

DICHIARAZIONE SOSTITUTIVA DI CERTIFICAZIONE e/o di NOTORIETA'  
ai sensi degli artt. 46 e 47 del D.P.R. n. 445 del 28 dicembre 2000

La sottoscritta

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D I C H I A R A

Di aver essere autrice del capitolo

7. GENDER ASYMMETRIES IN ACADEMIC CAREERS IN ITALY

della pubblicazione GEA Working Paper 1, *GENDER ASYMMETRIES IN ACADEMIA. MAPPING THE  
MACRO-CONTEXT*, pubblicata da Università di Trento nel 2021, ISBN 978-88-8443-955-0, a cura di  
Paola Villa, con contributi di Alessia Donà, Annalisa Dordoni, Barbara Poggio, Maria Luigia  
Segnana, Paola Villa. La pubblicazione è frutto del lavoro svolto dall'Unità di Trento del progetto  
nazionale PRIN GEA – GEnding Academia, nella prima fase del progetto di ricerca.

Milano, 17/01/2022

Firma





**GEA Working Paper 1**

**GENDER ASYMMETRIES IN ACADEMIA.  
MAPPING THE MACRO-CONTEXT**

Edited by Paola Villa

With contributions from Alessia Donà, Annalisa Dordoni,  
Barbara Poggio, Maria Luigia Segnana, Paola Villa

2021

Università degli Studi di Trento





UNIVERSITÀ  
DI TRENTO

Publicato da  
Università degli Studi di Trento  
via Calepina, 14 - 38122 Trento

Impaginazione: Paola Villa  
Copertina: \*\*\*\*

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1 ed., anno 2021  
ISBN 978-88-8443-955-0

## TABLE OF CONTENTS

<b>INTRODUCTION.....</b>	<b>6</b>
<b>1. EDUCATION POLICIES AND OUTCOMES.....</b>	<b>7</b>
1.1 EDUCATIONAL TRENDS.....	7
1.2 WOMEN AND MEN IN EDUCATION .....	11
1.3 EDUCATION POLICIES.....	16
1.4 EDUCATION OUTCOMES .....	17
<b>2. EMPLOYMENT, LABOUR MARKET POLICIES AND OUTCOMES.....</b>	<b>20</b>
2.1 AN OVERVIEW .....	20
2.2 TERTIARY EDUCATION AND EMPLOYMENT CONDITIONS IN ITALY.....	23
<b>3. FAMILY-FORMATION PRACTICES AND POLICIES .....</b>	<b>26</b>
3.1 FAMILY MODELS.....	26
3.2 POLICIES.....	27
<b>4. CARE &amp; WORK-LIFE POLICIES AND PRACTICES .....</b>	<b>29</b>
<b>5. EQUAL OPPORTUNITY POLICIES AND PRACTICES.....</b>	<b>31</b>
5.1 GENDER EQUALITY LEGISLATION.....	31
5.2 INSTITUTIONAL STRUCTURE FOR GENDER EQUALITY AND EQUAL RIGHTS.....	33
<b>6. EQUAL OPPORTUNITY AND PROMOTION OF WOMEN IN ACADEMIA AND SCIENCE: POLICIES AND PRACTICES .....</b>	<b>35</b>
6.1 THE MOST SIGNIFICANT RESEARCH INITIATIVES FOR GENDER EQUALITY IN EDUCATION & SCIENCE	35
6.2 THE PROCESS OF CHANGE: RESEARCH INITIATIVES AND ACTION PLANS FOR GENDER EQUALITY .....	37
6.3 TEACHING GENDER IN ITALIAN UNIVERSITIES .....	39
<b>7. GENDER ASYMMETRIES IN ACADEMIC CAREERS IN ITALY .....</b>	<b>40</b>
7.1 RECRUITMENT PROCEDURES IN THE ITALIAN UNIVERSITY SYSTEM.....	40
7.1.1 <i>Budget cuts and low funding in Tertiary Education and Research.....</i>	41
7.1.2 <i>The Research Quality Evaluation.....</i>	41
7.1.3 <i>The ‘Departments of Excellence’ programme.....</i>	42
7.1.4 <i>The National Scientific Qualification system and its gender effects.....</i>	42
7.2 INVESTIGATING THE ‘GLASS CEILING’ PHENOMENON IN ITALIAN ACADEMIA.....	42
7.2.1 <i>Participation in NQS.....</i>	43
7.2.2 <i>The gender productivity gap.....</i>	43
7.2.3 <i>National and local vertical discrimination .....</i>	44
7.2.4 <i>Bibliometric indicators and NQS results .....</i>	45
7.2.5 <i>The role of gender in the national committees .....</i>	46
7.3 THE EARLY STAGES OF THE ACADEMIC CAREER .....	47
7.3.1 <i>Post-doc and entry positions.....</i>	47
7.3.2 <i>New frontiers of work flexibility in Italian Academia.....</i>	48
7.4 CONSEQUENCES OF THE FLEXIBILIZATION OF THE EARLY STAGES OF THE ACADEMIC CAREERS .....	48
7.5 HIGHLY SKILLED MIGRATION AND THE BRAIN DRAIN .....	49
7.6 CURRENT CHALLENGES AND DEBATES ON WOMEN AND SCIENCE ISSUES .....	50
<b>8. CONCLUDING REMARKS .....</b>	<b>53</b>
<b>ABBREVIATIONS AND ACRONYMS.....</b>	<b>55</b>
<b>APPENDIX.....</b>	<b>56</b>
TABLES .....	56
FIGURES.....	61
<b>BIBLIOGRAPHY.....</b>	<b>64</b>

A. GENDER EQUALITY IN EDUCATION, EMPLOYMENT, FAMILY-FORMATION AND WORK-LIFE BALANCE ...	64
B. GENDER EQUALITY IN ACADEMIA AND WOMEN IN SCIENCE .....	66
WEBSITES .....	70

## INTRODUCTION

Over the last few decades, women greatly improved their educational attainment, and their labour market ambitions increased accordingly. Along with these changes, the employment rate of women (especially mothers) increased to a significant extent in the decade before the Great Recession. However, gender gaps recorded in Italy in employment and unemployment rates remain amongst the highest in the EU28. The majority of highly educated women still has to overcome several obstacles to get access to the top positions. Thus, women are not fully integrated into the labour market or remain in its periphery. This stylised picture is also found at the university level where women remain a small minority among full professors, and even a smaller minority in leadership positions (among heads of department and rectors).

This report (GEA-WP1) presents an overview of the socio-economic context within which gender asymmetries in career advancement develop in the Italian university system. The focus is rather broad, spanning from education, employment, and family formation (considering trends, policies and outcomes) to equal opportunity policies and practices in the Italian society and in Academia. The analysis is based on empirical evidence available from major secondary sources (Eurostat, Oecd, Istat, Miur, etc.) and a review of the literature.

The report is structured in seven sections: 1. Education policies and outcomes; 2. Employment, labour market policies and outcomes; 3. Family-formation practices and policies; 4. Care and work-life policies and practices; 5. Equal opportunity policies and practices; 6. Equal opportunity and promotion of women in Academia and Science: policies and practices; 7. Gender equality: equal opportunity and promotion of women in Academia. Section 8. Concluding remarks.

The bibliography is organised in two distinct sections. Section A includes references to the literature on education, employment, family-formation and work-life balance; Section B includes references to the literature on gender equality in academia and women in science. The Appendix presents additional information and empirical evidence that supports some of the main points discussed in this report.

## 7. GENDER ASYMMETRIES IN ACADEMIC CAREERS IN ITALY

The need to promote equal opportunity in the Italian university system recently entered the debate. Some initiatives were put in place, but without significant changes. The university system has gone through important legislative changes in the last decades (see Appendix, box. A.4), affecting the position of women in academia. This section focuses on these issues.

### 7.1 Recruitment procedures in the Italian university system

The Italian university system consists of 97 institutions: 67 state universities; 19 non-state universities; and 11 telematic universities. In 2019/20, the academic and administrative staff amounts to 125,605 units, of which 55,426 units are academic staff (full professors, associate professors, researchers), plus 14,459 post-doc positions (*assegnisti*). About 26,870 external teachers (*docenti a contratto*), with annual contracts, must be added to the total academic staff<sup>14</sup>.

The academic staff has a hierarchical and pyramidal structure:

- at the base, temporary positions characterised by precarious non-standard contracts: post doctoral fellows (*assegnisti/e*) and collaborators (*collaborator/trici*);
- the entry position into *structured staff* is that of temporary researcher RTD-a (with a fixed-term contract of type A);
- temporary researchers RTD-b (with a fixed-term contract of type A), is a sort of tenure-track position (conditional to the acquisition of the national scientific qualification, NSQ);
- associate professors (with tenure)
- full professors (with tenure).

The Italian university system is regulated by national laws and by the statutes of universities. Recruitment procedures, employment conditions and salaries fall under the control of nation-wide laws. Salaries vary only by academic position and seniority; ‘payment by result’ (according to research productivity and/or teaching load) is forbidden by law. Every academic is characterised by an academic position (full professor, associate professor, researcher of type A or B) and one academic discipline. There are 383 academic disciplines (*settori scientifico disciplinari*), grouped into 14 research areas. Any vacancy is coded by a research sector, and applicants are evaluated by professors of the same sector. Given the public nature of the employment contract, academic staff is recruited through public competitions; decisions by the selecting committee have to be based on objective criteria and transparency of the selection process.

The institutional design of selection procedures for recruitment and promotions changed radically over the last four decades (see Appendix, box. A.4, for additional information).

1979-1998: centrally managed nation-wide competitions were used to recruit (i.e. promote) associate and full professors; assistant professors (with tenure) were recruited through local competitions (though the selecting committee was appointed at the national level).

1999-2004: recruitment procedures became entirely local. Each university could organise its own selection procedures (for assistant professors, associate professors and full professors) through local committees.

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<sup>14</sup> Additional information is available at MIUR web page: <https://www.miur.gov.it/universita>.



2005-2009: recruitment procedures for associate and full professors were changed again by the so called *Moratti reform* (L. 230/2005). It involved a random extraction (by lottery) of 4 external professors out of a pool of previously elected professors (at the national level, in the same research field) and an internal commissioner appointed by the faculty which decided to run the competition. This new procedure intended to avoid the formation of ad hoc committees (i.e. collusive behaviour favouring local candidates) and to increase competition.

Since 2010: the recruitment procedure (for associate and full professors) was reorganized and partially re-centralized. The so called ‘Gelmini reform’ (L. 240/2010) established a National Scientific Qualification (NSQ, i.e. *Abilitazione Scientifica Nazionale* (ASN)) as a necessary prerequisite for access to permanent positions, associate and full professor.

#### *7.1.1 Budget cuts and low funding in tertiary education and research*

The Italian university system suffers from poor funding (Ocse 2019a; Almalaurea 2019). This is due to the modest investments traditionally devoted to tertiary education, and to the impact of fiscal consolidation during austerity (see Section 1.1, for additional information).

According to the European University Association, Italy recorded a 17.3% cut in public funding for tertiary education from 2008 to 2017. The funding cut resulted, among other things, in a significant contraction in the number of tenured and fixed-term positions (-14.9%). As a result, the average age of academic staff and the teaching load increased. The Ordinary Financing Fund (FFO), the main source of entry of universities, was around 7.3 billion euros in 2018. After a contraction between 2009 and 2015 (-8%), it started to rise again in the more recent years. Furthermore, public funds based on specific criteria (rewarding tertiary education institutions on the basis of an assessment of the results achieved) was increased from 20% (of total funding) in 2015 to 24% in 2018. This ‘reward share’ should increase up to a maximum of 30%. This increase was decided by ministerial actions related to the ‘Triennial Planning’ and the Research Quality Evaluation (VQR).

Investments in Research and Development (R&D) are also modest in Italy. According to Eurostat database on science, technology and innovation, in the past two decades, the intensity of expenditure in R&D increased by 0.34 p.p., reaching 1.35% of GDP in 2017. Although the trend is positive and shows a progressive increase in resources dedicated to the R&D sector, Italy has not been able yet to bridge the gap with other EU countries (for Germany, France and the UK, percentages of 3.02, 2.19 and 1.66 are recorded). Italy is still far from the EU target set for 2020: 1.53%. In this context, tertiary educational attainment remains low in Italy compared to other EU countries. See Section 1.1 for additional information.

#### *7.1.2 The Research Quality Evaluation*

The Research Quality Evaluation (VQR) was established at the national level in 2004 in order to enhance the production of high quality research. VQR assessment is used for the allocation of the ‘reward share’ of the Ordinary Financing Fund (FFO) to universities. A national body, ANVUR, has the task of evaluating the quality of the research products, mainly through a peer review. The first evaluation round (VQR 2004-2010, which refers to the years of publication 2004-2010) started in July 2011 (D.M. 17/2011) and results were published in summer 2013. The second evaluation round (VQR 2011-2014) started in June 2015 (D.M. 458/2015) and results were published in February 2017. At present, the third evaluation round (VQR 2015-2019) is taking place.

Many criticisms were raised about the ‘bibliometric evaluation system’ used by ANVUR (based on quantitative indicators). In preparation of the VQR 2015-2019, ANVUR entrusted a group of

independent international experts to prepare a report highlighting the strengths and weaknesses of the first two VQRs. The results were published (on ANVUR website) in March 2019.

### 7.1.3 The ‘Departments of Excellence’ programme

The ‘Departments of Excellence programme’ is an institutional innovation with extraordinary funding (with an annual budget of 271 million euros) from the Ministry of Education and University (MIUR). This programme, introduced by the 2017 budget law (L. 232/2016), identifies and finances what are supposed to be the best 180 University Departments for the quality of the research produced and the quality of a five-year development project (2018-2022). Again, ‘quality’ has been assessed through bibliometric quantitative evaluations. The additional resources made available by this programme have (temporarily) helped some Departments. However, it cannot be a solution in a context of budget cuts and precariousness. In particular, it does not help researchers in the early stages of their career to exit precariousness.

### 7.1.4 The National Scientific Qualification system and its gender effects

In December 2010 a comprehensive reform, known as the ‘Gelmini reform’, introduced new rules for the recruitment procedures of academic staff (see Appendix, box. A.4). A two-step procedure was established for promotions to associate professor and to full professor. First, candidates have to apply at the national level in order to be acknowledged the National Scientific Qualification (NSQ). National committees (appointed at the national level, by research filed) have to identify the candidates that deserve the scientific qualification (*‘idoneità’*) for which they applied (associate professor, full professor).<sup>15</sup> Second, candidates have to win a ‘local competition’. Each Department has to decide to open (or not) a public competition to recruit from outside (or promote from inside) somebody for a specific position (associate professor, full professor) in a specific research field.

The ‘Gelmini reform’ changed not only the recruitment process (introducing the two-step procedure) and the rules for the setting up of national committees, but also strengthened the importance of ‘merit evaluation’. It indirectly opened the door to the problematic relationship between ‘merit evaluation’ and ‘quantitative indicators’ for scientific productivity, and to the legitimacy and quality of the ‘bibliometric evaluation system’<sup>16</sup>. In recent years, a heated debate started on this bibliometric evaluation system (Biagioli 2018).

## 7.2 Investigating the ‘glass ceiling’ phenomenon in Italian Academia

As shown in Section 1.2, women represent well over 50% of the reference student population at all levels: first-entry into tertiary education, students enrolled in tertiary education, total number of graduates in the academic year, ‘regular’ graduates, students enrolled in doctoral courses, and PhD holders. The transition from tertiary education to academic career shows a decreasing share of women along the hierarchical scale. In 2017, women were 50.3% of postdoctoral researchers (*assegna di ricerca*), 46.6% of university researchers (with permanent or fixed term contracts), 37.5% of associate professors and 23.0% of full professors (Villa 2019).

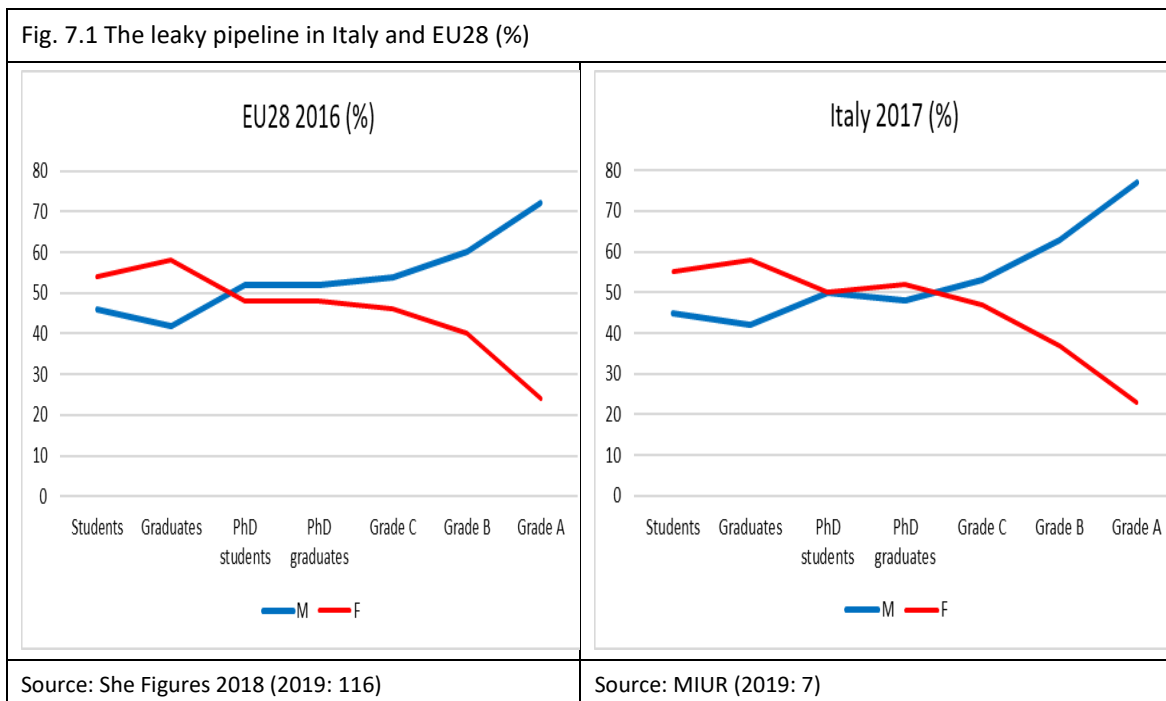
Three concepts are used to illustrate the disadvantages suffered by women in academia:

- i) **vertical segregation** of women in academic career: there is a high number of women at the bottom, while few women reach the top positions;

<sup>15</sup> The NSQ has a fixed duration (initially 4 yrs, then increased to 6 yrs, recently to 9 yrs).

<sup>16</sup> On the indicators in the procedure for the present period, 2018-2020 see: D.M. 589/2018.

- ii) **glass ceiling**: there is an invisible barrier that prevents women from accessing the top positions;
- iii) **leaky pipeline**: there is a progressive reduction in the share of women as one moves up the path of academic career, after the end of education (see fig. 7.1).



These three concepts consider gender asymmetries in academic career from different perspectives, partly overlapping, and with some limitations. In particular, there cannot be glass ceiling without gender vertical segregation. Also, the leaky pipeline is a powerful graphical representation of the disadvantage suffered by women in academia, but it suffers from severe distortions due to the comparison of different cohorts of individuals (observed at different ages).

The debate on gender asymmetries in academic careers is still ongoing today. Drawing on the literature, the following issues are here discussed: 1) women’s participation in NSQ; 2) the gender productivity gap; 3) national vs local discrimination; 4) bibliometric indicators and NSQ results; and 5) the role of gender in national committees.

### 7.2.1 Women’s participation in NSQ

On average, there is a lower number of women compared to men participating in the competition for NSQ (with differences across research fields). In 2014 the share of applicants on total ‘potential candidates’ was 48% among women, but 54% among men (Baccini 2014; Baccini, Rosselli 2014).

De Paola, Ponzio and Scoppa (2014) compared potential with effective applicants to NSQ. After controlling for productivity and a number of individual and field characteristics, women have a lower probability of applying for NSQ competition of about 4 p.p. (which amounts to a difference of about 8%). This lower propensity to enter competition is especially relevant for women in the lower tail of the distribution of scientific productivity and in fields in which productivity is not easily measurable. All in all, the results show a significant but small gender difference in competitive attitudes in Italy, much lower than the differences of about 25-30% found by Bosquet et al. (2014) in France and of 15 p.p. found by Christofides et al. (2009) in Canada.

### 7.2.2 The gender productivity gap

The gender productivity gap has been extensively documented in the literature. Baccini et al. (2014) studied 942 permanent researchers from various fields in Italy and found that women were less productive than men, confirming what was previously documented (Abramo et al. 2009). The determinants of individual scientific performance were considered (for 2008-2010). The gender effect was moderately significant, affecting all the research production measures negatively. This suggests that in Italy, women face more difficulties than men in publishing, *ceteris paribus*.

Further insights into the existence of a gender gap in productivity in other countries do not confirm its existence, without reservations. For instance, in Canada (after controlling for various factors) the difference disappears and the gap is decreasing over time, especially for the younger generations (Arensbergen, van der Weijden, van den Besselaar 2012). In the USA, gender discrimination was an important cause of women's underrepresentation in scientific academic careers (Ceci and Williams 2011), but today it has ceased being a valid cause of women's underrepresentation in math-intensive fields Ceci et al. (2014). However, there are also exceptions within this changing landscape. According to Lundberg and Stearns (2019), in the USA, the progress of women has stalled in Economics over the last two decades, in contrast to the experience in other disciplines.

### *7.2.3 National vs local discrimination*

Exploiting the features of the system currently governing academic promotions in Italy, recent papers compared gender gaps in national and local competitions (De Paola, Ponzo, Scoppa 2018), and the evolution over time of the results of two NSQ across disciplines (Manzo 2017).

As already discussed (Section 7.1.4), the success in promotion (to associate or to full professor) involves a two-step competition. Candidates (who decide to apply) are evaluated by a national committee that has to assess if they can be acknowledged a National Qualification. Then, qualified candidates compete in local competitions for a limited number of open positions. Given this two-step procedure, do men and women obtained similar results in each stage?

De Paola, Ponzo, and Scoppa (2018) carried out a probit analysis of the national competitions (NSQ 2012-2014) and the local competitions. Their analysis shows that gender differences do not emerge at the national level (ie. in the competition for a National Qualification), but women have a lower probability of winning a local competition (after controlling for several measures of scientific productivity and individual characteristics). This result implies that gender gaps in promotion (i.e. recruitment at the local level) tend to be larger when the number of openings shrinks. And this is consistent with the gender norm that when the number of positions is limited, men are given priority over women.

Gender discrimination is not only spatially different (local vs. national competition) but also vertically different (associate vs full professors' promotions). For associate professors, the probability of promotion for individuals who obtained the NSQ to associate professor is about 55%, but women suffer a 12% reduction with respect to men in the chances of being promoted 'locally'. For full professors, the probability of promotion for individuals who have obtained the NSQ to full professor is 10.4%, but women suffer a 20% reduction with respect to men of being promoted 'locally' (De Paola, Ponzo, Scoppa 2018). Overall, discrimination takes place mostly at the local level, and its extent depends on the relative number of positions at the local level. When the number of positions is low, the difference in the promotion rate by sex is around 10 p.p.; but when positions are abundant gender discrimination tends to disappear.

*The gendered probability of success and the Glass Ceiling Index across disciplines.* If a spatial discrimination is taking place in Academia in Italy (local versus national competition) the vertical discrimination is surely improving but still alive. Manzo (2017) examined the results of two NSQ (2012-2013; 2016-2018) using the Glass Ceiling index (GCI) and looking at the career profiles of a uniform stratified sample across different disciplines. The analysis shows for both associate and full professors, a partial improvement suggesting an apparent success of female participants in national competitions. But this success looks very partial to a deeper analysis. On the one hand, the GCI improvement does not map the gender stock composition of the lower hierarchical levels (researchers, associate professors): the share of promotion is 16% and 46% lower than the share of women researchers and associate professors. On the other hand, in the first NSQ (2012-2013) a significant self-selection shaped female participation because of the role played by the ‘median requirements’ that affected especially the lower tail of the productivity distribution. The same self-selection is identified also in the partial results of the NSQ (2016-17) especially in the case of applications for full professors.

*The perceived obstacles.* Manzo (2017, chapter IV) examined a uniform stratified sample of 50,331 individuals (academic staff in the Italian Universities, December 2015) in order to identify the gender gap in the career profiles and the related perceived obstacles. The multiple correspondence and cluster analysis shows different bottlenecks in the academic career profiles by different disciplines, aggregated by three macro areas: 1) Medicine and Health Sciences; 2) Social Sciences and Humanities; and 3) Hard Sciences. The perception of the male-oriented cooptative mechanisms emerges as the most important perceived obstacle across disciplines. It records higher means, always significantly different by gender.

Taken together, these results suggest that in the Italian Academia, women’s conditions still show vertical segregation as well as a persistent perception across disciplines of biased cooptative mechanisms. The introduction of local competition uncovers an additional gender promotion differential where spatial segregation (national versus local) plays a role.

#### 7.2.4 Bibliometric indicators and NSQ results

Starting in 2011, bibliometric indicators – based on research ‘productivity’ - gained a central role in the national research assessment (VQR) as well as in the entire body of the recruitment procedures (NSQ). As is known, indicators based on citations (used both in NSQ procedures and in VQR), include self-citations. Thus, researchers can increase their ranking just by self-citing their own work.

To become associate and full professor, a candidate’s work must reach certain ‘bibliometric thresholds’, established at the national level (by ANVUR). Only if two out of three thresholds – including citations (i.e. *h-index*) are reached, the candidate enters the final step, the evaluation by a committee of peers.

Baccini et al. (2019) produced a comparative analysis of the trends in self-citations for the G10 countries in 2000-2016, documenting a net increase of the Italian ‘inwardness indicator’ (the ratio between the total number of country self-citations and the total number of citations of that country). Italy became, globally and for most research fields, the country with the highest inwardness and the lowest rate of international collaborations. This change occurred in the years following the introduction in 2011 of national procedures regulating promotions in academic careers, governed by bibliometric indicators. An explanation of the peculiar Italian trend is a generalized strategic use of citations in the Italian scientific community, both in the form of

strategic author self-citations and of citation networking. This shows of how metrics can be misused, with significant gender effects given the lower propension of women to networking (Shen 2013) and to self-citation (King et al. 2017).

#### *7.2.5 The gender composition of national scientific committees*

The national committees are made of five professors: four randomly extracted from a list of professors employed in Italy (who meet some minima scientific requirements), and one external professor (teaching abroad), identified at the central level on the basis of his/her international reputation. These rules make it possible to estimate the effect of the national committees composition by sex on gender differences in the probability of success.

The research results are ambiguous. Scoppa and De Paola (2011) found that the presence of women in the national committees enhanced the probability of success of female candidates (in the first NSQ), reducing the bias against women produced by “all-male committees”. Surprisingly, De Paola, Ponzio and Scoppa (2014) found that the probability of success for female candidates in NSQ competition reduced, when they carried out a similar analysis for the second NSQ.

According to Bagues et al. (2017) the ‘surprising’ outcome in NSQ competition is due to the evaluation system that tends to change when a committee includes both sexes (as if all members tend to adopt more stringent evaluating criteria). This result is based on a large-scale assessment of the causal impact of the gender composition of scientific committees on national qualifications. The empirical analysis exploited the exceptional evidence provided by two large-scale randomized natural experiments in two different countries: Italy and Spain. The database includes information on all national qualification that were conducted in Italy (in 2012–2014) and in Spain (in 2002–2006). Overall, these evaluations involved approximately 100,000 applicants and 8,000 evaluators in all disciplines. The results show no evidence, in the two evaluation systems considered, that female candidates benefit from the presence of a larger share of women in evaluation committees.

When candidates’ observable productivity is taken into account, the remaining gender gap is equal to 1.5 p.p. Italy and 1.4 p.p. in Spain, and it is statistically significant in both countries (Bagues et al. 2017). However, there is no empirical support, neither from the average in the two countries nor from the majority of subsamples analyzed, to suggest that the presence of women in evaluation committees decreases the gender gap in a statistically significant way. On the contrary, in Italy, gender-mixed committees exhibit a significantly larger gender gap than committees composed only of male evaluators. An extra woman in a committee of five members increases the gender gap by somewhere between 0.4 and 3.3 p.p. In the Spanish case, any sizable impact is rejected. An additional woman in a committee of seven members may decrease the gender gap by at most 0.5 p.p. or it might also increase it by up to 1 p.p.

To conclude, the research on the issues highlighted above, shows that Italian Academia is far from being a land of equal opportunities, despite the changes recorded since 2010. The evaluation system has been criticised, and still debated today, from a gender perspective<sup>17</sup>.

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<sup>17</sup> See De Paola, Scoppa 2015; Pautasso 2015; Abramo, D’Angelo 2015; Abramo, D’Angelo, Rosati 2016; Abramo, D’Angelo 2016; Baccini, De Nicolao 2016; Franceschini, Maisano 2017; Benedetto et. al. 2017; Bagues, Sylos-Labini, Zinovyeva 2017; Abramo, D’Angelo 2018. In the international debate, other critical issues concern the evaluation of publications, the academic peer review system, and women’s positions in scientific societies (Helmer et al. 2017; Murray 2018; James et al. 2019; Potvin et al. 2018).

## 7.3 The early stages of the academic career

### 7.3.1 Post-doc and entry positions

Over the last two decades, the recruitment process of academic staff changed substantially, increasing the flexibilisation of the research positions at the ports of entry into academic career (see Appendix, box. A.4). In 2005, the Moratti Reform eliminated the two permanent entry positions: ‘assistant professor’ and ‘researcher’. They were replaced by two new types of ‘fixed-term researcher’, one dedicated to research and one to teaching. It also extended the possibility of using precarious contracts in universities. Besides extending the use of post-doc contracts (*assegni di ricerca*), it introduced the possibility of ‘collaboration contracts’ (*collaborazioni di ricerca*). In 2010, the Gelmini Reform further modified the entry positions (fixed-term researchers) into academic career by introducing two types of fixed-term contracts: RTD-a and RTD-b. Type A is non-tenured track, while type B gives the possibility of becoming Associate Professor. At present, the general *academic career path* is organised around five positions:

1. *Postdoctoral researcher (assegnista di ricerca): temporary position.* Each contract can last from a minimum of one year to a maximum of three years. It is possible to have more than one contract over time (up to a maximum of 6 years in the same University, 12 years in different Universities).
2. *Fixed-term researcher of type A (RTDa): temporary position.* Three-year contract, renewable for another two years (3+2).
3. *Fixed-term researcher of type B (RTDb): tenure track position.* Non-renewable three-year contract, at the end of which it is possible to directly access the role of Associate Professor, if passed the NSQ, and conditional on a positive evaluation by the Department.
4. *Associate professor: with tenure.*
5. *Full professor: with tenure.*

Many years of precarious and temporary contracts are foreseen in the Italian academic career (ARTeD 2017).

The first step (after PhD award) is to enter (through a local competition) a postdoctoral position (*assegnista*). This position does not imply an employment contract, with all associated individual rights (e.g. social security provisions, pension contributions); rather, it is analogous to a scholarship grant (similar to the position of PhD students). Post-doc researchers are not part of the academic staff: they are considered halfway between work and education. These research positions are usually financed by a grant on research funds (e.g. EU research funds) in order to do research on a specific topic for for a specific period of time, without teaching duties. People entering this position were not eligible for unemployment benefits, parental leave or other social security provisions (except mandatory maternity leave) until 2017. Currently, postdoctoral researchers have right to unemployment benefit (DIS-COLL, activated in 2015 for ‘collaborators’, see Appendix, box. A.4), to maternity leave and pension contributions.

The second step is to win a local competition for RTDa (‘fixed-term researcher of type A’): a temporary contract (three-years, renewable for another two). It includes both research and teaching duties (see Appendix, box A.4). Young researchers with a RTDa contract are part of the academic structured staff.

The third step is the transition into a RTDb position (‘fixed-term researcher of type B’) through a local competition (with external commissioners). It is a sort of tenure-track position. with a

maximum duration of 3 years, not renewable. It includes both research and teaching duties (see Appendix, box. A.4). The access to this position is subordinated to a three-year experience either as RTDa or as post-doc researcher. At the end of the RTDb contract (at the end of the third year), conditional on the acquisition of the national qualification (NSQ), the Department can directly promote the researcher as associate professor.

Given the average age of completion of the PhD in Italy, these three steps imply that a researcher is considered “young”, hence in a temporary and precarious position, up to the age of 39-40.

### 7.3.2 *New frontiers of work flexibility in Italian academia*

In recent years, other precarious positions, different from the postdoctoral research contract (*assegno di ricerca*), began to be used to an increasing extent in Italian universities: i) teaching collaborations (*docenze a contratto*); ii) research collaborations (*collaborazioni di ricerca*); iii) research scholarships (*borse di ricerca*).

Universities can rely on ‘external collaborators for teaching activities’ (with short-term contracts, lasting one academic year) for different purposes: to take advantage of experts with a scientific or professional curriculum; to meet specific teaching needs; or to promote internationalization. Sometimes, these positions are covered by young researchers after or during their PhD. Overall, in state universities in 2017-2018, *every 100 people involved in teaching activities, 39 are external collaborators and only 61 are ‘structured’ professors or researchers* (MIUR 2019). The teaching load of these external collaborators is presumably lower than average teaching load of professors and researchers, however it is indicative of a trend aimed at containing ‘structured’ teaching staff.

Instead of increasing resources for new ‘structured’ positions, in 2005 the ‘Moratti reform’ introduced the possibility to open temporary positions as ‘research collaborations’ (*collaborazioni di ricerca*), in addition to post doc positions (*assegni di ricerca*) already established in 1997. These are self-employed contractors, without any guarantee or labor protection, supplying teaching and/or research activities (coordinated by the faculty/department). Nowadays, PhDs and young scholars often accept to be recruited as research collaborators.

Finally, PhDs may participate in a local competition for a ‘research scholarship’ (not considered ‘work’ but ‘education’). These young researchers with scholarships do some research activities, but without any labour rights (i.e. pension contributions, maternity leave, unemployment benefits). Some universities recruit young PhD holders in this position, instead of postdoctoral contracts, due to the lower total costs (as income taxation and social contributions do not apply). This is the last frontier of flexibilization.

## 7.4 **Consequences of the flexibilization of the early stages of the academic careers**

The imbalance between permanent and non-permanent positions in academia is the result of: a) the legislative innovations in the recruitment process, enhancing flexibility in the early stages of academic career; b) the budget cuts imposed to the university system.

From a long-term perspective, the reforms implemented over the last 15 years resulted in the marginalisation of young researchers. In the decade 2004-2013, only 6.7% of those who held a temporary research position at the university achieved a permanent position (Toscano et al. 2014).

At present, a high share of ‘assegnisti’ is still bound to leave academia. In fact, the average of the last 4 years shows that there are about 860 RTD-b per year and about 13,600 ‘assegnisti’ per year.



It follows that only the 6.3% of ‘assegnisti will continue their academic career (ADI 2020). This suggests that there is a serious issue concerning the dispersion of highly qualified competences and professional skills developed inside the academic system. The high insecurity in the first stages of academic career tends to affect negatively young researchers’ ability to plan their present and future work: 84.3% of the respondents think that their insecure work position negatively affects their work performance and 50% are unable to imagine their professional future in 10 years time.

According to ADI estimates on Cineca data (ADI 2019a), precarious academic staff in universities exceeds permanent academic staff (68,428 vs 47,561 people) in 2018, with significant gender differences. The share of women decreases along the hierarchical structure: 50.3% among post-docs, 41.1% among fixed-term researchers (RTDb), 37.5% among associate professors, only 23.1% among full professors. According to ADI survey (ADI 2019b), 56.2% of PhDs expect to leave academia at the end of their temporary contracts (but 29% among those with a RTDa contract).

According to MIUR data, about 52% of all fixed-term researchers (RTDb, RTDa, post-docs) is over 38 years old (in 2017/18). For a large share of these researchers, the probability of career advancement (entering a permanent position) is very low. Some will stay in Academia taking up marginal academic activities (research and/or teaching), but in dead-end precarious positions. Others will look for work outside academia (e.g. public administration, teaching at school, in the private sector)<sup>18</sup>. Others will move abroad in order to develop their academic career.

Precariousness in academia and its effects on career advancement and personal life are key issues from a gender perspective. Various studies analysed them and are still high on the agenda today, especially in Italy<sup>19</sup>.

## 7.5 Highly skilled migration and the brain drain

In recent years, growing attention has been devoted to the phenomenon of brain drain, i.e. the emigration of people with tertiary education for better pay or conditions. The lack of research policies and funding in Italy made the country less able than others to attract and retain talents (OECD 2017a, *Education Policy Outlook: 4*). This situation did worsen over time (in a context of a long economic crisis, fiscal consolidation, severe budget cuts and almost no economic growth).

*Inability to attract foreign talent.* Italy’s problem lied in its limited capacity to attract skilled human capital, rather than in the fact that a percentage of our graduates moved abroad. Over the last six years, there has been an increase in the share of young graduates moving to EU countries with better employment opportunities (especially Germany and the UK); this tends to reinforce the hypothesis that Italy lacks the capacity to attract and retain talent.

*Italian talent mobility.* Studies on the destination countries of the Italian highly skilled workers (in particular, those employed in STEM fields) suggest that there is a high proportion of scientists, engineers and researchers among highly skilled emigrants. A major problem is the negative net flows between incoming and outgoing talent, exacerbated by the high qualification levels of those leaving the country compared to those arriving (Constant, D’Agosto 2010; Monteleone, Torrisi

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<sup>18</sup> Unfortunately, the PhD degree is not valued outside academia, in Italy. See ADI (2019c).

<sup>19</sup> Among them Toscano et al. 2014; Murgia, Poggio 2015; Bellè et al. 2017; Bozzon et al. 2017; Bozzon, Murgia, Villa 2017a; Murgia, Poggio 2018; Herschberg, Benschop, Van den Brink 2018; Steinþórsdóttir et al. 2019.

2012). Lack of funding and sponsorship, lower salary levels (compared to many foreign countries), the non-meritocratic criteria in the allocation of funds, and the lack of adequate infrastructure and equipment are considered the main causes of scientific migration.

A recent article on the Italian brain drain published by the *Financial Times*<sup>20</sup> states that nearly 10% of Italian nationals live overseas, and emigration rates are rising. Even worse, most of the leavers in recent years are educated professionals in the prime of their working life. In 2017, one-third of the Italian citizens who moved abroad had university degrees (up 41.8% since 2013). For many migrants, the decision to leave is about the growing conviction that Italy it is not a place where the well-educated and ambitious can build a successful life. This is synthesised in an effective way by the words of Chiara (associate professor in Italy):

*“The most talented young students are all fleeing academic careers. They know the career path is incredibly long. There is no money for research funding or doctorates. Even if you’re brilliant and get national accreditation to teach in a university, it’s rare that a tenure job will open.”*

Gender mobility strategies and the effects of precariousness on scientific migration have been studied in different countries, and are now the subject of numerous studies (Nikunen, Lempiäinen 2018; Bataille, Le Feuvre, Kradolfer Morales 2017; Cohen et al. 2019).

## 7.6 Current challenges and debates on gender and career advancement in Italy

As argued above, Italy lacks a university policy able to attract, retain and promote talent, and to reconfigure the academic structure in a more gender balanced way. High levels of insecurity and precariousness negatively affect the early stages of academic career, but also young researchers’ ability to manage and plan work and private life. Moreover, little has been done to promote equal opportunities in Italian universities. Since the 1980s, groups of researchers (mainly women) promoted a variety of initiatives for the enhancement of equal opportunities in academia, with mixed results. Initiatives were taken first in STEM, then in few other fields. Economics is a recent example that deserves attention. Box 7.1 summarizes the initiatives undertaken by SIE (Italian Society of Economics) for the promotion of equal opportunities in academia.

Box 7.1 The initiatives undertaken in recent years by SIE (Società Italiana di Economia) for the promotion of equal opportunities in academia

SIE is active in the promotion of gender equality in academia by producing reports, collecting data, and making proposals to other institutions. Here are listed initiatives of the SIE’s gender committee (1)-(4) or initiatives taken by other institutions to which SIE contributes (5)-(6).

1. SIE, Commissione di genere (2019). *La dimensione di genere della governance universitaria* (edited by Alessandra Casarico et al.)

The report shows a clear gender inequality in the Italian universities.

2. SIE, Commissione di genere (2014, 2016). *Rapporti 2014 e 2016* (edited by di Marcella Corsi)

Link: [https://siecon3-607788.cdn77.org/sites/siecon.org/files/media\\_wysiwyg/ii-rapporto-commissione-genere-sie2.pdf](https://siecon3-607788.cdn77.org/sites/siecon.org/files/media_wysiwyg/ii-rapporto-commissione-genere-sie2.pdf)

These reports - based on surveys about the career obstacles of SIE members - show that in a gender perspective: “There is no significant differences in the training phase. Gender differences become more evident in the initial stages of the career and in the difficulties in career progression, for which the access to the top positions is gender biased. The glass-ceiling effect is noticeable in the lower involvement of

<sup>20</sup> «Italy counts the cost of its brain drain”, by Renée Kaplan, *Financial Times*, 7 November 2019.

women in managerial and evaluative roles of Italian universities. Furthermore, family commitments weight on the career profile for almost 60% of women, with less time spent on research than their peers”.

### 3. SIE, Commissione di genere. Initiatives on data and quantitative analysis

#### a) *La professione dell'economista: uno sguardo di genere* (edited by Giulia Zacchia)

**Link:** <https://www.siecon.org/it/chi-siamo/organizzazione/commissioni/commissione-di-genere/dati>

Data on gender differences of Italian academic economists in Italy, in line with consolidated foreign experiences (e.g. Annual reports of the CSWEP in the USA and biennial of the RES Women’s Committee in the UK) and in continuity with the monitoring activity of SIE members carried out by the previous Gender Commission of the SIE (2014 and 2016 Reports “SIE Members: A gender view”). The data comes from various databases (ANVUR, CINECA, MIUR, REPRISE) and are organized by: Education, Career profiles and Allocation of research funds in a gender perspective. The final focus is on SIE’s members.

#### b) *Il Fondo per le Attività Base di Ricerca 2017. Partecipazione al bando ed esiti della valutazione per sesso* (edited by Francesca Bettio e Fernanda Mazzotta)

The allocation of research funds is examined in a gender perspective.

**Link:** [https://siecon3-607788.c.cdn77.org/sites/siecon.org/files/media\\_wysiwyg/fabbr\\_valutazione\\_di\\_genere\\_2.pdf](https://siecon3-607788.c.cdn77.org/sites/siecon.org/files/media_wysiwyg/fabbr_valutazione_di_genere_2.pdf)

### 4. SIE, Commissione di genere, Linee guida per la parità di genere in eventi scientifici

SIE promotes gender equality in conferences, seminars and scientific events, by suggesting the guidelines and the rules in order to ensure adequate representation of both sexes in scientific events, conferences, workshops, scientific and organizing committees.

**Link:** <https://www.siecon.org/it/chi-siamo/51app-guida-la-parita-di-genere-eventi-scientifici>

### 5. MIUR: Indicazioni per azioni positive del MIUR sui temi di genere nell’università e nella ricerca, 18 maggio 2018

The work of this group indicates guidelines and good practices for research fundings and university governance in a gender perspective.

**Link:** [https://siecon3-607788.c.cdn77.org/sites/siecon.org/files/media\\_wysiwyg/indicazioni\\_per\\_azioni\\_positive\\_del\\_miur\\_sui\\_temi\\_di\\_genere\\_nell\\_universita\\_e\\_nella\\_ricerca\\_0.pdf](https://siecon3-607788.c.cdn77.org/sites/siecon.org/files/media_wysiwyg/indicazioni_per_azioni_positive_del_miur_sui_temi_di_genere_nell_universita_e_nella_ricerca_0.pdf)

### 6. Conferenza dei rettori delle università italiane (CRUI): Gender Budgeting

On the basis of European Parliament Resolution (2003) *Gender budgeting – Building public budgets from a gender perspective*; and (2011) *Gender mainstreaming in the work of the European Parliament* as well the I of Horizon 2030, a group within the CRUI suggested the guidelines for gender budgeting by Italian Universities, looking at the harmonization and comparison of the ongoing practices.

**Link:** <https://www.cruai.it/bilancio-di-genere.html>;  
[https://www2.cruai.it/cruai/Linee\\_Guida\\_Bilancio\\_di\\_Genere\\_negli\\_Atenei\\_italiani.pdf](https://www2.cruai.it/cruai/Linee_Guida_Bilancio_di_Genere_negli_Atenei_italiani.pdf)

Surprisingly, other research fields in SSH (e.g. Sociology and Political Science) have no initiatives on gender issues. Finally, it should be mentioned that projects aiming to enhance the role of women in science and fight discrimination have been promoted by central government institution for equal opportunities or universities, mainly under EU funds (7FP and Horizon 2020). But these projects are few and isolated, not being part of a national strategy to promote women in science.

Another point to note is the very limited and fragmented diffusion of gender studies in tertiary education. Entire degree programs, crucial for the formation of the Italian ruling classes, do not provide courses that include a gender approach.

The debate on gender and career advancement shed some light on the gender effects of evaluation procedures, in particular how bibliometric criteria and productivity measures may negatively affect women’s probability of success. To add, the measures introduced to evaluate scientific research

and teaching activity in order to rationalize the central system of (decreasing) public funding for universities are currently under discussion within the academic community. To note, Italy is a country with no experience in evaluation, and this lack of experience is mirrored in the current difficulties to introduce and implement an effective system of university evaluation.

**ABBREVIATIONS AND ACRONYMS**

(and translations)

ADI	Associazione Dottorandi e Dottori di Ricerca Italiani (Association of Doctoral Students and Doctoral holders, Italy)
ANVUR	Agenzia Nazionale di Valutazione del sistema Universitario e della Ricerca (Agency for the Evaluation of the University and Research)
art.	Article
ASN	Abilitazione Scientifica Nazionale (National Scientific Qualification, NSQ)
CPO	Comitato Pari Opportunità (Equal Opportunity Committee)
CRUI	Conferenza dei Rettori delle Università Italiane (Conference of Rectors of Italian Universities)
CUG	Comitato Unico di Garanzia
CUN	Consiglio Universitario Nazionale (National University Council)
D.Lgs.	Decreto legislativo (Legislative decree)
DEO	Department of Equal Opportunities
D.M.	Decreto Ministeriale (Ministerial Decree)
D.P.R.	Decreto del Presidente della Repubblica (Presidential Decree)
EC	European Commission
EP	European Parliament
EU	European Union
FFO	Fondo di Finanziamento Ordinario (Ordinary Financing Fund)
FP7	Seventh Framework Programme
GB	Gender Budgeting
GCI	Glass Ceiling Index
GEP	Gender Equality Plan
ISCED	International Standard Classification of Education
L.	Legge (Law)
LFS	Labour Force Survey
MIUR	Ministero dell'Istruzione, dell'Università e della Ricerca (Ministry of Education, University and Research)
NSQ	National Scientific Qualification (Abilitazione Scientifica Nazionale, ASN)
p.p.	percentage points
RTDa	Researcher (fixed-term) type A (three-year duration)
RTDb	Researcher (fixed-term) type B (tenured track position)
Post-doc	Assegnista di ricerca
SIE	Società Italiana di Economia (Italian Society of Economics)
SSH	Social Sciences and Humanities
STEM	Science, Technology, Engineering and Mathematics
UN	United Nations
VQR	Valutazione della Qualità della Ricerca (Research Quality Evaluation)
WEF	World Economic Forum

## APPENDIX

### BOXES

#### Box A.1: Fields of education (academic disciplines) at the international and national level

An academic discipline (or field of study) is a branch of knowledge. A scholar's discipline is commonly defined and recognized by a university faculty. That person will be accredited by learned societies to which he/she belongs along with the academic journals in which he/she publishes. However, no formal criteria exist for defining an academic discipline. There is no consensus on how some academic disciplines should be classified (e.g., whether anthropology and linguistics are disciplines of social sciences or fields within the humanities). More generally, the proper criteria for organizing knowledge into disciplines are also open to debate.

EUROSTAT database: tertiary education students/graduates by broad field (and sex) in EU 28 countries. Online code: educ\_uae\_enrt03. Data for Italy is available, but with a very high share on 'unknown' (over 1/3). The grouping of fields is very broad (10 fields).

OECD database (OECD.Stat): tertiary education students/graduates by field of education (and sex) in OECD countries. Italy is included in the database. However, information in OECD database is not updated (available only up to 2012).

OECD Education at a Glance (EAG 2019): tertiary education students/graduates by broad field of education (also by sex) in OECD countries. Italy is included in the EAG database. These are the seven broad fields of study: 1. Arts and humanities; 2. Social sciences, journalism and information; 3. Business, administration and law; 4. Natural sciences, mathematics and statistics; 5. Information and communication technologies; 6. Engineering, manufacturing and construction; 7. Health and welfare.

ISTAT database (I.Stat): tertiary education students/graduates by disciplinary field (and sex). Istat identifies 16 disciplinary fields (so called 'gruppi ISTAT'). However, the relationship with the classification used in Italian universities (i.e. the 14 CUN areas) is not made clear. See Box A.2 for the classification of disciplinary fields by Istat (16 groups) and by CUN (14 areas).

Box A.2: The classification of disciplinari fields in Italy: Istat groups and CUN areas (and translation in English)

<i>Istat groups</i> (Italian)	<i>Istat groups</i> (English)
1. Scientifico 2. Chimico-farmaceutico 3. Geo-biologico 4. Medico 5. Ingegneria 6. Architettura 7. Agrario 8. Economico-statistico 9. Politico-sociale 10. Giuridico 11. Letterario 12. Linguistico 13. Insegnamento 14. Psicologico 15. Educazione fisica 16. Difesa e sicurezza	1. Scientific 2. Chemical-pharmaceutical 3. Geo-biological 4. Medical 5. Engineering 6. Architecture 7. Agrarian 8. Economic-statistical 9. Political-social 10. Law 11. Literature 12. Linguistic 13. Teaching 14. Psychological 15. Physical education 16. Defense and security
<i>CUN areas</i> (Italian)	<i>CUN areas</i> (English)
1. Scienze matematiche e informatiche 2. Scienze fisiche 3. Scienze chimiche 4. Scienze della terra 5. Scienze biologiche 6. Scienze mediche 7. Scienze agrarie e veterinarie 8.a Architettura 8.b Ingegneria civile 9. Ingegneria industriale e dell'informazione 10. Scienze dell'antichità, filologico-letterarie, storico-artistiche 11.a Scienze storiche, filosofiche e pedagogiche 11.b Scienze psicologiche 12. Scienze giuridiche 13. Scienze economiche e statistiche 14. Scienze politiche e sociali	1. Mathematical and computer sciences 2. Physical sciences 3. Chemical sciences 4. Earth sciences 5. Biological sciences 6. Medical sciences 7. Agricultural and veterinary sciences 8.a Architecture 8.b Civil engineering 9. Industrial and information engineering 10. Ancient, philological-literary, historical-artistic sciences 11.a Historical, philosophical and pedagogical sciences 11.b Psychological sciences 12. Legal Sciences 13. Economic and statistical sciences 14. Political and social sciences

## Box A.3: Main legislative acts to promote women's rights and gender equality – Italy

<i>SOURCE</i>	<i>MAIN DISPOSITION</i>
Constitution (1948): Art. 3 Art. 37 Art. 51	Formal equality between men and women Pay equality between men and women Equal access to public office
Law 868/1950	Physical and economic protection of working mothers
Law 898/1970	Divorce law
Law 1204/1971	Protection of working mothers
Law 1044/1971	Childcare facilities under local government
Law 151/1975	Family law reform
Law 903/1977	Equality of treatment between men and women on the workplace
Law 194/1978	Abortion Law
Law 125/1991	Positive action for achieving parity between men and women at work
Law 215/1992	Positive action for female entrepreneurship
Law 66/1996	Measures against sexual violence
Law 53/2000	Measures to promote reconciliation of work- family life
Reform of art. 51 of the Constitution	Legal Recognition of electoral gender quota
Law 154/2001	Measures against intimate violence
Legislative Decree 198/2006	National code of equal opportunities between women and men
Legislative Decree 196/2007	Equal treatment between men and women in access to and supply of goods and services (Implementation of EEC Directive 2004/133/CE)
Law Decree 11/2009	Measures against gender violence and stalking.
Law 120/2011	Law on mandatory quotas on Boards (For public and private board composition, no more than 2/3 members of the same sex on the board)
Law 215/2012	Law on mandatory quotas on local elections (For local elections, no more than 2/3 candidates of the same sex on the lists; gender preferences)
Law Decree 93/2013	It includes measures against gender violence (converted in Law 119/2013)
Law 65/2014	Law on mandatory quotas for the European Parliament elections (candidates of both sexes on the lists; gender preferences)
EU Istanbul Convention 2014	Council of Europe Convention on preventing and combating violence against women and domestic violence (implemented in 2014)
Legislative Decree 80/2015	It provides for up to three months' leave for women victims of violence
Law 205/2017 (Budget law for 2018)	It foresees prevention obligations for employers regarding sexual harassment and harassment

Source: Economist Intelligence Unit (2011) <http://www.globaltalentindex.com/>



## Box A.4: University laws and reforms - Italy

SOURCE	MAIN DISPOSITION	COMMENT
'Berlinguer Reform':  L. 425/1997; D.M. 509/1999; L. Quadro 30/2000.	- Research contracts ( <i>assegni di ricerca</i> ) are established (1997).  - The National Evaluation Committee for funding is established.  - University teaching cycles are reorganized: first level degrees (3 year courses); second level degrees (2 year courses); course credits are introduced.	The process of quantifying merit and competition of individual universities for public funding begins. The evaluation of excellence allows access to public resources. The key principles of the process are autonomy of the universities, competition between universities for funding, quantification of the merit.
D. Lgs. 204/1998; D. Lgs. 381/1999; L. 370/1999; D.M. 178/2000.	The Steering Committee for Research Evaluation (CIVR), and the National Committee for the Evaluation of the University System (CNVSU) are established.	CIVR and CNVSU are predecessor committees of ANVUR. The process of institutionalization and systematization of the evaluation of teaching and research activity is increasingly affirmed, in order to increase competition between Italian universities.
'Moratti Reform':  L. 53/2003; D.M. 270/2004.	- The Degree Classes are rearranged, the Master's Degree is established, which is equivalent to the old four-years Degree.  - The autonomy of individual universities is strengthened.  - The Evaluation System is strengthened.	The Moratti Reform continues with the setting of the previous Berlinguer Reform, strengthening autonomy and competition based on a central evaluation.  It should also be noted that the evaluation process is still to be implemented: implementation will only take place in 2010 with the Gelmini Reform.  The Reform eliminated the two full-time entry positions, "assistant professor" and "researcher" which were replaced by two new types of "fixed-term researcher", one more dedicated to research and one to teaching. Furthermore, the Reform has extended the possibility of using precarious contracts in universities. In fact, in addition to extending the use of post doc contracts ( <i>assegni di ricerca</i> ), it has established collaboration contracts ( <i>collaborazioni di ricerca</i> ).
L. 286/2006	The National Agency for University and Research Evaluation (ANVUR) is established	CIVR and CNVSU (see above) are abolished; a new body (ANVUR) is established.  It should also be noted, once again, that the regulation for the implementation of the Agency's activities was enacted with a delay, only in 2010 with the Gelmini Reform.
D.M. 565/2007	Extraordinary plan for the recruitment of researchers in Italian universities	This Plan allocated 20 million Euros to universities for competition calls for new researcher positions. The distribution of funds among the universities, which must provide for the co-financing of places, took place considering these criteria: 20% on the CIVR surveys of the scientific research activity; 80% based on the total number of PhD students, postdoctoral researchers and researchers (RTI + RTD) in 2004-2007.
'Gelmini Reform':	- Career phases are established and rules for career changes and new	The Reform systematized the steps of the academic career as we know them today establishing two new types of fixed-term research contracts:

L. 240/2010	<p>positions are introduced (RTDa and RTDb).</p> <ul style="list-style-type: none"> <li>- The National Scientific Qualification (NSQ) is established.</li> <li>- The process for VQR (Regulation and implementation) is implemented and implemented.</li> </ul>	<ul style="list-style-type: none"> <li>- RTD - Type A three-year contracts, extendable for two years, for one time only, after a positive evaluation of the teaching and research activities carried out. It is still a temporary position.</li> <li>- RTD - Type B three-year contracts reserved for candidates who have benefited from type A contracts, or who have obtained national scientific qualification (NSQ), or who, for at least three years, even if not consecutive, have benefited from research grants or similar in foreign universities. Subject to qualification, there is a transition to Associate Professor for them. The Gelmini Reform establishes for the NSQ, National Scientific Qualification for the first level (Full Professors) and the second level (Associate Professors) of the professorship, a two-phase procedure: national and local. There are national commissions by sector, to assess the suitability (from 4 to 6 to 9 years) plus a local competition by disciplinary scientific sector.</li> </ul> <p>The national commissions for the NSQ are composed of five members: four extracted from those professors with minimum scientific requirements for the disciplinary field (thresholds, bibliometric indicators) and an external professor (selected on the basis of international reputation).</p> <p>The Reform continues the quantification and evaluation process and has opened the door to the problematic relationship between merit and bibliometric indicators for scientific productivity.</p>
D.M. 17/2011	First cycle of VQR (2004-2010)	After the first evaluation cycle (2011-2014), a second evaluation cycle took off in June 2015 (D.M. 458/2015). The results of this second cycle were published in February 2017. The third VQR cycle (2015-2019) took off in November 2019 (D.M. 1110/2019).
Budget Law for 2017 (L. 232/2016)	<ul style="list-style-type: none"> <li>- 'Departments of Excellence' programme.</li> <li>- The five-year frequency of the VQR is established.</li> </ul>	The "Departments of Excellence" programme, supported by extraordinary financial resources, had to identify and finance 180 Departments (in the 14 CUN areas), with an annual budget of 271 million euros, over a period of 5 years. It has temporarily helped some departments in a context of scarce resources, still rewarding the merit of some Departments instead of planning funding for all public universities.
'Jobs Act': L. 81/2017; Legislative decree 22/2015)	Extension of unemployment benefits (the Dis-Coll) to PhD students with scholarships, research collaborators and research fellows ("assegnisti/e").	<p>First form of unemployment insurance for young researches with a post-doc position ("assegnista").</p> <p>It is an unemployment benefit with a maximum of 6 months, from 80% of the net salary received and then up to 20%, set up first for collaborators in the private sector and then also extended to PhD students with scholarships and fellows.</p> <p>Previously, enrollment in the INPS Separate Management (with a minimum payment of contributions) was already foreseen for these researchers ("assegnisti/e"), but no unemployment allowance was foreseen. The protections already present before 2017 were compulsory and optional maternity, parental leave, accident insurance.</p>

## TABLES AND FIGURES

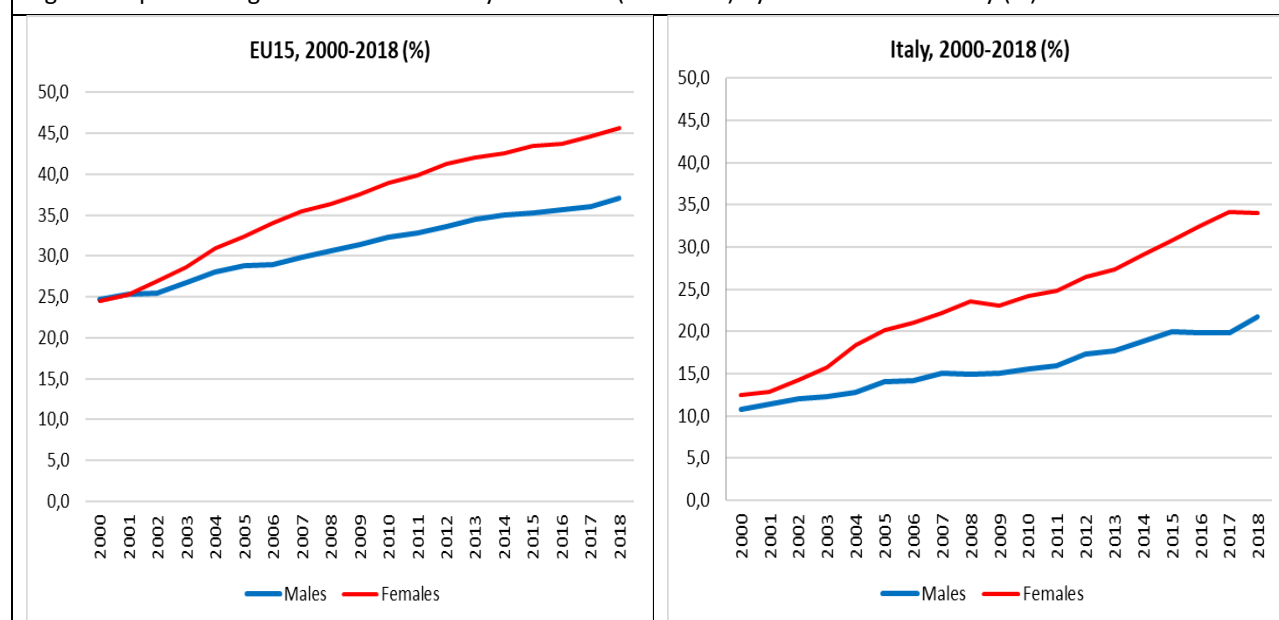
Tab. A.1 – First-time tertiary entrants by type of curriculum, 2002/03-2017/18 (absolute numbers)

A.A.	Corsi di Laurea triennale	Corsi di Laurea a Ciclo Unico	CdL Vecchio ordinamento non riformati*	Totale
2002/2003	304.695	20.895	3.786	329.376
2003/2004	308.588	19.192	4.828	332.608
2004/2005	307.544	19.949	5.049	332.542
2005/2006	296.674	17.547	4.235	318.456
2006/2007	255.547	47.144	3.092	305.783
2007/2008	253.499	47.914	3.252	304.665
2008/2009	243.668	45.244	3.073	291.985
2009/2010	244.632	48.617	2.299	295.548
2010/2011	239.120	46.790	2.133	288.043
2011/2012	233.734	45.452		279.186
2012/2013	227.828	41.344		269.172
2013/2014	229.537	39.248		268.785
2014/2015	230.197	40.531		270.728
2015/2016	240.862	35.301		276.163
2016/2017	254.579	35.673		290.252
2017/2018	256.834	34.023		290.857

\* immatricolati nei corsi v.o. in Giurisprudenza (fino all'a.a. 2005/06) e in Scienze della formazione primaria (fino all'a.a. 2010/2011)  
(Fonte: elaborazione su dati Anagrafe Nazionale Studenti)

Source: ANVUR (2019), Tab. I.1.1.2 (p. 29).

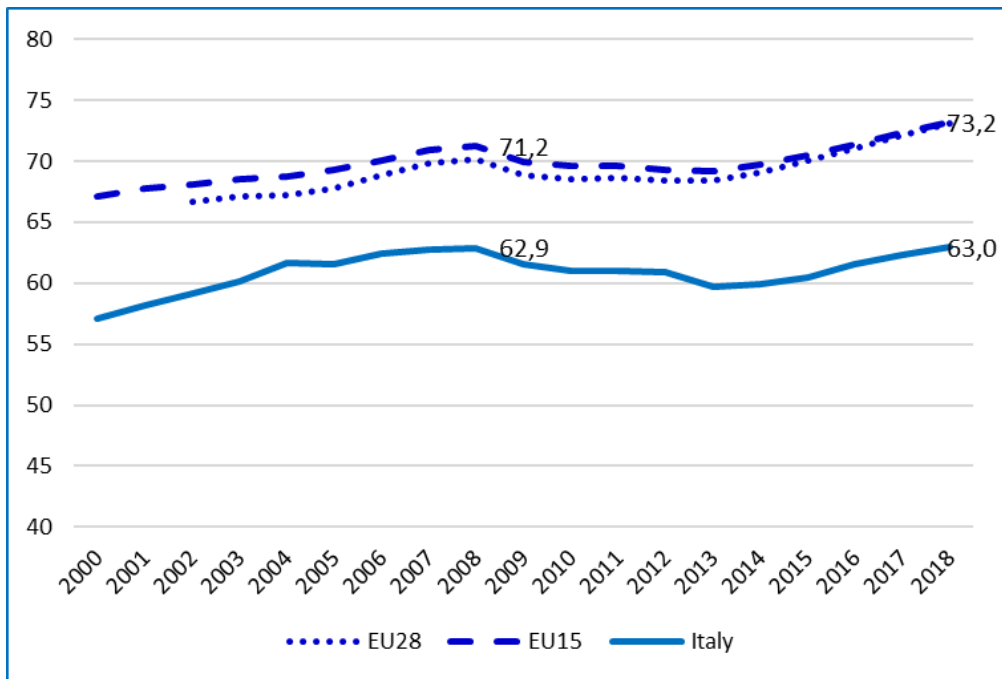
Fig. A.1 Population aged 30-34 with tertiary education (levels 5-8) by sex in EU15 and Italy (%)



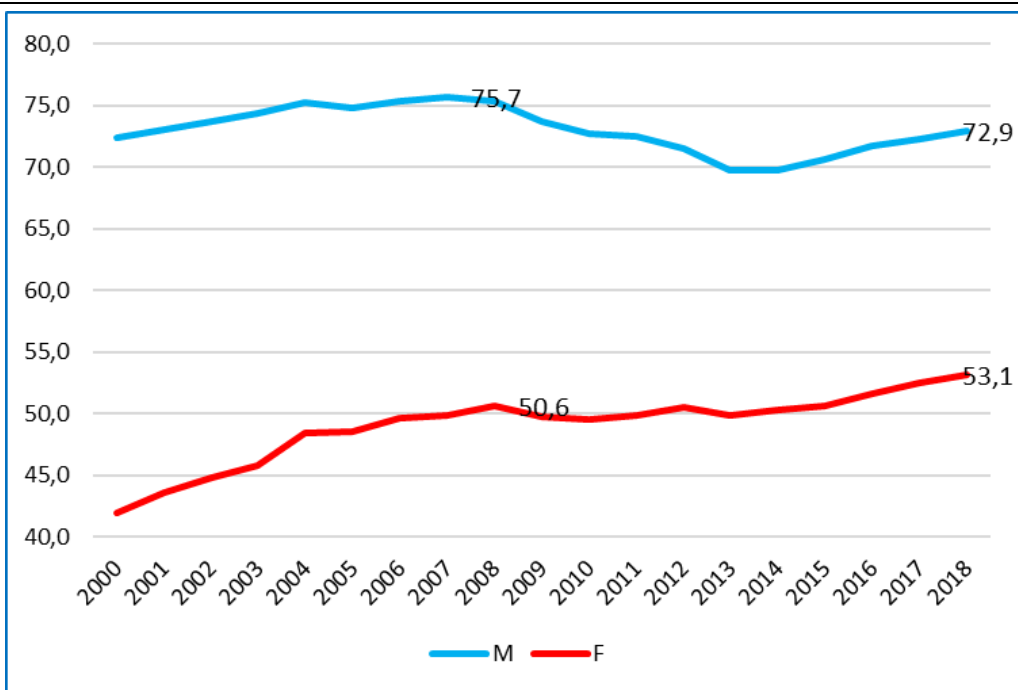
Source: Eurostat database, variable code: edat\_lfse\_12

Fig. A.2 Employment rates, 2000-2018, % (population aged 20-64)

a) Total population (MF) in Italy, EU15 and EU28.

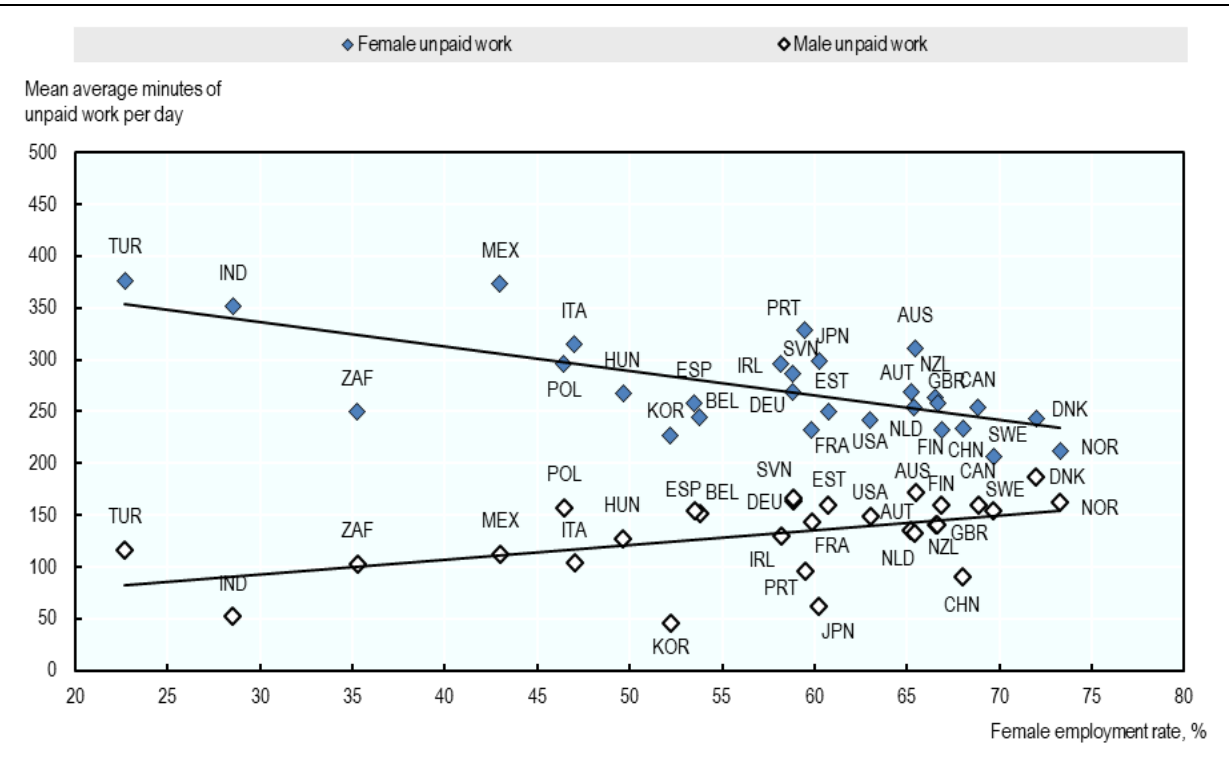


b) Men and women in Italy



Source: Eurostat database, variable code: lfsa\_ergan.

Figure A.3 - Gender balance in unpaid work correlates with greater female employment rate in OECD countries\*



Source: OECD (2017), Secretariat estimates based on national time-use surveys and Labour Force Surveys for employment rates.

## BIBLIOGRAPHY

### A. Gender equality in education, employment, family-formation and work-life balance

- AAVV (2017) Shadow Report – Cedaw alternative Report – Italy art. 2 and art. 5. With reference to the Seventh periodic report of Italy on the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). Available at: [https://tbinternet.ohchr.org/Treaties/CEDAW/Shared%20Documents/ITA/INT\\_CEDAW\\_NGO\\_ITA\\_27687\\_E.pdf](https://tbinternet.ohchr.org/Treaties/CEDAW/Shared%20Documents/ITA/INT_CEDAW_NGO_ITA_27687_E.pdf)
- AlmaLaurea (various years). Condizione occupazionale dei Laureati. Available at: [www.alma laurea.it](http://www.alma laurea.it)
- ANVUR (2019). *Rapporto Biennale sullo Stato del Sistema Universitario e della Ricerca 2018*. PARTE I: La formazione terziaria. [https://www.anvur.it/download/rapporto-2018/ANVUR\\_Rapporto\\_Biennale\\_2018\\_Sezione\\_1.pdf](https://www.anvur.it/download/rapporto-2018/ANVUR_Rapporto_Biennale_2018_Sezione_1.pdf)
- Banca d'Italia (2012). *Annual Report for 2011*. Abridged Version, Banca d'Italia, Roma.
- Banca d'Italia (2014). *Annual Report for 2013*. Abridged Version, Banca d'Italia, Roma.
- Bettio, Francesca, and Alina Verashchagina (2009). Gender segregation in the labour market. Root causes, implications and policy responses in the EU (EC's Expert Group on Gender and Employment, EGGE). Available at: <http://www.voced.edu.au/content/ngv44251>
- Bettio, Francesca, and Paola Villa (1998). "A Mediterranean Perspective on the Break-down of the Relationship between Participation and Fertility", *Cambridge Journal of Economics*, 22: 137-171.
- Consob (2018). "Gender diversity e performance delle società quotate in Italia". Available at: <http://www.consob.it/documents/46180/46181/qdf87.pdf/8954940f-223c-422f-b0fc-bc8c9b6b806a>
- Del Boca Daniela, Christopher Flinn, Daniela Piazzalunga, Chiara Pronzato, Giuseppe Sorrenti & Matthew Wiswal (2016). "Child Care Policies in Different Countries", Report Fondazione Rodolfo Benedetti. Available at [http://www.frdb.org/be/file/\\_scheda/files/DeBocaETal\\_full\\_reportCOVER.pdf](http://www.frdb.org/be/file/_scheda/files/DeBocaETal_full_reportCOVER.pdf)
- Donà, Alessia (2015), "La nuove norme contro la violenza di genere in Italia: possono le pressioni internazionali superare i vincoli dell'eredità di policy?", *Rivista Italiana di Politiche Pubbliche*, n. 1: 115-142.
- Donà, Alessia (2018). "Eppur si muove. The tortuous adoption and implementation of gender quota in conservative Italy, in R. Rubio Marin and E. Lepinard (eds.). *Transforming gender equality: The irresistible rise of gender quotas in Europe*, Cambridge University Press.
- Donà, Alessia (2019). "The populist Lega from ethno-regionalism to radical right-wing nationalism: backsliding gender equality policies with the help from the anti-gender movement", *European Journal of Politics and Gender*, 3(1), 161-163.
- EC (European Commission) (2014). *Report on Progress on equality between women and men in 2013*, Commission Staff Working Document, SWD (2014) 142 final, Brussels, 14 April 2014.
- EC (European Commission) (2018). *Paternity and parental leave policies across the European Union*. Luxembourg: Publications Office of the European Union
- EC (European Commission) (2019). *2019 Report on equality between women and men in the EU*. Luxembourg: Publications Office of the European Union
- EP (European Parliament) (2014). The Policy on Gender Equality in Italy. In-depth Analysis for the FEEM Committee, PE 493.052. Available at: <http://www.europarl.europa.eu/RegData/etudes/note/JOIN/2014/493052/IPOL-FEMM>
- EP (European Parliament) (2018). "Backlash in Gender Equality and Women's and Girls' Rights, study request by FEMM committee". Available at [https://www.europarl.europa.eu/RegData/etudes/STUD/2018/604955/IPOL\\_STU\(2018\)604955\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2018/604955/IPOL_STU(2018)604955_EN.pdf)
- ESDE (2013). "The gender impact of the crisis and the gap in total hours worked", Chapter 3 in: *Employment and Social Development in Europe* (ESDE). Available at: <http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7684>
- Eurostat (2019a). "Tertiary education statistics". *Statistics explained*

- Eurostat (2019b). «Living conditions in Europe – childcare arrangements», *Statistics explained*. [https://ec.europa.eu/eurostat/statistics-explained/index.php/Living\\_conditions\\_in\\_Europe\\_-\\_childcare\\_arrangements](https://ec.europa.eu/eurostat/statistics-explained/index.php/Living_conditions_in_Europe_-_childcare_arrangements)
- Eurostat (2019c). «Gender pay gap statistics», *Statistics explained*. [https://ec.europa.eu/eurostat/statistics-explained/index.php/Gender\\_pay\\_gap\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php/Gender_pay_gap_statistics)
- Eurydice (2009). “Gender Differences in Educational Outcomes: Study on the Measure Taken and Current Situation in Europe.” Available at: <http://www.eurydice.org>
- Guadagnini Marila and Alessia Donà (2007). “Women’s Policy Machinery in Italy between European Pressures and Domestic Constraints”. In Joyce Outshoorn and Johanna Kantola (eds.) *Changing State Feminism*, Londra, Palgrave, pp. 165-181.
- Isfol (2010). *Perché non lavori? I risultati di un’indagine Isfol sulla partecipazione femminile al mercato del lavoro* (edited by Roberta Pistagni), Roma: I libri FSE, Isfol.
- Istat (2011a). “Il sovraccarico di lavoro familiare delle donne”, in: Rapporto annuale 2010, Roma, pp. 155-161.
- Istat (2011c). “Le interruzioni di lavoro per la nascita di un figlio: le ‘dimissioni in bianco’”, in: *Rapporto annuale 2010*, Roma, pp. 153-155.
- Istat (2013). *Rapporto annuale 2013. La situazione del paese*, Roma: Istat.
- Istat (2014). *Rapporto annuale 2014. La situazione del paese*, Roma: Istat.
- Istat (2016). “I percorsi di studio e lavoro dei diplomati e dei laureati”. *Statistiche Report*, 26 settembre 2016
- Istat (2018). “L’Inserimento professionale dei dottori di ricerca. Anno 2018”. *Statistiche Report*, 26 novembre
- Istat (2019a). “Livelli di istruzione e ritorni occupazionali. Anno 2018”, *Statistiche Report*, 15 luglio 2019
- Istat (2019b). “Natalità e fecondità della popolazione residente. Anno 2018”, *Statistiche Report*, 25 novembre
- Istat (2019c). “Conciliazione tra lavoro e famiglia. Anno 2018”, *Statistiche Report*, 18 novembre
- Maione, Valeria (2014). “Consigliere di parità o dame di carità”, *inGenere*, 7 October. Available at: <http://www.ingenere.it/>
- Mundo, Antonietta (2012). “Analisi dei dati sull’utilizzo del congedo parentale: focus sulla situazione del Paese”, presentation at the seminar ‘Maternità, paternità & lavoro: istruzioni per l’uso’, INAIL, Roma.
- Murgia, Annalisa and Barbara Poggio (2009) “Challenging Hegemonic Masculinities. Men’s Stories on Gender Culture in Organizations”, *Organization*, 16(3): 407-423.
- Murgia, Annalisa and Barbara Poggio (2013). “Fathers’ Stories of Resistance and Hegemony in Organizational Cultures”, *Gender, Work and Organization*, 20(4) 413-424.
- Naldini, Manuela (2003). *The family in the Mediterranean welfare states*, Abingdon and New York: Routledge.
- Naldini, Manuela, and Chiara Saraceno (2008). « Social and family policies in Italy : Not totally frozen but far from structural reforms. » *Social Policy & Administration* 42(7) : 733-748.
- Naldini, Manuela, and Chiara Saraceno (2011). *Conciliare famiglia e lavoro. Vecchi e nuovi patti tra sessi e generazioni*. Bologna : Il Mulino.
- OECD (various years). *Education at a Glance*. Paris, OECD
- OECD (2017a). « Gender equality in education », in OECD (2017). *The Pursuit of Gender Equality: An Uphill Battle* (Ch. 6, 7 and 8): 95-120.
- OECD (2017b). *Education Policy Outlook: Italy*, Paris: OECD Publishing
- OECD (2017c). « Gender inequality in unpaid work », in OECD (2017). *The Pursuit of Gender Equality: An Uphill Battle* (Ch. 17): 189-198.
- OECD (2019a). *Education at a Glance. Country Note. Italy*. Paris, OECD
- OECD (2019b). *Family database*, <http://www.oecd.org/social/family/database.htm>  
SF1.1 “Family size and household composition”;  
SF2.1 “Fertility Rates”; SF2.2 “Ideal and actual number of children”;

SF2.3 “Age of mothers at childbirth and age-specific fertility”;  
 LMF 1.1 “Children in households by employment status”;  
 LMF1.3 “Maternal employment by partnership status”.

- Tomio, Patrizia (2012). “Gli organismi di parità universitari, il loro sviluppo e coordinamento”, *Meno di zero*, Anno III, 8-9. <http://menodizero.eu/>
- Trifiletti, Rossanna (1999). “Southern European Welfare Regimes and the Worsening Position of Women”, *Journal of European Social Policy*, 9: 49-64.
- Valentini, Chiara (2012). *O I figli o il lavoro*, Milano: Feltrinelli.
- Verloo, Mieke (2018). *Varieties of opposition to gender equality in Europe*. London: Routledge.
- Villa, Paola (2012). “Club Med. Issues for gender equality and intergenerational solidarity in Mediterranean countries”, *European Women’s Voice*, Spring: 16-18.
- WEF (World Economic Forum) (2014). *The Global Gender Gap Index. Italy*  
<http://reports.weforum.org/global-gender-gap-report-2014/economies/#economy=ITA>
- WEF (World Economic Forum) (2019). *Global Gender Gap 2020*. Available at:  
[https://tbinternet.ohchr.org/Treaties/CEDAW/Shared%20Documents/ITA/INT\\_CEDAW\\_NGO\\_ITA\\_27687\\_E.pdf](https://tbinternet.ohchr.org/Treaties/CEDAW/Shared%20Documents/ITA/INT_CEDAW_NGO_ITA_27687_E.pdf)

## B. Gender equality in academia and women in science

- Abramo, Giovanni, Ciriaco Andrea D’Angelo, Alessandro Caprasecca (2009). “Gender differences in research productivity: A bibliometric analysis of the Italian academic system”. In *Scientometrics*, 79(3): 517–539.
- Abramo, Giovanni and Ciriaco Andrea D’Angelo (2016). “Refrain from adopting the combination of citation and journal metrics to grade publications, as used in the Italian national research assessment exercise (VQR 2011–2014)”. In *Scientometrics* 109(3): 2053-2065.
- Abramo, Giovanni, and Ciriaco Andrea D’Angelo (2015). “The VQR, Italy’s second national research assessment: Methodological failures and ranking distortions”. In *Journal of the Association for Information Science and Technology* 66(11): 2202-2214.
- Abramo, Giovanni, & Ciriaco Andrea D’Angelo (2018). “On tit for tat: Franceschini and Maisano versus ANVUR regarding the Italian research assessment exercise VQR 2011-2014”. In *arXiv preprint arXiv: 1810.12635*.
- Abramo, Giovanni, Ciriaco Andrea D’Angelo and Francesco Rosati (2016). “Gender bias in academic recruitment”. In *Scientometrics*, 106(1): 119-141.
- ADI (2019a). “Quali prospettive per i post-doc? 2019”. <https://dottorato.it/content/viii-indagine-adi-su-dottorato-e-postdoc>
- ADI (2019b). “VIII Indagine ADI su Dottorato e Postdoc”. <https://dottorato.it/content/viii-indagine-adi-su-dottorato-e-postdoc>
- ADI (2019c). “Valorizzare il dottorato nelle imprese e nelle pubbliche amministrazioni”.  
<https://dottorato.it/content/3-valorizzare-il-dottorato-nelle-imprese-e-nelle-pubbliche-amministrazioni>.
- ADI (2020). “IX Indagine ADI su Dottorato e Postdoc: Abolire l'assegno di ricerca”.  
<https://dottorato.it/content/indagine-adi-2020>
- Arensbergen, Pleun, Inge van der Weijden and Peter van den Besselaar (2012). “Gender differences in scientific productivity: a persisting phenomenon?”. In *Scientometrics*. 93(3): 857-868.
- Antonelli, Francesco, Giada Sarra and Roberta Sorrentino (2013), “Il sesso mancante nell’università italiana.” In *InGenere.it*, [www.ingenere.it/articoli/il-sesso-mancante-nelluniversitaliana](http://www.ingenere.it/articoli/il-sesso-mancante-nelluniversitaliana)
- AETeD (2017). “Il Precariato nelle Università dopo la legge 240/2010 (“Gelmini”). [http://www.uniarted.it/wp-content/uploads/2017/01/2017-01-24-Precariato\\_Analisi\\_e\\_Proposte6.pdf](http://www.uniarted.it/wp-content/uploads/2017/01/2017-01-24-Precariato_Analisi_e_Proposte6.pdf)
- Baccini, Alberto (2014). “Le donne sono state discriminate nell’abilitazione scientifica nazionale?” In *Roars*, 28 October. <https://www.roars.it/online/le-donne-sono-state-discriminate-nellabilitazione-scientifica-nazionale/>



- Baccini, Alberto, Lucio Barabesi, Martina Cioni & Caterina Pisani (2014). "Crossing the hurdle: the determinants of individual scientific performance". In *Scientometrics*, 101(3): 2035-2062.
- Baccini, Alberto and Annalisa Rosselli (2014), "Abilitazione scientifica nazionale, miglioramenti da migliorare." In *InGenere.it*, 28 ottobre. <https://www.ingenere.it/articoli/abilitazione-scientifica-nazionale-miglioramenti-da-migliorare>
- Baccini, Alberto and Giuseppe De Nicolao (2016). "Do they agree? Bibliometric evaluation versus informed peer review in the Italian research assessment exercise." In *Scientometrics* 108(3): 1651-1671.
- Baccini, Alberto, Giuseppe De Nicolao and Eugenio Petrovich E. (2019). "Citation gaming induced by bibliometric evaluation: A country-level comparative analysis". In *PLOS ONE*, 14(9).
- Bagues, Manuel, Mauro Sylos-Labini and Natalia Zinovyeva (2017). "Does the gender composition of scientific committees matter?". In *American Economic Review* 107(4): 1207-38.
- Bataille, Pierre, Nicky Le Feuvre, and Sabine Kradolfer Morales (2017). "Should I stay or should I go? The effects of precariousness on the gendered career aspirations of postdocs in Switzerland." In *European Educational Research Journal* 16(2): 313-331.
- Bellè, Elisa, Rossella Bozzon and Annalisa Murgia (2017). "Inside/Out. Storie di precarietà nell'università italiana." In Francesca Coin, Alberta Giorgi, Annalisa Murgia (Eds.). *In/disciplinate: soggettività precarie nell'università italiana*, Edizioni Ca' Foscari Culture del lavoro 4: 59-74.
- Benedetto, Sergio, Daniele Checchi, Andrea Graziosi and Marco Malgarini (2017). "Comments on the paper "Critical remarks on the Italian assessment exercise". In *Journal of Informetrics* 2(11): 622-624.
- Biagioli, Mario (2018). "Impact or perish. L'ossessione per l'impatto delle pubblicazioni scientifiche genera frodi e condotte abusive." In *Roars*, 27 March. <https://www.roars.it/online/tag/indicatori-bibliometrici/>
- Bosquet, Clément, Pierre-Philippe Combes, Cecilia García-Peñalosa, Sarra Ben Yahmed, and Camille Dufour (2014). 8. Le monde universitaire, un laboratoire d'analyse des différences d'avancement de carrière des hommes et des femmes. *Regards croisés sur l'économie*, (2): 158-165.
- Bozzon, Rossella, Annalisa Murgia, and Barbara Poggio (2017). "Work-life interferences in the early stages of academic careers: The case of precarious researchers in Italy." In *European Educational Research Journal* 16(2-3): 332-351.
- Bozzon, Rossella, Annalisa Murgia and Paola Villa (2017). "Precariousness and gender asymmetries among early career researchers: a focus on STEM fields in the Italian academia." In *Polis* 31(1): 127-158.
- Ceci, Stephen, J., Donna K. Ginther, Shulamit Kahn and Wendy M. Williams (2014). "Women in Academic Science: A Changing Landscape." *Psychol Sci Public Interest*. 15(3): 75-141.
- Ceci, Stephen, J. and Wendy M. Williams (2011). "Understanding current causes of women's underrepresentation in science." In *PNAS* 108 (8): 3157-3162. Available at <https://www.pnas.org/content/108/8/3157>
- Christofides, Louis N., Michael Hoy and Ling Yang (2009). "The gender imbalance in participation in Canadian Universities (1977-2005)." CESifo Working Paper, No. 2791.
- Cohen, Scott, Paul Hanna, James Higham, Debbie Hopkins and Caroline Orchiston (2019). "Gender discourses in academic mobility." In *Gender, Work & Organization*, <https://doi-org.proxy.unimib.it/10.1111/gwao.12413> 1-17.
- Constant, Amelie F., and Elena D'Agosto (2010). "Where do the brainy Italians go?" *The labour market impact of the EU enlargement*. Physica-Verlag HD, 247-271.
- CRUI (2019). *Linee guida per il Bilancio di Genere negli Atenei italiani*, <https://www.cru.it/bilancio-di-genere.html>.
- De Paola, Maria, Michela Ponzio, Vincenzo Scoppa (2014). "Donne sull'orlo di una crisi di competizione". *Lavoce.Info*, 29 July. <https://www.lavoce.info/archives/29143/donne-competizione-universita/>
- De Paola, Maria, Michela Michela and Vincenzo Scoppa (2017). Gender differences in the propensity to apply for promotion: Evidence from the Italian Scientific Qualification, *Oxford Economic Papers*, 69(4): 986-1009.

- De Paola, Maria, Michela Ponzio and Vincenzo Scoppa (2018). "Are Men Given Priority for Top Jobs? Investigating the Glass Ceiling in Italian Academia". In *Journal of Human Capital* 12(3): 475-503.
- De Paola, Maria and Vincenzo Scoppa (2015). "Gender discrimination and evaluators' gender: evidence from Italian academia". In *Economica*, 82(325): 162-188.
- D.M. (2018). D.M. 8 agosto 2018, N. 589 – Tabelle valori – Soglia candidati e commissari. [https://abilitazione.miur.it/public/documenti/2018/Tabelle\\_Valori\\_Soglia\\_ALLEGATI\\_DM\\_589\\_2018.pdf](https://abilitazione.miur.it/public/documenti/2018/Tabelle_Valori_Soglia_ALLEGATI_DM_589_2018.pdf)
- Franceschini, Fiorenzo and Domenico Maisano (2017). "Critical remarks on the Italian research assessment exercise VQR 2011–2014." In *Journal of Informetrics* 11(2): 337-357.
- Gaiaschi, Camilla (2019). "Same job, different rewards: the gender pay gap among physicians in Italy." In *Gender, Work & Organization*.
- Helmer, Markus, Manuel Schottdorf, Andreas Neef and Damian Battaglia (2017). "Gender bias in scholarly peer review". In *Elife* 6: 1-18.
- Herschberg, Channah, Yvonne Benschop and Marieke Van den Brink (2018). "Precarious postdocs: A comparative study on recruitment and selection of early-career researchers." In *Scandinavian Journal of Management* 34(4): 303-310.
- King, Molly. M., Carl T. Bergstrom, Shelley J. Correll, Jennifer Jacquet and Jevin D. West (2017). "Men set their own cites high: Gender and self-citation across fields and over time". *Socius: Sociological Research for a Dynamic World*, 3: 1-22
- James, Alex, Rose Chisnall and Michael J. Plank (2019). "Gender and societies: a grassroots approach to women in science". In *Royal Society Open Science* 6(9): 1-11.
- Lansu, Monic, Inge Bleijenbergh and Yvonne Benschop (2019). "Seeing the system. Systemic gender knowledge to support transformational change towards gender equality in science." In *Gender, Work & Organization* 1-17 <https://doi.org/10.1111/gwao.12384>.
- Leenders, Joke, Inge L. Bleijenbergh and Marieke Van den Brink (2019). "Myriad potential for mentoring: Understanding the process of transformational change through a gender equality intervention." In *Gender, Work & Organization* 1-16 <https://doi.org/10.1111/gwao.12385>.
- Lundberg, Shelly and Jenna Stearns. (2019). "Women in Economics: Stalled Progress." *Journal of Economic Perspectives*, 33 (1): 3-22.
- Manzo Francesca (2017). "Abilitazione Scientifica Nazionale (ASN) e progressione di carriera dei docenti universitari italiani". Ph.D. Thesis, University of Naples.
- Maxwell, Nicola, Linda Connolly and Caitríona Ní Laoire (2019). "Informality, emotion and gendered career paths: The hidden toll of maternity leave on female academics and researchers." *Gender, Work & Organization* 26(2): 140-157.
- MIUR (2019a). "Le carriere femminili in ambito accademico", Gestione Patrimonio Informativo e Statistica. <http://ustat.miur.it/documenti/>
- MIUR (2019b). "Il personale docente e non docente nel sistema universitario italiano - a.a 2017/2018". Gestione Patrimonio Informativo e Statistica. <http://ustat.miur.it/documenti/>
- Monteleone, Simona and Bruno Torrì (2012). "Geographical analysis of the academic brain drain in Italy." *Scientometrics* 93(2): 413-430.
- Murgia, Annalisa and Barbara Poggio (2015). "Il progetto GARCIA. Università e Ricerca in ottica di Genere: superare le asimmetrie e l'instabilità lavorativa.", In S. Avveduto et al., Eds., *Scienza, genere e società. Prospettive di genere in una società che si evolve*. CNR-IRPPS: 247-252.
- Murgia, Annalisa and Barbara Poggio (eds.) (2018). *Gender and precarious research careers*. London, NY: Routledge.
- Murray, Dakota, et al. (2018). "Author-reviewer homophily in peer review" (preprint). In *bioRxiv*.
- Nikunen, Minna, and Kirsti Lempiäinen (2018). "Gendered strategies of mobility and academic career." In *Gender and Education*: 1-18 [doi.org/10.1080/09540253.2018.1533917](https://doi.org/10.1080/09540253.2018.1533917).
- OECD (2017). "Gender equality in education". In *The pursuit of gender equality: An uphill battle*, Paris: OECD

- Pautasso, Marco (2015). "The Italian university habilitation and the challenge of increasing the representation of women in academia". In *Challenges*, 6(1): 26-41.
- Poggio, Barbara (2017). "Women and men in scientific careers: new scenarios, old asymmetries." *Polis* 31(1): 5-16.
- Poggio, Barbara (2018a) "Structural changes in higher education in the neoliberal age. Insight from Connell's theory", in R. Connell, P. Martin, J. W. Messerschmidt, M. Messner, Eds., *Gender Reckonings: New Social Theory and Research*, New York, NY University Press, pp. 234-260.
- Poggio, Barbara (2018b). "Gender politics in academia in the neoliberal age." In R. Connell, P. Martin, J. W. Messerschmidt, M. Messner, Eds., *Gender reckonings: New social theory and research*, New York, NY University Press, pp. 173-93.
- Potvin, Dominique A., Emily Burdfield-Steel, Jacqueline Potvin and Stephen Heap (2018). "Diversity begets diversity: A global perspective on gender equality in scientific society leadership". In *PLoS one* 13(5): e0197280.
- Sala, Emanuela and Roberta Bosisio (2017). "Gender inequalities in Italian academia: What future for female academics?". In *Feminismo/s* 29: 347-368.
- Scoppa, Vincenzo and Maria De Paola (2011), "Sorteggio non fa rima con merito", Lavoce.info, 8 March. <https://www.lavoce.info/archives/26805/sorteggio-non-fa-rima-con-merito/>
- Shen, Helen (2013). "Mind the gender gap". *Nature News*, 495: 22-24"
- Solera, Cristina and Rosy Musumeci (2017). "The persisting glass ceiling in academia: a multidimensional cross-national perspective." In *Polis* 31(1): 17-44.
- Steinþórsdóttir, Finnborg S., Thomas Brorsen Smidt, Gyða M. Pétursdóttir, Þorgerður Einarsdóttir, and Nicky Le Feuvre (2019). "New managerialism in the academy: Gender bias and precarity." In *Gender, Work & Organization* 26(2): 124-139.
- Toscano, Emanuele, Francesca Coin, Orazio Giancola, Barbara Gruening, Francesco Vitucci and Claudio Riccio (2014). "RICERCARSI – Indagine sui percorsi di vita e lavoro del precariato universitario". Available at: <http://www.research.lancs.ac.uk/portal/files/278645196/Ricercarsi.pdf>.
- Villa, Paola (2019). "Economics, gender and Academia", 25 November 2019, Seminar, DEM, University of Trento

## Websites

<https://dottorato.it/indagini>

<http://ec.europa.eu/eurostat>

[http://ec.europa.eu/index\\_it.htm](http://ec.europa.eu/index_it.htm)

<http://home.epws.org>

<http://menodizero.eu/>

<http://www.donnescienza.it/>

[https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Tertiary\\_education\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Tertiary_education_statistics)

<https://ec.europa.eu/eurostat/web/science-technology-innovation/data/database>

<https://www.anvur.it/apport-biennale/apport-biennale-2018/>

<https://www.crui.it/bilancio-di-genere.html>

<https://www.eui.eu/ProgrammesAndFellowships/AcademicCareersObservatory/AcademicCareersbyCounty/Italy>

<https://www.miur.gov.it/abilitazione-scientifica-nazionale>

<https://www.miur.gov.it/istituzioni-universitarie-accreditate>

<https://www.miur.gov.it/settori-concorsuali-e-settori-scientifico-disciplinari>

<https://www.miur.gov.it/web/guest/settori-concorsuali-e-settori-scientifico-disciplinari>

[www.anvur.org/index.php?lang=it](http://www.anvur.org/index.php?lang=it)

[www.bancaditalia.it](http://www.bancaditalia.it)

[www.cun.it/homepage/](http://www.cun.it/homepage/)

[www.ingenera.it](http://www.ingenera.it)

[www.ISTAT.it](http://www.ISTAT.it)

[www.istruzione.it/](http://www.istruzione.it/)

[www.lavoce.info](http://www.lavoce.info)

[www.OECD.org/](http://www.OECD.org/)

[www.quing.eu/index.php](http://www.quing.eu/index.php)

[www.roars.it/online/](http://www.roars.it/online/)

[www.weforum.org](http://www.weforum.org)