Title: Same job, different rewards: the gender pay gap among physicians in Italy.

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Abstract

Women have made a significant progress in the medical profession, but despite this trend towards equality, the gender pay gap persists. This study investigates the determinants of earning differentials among physicians in Italy. This analysis is based on a dataset of more than 1000 doctors working in five hospitals in the Lombardy region. Data were collected through an online survey with a response rate of 48.7%. Women's concentration in the lower ranks of the career ladder, their lower propensity to work as private practitioners and their lower concentration in surgical specialties contribute to the gender income gap. Having children and a spouse or a cohabiting partner entails a premium on income for men, but no penalty for women, which suggests that positive discrimination towards fathers and husbands is stronger than negative discrimination towards mothers and wives. On the other hand, the gender gap associated with marital and parental status is stronger in public hospitals than in private hospitals, at least up to the second child. Once differences in characteristics are controlled, women earn 18% less than men. This penalty should be ascribed to employer's discrimination and/or unobserved characteristics. These findings challenge the human capital perspective by calling for the role of structural mechanisms in producing inequalities.

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Introduction

Women have made significant progress in the medical profession. In 2014, they accounted for 41.2% of all physicians in OECD countries, a 21% increase in ten years. Italy fits the OECD average with 40.3% of women physicians, up from 33% in 2004[1]. The proportion of women doctors is unlikely to stop growing, not only because most medical school graduates are women but also, if not mainly, because most physicians close to retirement are men. Indeed, 59% (in OECD countries) and 66% (in Italy) of Ph.D. graduates in the healthcare field are women.[2] On the other hand, 84% (OECD countries) and 90% (Italy) of physicians who are 65 years old or more are men.[3]. That is, women's concentration in younger cohorts, together with men's concentration in older cohorts, is likely to further enhance the on-going process of feminization — defined as a growing representation of women (Roos and Jones, 1993) — of the medical work-force.

Despite this trend towards gender parity in the composition of the profession, inequalities between men and women physicians in pay and career progression persist. Most of the literature on gender inequalities among physicians find that pay differentials persist notwithstanding equal characteristics (Hoff, 2004; Wright et al., 2003; Sasser, 2005; Weeks et al., 2009; Boulis and Jacobs, 2010; Jagsi et al., 2012; Magnusson, 2016; Ly et al. 2016; Roth, 2016). By contrast, Baker (1996) reports no earning difference between men and women after controlling for experience, specialty, practice setting, family status and other attributes. Moreover, women tend to cluster in less remunerative organizations and specialties (Baker, 1996; Hinze, 2000; Sasser, 2005; Boulis and Jacobs, 2010; Crompton and Lyonette, 2011; Ku, 2011; Magnusson, 2016; Lepièce et al. 2016), while they are more likely to be under-represented in senior and leadership positions (Tesch et al. 1995; Kaplan et al., 1996; McManus & Sproston, 2000; Wright et al. 2003, Carnes et al., 2008, Boulis and Jacobs, 2010;

[1] OECD. Health Care Resources. Physicians by age and gender, 2014. Data extracted on 29 April 2017 from the following link: stats.oecd.org
[2] OECD. Education at a glance. Share of women graduates by field, 2013 for the OECD average and 2014 for Italy. Data extracted on 29 April 2017 from the following link: stats.oecd.org
[3] OECD. Health Care Resources. Physicians by age and gender, 2014. Data extracted on 29 April 2017 from the following link: stats.oecd.org

Zhuge et al., 2011; Spina and Vicarelli, 2015). Regarding the effect of marital and parental status on pay, Sasser (2005) finds a mechanism of premiums and penalties for, respectively, mothers and fathers after controlling for their characteristics. By contrast, Magnusson (2016) finds a positive effect of parenthood on income for both men and women.

Most studies on the pay gap in medical careers using econometric methods have been conducted in the United States, where cross-sectional and longitudinal national datasets are available (Baker, 1996; Sasser, 2005; Boulis and Jacobs, 2010; Jagsi et al. 2012; Weeks et al., 2009; Ly et al., 2016; Roth, 2016). Studies based on self-administered surveys (Hinze, 2000; Wright et al. 2003; Hoff, 2004; Jagsi et al., 2012) are also mostly American. To my knowledge, there is only one study specifically focused on earning differentials outside the US (Magnusson, 2016), while the other non-US contributions investigate gender differences in career progression (McManus and Sproston, 2000), leadership (Spina and Vicarelli, 2015), specialty choice (Crompton and Lyonette, 2011) and working hours (Pas et al. 2011, Nomura and Gohchi, 2012). This study aims to fill a gap in the literature on the gender pay gap among doctors by focusing on the Italian labour market.

The analysis reported in this paper is based on a dataset of more than one thousand doctors working in five hospitals in the Lombardy region of Northern Italy. Data were collected from June 2014 to July 2015 by means of an online survey, with a response rate of 48.7%. Analysing the effect of gender on earnings within a single profession has the advantage of reducing unobserved heterogeneity, provided that individuals are similar in terms of human capital investments and work attributes, thus limiting the potential bias in the estimations due to unobserved characteristics. Moreover, the Lombardy healthcare system is a mixed-system made of public and private providers that is known for being competitive and for dispensing high-quality standards of care. This factor makes it possible not only to study a highly selected population, thus further reducing heterogeneity, but also to compare public and private organizations.

A previous study conducted on the same dataset (Gaiaschi, 2017) showed that, all else being equal, married fathers and married mothers reported, respectively, a 15% premium/penalty on income compared to childless single men/women. However, given that this study was focused on the combined effects of gender, parenthood and marriage, it left some issues unresolved. First, it compared mothers and non-mothers and fathers and non-fathers, while this study analyses the gender income gap from a broader perspective. Second, the moderation analysis — the analysis of the different effects of the same attributes across sex groups through the use of interaction terms — was conducted only on family characteristics, while in this study it is extended also to human capital and work characteristics. Third, inconsistent results with respect to the literature and institutional data were found on premiums and penalties by sector, which called for further investigations. This paper focuses on these overlooked aspects to provide a more complex picture of gender inequalities in pay among physicians.

Explanations of the gender pay gap in the literature.

The issue of the gender pay gap and its explanations is the object of manifold disciplines, approaches, methods and languages. This makes the existing literature on earning inequalities extremely rich but also somewhat confusing: authors may differ not only in the way they interpret the same concept but also in their naming of the concept. In this section, I will briefly review the contributions of the literature while proposing an analytical grid to simplify the debate.

One way to efficiently disentangle the different explanations for the gender pay gap in the literature is to start from the analytical distinction — which is at the base of the wage equation used to analyse the determinants of earning differentials by means of regression

analysis — between two components of the gap. The first component refers to *employees'* characteristics ("explained" component). The second component refers to *employers'* discrimination and/or unobserved characteristics ("unexplained" component). With respect to the first of the two components, the main idea is that the gender pay gap is explained by gender differences in individual observable attributes. For example, men and women may differ in their human capital characteristics, and this may partly explain the differences in earnings: that is, because of their (present or future) family responsibilities, women may work fewer hours (in paid work), invest less than men in on-the-job training and have a shorter and more discontinuous work life due to maternity and/or parental leave. On the contrary, men report a more continuous work life and may engage more in market capital by working longer hours because of their greater financial responsibilities as current/future husbands and fathers (Becker, 1991; Mincer and Polacheck, 1974). The difference in the amounts of human capital between men and women translate into a difference in skills and productivity, which explain differences in pay.

Different human capital characteristics are not sufficient to explain the gender pay gap. A second range of explanations points to (gender) differences in structural, organizational and/or institutional features, for example, the gender distribution across sectors and occupations (horizontal segregation) or across the career ladder (vertical segregation) (Blau and Kahn, 1997, 2000; England, 1992; Grimshaw and Rubery, 2007), the geographical variation in the labour demand (Grimshaw and Rubery, 2007), and the characteristics of the organization, such as the level of unionization and the size of the firm (Olsen and Walby, 2004). From a methodological point of view, the increasing attention to these aspects has led to the progressive inclusion of an increasing number of variables in the wage equation (Grimshaw and Rubery, 2002) which is used by scholars to measure the gender pay gap. Additionally, with the addition of more variables, the explained component of the gender pay gap — the portion of the gap explained by gender differences in observable characteristics — has increased (Grimshaw and Rubery, 2002).

To the extent that the pay gap is not explained by differences in employee characteristics (explained component), discrimination offers a further explanation (unexplained component). That is, if men and women (mothers and non-mothers, fathers and non-fathers, etc.) are promoted at different rates *despite having equal characteristics*, employer discrimination is occurring. Because of the potential bias linked to unobserved characteristics, this component is called the unexplained component of the gap, which includes both discrimination and unobserved characteristics. Discrimination takes place when the same observable characteristic produces different effects, whether it refers to men or women. For example, the same degree and qualification may be differently "valued" and therefore "rewarded" by employers (in terms of pay but also in terms of hiring and promotion) on the basis of the gender of the employee (Reskin and Ross, 1990). Moreover, the same family status may produce different effects whether it refers to men or women: typically, men experience a marital and a fatherhood premium while women are more likely to experience a marital and a motherhood penalty (Budig and England, 2001; Hodges and Budig, 2010; Kelly and Grant, 2012). If this occurs, it may be attributed — net of unobserved characteristics — to employers' discrimination against women.

If the distinction between explained and unexplained components of the pay gap is widely accepted, how this distinction — and more precisely, how the explained component — should be interpreted is not. While neoliberal scholars tend to interpret the explained component as the component "justifying" the gender pay gap, the feminist and structuralist traditions do not. Indeed, the neo-liberal approach tends to interpret gender differences in characteristics (explained component) – more specifically, but not solely, the ones that are related to the human capital sphere – in terms of the "free choices" that individuals make

towards market capital. Trivially speaking, if women work fewer hours, thus progressively losing human capital compared to their male colleagues, it is because they "choose" it. If they "choose" a women-friendly occupation with lower wages and chances of promotion but better work schedules, it is because they "want" it. This approach has been popular in both economics and sociology, from which it derived its theoretical framework, respectively, on human capital (Mincer and Polacheck, 1974; Becker, 1985, 1991) and preference (Hakim, 2000) theories. The human capital approach conceives pay differentials as the result of women being less committed to work because they have greater family responsibilities. The preference theory goes a step further by interpreting such roles in terms of "preferences". The difference is not negligible: whilst the former acknowledges the role of the sexual division of labour in "shaping" individual (rational) choices, the latter tends to consider preferences as innate inclinations. In other words, while human capital scholars, in practice, shed light on the role of the structure of opportunities in determining gender differences in choices, Hakim, on the contrary, does not, notwithstanding her various declarations where she admits, in theory, the interconnection of agency and structure (for a critical reading of Hakim's theory, see Crompton, 2006).

Many feminist and/or structuralist scholars have challenged this idea by suggesting that individuals' agency is often "shaped" by structural constraints that can be material (in terms of opportunities) and/or cultural (in terms of norms and expectations) (Crompton et al., 2005; England, 1982, 1992; Reskin and Ross, 1990, Jacobs, 1995; Wajcman, 1998). As a consequence, gender differences in observable characteristics – this holds especially true for human capital attributes but it also applies, as said above, to certain organizational/structural features (i.e., the choice of the occupation) – may be affected by discrimination because of the so-called "feedback effects" (Oaxaca, 1973; Grimshaw and Rubery, 2002; Beblo et al., 2003). Discrimination may be direct or indirect (Olsen and Walby 2004). Direct discrimination works by limiting women's opportunities: for example, medical school professors may "dissuade" their female students from entering traditionally male (and usually better paid) specialties, such as surgery (McManus & Sproston, 2000); employers may block women's access to on-the-job training programmes, thus limiting their skill augmentation opportunities (Grimshaw and Rubery, 2002). Indirect discrimination works by reshaping women's preferences (Haveman and Baresford, 2012): inappropriate working conditions, the perception of sex discrimination in the workplace or the lack of access to informal networking and mentoring may affect women's motivation to work (McManus & Sproston, 2000; Kelly and Grant, 2012). Consequently, women may "prefer" to reduce their work hours and invest more in the family because they perceive their commitment to paid work as useless (Hinze, 2000; Kelly and Grant, 2012).

In summary, these feedback effects have two consequences. First, if it is plausible to assume that the adjusted pay gap may be *over-estimated* because of unobservable characteristics, it is equally plausible that it may be *under-estimated* as long as (direct and/or indirect) discrimination (or its anticipation) affects women's characteristics. While the former assumption is widely accepted, the latter is not always taken into consideration. Second, it is incorrect to assume, as neoliberal scholars do, that differences in observable characteristics are the "legitimate" component of the pay gap given that they may partly be the result of gender-based obstacles. These two elements should guide the researcher in the interpretation of regression-based results.

While econometric analysis aims at measuring the determinants of the gender pay gap, other types of contributions — from experimental methods to qualitative research, including organizational ethnography — have shed light on the underlying mechanisms, explaining *why* and *how* gender discrimination takes place. Discrimination may be due to gender unconscious biases in employers' evaluation of women's performance (Valian, 1999), as well as to the

persistence of a hegemonic masculine culture within organizations (Acker, 1990; Britton, 2000; Gherardi, 1998). For example, (internalized) stereotypical norms in gender-based attitudes may lead employers to believe that women in traditionally male-dominated occupations do not perform as well as men because they lack "typically male" characteristics. On the other hand, they may believe that men are more serious about work or at least more deserving, especially if they have economically dependent wives (Hodges and Budig, 2010). This would explain the fact that regardless whether women have equal or better educational credentials, employers "rank" women after men in their hiring and/or promoting decisions, thus producing "gender queues" in the labour market (Reskin & Ross, 1990). Finally, "old boy networks" (Smith-Doerr, 2004; Lalanne & Seabright, 2011) and "homophily" (McPherson et al., 2001; Zippel, 2017) may also contribute to strengthening gender inequalities at work because they influence decisions on hiring, promotion and pay.

The research field.

This study is based on a dataset collected by means of an online questionnaire administered to physicians working in five hospitals in the Lombardy Region of Italy: the Policlinico Hospital in Milan, the Civil Hospital in Legnano, the Sant'Anna Hospital in Como, the San Donato Hospital in San Donato and a fifth hospital, which has asked to remain anonymous and will be given the fictitious name of Machado Hospital. The data collection lasted from two to three months for each hospital and required more than one year overall to complete, starting in June 2014 and ending in July 2015. The physicians received the survey by email, and each hospital disseminated the initiative among its doctors. This led to a good response rate (48.7%). The questionnaire aimed to collect information on physicians' demographic, human capital, work and family characteristics as well as opinions on the work environment and the organisational culture. Together with the dataset collected through the survey, each hospital provided a dataset containing general information on its medical population (gender, rank, type of practice, specialty, etc.) so that the representativeness of the respondents could be tested by analysing the non-respondents' characteristics. Out of the 2205 physicians who received the questionnaire, 1074 answered. The five hospitals were chosen to be as representative as possible of the health-care system in the Lombardy region because they vary in sector (three are public, two are private), vocation (three out of five are university hospitals), geography (two hospitals are located in Milan, two in the province of Milan, and one in the province of Como), and size (the physician numbers range from approximately 300 to approximately 900).

The health system in the Lombardy region is recognized as providing a wide range of services with high-quality standards within the strongly de-centralized National Health System. On the one hand, it promotes a mixed system because one-third of health care providers are private. On the other hand, it guarantees the principle of universal coverage and solidarity because patients can access private hospitals at the same cost paid to public providers (services are reimbursed by the region). This has led to the creation of a highly competitive health care system consisting of 130 providers (out of 1070 in the whole country) and 35,605 hospital beds (18% of the total)[4], which attracts 10% of its patients from other regions (with the rate reaching 50% in some specialties)[5]. Moreover, with seven medical schools (the highest concentration in Italy) and 18 out of 49 university hospitals or IRCCS (Istituti di Ricovero e Cura a Carattere Scientifico, i.e., Scientific Institutes for

[4] Istat (2017), Annuaro statistico italiano 2017. Retrieved February 8th, 2018, from: *https://www.istat.it/it/archivio/207188*

[5] The information on the share of patients from other regions was directly provided to the author by the Regional Health Department on February 2016.

Hospitalization and Care") in the whole country, the Lombardy health system is strongly focused on research.[6] Indeed, 50% of the approximately 12,000 scientific publications produced by the Italian IRCCS in 2015 come from Lombardy.[7]

Focusing on such a specific context has advantages and drawbacks. In fact, the population considered by this study is restricted twice: first, with respect to the general labour market because it represents a specific "slice" consisting of highly skilled professionals; second, with respect to the medical profession itself because of the specific characteristics of the Lombardy healthcare system. Given the design of this study, the population is representative of the five organizations surveyed. On the other hand, analysing the income-gap in such a restricted population has the advantage of reducing heterogeneity in earnings provided that individuals are quite similar in terms of human capital investments and work characteristics. This limits the potential bias in the estimations due to unobserved characteristics.

The focus of the research.

This paper investigates the determinants of the gender pay gap among physicians. The gender gap may be due to two different components. The first component is due to gender differences in observed characteristics (explained part of the gap). The second component is due to employer discrimination and/or unobserved characteristics (unexplained part of the gap). Employer discrimination occurs whenever men and women are differently rewarded in terms of pay for the same observed characteristics.

With respect to the explained component of the gap, four mechanisms can be considered. First, women and men may be differently paid because of different levels of human capital (hypothesis 1). On the one hand, I expect women to report higher levels of educational credentials, consistent with national data on graduates (Almalaurea, 2016). On the other, once they become physicians, women may receive less on-the-job international training because of their (greater) family responsibilities or because employers provide them with less training. Educational credentials are operationalized by the final grade received in medical school, while the level of on-the-job training is operationalized by the number of months spent abroad for training. I expect the (higher women's level) of educational credentials to reduce the gender pay gap (hypothesis 1a) and the (lower women's level) of on-the-job training to increase it (hypothesis 1b).

Second, men may work longer hours while women may work fewer hours. This gap in working hours may contribute to explaining the mechanism of earning differentials (hypothesis 2). Gender differences in work hours may be due to the sexual division of work, which allocates heavier care commitments to women (Crompton, 2006).

Third, women's concentration in medical specialties may contribute to increasing the gap (hypothesis 3). I expect women to be more concentrated on medical specialties, both because of the persistence of gender stereotypes on surgery and because they provide better work-life arrangements. Typically, medical departments offer more predictable schedules and shorter working hours. On the contrary, surgeons are more likely to work extra hours and face emergencies. The trade-off for a better work-life balance in medical specialties could result in lower earnings for women.

Fourth, women may earn less because they spend more time on care and domestic activities (unpaid work) (hypothesis 4a). On the other hand, outsourcing part of these

[6] Health Department of the Lombardy Region (2017). *Sanità: gli IRCCS lombardi sono i migliori d'Italia*. Retrieved February 8th, 2018 from: http://www.lombardiaspeciale.regione.lombardia.it/wps/portal/LS/Home/Approfondimenti/Dettaglio-Approfondimento/2017/03-marzo/Sanita-gli-IRCCS-lombardi-sono-i-migliori-d-Italia

[7] *Ibid.*

activities (to cleaning and care personnel) may reduce the penalty (hypothesis 4b). In a traditional country like Italy, I expect that women physicians would reduce their work-life conflict by outsourcing household tasks, while men's responsibilities in care and domestic work remains very limited.

The part of the gap that is not explained by gender differences in the observed characteristics should be ascribed to employer discrimination and/or unobserved factors (hypothesis 5). Discrimination occurs when men and women's equal characteristics are differently rewarded in terms of pay. In this respect, four more hypothesis will be tested. First, the gender pay gap may vary across specialties (hypothesis 6). More specifically, working in surgery may increase men's pay to a greater extent than women's: that is, male surgeons may earn more than female surgeons, given equal attributes, and this difference may be due to the persistence of gender stereotypes on surgery, which is considered a "male" specialty[8].

Second, working in private institutions may increase men's earnings and decrease those of women because salaries in private institutions are regulated by company agreements (hypothesis 7). On the contrary, in public hospitals, salaries are regulated by the national collective agreement, and bonuses are team-based rather than based on individual performance, which permits less space for individual bargaining.

Third, because of the sexual division of work, the same family status may have different effects on pay with regard to men or women (hypothesis 8). More specifically, having children may negatively impact on women's pay while enhancing men's pay (hypothesis 8a). Likewise, being married (or cohabitating) can yield different returns, being positive for men and negative for women (hypothesis 8b).

Fourth, parental and marital premiums and penalties are analysed in public and private hospitals separately to assess whether there is a difference in their magnitude by sector. More specifically, public institutions should record a lower gender gap linked to parenthood and marriage than private institutions (hypothesis 9). Adding controls for unpaid work hours and outsourced hours of care and domestic work, both in the pooled model and in the model by sector, allows better measurement of the effects of parental and marital status on men's and women's earnings, while reducing the risk of a spurious relation.

Descriptive statistics.

Before analysing the dataset, the representativeness of the respondents with respect to the whole population was tested. On the basis of the information provided by each hospital on its physicians (gender, rank and specialty), the differences in attributes between respondents and non-respondents were analysed by running t-tests. No significant differences were found, so that the possibility of a selection bias in the answers could be excluded.[9] Once the representativeness of the dataset had been tested, descriptive statistics were run by gender. Table 1 reports the mean characteristics of men and women physicians and reports on the significant differences using two-sample t-tests. Out of 1074 physicians, 51.5% (equal to 553 units) are male and 48.5% (521) are female. On average, the women are younger than the men (48 vs. 52 years old), and they report fewer years of work experience (17.1 versus 21.6). Overall, the men report a yearly mean income of 85,973 euros while women earn 62,747

[8] In summary, considering both hypothesis 3 (explained component) and hypothesis 6 (unexplained component), the effect of the specialty on the pay gap may be double. Women's concentration in medicine on the one side (differences in characteristics) and men's higher returns in surgery on the other (differences in rewards) contribute to produce income differentials.

[9] Further details on the data collection and the analysis of representativeness are included in Gaiaschi 2016, *Gender inequalities in medical careers*. University of Milan. Unpublished Ph.D. dissertation.

euros, resulting in an income differential of 23,226 euros (number of observations=1004). The respondents were asked to state their income related to their medical activity, not their salary, to include earnings from private practice and any possible consultancy activities. Moreover, because these earnings from extra work are taxed once a year through the income tax declaration, the respondents were asked to report the gross value, which is easier to remember than the net value.

As expected, women graduate from medical school with slightly better grades than men (108 vs. 107) and they tend to receive special honours slightly more often than men (51.5% versus 45.1%). On the other hand, men tend to report more postgraduate training because they spend slightly more than five months abroad for study or work, while women spend slightly less than three months.

Tab. 1 – Mean differences by gender

With respect to working hours, men tend to work slightly more than women: almost 48 hours versus 45 hours per week on average. Nevertheless, this difference decreases to approximately one hour if the salaried worked hours only are considered or, in other words, if the time spent on private practice is not taken into account. Private practice (the so called "libera professione" – "free profession") is the activity that physicians do as self-employed in their extra time. Private practice can occur inside or outside the hospital and it does not form part of the salary envisaged in the contract. Hence, men tend to work more than women in private practice, which is more lucrative. Moreover, part-time work is residual among physicians, with no marked difference between men and women. Only thirteen physicians — six men and seven women — work less than twenty hours a week, which is not surprising because part-time work is not as widespread in Italy as in other European countries,[10] especially for high-qualification professions, where long hours of work are required. Lastly, there is a slight tendency for women to cluster in public institutions, which offer better schedules than private institutions (46 vs. 49 hours a week), even if the difference is not significant

The analysis of the gender composition of the specialties provides interesting results, with 56% of women working in the medical field versus 40% of males, while only 16% of female doctors versus 35% of male doctors work in the surgical field. The diagnostic area appears to be the most gender-balanced, with 24% of female physicians versus 21% of male doctors present. The public health area comprises only thirty respondents (seventeen men and thirteen women), which makes it difficult to draw conclusions. Each area includes manifold specialties according to the MIUR classification (Italian Ministry of Education, Universities and Research). Among the twenty-three medical specialties, some are more feminized than others: in neonatology and rheumatology, 80% of the physicians are females. High female rates can also be found in paediatrics (67.5%), radiotherapy (66.7%), and child neuropsychiatry (60%), while psychiatry exhibits a lower proportion of women (56.2%). While women are clustered in the medical area, men are more concentrated in the surgical field: out of every ten physicians, seven are male and three are female. The percentage of men is higher in oral and maxillofacial surgery (91% male vs. 9% female), orthopaedics (88% vs. 12%), urology (87.5% vs. 12.5%), heart surgery (83% vs. 17%), general surgery (77% vs. 23%), vascular surgery and otorhinolaryngology (both 75% vs. 25%). The traditionally male-dominated branch – at least in Italy – of gynaecology has experienced strong feminization in recent years: in the dataset, 49% physicians in this specialty are

[10] See: Eurostat, *Persons employed part-time – Total.* Dataset code: tps00159. Retrieved April 21st, 2018 from: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00159&plugin=1

women. Only two out of thirteen surgical specialties appear to be perfectly gender-balanced: paediatric surgery and neurosurgery (50% vs. 50%). Together, the medical and surgical areas comprise 74% of all physicians. When also including the diagnostic area, which is the third most populated area, the three areas represent up to 96% of physicians (descriptive statistics on single specialties are not reported in the tables but are available upon request).

Together with the persistence of the horizontal segregation, the data confirm the existence of a mechanism of vertical segregation. The different steps of the career ladder were harmonized by considering the differences between public and private hospitals and between the two private institutions. The result was a career ladder consisting of three steps: 1st level, vice, and head. All other steps comprise thirty-seven cases that are difficult to code in an ordinal scale, which include collaborators, grant holders and freelancers working in public hospitals, as well as purely academic researchers. Descriptive statistics show that women are more likely to be concentrated in the lower steps of the ladder given that 70% are in a first-level position versus 50% of men.

Men and women exhibit significant differences also with respect to family characteristics. Men are more likely to be married than women (70.5% of male physicians are married versus 58% of female physicians), while no significant difference is apparent in the likelihood of having a non-married cohabiting partner. Moreover, the percentage of women who have no children is higher than that of men: 39% versus 24%. Among parents, there is a significant gender difference in the number of children: 1.5 children for men on average versus 1 for women.

Women and men show different commitments towards unpaid work, defined as domestic and care work. Overall, men and women spend, respectively, an average of fifteen and a half hours and twenty-five and a half hours per week on unpaid activities, which translates into approximately one and a half hours per day of the gender gap in time devoted to unpaid work. This gap is half the size of the gap in the general population (Gaiaschi, 2014), which means that the medical population is less 'gender-unequal' with respect to the division of unpaid activity than the general population. This discrepancy may be due to the different methods of data collection (national data are collected by ISTAT, the Italian National Institute of Statistics, through diaries, while this study is based on respondents' estimates) as well as the different targeted population. That is, general data include women working part-time or residually, while this study is based on a selected population composed of highly skilled female professionals who are able to outsource care and domestic work to balance work and family. Indeed, data on outsourcing show that women physicians report seven hours per week of outsourced care and domestic work versus five and a half hours for men.

Table 2 – Ols models on log income and log hourly income: female coefficients

Models and measures.

To test the above-mentioned hypotheses, multivariate regression models were run based on the linear function of log gross income. I estimated the following wage equation using OLS:

$$Y_i = b_0 + \sum b_i X_i + e_i$$

where Y is the dependent variable, b denotes a vector of regression coefficients for the explanatory variable X, b_o is the intercept, *i* indexes individuals and e is the error term.

The main results are reported in Tables 2-4. Four further tables are reported in the appendix (Tables A1-4). Table 2 investigates the contribution of the differences in characteristics of the pay gap (hypothesis 1-4) through the use of two linear nested models on the log (yearly) income (first column) and the log hourly income (second column). The models measure whether and how the gender penalty on the income changes once the different characteristics are progressively added in the regressions while considering the mean differences in these same characteristics between men and women. The rows report the coefficient of the independent variable "gender" (1 = women; 0 = men) for each specification. Tables A1 (log income) and A2 (log hourly income) report the same two nested models by showing the coefficients of all control variables as well. The first specification in Table 2 (first row) reports the unadjusted gender effect, which is the gender pay gap without controls. The second specification reports the basic work controls for work experience, rank and sector. Work experience is an interval variable accounting for the number of work years since entry into the labour market. The rank is a dummy variable that assigns 1 for physicians in the vice or head position and 0 for all others. The sector is a dummy variable that assigns 1 for respondents working in the two private institutions and 0 for respondents working in the three public hospitals.[11] The third specification adds controls for family characteristics, more specifically for parental and marital status. The parental status is a dummy variable that assigns 1 for having children and 0 for not having children. The marital status is a dummy that assigns 1 for having a co-habiting partner and 0 for not having a spouse or a co-habiting partner.

Once basic controls for work and family characteristics have been considered, hypotheses 1-4 will be tested by analysing changes in the gender penalty after accounting for differences in human capital (1st hypothesis), work hours (2nd hypothesis), specialty (3rd hypothesis) and unpaid work arrangements (4th hypothesis). Hence, the fourth and fifth specifications add human capital characteristics, more specifically educational credentials (fourth specification) and postgraduate training (fifth specification). Educational credentials are operationalized through a dummy variable that assigns 1 to physicians who had graduated with a final grade of 105 (out of 110) or higher and 0 to graduates with a grade of up to 104, while postgraduate training is an interval variable accounting for the number of months spent in training abroad since entry into the labour market. Specifications six and seven add working hours, which are operationalized in two variables: the first variable accounts for the number of weekly salaried work hours, that is, the hours worked within and for the organization net of the private practice (variable "work hours w/o private practice (h/w)" in the sixth specification). The second variable accounts only for the number of hours a week devoted to private practice, that is, the number of hours a week as self-employed (variable "private practice (h/w)" in the seventh specification). The eight specification controls for the specialty, which is a categorical variable composed of four items: medicine (reference category), surgery, diagnostics, and all others (including public health, physicians without a specialty and specialties that cannot be categorized). Specifications nine and ten add differences in work-life balance arrangements within the household and, more specifically, the weekly hours of care and "outsourced" domestic activities ("outsourcing") and the weekly hours personally spent on care and domestic activity ("unpaid work"). The final specification also provides information on the adjusted gender income gap, which is the female penalty with all else

[11] I chose to include the sector as a dummy variable (1=private hospitals; 0=public hospitals) with the aim of controlling for the type of organization in which the respondent works. Therefore, the private variable must be conceived as a substitution of a five-fold categorical variable indicating the single hospital. The full model of the wage equation and the interaction model on log income were also run using the hospitals instead of the sector for a robustness check (analysis available upon request), and no substantial difference was reported with the models in which the dummy variable for the sector was used.

being equal, which is not explained by differences in the observed characteristics. This "net" penalty corresponds to the unexplained component of the ("gross") gender income gap, and it should be associated with discrimination and unobserved characteristics (hypothesis 5)

Discrimination occurs when the same characteristics produce different returns whether they refer to men or women. To test gender differences in rewards (hypothesis 6-9), a moderation analysis was carried out by adding interaction terms in the wage equation (Tables A3 and A4 in the appendix) and computing marginal effects (Tables 3 and 4). Table A3 reports the full model of the wage equation on log income, including interaction terms. All characteristics included in the model were interacted to analyse any possible difference in the "rewards", and only significant interactions or hypothesis-driven interactions were kept — more specifically, the sector, the specialty, and the marital and parental status. To test the gender effect of the sector on parental and marital premiums/penalties (hypothesis 9), the moderation analysis was carried out by splitting the population and running separate analyses for the physicians working in public and private hospitals (Table A4). Since the coefficients of interacted terms are substantially uninformative (Brambor et al., 2005)[12], marginal effects or, more precisely, discrete changes in predicted margins were computed based on the two interaction models reported in the appendix. The marginal effects are reported in Table 3 and Table 4.

Table 3 – Interaction model on log income: marginal effects

Results.

The results of the multivariate analysis are reported in Table 2-4. All the models have been run on 908 observations (out of 1074 completed questionnaires as reported in the descriptive statistics of Table 1), mainly because of the missing information on the income (70 missing out of 1074) and the final grade received in medical school (95)[13]. Table 2 displays the female coefficients of the OLS regressions on, respectively, the log income (first column) and the log hourly income (second column) reported in Table A1 (log income) and A2 (log hourly income) of the appendix. To test hypotheses 1-4, I have analysed whether and how the gender penalty on pay (variable "Gender") changes once the various variables are added in the regression while considering the mean differences in characteristics between men and women.

The comparison of the two models shows that they are different if the controls for work hours are omitted (up to row 7). Once they are included, the two models become similar in results, with an adjusted pay gap of 17.7% on the log income and 16.8% on the log hourly income. The difference between the two models up to row 7 is due to the opposite effects of work hours: once they are added, they decrease the pay gap in the first model (where it is measured as gap in the income), while they increase the gap in the second model (where it is measured as gap in the hourly income). This difference suggests that women's fewer hours of

[12] Since gender is a categorical variable, the effect of the interaction is a discrete change. Because of the wider use of the expression "marginal effect" in the literature, and following Buis (2010), I will continue to use the adjective "marginal" notwithstanding the fact that it is a slight abuse of terminology.

[13] The missing answers on income and grade do not report a significant gender difference. Nevertheless, while the missing answers on income are likely to be randomly distributed (not everybody is willing to reveal such information, which is perceived as private), the missing answers related to the final grade are probably not. That is, the assumption of 95 respondents forgetting their graduation score is highly implausible. These individuals may have not wanted to answer this specific question because the vote was too low. To control for this non-random bias in the missing answers, robustness checks (available upon request) were run by substituting cases with missing grades into cases with low grades, and the results were consistent with the model with 95 missing grades.

work are disadvantageous in terms of income, but not in terms of hourly income, which is reasonable given that the gender difference in working hours (three hours) is quite small and part-time work — which is associated with lower hourly earnings in Italy[14] — is almost absent (the few existing part-time cases are gender-equally distributed).

The first specification reports the unadjusted gender income gap. Without controlling for differences in characteristics, women's penalty on the income is -0.321 log units, which is equal to a 37.8% difference with respect to men. By adding basic controls for work experience, rank and sector (second row), the income gap diminishes substantially to 22.3% (-0.201 log units in the income), suggesting that structural work features — more specifically, the differences in experience and rank[15] — play an important role in producing inequalities.

Once the controls for family characteristics are also added (third row), hypotheses 1-4 can be tested. The fourth and fifth specifications test the effects of human capital variables on earning differentials (first hypothesis). The effect does not occur in the way that the "traditional" human capital approach would suggest because once the final grades and post-graduate training are added into the model, the penalty barely changes to -0.197 log units (21.7%). Moreover, this (small) change in the penalty is almost entirely due to women's better educational credentials, as adding the two variables subsequently shows, while no marked effect is due to differences in post-graduate training.

The sixth specification tests for the contribution of gender differences in work hours on women's income penalty (second hypothesis). Looking at the first column (log income), the contribution, as expected, is positive. As salaried work hours (variable "work hours w/o private practice") and hours devoted to private practice (variable "private practice") are added, the penalty decreases to -0.160 log units (17.4%). However, this is mostly due to the difference in the private practice (which is almost two hours per week, see Table 1), while the contribution of salaried work hours (approximately 1 hour) is lower. If the log hourly income is used instead of the log income as a dependent variable (second column), the contribution of work hours to the gender pay gap vanishes because once the controls are added, the penalty increases. As mentioned above, this is the only substantial difference between the two Ols models, suggesting that women's fewer hours of work contribute to produce the gap but only in terms of income, not in terms of hourly income.

Table 4 – Interaction model on log income by sector: marginal effects

The different distribution across specialties — more specifically, women's lower presence in surgery — also contributes to engendering the female penalty (third hypothesis). The eight specification shows that once controls for the horizontal segregation are added in the model, women's coefficient slightly decreases to -0.153 log units, which is equal to a 16.6% earning differential. This result suggests that women's concentration in the medical specialties, which are generally less remunerated, partly contribute to the gender pay gap.

The two last specifications test the effect of gender differences in care and domestic tasks within the household. More specifically, once the hours of care and domestic work outsourced to cleaning staff and care personnel are added in the model (variable "outsourcing"), the female penalty increases substantially from -0.153 to -0.169 log units, suggesting that outsourcing care and domestic work eases the gender income gap. On the other hand, adding the gender difference in the amount of hours dedicated to care and domestic activities (variable "unpaid work hours") slightly reduces the penalty (to 0.163 log

[14] See Eurostat, *Gender pay gap in unadjusted form by working time*. Dataset code: earn_gr_gpgr2wt. Retrieved April 21st, 2018 from: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=earn_gr_gpgr2wt&lang=en

[15] The effect of the sector is almost null once the controls are added separately (analysis available upon request).

units), suggesting that women's higher responsibilities in care and domestic work play a role in engendering the gap.

The final model in Table 2 also provides information on the adjusted gender effect on the income, which is equal to -0.163 log units. That is, all else being equal, women physicians earn 17.7% less than men. This penalty should be ascribed to direct discrimination and/or unobserved characteristics (hypothesis 5).

Discrimination occurs when men and women are differently rewarded regardless of their equal characteristics. Three different hypotheses (from 6^{th} to 8^{th}) are investigated by including interaction terms in the pooled equation of the log income (Table A3 in appendix) and by computing marginal effects (Table 3). Hypothesis 6 argues that, all else being equal, working in surgery may result in better rewards for men than for women. The interaction analysis confirms this hypothesis because surgery displays a significant marginal effect for men (male surgeons earn 0.8% more than their male colleagues who work in medicine), while the marginal effect for women (which is positive as well at +0.4%) is not significant. Moreover, the gender difference in margins (column M-W) is the highest in surgery (1.8%), suggesting that surgery is more gender unequal compared to other specialties.

The seventh hypothesis argues that working in the private sector may penalize women while having a positive effect for men. The results only partially confirm this hypothesis: while there is a significant positive effect for men related to working in a private institution (+1.5% compared to their male colleagues working in public hospitals), the effect for women is less clear cut. The relative margin in Table 3 is positive and not significant. However, the interacted term in Table A3 in appendix displays a negative penalty (-0.113 at 90%). Because of how the marginal effects of interacted variables are computed (Brambor et al. 2005), women are shown to experience a (stronger) disadvantage from working in private hospitals compared to their male colleagues in the same organization, but not with respect to their female colleagues in public hospitals. This result is confirmed by comparing the female marginal effect (column "Women") with the gender difference in the marginal effect (column "M-W") in Table 3: women working in private hospitals earn 0.6% more than their female colleagues in public hospitals, but this difference is not significant. Nevertheless, the gender gap in earnings in private hospitals is significant and stronger than the one displayed for public institutions (+2.4% vs +1.4%). Once again, this should be interpreted in light of the fact that private organizations generally offer higher pay (which explains the fact that they do not represent a disadvantage for women compared to other women) but at the expense of a larger gender pay gap (compared to public hospitals).

The eighth hypothesis tests the role of the sexual division of work in engendering the gap. More specifically, parental and marital status may produce a gendered mechanism of premiums and penalties, with children and spouses increasing men's income and reducing women's. The moderation analysis only partly confirms the existence of such a mechanism. Table 3 reports a fatherhood premium for men which is defined as an increase in earnings for fathers with respect to childless men (column "Men"), from the third child, while no motherhood penalty, defined as a decrease in earnings for mothers with respect to childless women (column "Women"), exists. Likewise, being married (or having a cohabiting partner) entails a 0.9% premium for men, while it has a null effect for women. On the other hand, the gender difference in the marginal effects (column "M-W") is significant relative to both the marital and parental status and it increases as the number of children increases. Since women do not experience a penalty when they become mothers or when they get married (compared to their single/childless female colleagues), the existing gender gap in the marginal effects

linked to parenthood and marriage[16] should be ascribed to men's premiums. In simpler words, there are still pay inequalities between mothers and fathers, wives and husbands, but such inequalities are due to the persisting positive discrimination towards fathers and husbands (with respect to single and childless men), while the negative discrimination towards mothers (with respect to single and childless women) has fallen short.

After having measured the premiums and penalties linked to the marital and parental status, their interaction with the sector was tested (hypothesis 9). To do so, marginal effects (Table 4) were computed on the basis of two interaction models (Table A4 in appendix). The first model was run on the subsample of physicians working in public hospitals, and the second model was run on the subsample of physicians working in private institutions. Because of the small number of observations in the private sub-sample (148), all the following results should be considered carefully.[17] Table 4 shows that mothers with three or more children working in private hospitals experience a 3.8% disadvantage compared to women with no children but it is important to note that this penalty should not be emphasized given the low number of cases in this category (only five). On the other hand, no motherhood penalty exists up to the second child in private organizations. Moreover, the gender difference in margins (M-W) for one or two children are significant only in public hospitals, where they show a stronger coefficient (+1.4% for one child and +1.7% for two children) compared to private hospitals (+1% and +1.3%). These results suggest that – at least up to the second child – the fatherhood premium is higher in the public sector than in the private one. Moreover, men experience a premium linked to marriage in public hospitals (+1% compared to single men's in the same sector) but not in private ones. Likewise, the gender difference (M-W) in regard to the effect of having a spouse/cohabiting partner is slightly greater in public organizations compared to private ones (+1.7% at 99% level vs. +1.5% at 90%). This result is in line with the interaction model by sector on which the marginal effects were computed (Table A4), where the female coefficient for the marital status in public organizations ("variable spouse or cohabiting partner*gender") is significant while not being the case in private hospitals. A further interesting element of the interaction model in Table A4 is the "pure gender effect" provided by the variable "gender". This coefficient provides a disadvantage for single women with no children. The coefficient is not significant in either public or private hospitals. It is important to note, however, that the coefficient remains much stronger in private organizations than in public ones.

In summary, the analysis of the combined effect of gender, parenthood/marriage and the sector provide a complex picture: marital and parental premiums/penalties appear stronger in public institutions than in private ones at least up to the second child, while the pure gender effect disappears both in private and public organizations even if it is much stronger in private institutions. These results are consistent with the findings of a previous study on the motherhood penalty among physicians (Gaiaschi, 2017), where the married mothers and fathers' penalties and premiums resulted in being significant only in public hospitals. In both cases, the results are surprising because they appear to suggest that in private hospitals, women encounter less discrimination as mothers and spouses than as women themselves. On the other hand, in public hospitals, the female disadvantage (the male advantage) arises once women (men) become mothers (fathers).

[16] The gender gap in the marginal effects (column "M-F") is confirmed by the significant coefficients of the interacted terms in Table A3 in appendix (see Brambor et al. 2005 for a correct interpretation of interactions).

[17] Because of the small number of cases in the model run on the subsample of private hospitals (148), a three-way interaction regression was run for a robustness check (available upon request) and was compared to Table A4. This regression is equivalent to running separate models, but by pooling private and public hospitals in the same regression, one can avoid estimating a model using a small sample. The results of the pooled model are consistent with those reported in the two separate models.

A possible explanation for this mechanism could be related to the different maternity "costs" in private and public organizations. Most women in public hospitals have a regular contract and, consequently, they have a right to five months of mandatory paid maternity leave plus from five to six months of non-mandatory parental leave. On the contrary, most women in the two private hospitals work freelance with no rights to mandatory leave (maternity breaks are negotiated on an individual basis). Therefore, they are likely to take shorter leaves once they become mothers, which translates into lower "costs" in terms of work interruptions for the employer. In this perspective, private institutions appear to be more gender equal with respect to mothers than public hospitals, while not necessarily with respect to women, but the price is high. Thinking of the "equality vs. difference" controversy (Scott, 1988), one could say that the former is pursued at the expense of the latter as long as women in private organizations appear to be pushed to follow a masculine model of emancipation. It is no coincidence that the percentage of childless women is much higher in private than public hospitals (49% vs. 37%). In summary, the result encourages reconsideration of the fact that public institutions guarantee stronger gender equality, at least with respect to highly skilled professions.

Conclusions.

Most studies on the pay gap in medical careers have taken place in the United States. To my knowledge, only one paper outside the US is specifically focused on earning differentials (Magnusson, 2016). This study has aimed to fill the gap in the literature on the gender pay gap among doctors by focusing on the Italian labour market. The analysis has been based on an original dataset of more than one thousand doctors working in five hospitals in the Lombardy region of Northern Italy. Data were collected from June 2014 to July 2015 by means of an online survey, with a response rate of 48.7%.

The analysis shows that women physicians earn 38% less than men without controlling for gender differences in characteristics (unadjusted pay gap). Once the differences in the characteristics are controlled, the earning differential eases at 17.7% (adjusted pay gap). Out of a 38% unadjusted gap, 49% of this gap is due to differences in observed characteristics (explained component of the gap), while 51% is due to direct discrimination against women and/or the effect of possible unobserved characteristics (unexplained component). The data should be interpreted carefully: on one hand the unexplained part of the gap may be over-estimated by unobserved characteristics. On the other but the explained part could be underestimated by the feedback effects (Grimshaw and Rubery, 2002). Therefore, the explained part should not be interpreted as the "legitimate" component of gender inequality in pay because it may include the effect of structural constraints in determining individual choices through a mechanism of indirect discrimination.

Within the explained component, women's younger age, their concentration in the lower ranks of the career ladder as well as the fact that they work fewer hours are the three most important "observed" factors for gender inequality in income. It is important to note that most of the working hour difference is because women work less in private practice than their male colleagues. This difference may be due to women's greater family responsibilities or, inversely, to their greater commitment to the organization, given that women's mean weekly working hours without considering the private practice are 43 versus 44 hours for men, both of which are much higher than the national medical contract. The gender distribution across specialties, i.e., women's lower presence in the surgical area, also partly contribute to enhancing the gap. If gender differences in age, rank, work hours and, to a smaller extent, specialty contribute to engendering the gender pay gap, the elements which on the contrary

contribute to reducing the gap are women's better educational credentials and their greater reliance on outsourcing care and domestic work.

The use of interaction terms for work characteristics reports mixed results. With respect to the specialty, men working in surgery report a premium on income with respect to their male colleagues working in the medical area while female surgeons do not experience any significant advantage with respect to their female colleagues working in the medical specialties. Moreover, the gender difference in pay is larger in surgery than in other specialties. With respect to the sector, working in private hospitals entails a premium for men while women, contrary to expectations, do not experience any penalty. Nevertheless, the pay gap is larger in private institutions than in public ones. Provided that private hospitals and surgical specialties guarantee higher earnings, these results support the idea of a "glass ceiling"[18] in the gender pay gap: that is, the idea that earning differentials are larger among high earners. As such, the research is coherent with studies highlighting an increase of earning differences between men and women across the wage distribution (Albrecht et al. 2003; Albrecht et al. 2009; Arulampalam et al. 2007, Garcia et al. 2001) and even more so among highly educated workers (De la Rica et al. 2008, Addabbo and Favaro 2011). More specifically, by analysing the pay gap in one single high-skilled profession, that of physicians, and by focusing on its variation by sector and specialty, this study confirms on a "micro" level what labour market-based studies have shown on a wider macro-level with respect to the general population.

The premium/penalty mechanism linked to marital and parental status shows a pattern similar to that associated with the sector and the specialty. While there is a fatherhood premium on the income, no motherhood penalty persists. Likewise, being married or having a cohabiting partner entails a premium for men while it has a null effect for women, which suggests that the positive discrimination towards fathers and husbands is stronger that the negative discrimination towards mothers and wives. However, because of the persistence of positive discrimination for men, the gender difference in the effects remains significant. The mechanism of parental and marital effects should be interpreted in light of the outsourcing of care and domestic work, whose gender difference (in the number of hours) is significant (also) because of the higher probability, among the men surveyed, to be married with a non-working or a part-time working wife who is responsible for care and domestic activities. On the contrary, the women surveyed are more likely to have a full-time working husband, which is why they outsource care and domestic work to a greater extent than their male colleagues. In so doing, they offset the (marital and parental) penalties linked to the sexual division of labour.

Analysing marital and parental premiums/penalties by sector adds a further element. Gender inequalities among fathers and mothers appear stronger in public hospitals at least up until the second child. On the other hand, the pure gender effect disappears both in private and public organizations, even if it is much stronger in the former. These findings are quite surprising because they appear to suggest that in private hospitals, women face less discrimination as mothers and spouses than as women. These results may be related to the

[18] I use the term "glass ceiling" in the way that it is used in the economics literature rather than the sociology literature. Among sociologists, the glass ceiling metaphor generally refers to the under-representation of women in the upper ranks of the career ladder. In its strict definition, it suggests that the obstacles to women's promotion are placed at the end of the ladder. In its broader sense, is suggests that they increase all along the hierarchy (Baxter and Wright 2000). Parallel to the idea of the glass ceiling, the "sticky floor" metaphor suggests that the obstacles to promotions are higher at the beginning of the hierarchy, not at the end. In both cases, the two concepts deal with the transition from rank to rank across the ladder. On the contrary, in the economics literature, the glass ceiling and the sticky floor metaphors deal mostly with pay, more specifically with the idea that the pay gap is larger at the end/the bottom of the wage distribution.

different maternity "costs" for public and private employees, given that in private hospitals women may take shorter leaves, thus reducing the penalty.

Once the differences in characteristics are controlled, the results show that, all else being equal, women physicians earn almost 18% less than their male colleagues, suggesting that, net of unobservable characteristics, the mechanisms of discrimination take place in the five hospitals analysed. These findings challenge the human capital perspective by calling for the role of structural mechanisms in producing inequalities. However, the interaction analysis shows that this is largely due to the persistence of positive discrimination towards men rather than negative discrimination towards women, which is certainly good news and suggests that the increasing presence of women in the medical profession parallels the reduction of discrimination against them. The other side of the story is that part of the reason for this amelioration may be ascribed to women's strategies to reduce disadvantages for the employer, not a radical change in the sexual division of labour. Hence, 39% of the women surveyed have no children. Among mothers, the number of children is much lower than the national average, while in private organizations they are more likely to have no children or to choose to shorten maternity leave. Lastly, to remain competitive, women outsource care and domestic activities, thus reducing the disadvantage associated with work-life balance issues. At the same time, family responsibilities are still unbalanced, and gender roles within the family remain quite traditional because of the allocation of time dedicated to unpaid work between men and women.

This observation calls for the concept of a "stalled" (Hochschild, 1989), "unfinished" (Gerson 2009) or "incomplete" (Esping-Andersen, 2009) gender revolution: women's becoming "more like men" by reducing family responsibilities is certainly contributing to reducing gender inequalities. However, this is not enough, as the persistent positive discrimination towards men demonstrates. In other words, as long as the deconstruction of the sexual division of labour is a "woman's issue" concerning women's choices and efforts to reduce gender differences in observable characteristics, gender equality will not be fully achieved. Reducing women's disadvantage is only one part of the story; the other part is to reduce men's advantages. To do so, traditional gender roles within and outside the household must be deconstructed, both for women and men.

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Table A1 –Ols models on log income

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Gender	-0.321***	-0.201***	-0.194***	-0.197***	-0.197***	-0.188***	-0.160***	-0.153***	-0.169***	-0.163***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Private hospital		0.156***	0.158***	0.158***	0.158***	0.157***	0.120***	0.134***	0.121***	0.121***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Experience		0.0143***	0.0136***	0.0136***	0.0136**	0.0143**	0.0140**	0.0143**	0.0137**	0.0134**
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Top manager		0.345***	0.345***	0.341***	0.342***	0.331***	0.337***	0.329***	0.320***	0.317***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children			0.0552**	0.0557**	0.0557**	0.0651**	0.0618**	0.0552**	0.0315	0.0422
			(0.044)	(0.042)	(0.042)	(0.017)	(0.022)	(0.037)	(0.241)	(0.137)
Spouse or cohabiting partner			0.0196	0.0217	0.0217	0.0238	0.0311	0.0329	0.0288	0.0281
			(0.523)	(0.479)	(0.482)	(0.437)	(0.302)	(0.267)	(0.327)	(0.338)
Best in class				0.0432	0.0433	0.0422	0.0387	0.0523*	0.0414	0.0437
				(0.136)	(0.138)	(0.145)	(0.173)	(0.063)	(0.139)	(0.119)
Months abroad					-0.0000228	-0.000363	-0.000349	-0.000314	-0.000839	-0.000871
					(0.981)	(0.711)	(0.717)	(0.741)	(0.377)	(0.360)
Work hours w/o private practice (h/w)						0.00417**	0.00651**	0.00655**	0.00637**	0.00633**
						(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Private practice (h/w)							0.0145***	0.0144***	0.0136***	0.0133***
							(0.000)	(0.000)	(0.000)	(0.000)
Specialty: Medicine								0	0	0
								(.)	(.)	(.)
Specialty: Surgery								0.0722***	0.0682**	0.0678**
								(0.008)	(0.012)	(0.012)
Specialty: Diagnostic								0.140***	0.138***	0.143***
								(0.000)	(0.000)	(0.000)
Specialty: All others								0.195***	0.183***	0.181***
								(0.001)	(0.002)	(0.002)
Outsourcing (h/w)									0.00494**	0.00502**
									(0.000)	(0.000)
Unpaid work hours (h/w)										-0.000631
										(0.243)
Constant	11.28***	10.88***	10.83***	10.80***	10.80***	10.59***	10.45***	10.37***	10.40***	10.41***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
r2	0.139	0.409	0.413	0.415	0.415	0.423	0.444	0.465	0.475	0.475

N	908	908	908	908	908	908	908	908	908	908

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A2 – Ols model on log hourly income

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Gender	-0.245***	-0.117***	-0.103***	-0.104***	-0.110***	-0.140***	-0.151***	-0.144***	-0.160***	-0.155***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Private hospital		0.104***	0.109***	0.109***	0.112***	0.114***	0.129***	0.143***	0.130***	0.130***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Experience		0.0180***	0.0168***	0.0168***	0.0167***	0.0145***	0.0145**	0.0148**	0.0143**	0.0140**
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Top manager		0.297***	0.296***	0.294***	0.295***	0.329***	0.326***	0.319***	0.310***	0.308***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children			0.0910***	0.0912***	0.0891***	0.0599*	0.0612**	0.0547**	0.0314	0.0405
			(0.002)	(0.002)	(0.002)	(0.027)	(0.023)	(0.040)	(0.244)	(0.155)
Spouse or cohabiting partner			0.0475	0.0486	0.0441	0.0354	0.0322	0.0340	0.0299	0.0294
			(0.140)	(0.132)	(0.173)	(0.242)	(0.286)	(0.253)	(0.310)	(0.319)
Best in class				0.0212	0.0263	0.0332	0.0350	0.0487*	0.0381	0.0401
				(0.486)	(0.390)	(0.246)	(0.220)	(0.085)	(0.176)	(0.155)
Months abroad					-0.00153	-0.000392	-0.000385	-0.000351	-0.000867	-0.000893
					(0.138)	(0.686)	(0.690)	(0.713)	(0.364)	(0.350)
Work hours w/o private practice (h/w)						-0.0138***	-0.0149**	-0.0149**	-0.0150**	-0.0151**
						(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Private practice (h/w)							-0.00596***	-0.00614***	-0.00689**	-0.00712**
							(0.017)	(0.014)	(0.006)	(0.004)
Specialty: Medicine								0	0	0
								(.)	(.)	(.)
Specialty: Surgery								0.0737**	0.0697**	0.0694**
								(0.007)	(0.010)	(0.011)
Specialty: Diagnostic								0.141***	0.139***	0.143***
								(0.000)	(0.000)	(0.000)
Specialty: All others								0.187***	0.175***	0.174***
								(0.002)	(0.003)	(0.003)
Outsourcing (h/w)									0.00486**	0.00493**
									(0.000)	(0.000)
Unpaid work hours (h/w)										-0.000534
										(0.325)
Constant	7.418***	6.958***	6.871***	6.854***	6.865***	7.538***	7.606***	7.531***	7.562***	7.571***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
r2	0.0770	0.374	0.387	0.387	0.388	0.464	0.468	0.487	0.496	0.497

N	908	908	908	908	908	908	908	908	908	908

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A3 – Interaction model on log income

	Log income
Gender	-0.00499
	(0.932)
Private hospital	0.174***
	(0.000)
Private hospital*gender	-0.113*
	(0.052)
Experience	0.0133***
	(0.000)
Top manager	0.314***
	(0.000)
Best in class	0.0431
	(0.128)
Months abroad	-0.000937
	(0.325)
Work hours w/o private practice (h/w)	0.00600***
	(0.000)
Private practice (h/w)	0.0129***
	(0.000)
Specialty: Medicine	0
	(.)
Specialty: Surgery	0.0853**
	(0.013)
Specialty: Diagnostic	0.142***
	(0.000)
Specialty: All others	0.183**
	(0.028)
Specialty*gender: Medicine	0
	(.)
Specialty*gender: Surgery	-0.0389
	(0.477)
Specialty*gender: Diagnostic	-0.00749
	(0.888)
Specialty*gender: All others	0.00951
	(0.937)
No children	0
	(.)
1 child	0.0570
	(0.219)
2 children	0.0699*
	(0.099)
> 2 children	0.0975*
	(0.063)
No children*gender	0
	(.)
1 child*gender	-0.0307
	(0.615)
2 children*gender	-0.0692
	(0.233)
> 2 children*gender	-0.146*
	(0.060)
Spouse or cohabiting partner	0.0983**
	(0.034)
Spouse or cohabiting partner*gender	-0.108*
	(0.071)
Outsourcing (h/w)	0.00547***
	(0.000)
Unpaid work hours (h/w)	-0.000401
	(0.462)
Constant	10.33***
	(0.000)
r2	0.483
N	908

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A4 – Interaction models by sector

	Log income Public	Log income Private
Gender	-0.00146	-0.140
	(0.979)	(0.374)
No children	0	0
	(.)	(.)
One child	0.0721	-0.00207
	(0.151)	(0.987)
Two children	0.0635	0.0570
	(0.164)	(0.641)
More than two children	0.0844	0.142
	(0.123)	(0.415)
No children*gender	0	0
	(.)	(.)
One child*gender	-0.0412	0.0147
	(0.527)	(0.934)
Two children*gender	-0.0665	-0.0141
	(0.282)	(0.932)
More than two children*gender	-0.0858	-0.570**
	(0.285)	(0.034)
Spouse or cohabiting partner	0.112**	0.0340
	(0.030)	(0.762)
Spouse or cohabiting partner*gender	-0.142**	0.0155
	(0.030)	(0.924)
Experience	0.0139***	0.0113***
	(0.000)	(0.010)
Top manager	0.263***	0.472***
	(0.000)	(0.000)
Best in class	0.0489*	0.0319
	(0.097)	(0.726)
Months abroad	-0.000999	-0.000589
	(0.351)	(0.799)
Work hours w/o private practice (h/w)	0.00544***	0.00856**
	(0.000)	(0.016)
Private practice (h/w)	0.0109***	0.0204***
	(0.000)	(0.002)
Specialty: Medicine	0	0
	(.)	(.)
Specialty: Surgery	0.0630**	0.145
	(0.025)	(0.108)
Specialty: Diagnostic	0.117***	0.290***
	(0.000)	(0.001)
Specialty: All others	0.201***	-0.0221
	(0.001)	(0.913)
Outsourcing (h/w)	0.00593***	0.00430
	(0.000)	(0.212)
Unpaid work hours (h/w)	-0.000506	0.000152
	(0.361)	(0.940)
Constant	10.35***	10.35***
	(0.000)	(0.000)
r2	0.457	0.571
N	760	148

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1 - Mean differences by characteristics

	Men	Women	T-Test
Annual income (euro)	85973.03	62747.42	0.0000
Age	52.29	47.89	0.0000
Grade	107.12	108.01	0.0004
Honors	45.11	51.46	0.0468
Work experience (years)	21.62	17.06	0.0000
Months of training abroad	5.2	2.8	0.0004
Work hours (h/w)	47.78	44.97	0.0000
Work hours w/o private practice (h/w)	44.03	42.93	0.0467
Private practice (h/w)	3.74	2.04	0.0000
Public hospital	81.56	84.07	0.2759
Specialties:			
Medicine	39.78	56.05	0.0000
Surgery	35.08	15.93	0.0000
Diagnostic	21.16	23.8	0.2759
Public health	3.07	2.5	0.5765
All others	0.72	0.96	0.6649
Rank:			
1st level	50.63	70.25	0.0000
Vice	28.57	18.62	0.0001
Head	18.81	6.14	0.0000
All others	1.99	4.99	0.007
Spouse or cohabiting partner	86.44	73.7	0.0000
Cohabiting partner	15.91	15.74	0.9378
Spouse	70.52	57.97	0.0000
Number of children	1.51	1.06	0.0000
Number of children living at home	1.11	0.96	0.0186
No children	23.87	38.96	0.0000
Unpaid work (h/w)	15.53	25.48	0.0000
Outsourced unpaid work (h/w)	5.75	6.95	0.0000

Table 2 - Ols models on log income and log hourly income: female coefficients

		Log income	%	Log hourly income	%
1	Gender	-0.321***	37.8	-0.245***	27.8
2	+ Work controls	-0.201***	22.3	-0.117***	12.4
3	+ Family controls	-0.194***	21.4	-0.103***	10.8
4	+ Best in class	-0.197***	21.7	-0.104***	10.9
5	+ Months abroad	-0.197***	21.7	-0.110***	11.6
6	+ Work hours w/o private practice (h/w)	-0.188***	20.7	-0.140***	15
7	+ Private practice (h/w)	-0.160***	17.4	-0.151***	16.3
8	+ Specialty	-0.153***	16.6	-0.144***	15.5
9	+ Outsourcing (h/w)	-0.169***	18.4	-0.160***	17.3
10	+ Unpaid work hours (h/w)	-0.163***	17.7	-0.155***	16.8
	N	908		908	

p-values in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01

Work controls include the years of experience, the rank and the sector. Family controls include the marital and parental status

Table 3 - Interaction model on log income: marginal effects

	Men	(%)	Women	(%)	M-W	(%)
Public	0	0	0		0.15***	+1.4
	(.)		(.)		(0.000)	
Private	0.17***	+1.5	0.06	+0.6	0.26***	+2.4
	(0.000)		(0.167)		(0.000)	
Medicine	0		0		0.16***	+1.4
	(.)		(.)		(0.000)	
Surgery	0.08**	+0.8	0.05	+0.4	0.20***	+1.8
	(0.013)		(0.285)		(0.000)	
Diagnostic	0.14***	+1.3	0.14***	+1.2	0.17***	+1.5
	(0.000)		(0.000)		(0.000)	
All others	0.18**	+1.6	0.19**	+1.8	0.15	+1.3
	(0.028)		(0.025)		(0.198)	
No children	0		0		0.12***	+1.1
	(.)		(.)		(0.003)	
One child	0.06	+0.5	0.03	+0.2	0.15***	+1.4
	(0.219)		(0.539)		(0.001)	
Two children	0.07	+0.6	0.00	+0	0.19***	+1.7
	(0.099)		(0.987)		(0.000)	
> 2 children	0.1*	+0.9	-0.05	-0.4	0.27***	+2.4
	(0.063)		(0.425)		(0.000)	
No spouse or cohabiting partner	0		0		0.08	+0.8
	(.)		(.)		(0.129)	
Spouse or cohabiting partner	0.10**	+0.9	-0.01	-0.1	0.19***	+1.7
	(0.034)		(0.799)		(0.000)	

Note: the marginal effects are computed on the interaction model in Table A3 of the Appendix
p-values in parentheses
* p < 0.10, ** p < 0.05, *** p < 0.01

Table 4 - Interaction model on log income by sector: marginal effects by sector

	Public						Private					
	Men	(%)	Women	(%)	M-W	(%)	Men	(%)	Women	(%)	M-W	(%)
No children	0		0		0.12	+1	0		0		0.13	+1.1
	(.)		(.)		(0.009)		(.)		(.)		(0.262)	
One child	0.07	+0.6	0.03	+0.3	0.16***	+1.4	-0.00	-0.0	0.01	+0.1	0.11	+1.0
	(0.151)		(0.486)		(0.001)		(0.987)		(0.927)		(0.435)	
Two children	0.06	+0.6	0.00	0.0	0.18***	+1.7	0.06	+0.5	0.04	+0.0	0.14	+1.3
	(0.164)		(0.947)		(0.000)		(0.641)		(0.757)		(0.283)	
> 2 children	0.08	+0.8	0.00	0.0	0.20***	+1.8	0.14	+1.3	-0.43*	-3.8	0.70***	+6.5
	(0.123)		(0.982)		(0.002)		(0.415)		(0.058)		(0.006)	
No spouse or cohabiting partner	0		0		0.04	+0.4	0		0		0.19	+1.7
	(.)		(.)		(0.452)		(.)		(.)		(0.214)	
Spose or cohabiting partner	0.11**	+1	-0.03	-0.3	0.19***	+1.7	0.03	+0.3	0.05	+0.4	0.17*	+1.5
	(0.030)		(0.455)		(0.000)		(0.762)		(0.670)		(0.050)	

Note: the marginal effects are computed on the interaction models in Table A4 of the Appendix

p-values in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01