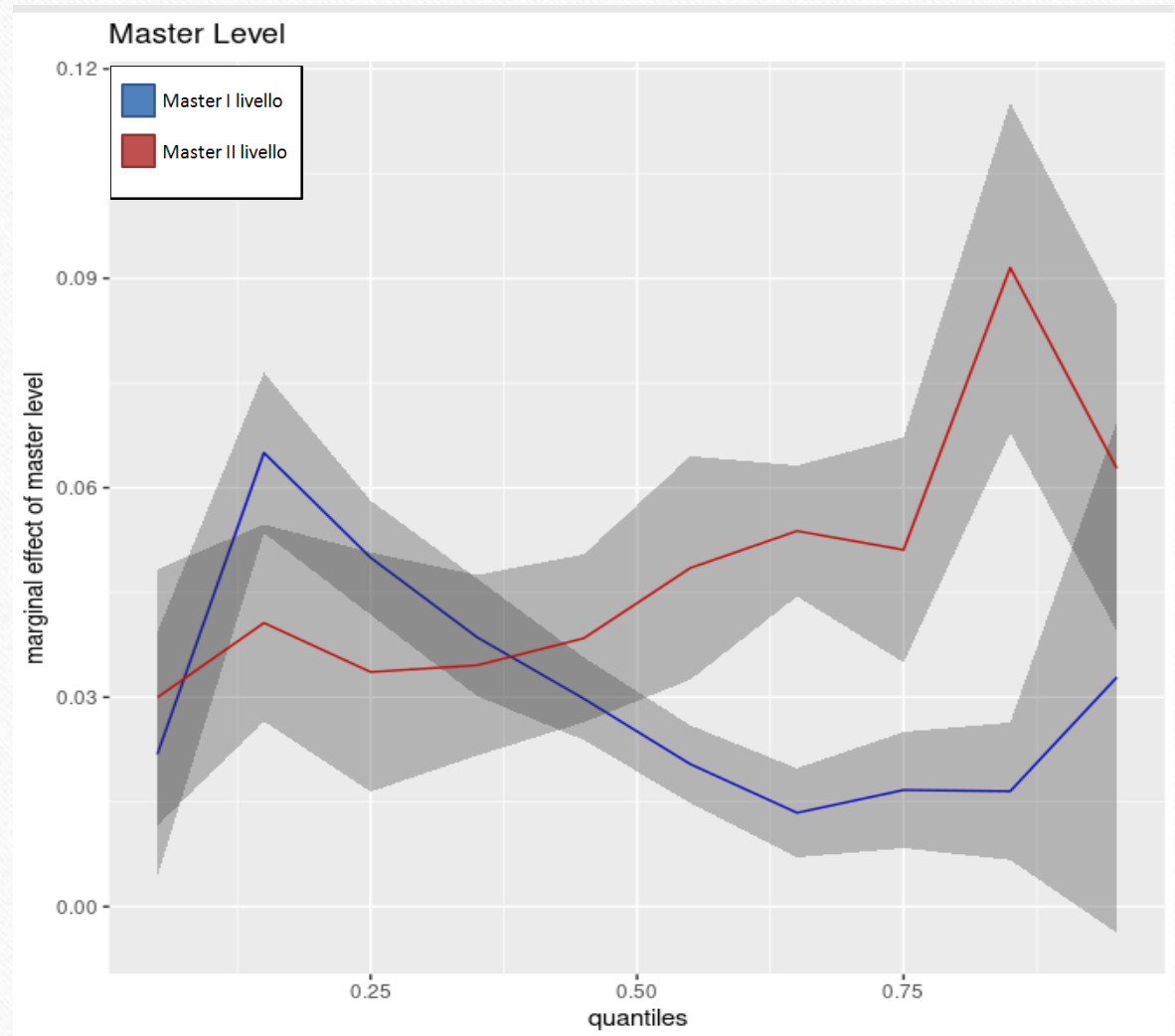
Type of Degree

Scientific degrees have a bigger effect on wages at lower levels. Then the two lines converge around the 75th percentile. Both are higher than humanistic degrees along the whole distribution



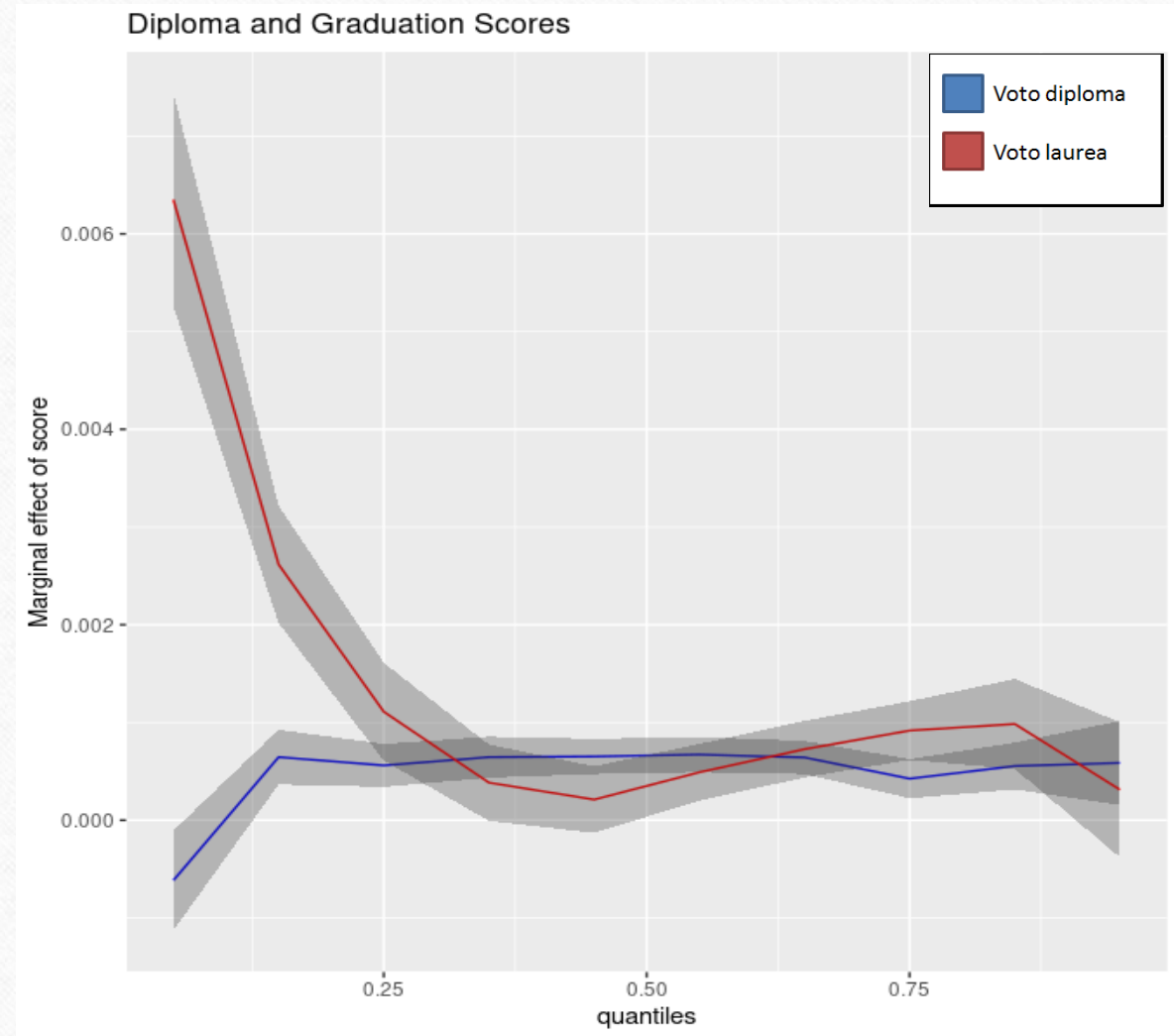
Master of Science

First level masters of science have a greater impact on salary than second level ones for lower salaries, then, around the 37th percentile, the trend reverses



Scores

The graduation score has a much greater effect than the highschool score for lower wages. However, the effect is not significant already from the median



Conclusions

Even if the media report correct but inaccurate figures, the problem they raise exists: the gender pay gap is a problem that needs to be investigated and treated rigorously.

There are wage inequalities between type of degree, at the expenses of graduates in the humanities and social sciences.

There are also inequalities, especially at lower levels both for occupation and wage between different parts of Italy