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Gender gaps in career opportunities: a look at graduates in the field of business and economics in Uruguay

Paola Azar *- Alina Machado**

Resumen

A diferencia de lo que sucede en países desarrollados, en Uruguay no se advierten diferencias de género en el número de egresos universitarios en las áreas de contabilidad, administración y economía. No obstante, igual que en las regiones desarrolladas, presentan características académicas semejantes al inicio de sus carreras laborales y se insertan en las mismas posiciones ocupacionales. Pero, esta similitud de partida ¿implica que varones y mujeres logren realizar carreras laborales equivalentes? Utilizando información sobre desempeño académico y laboral de la generación graduada en 2012, este trabajo estima modelos probit ordenados para analizar las diferencias de género en las posiciones ocupacionales alcanzadas tras la graduación. Los resultados muestran que el género no incide en la escolaridad, la probabilidad de egreso o en la posición ocupacional alcanzada al término del grado y en los 4 años posteriores. Sin embargo, se transforma en un significativo predictor de la posición ocupacional a los 7 años del egreso. Para ese momento, la probabilidad de que las mujeres alcancen las posiciones ocupacionales más altas de la escala se encuentra 10 puntos porcentuales por debajo de los varones y se reduce aún más con la presencia de niños en la familia. Además, al poco tiempo del egreso, las mujeres presentan mayor probabilidad que los varones de trabajar a tiempo parcial y valoran significativamente más la estabilidad laboral y el tiempo libre.

Palabras clave: graduación, universidad, carrera laboral, género, economía, negocios

Código JEL: J16, J24, J45

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Abstract

Unlike developed countries, male and female university graduates in Uruguay are equally sorted into the fields of accountancy, business and economics. In turn, as in those regions, these people begin their labor market tracks with similar academic characteristics and labor positions. But, does this imply they develop convergent career paths? Using data on academic and labor market performance of cohorts graduated in 2012, we apply *ordered probit models* to analyze gender differences in job positions at graduation and subsequent years. We find that gender does not account for differences either in university marks or in time to degree or job positions at graduation and 4 years later. However, it emerges as a strong predictor of job positions 7 years afterwards. At that stage, the chances of reaching the upper ranked jobs is 10 percentage points higher for men than for women while female probabilities of achieving higher positions are even lower when children are present. Besides, soon after degree, women have a significantly lower probability than men of full-time working and show a greater appreciation of job stability and free time.

Keywords: graduates, labor market career, gender, business, economics

JEL Code: J16, J24, J45

1. Introduction

The extent of women's progress relative to men has been remarkably visible when it refers to education. In the developed world, the female likelihood of having an advanced university degree has surpassed that of men in the last 20 years (Blau and Khan, 2017; Bertrand, 2018). As a result, among highly qualified people, human capital accumulation cannot easily explain gender differences in labor market performance. However, these differences persist.

A large literature accounts that, for university graduates, gender wage gaps are especially high and increase over their lifecycle (Napari, 2009; Goldin et al., 2014 and 2017; Bütikofer et al 2018; Francesconi and Parey, 2018). Observable differences are attributed to women and men sorting into different majors; to female labor participation interruptions due to family responsibilities, to women's preferences for shorter weekly hours worked. These factors may act along with others such as different treatment within firms by gender or different gender preferences for competition, risk or bargaining (Gneezy et al., 2003; Blau and Khan, 2017). Complementarily, a line of research has claimed that part of the gender gaps might arise from female preferences on work arrangements. Closeness to home, non-flexible schedules and stability –usually associated to lower paid jobs- seems to be more valued by women than men (Redmon and McGuiness, 2019; Mas and Pallais, 2017; Wiswall and Zafar, 2018).

In the midst of this discussion, some studies have particularly focused on the gender differing career opportunities of professionals at highly rewarding sectors such as finances, business and economics. Bertrand et al. (2010) show that one year after MBA completion in Chicago University, men already earn 6% more than women. For Sweden, Albrecht et al. (2018) find visible gender wage gaps among business and economics graduates, 20 years after they degree completion. The gap widens as these professionals become parents, a conclusion also raised by Bertrand et al. (2010). In this line, Bütikofer et al. (2018) show that three years after graduation, female MBAs in Norway –particularly those with the highest wages- experience a higher child penalty than in other professions. Significant pay gender gaps are also present among Italian and German recent graduates, particularly in the field of economics and statistics (Piazzalunga, 2018; Francesconi and Parey, 2018).

Based on the previous evidence, this paper examines whether these unequal labor market dynamics holds in the case of a small developing country like Uruguay. Several reasons make the Uruguayan setting interesting for this analysis. It is an upper-middle income economy, with a high Human Development Index, where women have been more educated than men since the mid-20th century. Besides, female graduates are predominant (60%) and this is also true in the fields of finances, business and economics, though being professions identified with high-paying jobs (UDELAR, 2023). In this regard, Uruguay resembles the situation of the rest of Latin America where, different from Europe and United States, women are not underrepresented in relation to men in these academic fields (Amarante and Bucheli, 2022). But, does this difference imply that women graduates develop convergent career paths in relation to their male counterparts?

To gauge into the question, this paper analyzes gender differences in the career opportunities of Uruguayan professionals in the fields of accountancy, business administration and economics after graduation. We resort to data from Universidad de la República-UDELAR (the largest in the country). We have matched worker to academic and socioeconomic records of graduates in 2012, who are followed 4 and 7 years later (in 2016 and in 2019). Our study focuses on the job positions these graduates are able to achieve. As these data conform to an ordered categorical variable, we estimate ordered probit models. Based on them, we discuss the effect of gender on the probability of reaching different job positions. We pay particular attention to the extent at which this effect depends on variables related to care responsibilities. The estimations take into account background characteristics and academic performance of graduates at university, so to capture whether female and male graduates were similar at the onset of their labor market tracks. We apply the same empirical approach to analyze graduates' working hours and preferences on job attributes. We also compute linear models to learn how much gender explains time to degree and average university marks.

The analysis provides new evidence for a scarcely explored subject in Uruguay. Most of the previous research on gender, labor market and graduates has concerned academics. The studies find gender gaps against women in postgraduate courses, in the ranking of faculty professors at UDELAR, in the maternity penalty at the scientific production (Fernández et al., 2022; Tomassini, 2014, Robaina and Tomassini, 2021; Galván and Tenenbaum, 2023). Gaps are particularly wide in the areas of technology, biology, engineering (MIMCIT, 2020). Gender discrimination in access and progress towards the more prestigious and highly paid levels of the ranking also appear in the National System of Researchers (Burkstein and Gandelman, 2019; Bernheim, 2015). Besides, Burone and Méndez (2022) find gender differences (against women) in terms of satisfaction, autonomy or promotion opportunities among PhD holders working at UDELAR.

Beyond academics, several scholars have identified a glass ceiling effect along the wage distribution (Bucheli and Sanroman, 2005; Borraz and Robano, 2010; Alves et al., 2016, CEPAL/ONU-Mujeres, 2020). Their general argument is consistent with the idea of a gender gap affecting highly skilled women (who also earn higher relative wages). Though for tertiary educated women labor participation and occupation rates are higher than for the average, they experience drawbacks in terms of gender industry segregation, working hours and wages that are similar to the mean-female worker (Espino et al., 2014; Soria 2021). Regarding the field of economics and business, a recent strand of research has examined gender gaps in female and male scientific productivity (Amarante et al., 2021) and in the perception about professional and technical issues (Amarante et al., 2023). However, beyond the academy, gender differences in the labor performance of these graduates has not been discussed yet.

For students enrolled in business, economics or administration majors (at the Faculty of Economics and Administration), former analyses have found that under-performance in mathematics and dropout rates are positively related. But, these analyses do not point out to visible gender biases (Alcalde et al., 2019; Álvarez et al., 2020). A timelier career completion has also been documented for women in Economics (Barro et al., 2018). Still,

the available evidence does not focus on the academic tracks of those who succeed in graduation, as we do in this paper.

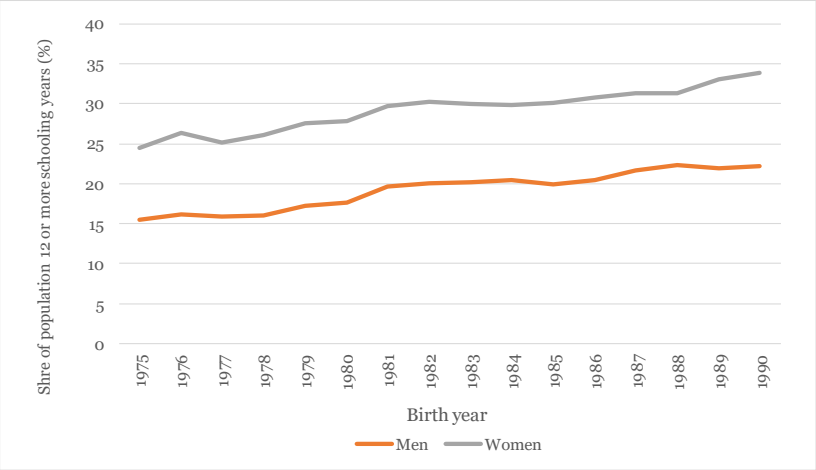
In this setting, this study contributes to bring on to Uruguay the discussion on the labor performance of graduates in business and economics (including its possible links to their previous academic track) and to test whether as in the developed world, gender gaps also emerge in the context of a developing country. Moreover, as far as we know, this is one of the first studies for Latin America which combines academic records with data on labor experience of graduates. We believe that documenting these gender differences might open new insights about the institutional and personal barriers and biases in labor performance faced by female and male professionals in comparison to the average. Indeed, from a policy perspective, awareness on the evolution of these gender disparities can help universities and workers to be more alert about the real opportunities available in labor markets for women and men.

In this paper, we proceed as follows: section 2 presents the Uruguayan context for the analysis and section 3 describes the data and section 4 the methodology. In section 5 we present the results and section 6 concludes.

2. The Uruguayan setting

Uruguay has been one of the first Latin American countries to close the education gender gaps, measured in average schooling years (Ñopo, 2012). Indeed, among people with tertiary education (i.e., at least 12 schooling years), the share of women largely surpassed that of men since the mid-20th century. In Figure 1, we show this continued and long-term trend since the cohort born in 1975.

Figure 1. Share of population with 12 or more schooling years by gender. Cohorts 1975-1990.



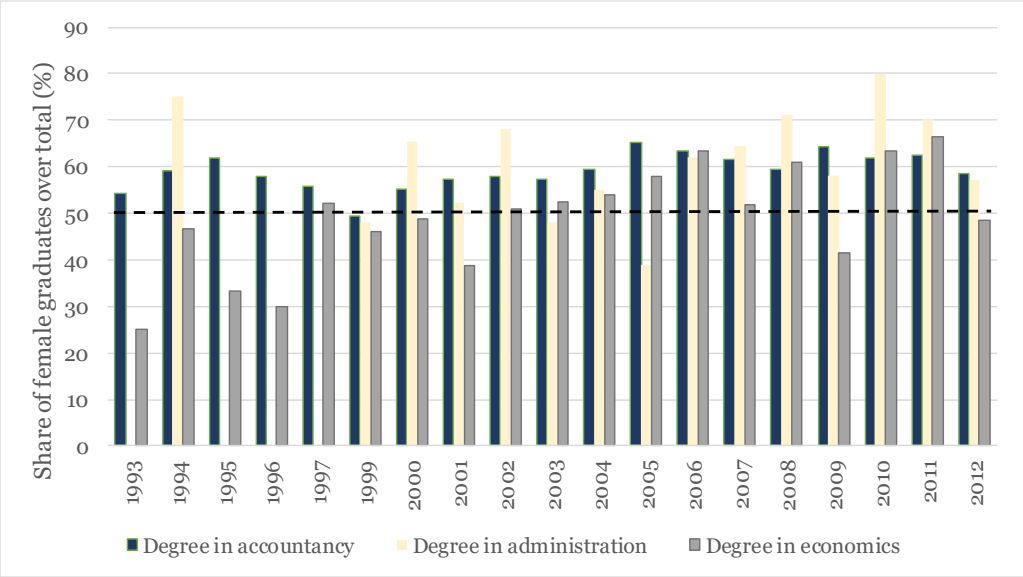
Source: Authors' own calculations based on harmonized National Household Surveys (National Statistics Office).

Particularly in the case of university education, the country has traditionally relied the training of professionals and academics in the large and prestigious public UDELAR. Until the 1980s, it has been the only higher education institution. Even today, despite the diffusion of private universities, UDELAR concentrates more than 86% of the total enrollment (UDELAR, 2023). There, all graduate courses (and some post-graduate programs) are completely free of charge. Students do not require any entrance examination and -except for some particular fields of knowledge -, there are not quotas to apply to any career enrollment.

The share of women enrolled at UDELAR was 50% by 1980s. However, this percentage continued expanding to reach 63% by 2010s (DGPLAN, 2019). Uruguay reproduces the international trend of a large concentration of female students (and graduates) in the fields of art, humanities and social sciences to the detriment of science, technology, engineering and mathematics. Accordingly, female graduates account for half of the total in medicine or health sciences; they explain almost 70% of those obtaining a degree in humanities and social sciences but they represent 30% of graduates in engineering (DGPLAN, 2019).

In UDELAR, the Faculty of Economics and Administration (FCEA for its Spanish acronym) offers four academic degrees: in accountancy, administration, economics and statistics. In the first two, graduates have been female-dominated since the 1990s. In economics, this trend emerged in the second half of the 2000s (Figure 2). The gender balance among economists is not frequent compared to United States or Europe, but resembles the case of other Latin-American countries (Amarante et al., 2022).

Figure 2. Female share among graduates in accountancy, administration and economics



Note: the figure does not include graduates in statistics because they are very few in numbers.
Source: Authors' own calculations based on data from UDELAR.

Our study uses data about graduates who obtained their first degree in 2012. In that year, the Faculty reformed both contents and duration of its degree course programs. As a result, a 4-year curricula replaced the old one (from 1990) where the regular completion time established 5 course-years plus an additional period (usually, another year) to write a graduation thesis. This modification implied that students graduating in 2012 included some who decided to complete their degree under the rules of the previous course-graduation program and others who opted for the new regime. The latter represented two thirds of the graduates under analysis. In the empirical approach, we take this condition into consideration as it might affect the current profile of Faculty graduates and therefore their employment experience.

Precisely, regarding labor market, female participation rates in the country have been high for women with some tertiary education (Espino et al., 2017). In the late 1980s, while the average female rate reached 41%, the percentage for those who have 12 or more schooling years was around 65%. Since then, the average female participation rate has continuously increased to reach 56% in 2019, being the rate for those better qualified 40% higher. This implies that the labor participation rate of the better educated women is almost 90% (Soria, 2021; Espino et al., 2014). Consistently, among university students, 80% of women have already entered the labor market at the time of graduation (UDELAR, 2017). The percentage is even higher for the female graduates we analyze in our study (90%).

As more educated female cohorts enter the labor market, arguments related to traditional human capital investments (i.e., schooling years) have lost ground to explain the gender pay differences. Though in Uruguay, the gender education gap for highly qualified wage earners was calculated in 0.1% by 2010s, the hourly pay gap reached almost 20% (Espino et al.,

2014). Almost a decade afterwards, despite women's gains in education and labor-force attachment, in 2018 this gap for tertiary educated workers has only declined to reach 15% (CEPAL/ONU-Mujeres, 2020). The figure is similar to that for lower-educated labor force.

Searching for the reasons behind these persistent gaps, researchers have called the attention to the role of educational choices of women and men, especially referred to the selection of university career tracks (Bertrand, 2018; Blau and Khan, 2017). In this paper, we examine the labor performance of graduates from identical careers, which are also traditionally associated to high-paying jobs. This allows us to avoid introducing biases connected to educational choices and to identify whether women graduates are getting ahead as fast as men in their job positions.

3. Data

We have matched information about individual and academic background to labor market data of graduates in economics, accountancy and administration from FCEA since they obtained their degree in 2012. All these data are generated by UDELAR, but come from different databases.

Data on academic performance come from administrative records about the academic trajectories at the degree. These was provided by the FCEA and include the detailed student story since enrollment (courses enrollment, course-approvals, exams taken, dates of activities, marks). Based on these raw information, we have built variables accounting for graduation marks, time to degree and scores obtained in some particular subjects.

Along with these data, information about individual characteristics at university entrance (anonymized) were available from a compulsory survey the students must complete at their first enrollment at university. They are asked about age at enrollment, region of residence, parent's education, scholarship application, employment and the high-school institution they attend during upper-secondary education (private, public or technical; domestic or foreign; in the capital city or from another region). This information is compiled and centralized by the Statistics and Planning Department of UDELAR.

As already mentioned, the 2012 graduates belong to cohorts that entered university between 2001 and 2008. Table 1 shows the main characteristics of these students obtained by combining the previous datasets. In the description, we have only considered "active students", that is, those who have a mark for the first course in mathematics, as a signal of having enrolled and developed academic activities. Performance in this subject is interesting for two main reasons. First, as we do not count on information prior to the course taking at the FCEA, we consider this mark a *proxy* of the student's performance in the secondary school (Capellari, 2012). Second, previous analyses show that the grade obtained in the subject appears to be strongly and positively linked to the subsequent academic achievements (Dolado and Morales, 2009; Bertrand et al., 2010; Capellari, 2012). In fact, for the FCEA, there is evidence that a low-performance in mathematics correlates with dropping out (Alcalde et al., 2019; Barro et al., 2018).

Table 1. Descriptive statistics for student cohorts between 2001 and 2008

	Mean			P_value (Two-sided t-test)
	Total	Women	Men	Women vs Men
Female	0.56	-	-	
Age at university entry	19.3	19.13	19.42	0.00***
Upper sec. public secondary school (omitted private)	0.69	0.71	0.66	0.00***
Upper sec. outside capital city (omitted Montevideo)	0.4	0.43	0.37	0.00***
Upper sec. in a foreign institution (omitted Montevideo)	0.01	0.01	0.01	0.17
Parent's middle educ. (omitted low educ.)	0.24	0.25	0.23	0.01***
Parent's high educ. (omitted low educ.)	0.48	0.43	0.54	0.00***
Parent's missing educ. (omitted low educ.)				
Mark in Mathematics (course 1)	3.55	3.61	3.47	0.02**
Share of graduated *up to* 2012	0.24	0.26	0.21	0.00***
Enrollment generation				
2001	0.12	0.13	0.12	0.03**
2002	0.12	0.12	0.13	0.39
2003	0.12	0.12	0.12	0.83
2004	0.12	0.12	0.12	0.88
2005	0.12	0.12	0.13	0.03**
2006	0.13	0.13	0.13	0.49
2007	0.13	0.13	0.13	0.53
2008	0.13	0.13	0.12	0.03**
Observations	11,159	6,301	4,858	

*** p<0.01, ** p<0.05, * p<0.1. Source: Authors' own calculations based on data from UDELAR.

According to the table, more than half of enrollment corresponds to women, the average age at entry has been 19.3 years and students come mainly from public secondary education institutions (69%) and from the capital city (60%). The enrolled population is dominated by students whose parents have a high education level. Besides, their average score in mathematics is 3.55 out of 12. By 2012, only 24% of the enrolled students from 2001 to 2008 cohorts obtained their degree.

Among these 2001 to 2008 cohorts, female students are younger than men and come from public high schools and from institutions outside the capital city significantly more than their male counterparts. However, it is interesting to note that parental education is higher for males. Also, the share of women who have obtained their degree by 2012 surpasses that of men and they outperform male students in the first course of mathematics.

The data on labor market careers come from a recently released survey on graduates from different fields of study, which includes information about business and economics graduates. We received from UDELAR anonymized administrative records for individuals first interviewed at her graduation (2012) and then again 4 and 7 years later (in 2016 and

2019, respectively). The survey asks about the graduates' personal characteristics, family background, post-graduate studies and labor market experience.

In this study, we have made focus on job positions as a *proxy* of career opportunities. Most of our population is currently employed and occupies a post. According to data, employed people are 91% of graduates in 2012, 97% of our population in 2016 and 98% in 2019. For these people, we also examine weekly hours worked and complementary, their preferences for some workplace attributes. It is important to note that responses about earnings only appear in the first survey and just refer to broad discrete bins, so it has not been possible to obtain a consistent series.

To build the variable "job position" we have combined two others. First, the employment type, which is a multiple-item variable covering different kind of jobs and activities associated to the main employment, e.g. owner, manager or directive, administrative, seller, blue-collar or independent worker; teacher, professional or technical position. The list also comprises the item "not working".

Second, we have considered a variable reflecting the connection between jobs and field of knowledge. It ranges from jobs "non-related" or "partially related" to those "very related" to the graduate major. We use the relative closeness between the activities performed in the job place and the graduates' major as a sign of increasing prestige and rewards to education credentials. Then, to scale up in job positions implies accessing jobs in which graduates might develop their capabilities in an employment that better fits their academic background. As a result, we have built an ordered categorical variable on job positions available for each of the waves with the following values: 1 "non-technical job and non-related to the graduate major"; 2 "dependent or independent job related to the graduate major"; 3 "professional, technical or teaching position"; 4 "directives and managers". A residual category gathers people who are not working (the survey does not explain whether they are unemployed or just not on the search).

Alternatively, we have built a variable on weekly working hours which organizes responses into another ordered categorical variable. In this case, the values are 1 (up to 30 weekly hours), 2 (between 30 and 40 hours) and 3 (more than 40 hours). Finally, we work with perceptions about the relevance of 5 attributes of the job position: job stability, autonomy, value of free time, earnings, and prestige. Responses are organized into a 5-point Likert-type scale ranging from "not important" to "very important". We count on answers to job positions and working hours for all three waves (2012, 2016 and 2019), but responses about attributes refer to the last two waves.

As the aim of the study is to examine gender differences in the career opportunities, we are interested in the background academic and personal characteristics of graduates in 2012, which might influence their ability or productivity. These traits are relevant, because they are part of the possible information the employer considers at hiring. Then, from the cohorts of enrolled students between 2001 and 2008, we have selected those who completed their

degree in 2012. For them, we have matched labor market and other current socioeconomic characteristics to the background information compiled at university entrance.

Our cohort of graduates includes 420 people who obtained their first college degree in business, economics or administration in 2012.[1] They represent 7% of the total number of graduates in UDELAR for that year. We have made focus on these recently graduated, to isolate the labor market experience immediately after the completion of the first university degree. Table 2 reports the summary statistics regarding these graduates across waves. As it is observed, we have had to deal with a drop in the total number of surveyed people (from 420 in 2012 to 412 in 2016 and 297 in 2019). The t-test columns check that the missing observations across waves do not infringe any statistically significant bias in the composition of the population under analysis (the bias only appears for the percentage of graduates from Administration though their presence over the waves is almost negligible).[2]

[1] These criteria made us discard 267 graduates from the analysis because they had already obtained a first degree in previous years.

[2] The exceptions appear for scholarship and share of graduates under the 2012 academic plan between waves 2 and 3 (at 5%) and public secondary high school, parent's middle education between waves 2 and 3 (though at 10%). All our regressions control for these variables.

Table 2. Summary statistics on graduates

	Total mean			P_value (two sided t-test)		Mean (Wave 1)	
	Wave 1	Wave 2	Wave 3	W1 vs W2	W2 vs W3	Women	Men
Female (dummy=1)	0.48	0.48	0.48	0.92	0.92		
Age at university entry	18.20	18.20	18.23	0.85	0.66	18.04	18.35
Upper sec. public secondary school (omitted private)	0.51	0.51	0.54	0.45	0.06*	0.55	0.47
Upper sec. in foreign institutions (omitted private)	0.00	0.00	0.01	0.84	0.37	0.01	0.00
Upper sec. outside capital city (omitted Montevideo)	0.37	0.37	0.38	0.48	0.58	0.47	0.28
Parent's middle educ. (omitted low educ.)	0.16	0.16	0.19	0.51	0.07*	0.17	0.16
Parent's high educ. (omitted low educ.)	0.70	0.69	0.67	0.73	0.17	0.67	0.72
Parent's educ. missing (omitted low educ.)	0.01	0.01	0.01	0.81	0.27	0.01	0.00
Applied for a scholarship	0.14	0.14	0.16	0.25	0.04**	0.19	0.09
Employed[1]	0.22	0.22	0.22	0.81	0.76	0.23	0.20
Share of graduated under 2012 academic plan	0.67	0.66	0.70	0.21	0.03**	0.66	0.68
Mark in Mathematics (course 1)	6.67	6.69	6.68	0.21	0.86	6.77	6.58
Mean graduation mark	5.66	5.66	5.64	0.70	0.67	5.61	5.70
Time to degree	7.81	7.81	7.89	0.73	0.25	7.79	7.82
Age at graduation	26.45	26.46	26.55	0.44	0.28	26.29	26.60
Enrollment generation							
2001	0.10	0.10	0.11	0.79	0.22	0.12	0.07
2002	0.09	0.09	0.10	0.38	0.09*	0.06	0.11
2003	0.10	0.10	0.09	0.34	0.32	0.08	0.12
2004	0.12	0.12	0.11	0.99	0.40	0.14	0.11
2005	0.22	0.22	0.21	0.30	0.41	0.20	0.25
2006	0.21	0.21	0.21	0.78	0.91	0.23	0.19
2007	0.13	0.13	0.13	0.94	0.90	0.14	0.12
2008	0.02	0.02	0.02	0.67	0.68	0.02	0.02
Career							
Accountancy	0.77	0.77	0.77	0.32	0.71	0.83	0.71
Administration	0.01	0.01	0.01	0.00**	0.88	0.01	0.01
Economics	0.22	0.22	0.22	0.82	0.74	0.16	0.27
Observations							
Wave 1	420					203	217
Wave 2		412					
Wave 3			297				

*** p<0.01, ** p<0.05, * p<0.1. Source: Authors' own calculations based on data from UDELAR.

On average, almost half graduates are female, they entered university at 18 years old, around 50% come from a public secondary school and over 60% completed the upper secondary cycle in the capital city (Montevideo). In this statistics, female averages are rather above those of men: they mostly come from public institutions (55% vs 47%) and proceed from regions outside the capital city (47% vs 28%). Besides, parental education is high for the vast majority of graduates (67% and 73% for female and male, respectively). The middle parental education (complete secondary education) applies to 17% of our population. Interestingly, 14% of graduates have asked for a scholarship and the figure is higher for women than for men (19% vs. 9%, respectively)

The mean graduation mark (6.7 out of 12) and the graduation age is similar between men and women (26.5). The latter implies that the average time to graduation reaches 8 years.[3] These graduates have enrolled at university between 2001 and 2008, but most of them belong to cohorts enrolled in 2005 and 2006 (around 43%). Two thirds of graduates have opted to complete their degree under the rules of the recently approved "2012 Academic Plan". A vast majority of them obtained a degree in accountancy (77%), albeit there are gender differences, because 83% of women chose that field compared to 71% of men. The preference for economics corresponds to 22% of our total population, but here the preference among men surpasses that of women (27% vs. 16%). The share of those with a degree in administration is almost negligible for both genders (around 1%).

Next, in Table 3 we show averages for our main variables of interest (job positions and weekly hours of work) together with other changing characteristics of the population. We distinguish between women and men for all three waves.

[3] The degree study program applicable to the cohorts enrolled up to 2012 formally established that the time to degree should be –approximately- 6 years (5 years to complete courses and almost one additional year to write a final thesis).

Table 3. Statistics for dependent and changing variables by gender, across waves

	Wave 1 (2012)		P_value	Wave 2 (2016)		P_value	Wave 3 (2019)		P_value
	Women	Men	(two sided t-test)	Women	Men	(two sided t-test)	Women	Men	(two sided t-test)
Job position									
Not working	0.10	0.08	0.58	0.01	0.05	0.02 **	0.02	0.01	0.59
Non-technical	0.16	0.19	0.40	0.04	0.04	0.92	0.09	0.06	0.29
Basic jobs related to graduates' major	0.61	0.59	0.73	0.10	0.06	0.14	0.14	0.06	0.02 **
Tech., prof., teaching	0.13	0.12	0.69	0.74	0.69	0.23	0.60	0.65	0.40
Directive, manager	0.00	0.02	0.20	0.11	0.15	0.14	0.15	0.22	0.10
Hours worked									
Up to 30 hours	0.06	0.08	0.43	0.09	0.02	0.00 ***	0.26	0.12	0.00 ***
30 to 40 hours	0.34	0.26	0.13	0.31	0.24	0.11	0.38	0.35	0.55
More than 40 hours	0.60	0.65	0.31	0.60	0.74	0.00 ***	0.36	0.53	0.00 ***
Changing characteristics									
Living in couple	0.32	0.23	0.03 **	0.70	0.68	0.70	0.78	0.73	0.26
Children under 6 (at least 1)	0.03	0.02	0.68	0.21	0.15	0.18	0.44	0.41	0.58
Post graduate studies (coursing or finished)	-	-	-	0.37	0.46	0.07 *	0.44	0.58	0.01 **
Job tenure (years)	-	-	-	3.27	3.91	0.02 **	4.98	5.14	0.67
Observations	203	217		199	213		143	154	

Note: job positions and hours worked are ordered categorical variables; living in couple, children under 6 and post-graduate studies are dummies, where a value of 1 indicate presence of the characteristic. Data on post-graduate studies and job tenure are just available for the last two waves. *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' own calculations based on data from UDELAR.

At first sight, the starting point of labor market careers is similar by gender. But, although not statistically significant, there are differences in favor of men in job market positions at wave 3 and in weekly hours of work for men, both, at waves 2 and 3. Besides, in waves 2 and 3 most of graduates live with a couple. The presence of children increases with time while data do not show statistical significant gender differences. Instead, gender gaps in favor of men are visible in post-graduate studies in waves 2 and 3 (differences reach more than 10 percentage points) and for job tenure, in wave 2. We use these changing variables as controls in all regression of interest.

Table A-1 in the Appendix summarizes results for gender differences in the appraisal of some job attributes across waves. Four years after graduation, women report a higher appreciation than men for almost all inquired domains (autonomy, income free time out of work and prestige). However, in wave 3, the difference holds just for free time and emerges in the case of stability.

Overall, graduates and students are not identical. The graduates' profile seems to accentuate some of the features already present in enrolled students, i.e. they mostly belong to the capital city, their family background corresponds to more socio-economic advantaged households and they are younger than those enrolled (18.2 and 19.3). However, for graduates, women do not stand out for their better academic records in relation to men (see age at graduation and mean graduation marks of Table 2).

4. Estimation strategy

We begin our study with an overview of the academic performance of student cohorts that will later comprise our graduate population. To that aim, we estimate linear models to check the variables associated with the graduation probability and with the marks obtained at the first course of mathematics.

Then, to explore gender differences in career opportunities after graduation, we use the familiar ordered probit models for a 5-point ordered scale of job positions. Our estimations rely on cross-sectional data of the three waves of respondents. Thus, the unit of observation is a surveyed individual at her graduate year and then 4 and 7 years later (Equation 1).

$$Pr\left(job\ position_j = i\right) = \Pr(\omega_{i-1} < \beta_1 x_{1j} + \beta_2 x_{2j} + \cdots + \beta_5 x_{5j} + \mu \leq \omega_i) \qquad (1)$$

where i is the number of possible outcomes (or job positions); ω_i are the number of cut points within which the function estimated for the probability of each outcome should be (ranging from 1 to i-1 while ω_0 tends to $-\infty$ and $\omega_i$tends to $+\infty$); x_k are the independent variables explaining the job positions; β_k are the k coefficients to be estimated and μ is assumed to be normally distributed.

Based on Equation 1, we compare the predicted probability of graduates to achieve any of the job positions at different points in time. We also compute average marginal effects of being women or men on those probabilities. This allows identifying the extent to which

gender affects the chances to occupy certain job positions as graduates advance in their labor market careers.

The models include a wide array of controls related to background characteristics, family, academic performance and job tenure. Regressions also consider career and enrollment generation fixed effects. All this information seeks to reduce the effect of unobserved variables that may cause differences between female and male probabilities to achieve the highest job positions after graduation.[4]

Though we do not have evidence to suspect that the female graduates are negatively selected in terms of labor participation (see section 2), our graduate population might present different characteristics in relation to the whole cohort of students that let them obtain a degree. To discard this possible influence, we could have used ordered probit models with sample selection (De Luca and Perotti, 2011). But unfortunately, our database does not provide any suitable variable to serve as an exclusion restriction allowing to test for selection. That is, we do not count on a variable which correlates with the probability of graduation for the whole cohort of students in 2001 and 2008 but does not with their chances of reaching different job positions as they graduate and enter the labor market.[5] Given this limitation, our estimations should not be interpreted as causal but rather in descriptive terms. Overall, if despite the inclusion of the set of controls, results still point to gender differences in career opportunities against women, this might reflect that their career-advancement is influenced by gendered individual decisions (choices, personal traits, bargaining power) and/orby employer's gender discrimination in labor demand.

In the estimations, we have interacted the dummy for female graduates with academic and family variables. We seek to observe whether the career opportunities of women are more or less affected by these variables in relation to men. Particularly, we have assessed whether the presence of little children have a different effect by gender on the chances of occupying different job positions. Additionally, we have computed transition probabilities using separate equations for men and women. In this case, we have included the job positions of each individual in the previous wave to the set of controls. The model can be written as follows:

$$Pr\ (job\ position_t = s / job\ position_{t-1} = j\ ), s, j = 1, \ldots .5 \qquad (2)$$

where s, j are job positions in the current (t) and the previous wave (t-1), respectively.

5. Results

5.1. Gender gaps in the students' academic performance

[4] Given the sample size, it was not possible computing separate regressions for each career.
[5] Variables that could have been an exclusion restriction but we discarded were the mark obtained in the first course of mathematics and the region in which the students completed secondary school. These are related to the chances of graduation. However, in the limit, they might also act as a signal that influences the future labor market insertion.

Students might show differences at their academic profiles as they entry to university. For cohorts 2001 to 2008, Table 4 describes the correlation between gender and marks in Mathematics I and the probability of graduation.[6] According to estimates, being women correlates positively and significantly with math's scores and with the graduation probability (in this case, women outperform men by between 5.2 and 5.8 percentage points). In both cases, the gap widens as we add background controls, meaning that the difference in favor of women does not respond to individual characteristics.

The results also show that mathematics scores and graduation probability are negatively correlated to the oldest ages at entry, to public upper high-school attendance and to the completion of the secondary education cycle abroad. However, they are particularly increasing with a high parental education level and, up a lesser extent, with secondary education outside Montevideo.

[6] Remember that the group of graduates under analysis belongs to these cohorts.

Table 4. Gender differences in marks in Mathematics I and at the probability of graduation for student cohorts 2001-2008.

Dependent variable	Math's I mark		Graduation probability	
	(a)	(b)	(c)	(d)
Female	0.151**	0.247***	0.052***	0.058***
	(0.064)	(0.061)	(0.008)	(0.008)
Age at university entry		-0.230***		-0.021***
		(0.012)		(0.001)
Upper sec. public secondary school (omitted private)		-0.789***		-0.071***
		(0.079)		(0.010)
Upper sec. in foreign institutions (omitted private)		-1.755***		-0.133***
		(0.344)		(0.042)
Upper sec. outside capital city (omitted Montevideo)		0.137**		0.057***
		(0.068)		(0.008)
Parent's middle educ. (omitted low educ.)		0.396***		0.024**
		(0.079)		(0.010)
Parent's high educ. (omitted low educ.)		1.316***		0.116***
		(0.075)		(0.009)
Parent's educ. missing (omitted low educ.)		2.063***		0.721***
		(0.614)		(0.034)
Cohort FE	Yes	Yes	Yes	Yes
Observations	11,159	11,159	11,159	11,159
Share female	0.56			

Note: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Among students from cohorts 2001 to 2008 who registered academic activity, 6% graduated in 2012. In Table 5 we focus on these people who have, effectively, obtained their degree in 2012 and comprise our group of graduates. For them, we do not find evidence of gender biases in the mean marks in mathematics, marks at graduation or time to degree. Conversely, higher marks in mathematics or at graduation are still significantly related to the highest parental education. In fact, that is the only variable that plays a relevant role for Math's mark. In turn, finishing by the "2012 academic plan" and attending upper secondary outside the capital city negatively affects the graduation marks.

Table 5. Gender differences in marks in mathematics I, graduation marks and time to degree for graduates in 2012

	Math's I mark	Mean mark at graduation	Time to degree
	(a)	(b)	(c)
Female	0.375	0.039	0.006
	(0.234)	(0.116)	(0.029)
Age at university entry	0.056	0.061	-0.006
	(0.114)	(0.056)	(0.014)
Upper sec. public secondary school (omitted private)	-0.103	-0.023	0.008
	(0.302)	(0.149)	(0.037)
Upper sec. in foreign institutions (omitted private)	-0.292	-0.492	0.089
	(1.646)	(0.812)	(0.202)
Upper sec. outside capital city (omitted Montevideo)	-0.132	-0.290*	-0.046
	(0.318)	(0.157)	(0.039)
Parent's middle educ. (omitted low educ.)	0.535	0.245	-0.015
	(0.418)	(0.206)	(0.051)
Parent's high educ. (omitted low educ.)	0.630*	0.428**	-0.053
	(0.370)	(0.183)	(0.045)
2012 academic plan	-0.028	-0.588***	0.004
	(0.243)	(0.120)	(0.030)
Applied for a scholarship	0.315	0.254	0.063
	(0.383)	(0.189)	(0.047)
Employed	-0.325	-0.179	0.002
	(0.453)	(0.223)	(0.056)
Cohort FE	Yes	Yes	Yes
Career FE	Yes	Yes	Yes
Observations	417	417	417

Note: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Importantly, then, women seem to start their career with better perspectives than men. However, at the end of their academic tracks, they do not maintain their relative advantage. This finding is similar to the obtained by Francesconi and Parey (2018) in Germany. The result might be influenced by a higher dropout rate for male students, leading the group of graduates to be composed by the best male performers. But as the above referred authors mentioned, it also might reflect other aspects, such as men achieving maturity and catching up with women in academic skills, or that programs are better suited to men's than women's abilities. Overall, at graduation, except for family education, no other individual characteristic explains the obtained outcomes. Particularly, for the cohort of graduates, gender does not seem to be relevant to account for differences in the academic performance.

5.2. Gender differences in career opportunities

To get a first picture, we have computed the probabilities of graduates to reach different jobs positions across waves (Table 6). The chances of reaching upper positions in the ranking increase with time. The highest probability in wave 1 corresponds to basic jobs related to the graduate major (job position 2). However, in the next waves it is associated to positions as professionals, technicians or teachers (job position 3). The probability of reaching directive or management positions also increases with time, but it is far from being predominant. The chances of being out of the labor market are declining across waves.

Table 6. Estimated probabilities of job positions across waves (%)

Job positions	Wave 1	Wave 2	Wave 3
Not working	9	3	2
Non-technical	17	4	7
Basic jobs related to graduates' major	60	8	10
Tech., prof, teaching	12	72	63
Directive, manag.	1	13	18
Observations	420	412	297

Estimates in Table 7 show the variables that significantly affect the likelihood of achieving each of the job positions after graduation. At graduation (wave 1), the probability of being outside the labor market or holding jobs unrelated to the disciplinary field increases if people are older at university entry but it declines with the graduation mark and graduation age. In this last case, the variable seems to be a better *proxy* of the labor market experience than of the cost of delayed academic paths. However, 4 years after graduation, university scores and age at graduation stop being statistically significant. That is, for our graduates, the effect of the academic performance on the labor market perspectives seems to fade rather soon. Now, age at entry and the presence of children aged below 6 have a negative effect on the probability of occupying the lowest job positions. The intuition for this result is that as time goes by, both variables reflect the accumulated labor market experience and the increasing needs of graduates prompted by their course of life. At these two first stages of the labor track, gender is not relevant to explain job positions.

The results are different in wave 3. Here, the most remarkable result is that being men or women yields statistically significant effects on the likelihood of reaching different career opportunities. Female graduates have a higher probability than men of occupying the lowest job positions of the ranking. Actually, the chances of reaching the upper job position is 10 percentage points higher for male than for female graduates. Along this effect, having finished upper secondary education at a public institution, being older at graduation and a longer job tenure increase the chances of holding the lowest job positions. As already mentioned, at this stage, the average course performance (mark at graduation) does not exert any significant impact on the probability of reaching the different job positions.

Table 7. Average marginal effect of the set of controls on the probability of achieving different job positions

	Not working		Job position 1		Job position 2		Job position 3		Job position 4	
					Wave 1					
Female	0.007	(0.017)	0.007	(0.017)	-0.005	(0.012)	-0.008	(0.019)	-0.001	(0.004)
Age at university entry	0.066***	(0.015)	0.067***	(0.015)	-0.045***	(0.012)	-0.075***	(0.018)	-0.013**	(0.006)
Upper sec. public secondary school	0.016	(0.022)	0.016	(0.022)	-0.011	(0.015)	-0.018	(0.025)	-0.003	(0.005)
Upper sec. outside capital city	-0.006	(0.022)	-0.006	(0.023)	0.004	(0.015)	0.006	(0.025)	0.001	(0.005)
Parent's middle educ.	-0.035	(0.032)	-0.035	(0.032)	0.023	(0.022)	0.039	(0.036)	0.007	(0.006)
Parent's high educ.	0.025	(0.027)	0.026	(0.028)	-0.017	(0.019)	-0.029	(0.031)	-0.005	(0.006)
Living in couple	-0.024	(0.021)	-0.024	(0.021)	0.016	(0.014)	0.027	(0.023)	0.005	(0.004)
Children under 6 (at least 1)	-0.026	(0.070)	-0.027	(0.071)	0.018	(0.048)	0.030	(0.079)	0.005	(0.015)
Mean mark at graduation	-0.013*	(0.007)	-0.013*	(0.007)	0.009*	(0.005)	0.015*	(0.008)	0.003	(0.002)
Age at graduation	-0.071***	(0.016)	-0.072***	(0.016)	0.048***	(0.012)	0.080***	(0.019)	0.014**	(0.006)
					Wave 2					
Female	0.001	(0.009)	0.001	(0.008)	0.002	(0.011)	-0.000	(0.003)	-0.004	(0.025)
Age at university entry	-0.015*	(0.008)	-0.013*	(0.007)	-0.020*	(0.011)	0.005	(0.006)	0.044**	(0.021)
Upper sec. public secondary school	-0.012	(0.010)	-0.010	(0.009)	-0.015	(0.013)	0.004	(0.006)	0.033	(0.028)
Upper sec. outside capital city	0.005	(0.010)	0.004	(0.008)	0.006	(0.013)	-0.002	(0.004)	-0.014	(0.028)
Parent's middle educ.	-0.002	(0.014)	-0.002	(0.012)	-0.003	(0.018)	0.001	(0.004)	0.006	(0.040)
Parent's high educ.	0.002	(0.011)	0.001	(0.010)	0.002	(0.015)	-0.001	(0.004)	-0.005	(0.033)
Living in couple	-0.014	(0.010)	-0.012	(0.008)	-0.019	(0.012)	0.004	(0.006)	0.040	(0.026)
Children under 6 (at least 1)	-0.025*	(0.015)	-0.022*	(0.012)	-0.033*	(0.019)	0.008	(0.010)	0.072*	(0.040)
Mean mark at graduation	-0.004	(0.004)	-0.004	(0.003)	-0.006	(0.005)	0.001	(0.002)	0.012	(0.011)
Age at graduation	0.007	(0.008)	0.006	(0.007)	0.010	(0.011)	-0.002	(0.004)	-0.021	(0.022)
Post-graduate studies	-0.012	(0.009)	-0.011	(0.008)	-0.016	(0.013)	0.004	(0.005)	0.035	(0.026)
Job tenure	0.000	(0.001)	0.000	(0.001)	0.001	(0.002)	-0.000	(0.001)	-0.001	(0.004)

Continued in the next page

Table 7 (cont). Average marginal effect of the set of controls on the probability of achieving job position

	Not working		Job position 1		Job position 2		Job position 3		Job position 4	
					Wave 3					
Female	0.016**	(0.008)	0.043***	(0.017)	0.041***	(0.015)	-0.002	(0.011)	-0.100***	(0.036)
Age at university entry	-0.010*	(0.006)	-0.026**	(0.012)	-0.025**	(0.011)	0.001	(0.007)	0.061**	(0.026)
Upper sec. public secondary school	0.015*	(0.009)	0.039**	(0.019)	0.036**	(0.017)	-0.002	(0.010)	-0.089**	(0.041)
Upper sec. outside capital city	-0.003	(0.007)	-0.009	(0.019)	-0.008	(0.018)	0.000	(0.002)	0.020	(0.044)
Parent's middle educ.	0.011	(0.011)	0.029	(0.026)	0.027	(0.025)	-0.001	(0.007)	-0.066	(0.059)
Parent's high educ.	0.004	(0.009)	0.012	(0.022)	0.011	(0.020)	-0.000	(0.003)	-0.027	(0.050)
Living in couple	-0.005	(0.007)	-0.013	(0.018)	-0.012	(0.017)	0.001	(0.003)	0.030	(0.041)
Children under 6 (at least 1)	-0.009	(0.007)	-0.025	(0.017)	-0.023	(0.016)	0.001	(0.006)	0.057	(0.038)
Mean mark at graduation	-0.002	(0.002)	-0.006	(0.006)	-0.006	(0.006)	0.000	(0.002)	0.014	(0.014)
Age at graduation	0.009	(0.006)	0.025**	(0.012)	0.023**	(0.011)	-0.001	(0.006)	-0.058**	(0.026)
Post graduate studies	0.002	(0.006)	0.006	(0.016)	0.005	(0.015)	-0.000	(0.001)	-0.013	(0.036)
Job tenure	0.002	(0.001)	0.006**	(0.003)	0.006**	(0.002)	-0.000	(0.002)	-0.014**	(0.006)

Note: regressions include career and cohort fixed effects. Observations are 417, 409 and 294 in wave 1, 2, and 3, respectively. Job positions include 1 “non-technical job and non-related to the graduate major”; 2 “dependent or independent job related to the graduate major”; 3 “professional, technical or teaching position”; 4 “directives and managers”. Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

To be more specific, Table 8 focuses on the changing effect of gender on job positions in wave 3, for different sets of controls. As previously stated, women are more likely than men to be at the bottom of the job ranking. Their probability of holding jobs either unrelated to their majors or very basic are between 3.7 and 4.4 percent points higher than for men. Note that the gender gap expands after controlling for background, family conditions, academic records, and job tenure. This suggests that the chances of occupying this type of jobs are not necessarily reflecting differences in personal, household, academic or labor path variables.

Table 8. Average marginal effect of being women on job positions (wave 3)

	Wave 3			
	(a)	(b)	(c)	(d)
Job position	Background controls	(b) + Family controls	(b)+ Academic controls	(c) + Job controls
Not working	0.014*	0.015*	0.015*	0.016**
	(0.008)	(0.008)	(0.008)	(0.008)
Non-technical	0.039**	0.040**	0.041**	0.044**
	(0.017)	(0.017)	(0.017)	(0.017)
Basic jobs rel. to grad. major	0.037**	0.038**	0.039**	0.041**
	(0.016)	(0.016)	(0.016)	(0.016)
Tech., prof, teaching	-0.002	-0.002	-0.002	-0.002
	(0.010)	(0.011)	(0.011)	(0.011)
Directive, management	-0.089**	-0.091**	-0.093***	-0.099***
	(0.036)	(0.036)	(0.035)	(0.035)
Cohort FE	Yes	Yes	Yes	Yes
Career FE	Yes	Yes	Yes	Yes
Observations	294	294	294	294

Note: Background controls include age at first entry at university, public high-school attendance, last year of high-school in the capital city, a dummy for foreign student, parent's middle or high education level. Family controls comprise marital/living status and presence of at least one children under 6 years old. Academic controls gather mean graduation mark, age when graduated and postgraduate studies. Job controls include tenure. Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

According to results, the only position for which gender does not seem to be relevant is the one related to professional and technical jobs (job position 3). However, given the whole picture, we do not attribute this finding to the absence of gender inequalities but to limitations in the available data. Remember that in this study, position 3 comprises a wide range of professional and technical jobs, which include teaching positions. This makes it difficult to untangle clear gender effects.

To check the robustness of these baseline results we have replicated the regressions including a control for the change in the curricula in 2012 and for the qualification obtained in the first course of mathematics. Alternatively, we have computed the above regressions using an extended sample comprising all students graduated in 2012, no matter whether they were first graduated at that time (see Table A-2 in the Appendix). In all cases, gender differentials in the career opportunities only emerge in wave 3 and imply a disadvantage for women to achieve the middle and top job positions. We do not find any statistically significant effect for the new controls.

Next, we look for factors that might affect the gender effect on the career opportunities in wave 3. To that aim, the baseline regressions include the interaction between selected controls and the female indicator variable. Table 9 reports that having children implies that the gender difference in job positions becomes more pronounced than when children are absent. That is, for women, having children aged 6 or less increases the probability of the lowest and middle-level job positions relative to men.

Table 9. Average marginal effect of being women on job positions with interaction terms in wave 3

Note: Regressions include background, family, academic and job controls, career and cohort fixed effects.

	Children aged 6 or less		Age at graduation		Post-graduate studies		Job tenure	
Job position	No	At least 1	10% youngest	Median	No	Coursing	Average	Longest
Not working	0.016	0.015*	0.008	0.020**	0.016	0.016*	0.016**	0.025*
	(0.011)	(0.009)	(0.005)	(0.009)	(0.010)	(0.010)	(0.008)	(0.015)
Non-technical	0.041*	0.046**	0.026	0.040**	0.044*	0.043**	0.044**	0.057*
	(0.022)	(0.023)	(0.016)	(0.016)	(0.024)	(0.021)	(0.018)	(0.029)
Basic jobs related to graduates' major	0.036*	0.049**	0.033*	0.035**	0.043*	0.040**	0.042**	0.044*
	(0.020)	(0.022)	(0.020)	(0.015)	(0.022)	(0.019)	(0.016)	(0.023)
Tech., prof, teaching	-0.016	0.026	0.129**	0.014	0.003	-0.006	-0.005	-0.042
	(0.015)	(0.025)	(0.052)	(0.011)	(0.019)	(0.015)	(0.012)	(0.027)
Directive, manag.	-0.078*	-0.135**	-0.196**	-0.110***	-0.106*	-0.094**	-0.097***	-0.084*
	(0.042)	(0.058)	(0.081)	(0.038)	(0.055)	(0.043)	(0.035)	(0.043)
Observations	294	294	294	294	294	294	294	294

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Age at graduation has also gender implications. In this case, the youngest female graduates are more likely to occupy professional and technical job positions compared to men. However, they are at a particular disadvantage in reaching the top jobs. Besides, post-graduate studies have a very subtle effect on female labor careers: they just slightly decrease the wide gender gap to achieve the top position favoring men. Likewise, the lower female likelihood to reach the top of the job ranking presents a reduction among those that have the longest job tenure in the sample (note, however, that this estimate is statistically significant at 90% confidence).

As mentioned in section 4, we have also explored gender differences regarding transition probabilities between waves 2 and 3. We have compute separated probabilities for male and female graduates. In Table 10, the estimates on the main diagonal correspond to the probability of holding the same job position between waves: those above (below) the diagonal indicate a worsening (improvement).

Both for male and female graduates, the highest probability of keeping the job level between waves correspond to the upper job positions. In these cases, male likelihoods are above those of women. Conversely, in relation to men, women have a substantially higher probability of remaining in basic jobs, a lower probability to keep non-technical jobs and a negligible probability of staying out of work between waves 2 and 3. In this sense, movements in the bottom part of the job ranking seem to be more favorable for women while the contrary is true for the upper-middle and top job positions.

When looking below the diagonal, the chances of women to scale up from basic to teaching, professional or technical positions between waves are positive and significant. But, the magnitude of that probability is almost 60% higher for men (39.8% vs. 68% for women and men respectively). Also, men have better chances than women of moving from being outside labor market or from basic jobs to technical or professional positions. The results are similar when graduates move from technical and professional employment to directive or management posts: the chances are positive for both genders, but noticeably higher for men. Again, in the bottom part of the ranking, women have better chances than men to move from non-technical to basic or professional posts. Alternatively, regarding the probabilities of going down in the job ranking, women's chances are higher than men's (figures are higher in magnitude or they are statistically significant while for men they are not).

Table 10. Transition probabilities for labor positions between wave 2 and 3 by gender

	Wave 2				
	Women				
Wave 3	Not working	Non-technical	Basic jobs…	Tech., prof…	Directive, manag.
Not working	**0.000**	0.047	0.128**	0.018*	0.000
Non-technical	0.002	**0.136***	0.231***	0.073***	0.002
Basic jobs relat. to graduates major	0.000	0.190***	**0.230*****	0.133***	0.010
Tech., prof, teaching	0.000	0.576***	0.398***	**0.655*****	0.346**
Directive, manag.	0.000	0.052	0.014	0.121***	**0.641*****
	Men				
Wave 3	Not working	Non-technical	Basic jobs…	Tech., prof…	Directive, manag.
Not working	**0.044**	0.109	0.026	0.016	0.000
Non-technical	0.117	**0.192****	0.084	0.061***	0.002
Basic jobs related to graduates major	0.094**	0.123***	**0.076***	0.061***	0.004
Tech., prof, teaching	0.654***	0.540***	0.680***	**0.683*****	0.305***
Directive, manag.	0.090	0.037	0.134	0.179***	**0.689*****

Note: Regressions for wave 3 include controls for labor positions in wave 2 and also for background, family, academic, job controls and career and cohort fixed effects. Observations are 140 for female and 152 for male graduates. Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Gender differences in working hours

Gender gaps might also emerge in relation to work arrangements which imply different weekly working hours. In Table 11, we estimate the effect of being women on the probability of working different schedules per week for each wave. Similar to the previous results, there are no gender disparities in choosing hour ranges at graduation. But, they emerge after

graduation. Hence, women in wave 2 are more prone than men to work up to 30 hours. But, in wave 3, this effect gets more than doubled. From an alternative perspective, the results show that being women reduces the probability of working full-time progressively more over time.

Table 11. Average marginal effect of being women on working hours across waves

	Wave 1	Wave 2	Wave 3
Up to 30 hours	0.016	0.042***	0.115***
	(0.017)	(0.014)	(0.036)
30 to 40 hours	0.028	0.108***	0.053***
	(0.030)	(0.033)	(0.019)
More than 40 hours	-0.043	-0.150***	-0.168***
	(0.047)	(0.045)	(0.052)
Observations	376	396	294

Note: Regressions include background, family, academic and job controls. Career and cohort fixed effects. Robust standard errors in parentheses;
*** p<0.01, ** p<0.05, * p<0.1

Using family interactions, we observe that having children and living in couple further reduces the female probability of holding a full-time job in relation to men. In general, the strongest effect corresponds to children (Table 12). These results are in line with the literature that discusses the effect of care responsibilities on women's labor market performance (Bertrand et al., 2010; Albrecht et al. 2018; Bütikofer et al., 2018).

Table 12. Average marginal effect of being women on working hours interacted with family controls (waves 2 and 3)

	Children aged 6 or less		Couple	
Wave 2	No	At least 1	No	Yes
Up to 30 hours	0.019	0.178***	0.026	0.047***
	(0.013)	(0.055)	(0.026)	(0.017)
30 to 40 hours	0.063	0.269***	0.057	0.129***
	(0.039)	(0.064)	(0.055)	(0.039)
More than 40 hours	-0.083	-0.447***	-0.083	-0.177***
	(0.051)	(0.094)	(0.081)	(0.053)
Observations	396	396	396	396
Wave 3	No	At least 1	No	Yes
Up to 30 hours	0.051	0.223***	0.054	0.130***
	(0.040)	(0.063)	(0.086)	(0.039)
30 to 40 hours	0.037	0.047	0.013	0.072***
	(0.029)	(0.030)	(0.020)	(0.025)
More than 40 hours	-0.088	-0.270***	-0.067	-0.202***
	(0.068)	(0.074)	(0.103)	(0.059)
Observations	294	294	294	294

Note: Regressions include background, family, academic and job controls. Career and cohort fixed effects. Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Interaction between gender, children and post-graduate studies allows gauging whether this effect varies when women decide continuing their studies. In this case, the presence of children reduces the chances of women to choose longer working hours provided they do not follow post-graduate studies. When people involved are studying, gender gaps disappear (Table 13). Then, career aspirations –reflected in continuing studies after graduation- seem to be relevant to melt the gender gaps in the effect of family responsibilities. It is interesting to note that this finding does not appear in relation job positions.

Table 13. Average marginal effect of being women interacted with presence of children and post-graduate studies, 4 and 7 years after graduation (waves 2 and 3)

	No Post- graduate studies		Coursing Post- graduate studies	
Wave 2	No children	Children under 6	No children	Children under 6
Up to 30 hours	0.025	0.216***	0.013	0.111
	(0.021)	(0.066)	(0.012)	(0.090)
30 to 40 hours	0.064	0.319***	0.058	0.146
	(0.051)	(0.067)	(0.051)	(0.113)
More than 40 hours	-0.089	-0.536***	-0.072	-0.257
	(0.071)	(0.097)	(0.063)	(0.189)
Observations	396	396	396	396
Wave 3	No children	Children under 6	No children	Children under 6
Up to 30 hours	0.078	0.319***	0.031	0.101
	(0.070)	(0.087)	(0.047)	(0.083)
30 to 40 hours	0.052	0.047	0.026	0.037
	(0.049)	(0.051)	(0.038)	(0.034)
More than 40 hours	-0.130	-0.367***	-0.057	-0.139
	(0.116)	(0.096)	(0.084)	(0.111)
Observations	294	294	294	294

Note: regressions include background, family, academic and job controls. Career and cohort fixed effects. Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

A note on subjective preferences

To complement our results, we have examined female and male preferences on the attributes of their jobs. As mentioned in the introduction, a large literature has accounted for gender differences in the appreciation of job stability or flexibility. Though a thorough discussion of this topic is beyond the reach of the present paper, we include here some preliminary results which could be illustrative about the influence of different gender preferences on the job position.

We focus on five attributes associated to jobs that graduates rank on a Liker-type scale from not important to very important and compute ordered probit models for waves 2 and 3. Table 14 summarizes the average marginal effect of being woman on the estimated probability of rating that the attribute is very important.

Table 14. Average marginal effect of being woman on the relevance of job attributes, 4 and 7 years after graduation (waves 2 and 3)

	Job attributes				
	Autonomy	Stability	Income	Time	Prestige
Wave 2	0.081	0.281***	0.051	0.240***	0.062**
	(0.050)	(0.047)	(0.046)	(0.046)	(0.026)
Wave 3	0.040	0.235***	-0.050	0.139**	-0.000
	(0.060)	(0.056)	(0.052)	(0.055)	(0.026)

Note: regressions include background, family, academic and job controls. Career and cohort fixed effects. Robust standard errors in parentheses. Wave 2 comprises 396 observations and wave 3, 279.

Graduates do not show gender differences in the appraisal of the relevance of autonomy and income when seeking for a job. However, in the two waves, women report a greater consideration than men for stability and time (or time out of work). Prestige only appears as an important condition 4 years after graduation. These results are consistent with the literature that documents women's preferences for greater flexibility at the workplace (Goldin, 2014; Wiswall and Zafar, 2018) and with the one that attaches a lower female preference for competition, negotiation or risks (Bertrand, 2018). Based on these, the findings in the previous sections about a lower female probability to scale up in job positions might be influenced by some female intrinsic preferences. Although far from conclusive, this brief exercise allows contemplating that, besides pure gender discrimination, also demand-side variables (of course, pervaded by the prevailing gender order) might account for gender differences in the achievement of the different job positions.

6. Concluding remarks

Our main finding in this paper is that gender does not influence the career opportunities of graduates at the start of their labor career but it becomes a strong predictor of people's performance rather soon. Gender impacts are visible in terms of the job positions attained, the chosen work schedule, and preferences. Though we are not able to examine wages, the documented gender differentials in occupational mobility are directly connected to gender pay gaps. In this sense, our results are comparable to those for developed countries that report diverging gender pay gaps soon after university, particularly in the case of graduates from STEM and also economics and business.

According to our estimates, women who start their careers at FCEA have better academic perspectives than men. Instead, for those who obtain their degree, gender does not seem to be relevant either for graduation marks or for time to graduation. Francescony and Parey (2018) suggest that this might be related to a higher dropout rate of low-skilled men, a delayed maturation male process or to course careers better suited to men's skills than women's.

Conversely, seven years after obtaining a degree, the probabilities of women to hold job positions either unrelated to their majors or very basically related are between 3.7 and 4.4 percent points higher than for men. Conversely, their chances of reaching the upper job

position are 10 percentage points lower. Women also show an early lower propensity to be employed full time compared to male graduates, which tend to increase with time.

Once women become mothers and have little children, gender differences in the likelihood of reaching higher job opportunities or working full-time tend to be wider. Interestingly, post-graduate studies have a very subtle effect on these probabilities in the case of the type of employment but they do have a significant effect to explain the preference for full time working, beyond the presence of children. These relative disadvantages against women also appear when we study the chances of women and men to move across job positions in time (between waves 2 and 3).

Finally, concerning job attributes, we find that women show a greater consideration than men for stability and free time (or time out of work). This results is also in line with the international literature that connects these preferences to the gender wage gaps. Again, though we do not have information on wages, our results are suggestive of a plausible relation to gender pay differentials.

Unlike developed countries, in Uruguay, male and female graduates are not differently sorted into the fields of accountancy, business administration, and economics. But, in line with previous studies, few years after graduation, gender itself seems to affect their career opportunities. Our evidence contributes to illustrate that gender equality in educational credentials among highly qualified does not preclude the professional labor market from acting as gendered institution that still reproduces biases against women. Our estimates also show that family responsibilities and preferences for part-time jobs or a higher valuation of stability and time out of work might account for a part of these women's relative disadvantages. However, the results also open the need to count on better data to discuss the differential assessment of professional men and women in the workplace and about organizational barriers that might render women's career advancement compared to men.

References

Alves, G., Brum, M., and Yapor, M. 2016. “Wage Inequality on the Rise: The Role of Workers’ Characteristics”, Journal of Income Distribution, 22(2), 99–123.

Amarante, V., Bucheli, M. and Moraes, M. I. 2022. El rol de las mujeres en la investigación del IECON. In *Miradas sobre la investigación en economía en Uruguay. Setenta años del Instituto de Economía*, Cap. 6. Instituto de Economía, Facultad de Ciencias Económicas y de Administración y Archivo General de la Universidad, Montevideo.

Amarante, V., Bucheli, M., Moraes, M. I and, Pérez, T. 2021. “Women in research in Economics in Uruguay”, Cuadernos de Economia XL(84).

Amarante, V., Bucheli, M. and Pérez, T. 2023. “Gender differences in opinions about market solutions and government interventions: the case of Uruguayan economists”, Feminist Economics 30(1): 211-243.

Albrecht, J., Bronson, M.A., Skogman, P. and Vroman, S. 2018. “The career dynamics of high-skilled women and men: evidence from Sweden”, European Economic Review 109: 83-102.

Alcalde, V., Álvarez, C., Correa, A., Ferreira, M., Lamela, M., Martínez, S., Olivera, M., and Romero, P. 2019. Determinantes del abandono de estudiantes universitarios: tecnicatura en administración. Trabajo final del EFI “Determinantes del abandono en la Udelar”. MIMEO.

Álvarez, L., Carbajal, F., Machado, A., Maiche, A., Rodriguez, C. and Vásquez, A. 2020. “Trayectorias académicas en la Universidad de la República. El rol de los factores sociodemográficos y psicológicos en el abandono en dos servicios altamente masificados”.

Barro, P., Lezcano, M., Machado, M., Sena, E., Strehl, M. and Torres, J. 2018. “Abandono en la Licenciatura en Economía en la UDELAR: Caracterización y actividades de los estudiantes”. Serie Documentos de investigación estudiantil, DIE 07/2018. Instituto de Economía, FCEA, Udelar, Uruguay.

Bernheim, R. 2015. Informe de género año 2015. Unidad de evaluación y monitoreo, Agencia Nacional de Investigación e Innovación, Uruguay.

Bertrand, M. 2018. “The Glass Ceiling. Coase Lecture”, Economica, 85: 205-231.

Bertrand, M., Goldin, C. and Katz, L. 2010. "Dynamics of the Gender Gap for Young Professionals in the Financial and Corporate Sectors", American Economic Journal: Applied Economics, 2 (3): 228-55.

Blau, F. and Kahn, L. 2017. "The Gender Wage Gap: Extent, Trends, and Explanations", Journal of Economic Literature, 55(3): 789-865.

Borraz, F. and Robano, C. 2010. “Brecha salarial en Uruguay”, Revista de Análisis Económico, 25(1), 49-77.

Bucheli, M. and Sanroman, G. 2005. “Salarios femeninos en el Uruguay. ¿Existe un techo de cristal?”, Revista de Economía - Segunda Época XII(2), Banco Central del Uruguay.

Bukstein, D. and Gandelman, N. 2019. “Glass ceilings in research: Evidence from a national program in Uruguay”, Research Policy 48 (6), 1550–1563.

Burone, S. and Méndez, L. 202.2 “Are women and men equally happy at work? Evidence from PhD. Holders at a public university in Uruguay”, Journal of Behavioral and Experimental Economics 97: 101821.

Bütikofer, A., Jensen and S., Salvanes, K. 2018. “The role of parenthood on the gender gap among top earners”, European Economic Review 109: 103-123.

Cappellari, L., Lucifora, C. and Pozzoli, D. 2012. “Determinants of grades in maths for students in economics”, Education Economics 20(1): 1-17.

CEPAL/ONU-Mujeres. 2020. Brechas de género en los ingresos laborales en Uruguay. CEPAL-ONU Mujeres, Montevideo.

De Luca, G. and Perotti, V., 2011. “Estimation of ordered response models with sample selection”, The Stata Journal 11(2): 213-239.

DGPLAN (Dirección General de Planeamiento, Universidad de la República). 2019. Forma. Relevamiento continuo. Perfil de los estudiantes de grado, 2018. Universidad de la República.

Dolado, J. and Morales, E. 2009. “Which factors determine academic performance of economic fresheres? Some Spanish evidence”, Investigaciones Económicas, XXXIII(2): 179-210.

Espino, A., Salvador, S. and Azar, P. 2014. Desigualdades persistentes: mercado de trabajo, calificación y género. Cuadernos de Desarrollo Humano- El futuro en FOCO. PNUD, Uruguay.

Espino, A., Isabella, F., Leites, M. and Machado, A. (2017) “Do Women Have Different Labor Supply Behaviors? Evidence Based on Educational Groups in Uruguay”, Feminist Economics, 23:4, 143-169.

Fernández, M., Galván, E., Robaina, S., Tenenbaum, V. and Tomassini, C. 2022. “Desigualdades de género en la trayectoria académica de investigadores e investigadoras en Uruguay”, Serie Documentos de Trabajo, DT 06/2022. Instituto de Economía, Facultad de Ciencias Económicas y Administración, Universidad de la República, Uruguay.

Francesconi, M. and Parey, M. 2018. “Early Gender Gaps Among University Graduates”, European Economic Review, 109: 63-82.

Galván, E. and Tenenbaum, V. 2023 “Gender gaps in academia: the role of children”, MIMEO.

Gneezy, U., Niederle, M. and Rustichini, A. 2003. “Performance in competitive environments: gender differences”, The Quarterly Journal of Economics, 118 (3): 1049-1074.

Goldin, C. 2014. “A grand gender convergence: its last chapter”, American Economic Review 2014, 104(4): 1091-1104.

Goldin, C., Pekkala and S., Olivetti, C. 2017. “The expanding gender earnings gap: evidence from the LEHD-2000 Census”, American Economic Review: Papers and Proceedings 107(5): 110-114.

Mas, A. and Pallais, A. 2017. “Valuing alternative work arrangements”, American Economic Review 107(12): 3722-3759.

MIMCIT. 2020. Mujeres en Ciencia, Tecnología e Innovación en Uruguay: un factor clave para avanzar en igualdad de género y desarrollo sostenible. UNESCO, Oficina Montevideo-BID.

Napari, S. 2009. “Gender differences in early-career wage growth”, Labour Eonomics 16: 140-148.

Ñopo, H. 2012. New century, old disparities: gender and ethnic earnings gap in Latin American and the Caribbean. The InterAmerican Development Bank and the Work Bank.

Piazzalunga, D. 2018. “The Gender Wage Gap among College Graduates in Italy”, Italian Economic Journal, 4(1): 33-90.

Redmon, P. and McGuiness, S. 2019. “The gender wage gap in Europe: job preferences, gender convergence and distributional effects”, Oxford Bulletin of Economics and Statistics 81(3): 564-587.

Robaina, S., and Tomassini, C. 2021. Formación de doctorado en las ciencias sociales en Uruguay: Un análisis de los calendarios y duraciones. In *Formación doctoral, universidad ciencias sociales,* IGG GINO GERMANI.

Soria, A. 2021. “Desigualdad de género en el mercado laboral uruguayo en el contexto de heterogeneidad estructural”. CIEDUR, Montevideo.

Tomassini, C. 2014. Ciencia académica y género: Trayectorias académicas de varones y mujeres en dos disciplinas del conocimiento dentro de la Universidad de la República. Ediciones Universitarias.

Udelar. 2023. “La Udelar desde una perspectiva de género”. Dirección General de Planeamiento, Montevideo.

Wiswall, M. and Zafar, B. 2018. “Preference for the workplace, investment in human capital and gender”, Quarterly Journal of Economics 133(1): 457-507.

Appendix

Table A-1. Descriptive statistics for preferences about workplace attributes

	Total	Women	Men	t-test Women vs Men
Relevance of			Wave 2	
Autonomy	2.44	2.51	2.38	0.015
Stability	2.55	2.55	2.55	2.548
Income	2.34	2.39	2.29	0.060
Free Time	2.65	2.79	2.53	0.000
Prestige	1.90	1.98	1.83	0.008
Relevance of			Wave 3	
Autonomy	2.49	2.50	2.48	0.747
Stability	2.57	2.72	2.44	0.000
Income	2.30	2.29	2.31	0.768
Free Time	2.71	2.81	2.62	0.001
Prestige	1.84	1.84	1.84	0.997

Note: all variables contain values ranging from 1 to 5 (1: “not important” to 5: “very important”)

Table A-2. Average marginal effect of being women on job positions (wave 3)

Job positions	Expanded sample			Course-program 2012 and marks in Mathematics I		
	Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3
Not working	-0.001	-0.001	0.013**	0.008	0.000	0.015*
	(0.012)	(0.005)	(0.005)	(0.017)	(0.009)	(0.008)
Non-technical	-0.001	-0.001	0.039***	0.008	0.000	0.041**
	(0.016)	(0.006)	(0.013)	(0.017)	(0.008)	(0.017)
Basic jobs rel. to grad. major	0.001	-0.001	0.035***	-0.005	0.001	0.039**
	(0.011)	(0.010)	(0.012)	(0.012)	(0.012)	(0.016)
Tech., prof, teaching	0.001	0.000	-0.007	-0.009	-0.000	-0.002
	(0.014)	(0.004)	(0.007)	(0.019)	(0.003)	(0.011)
Directive, management	0.000	0.002	-0.080***	-0.002	-0.001	-0.092***
	(0.003)	(0.017)	(0.026)	(0.004)	(0.025)	(0.035)
Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes
Career FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	681	671	501	417	409	294

Regressions include background, family, academic and job controls. Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1