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An Analysis from 1990 to 2020

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Changes in Chile's Gender Earning Gap:

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Manuel Urquidi, Miguel Chalup, and Solange Sardán**

Synopsis

The gender earnings gap between men and women in Latin America is an obstacle to achieving gender equality and sustainable development. In Chile, this gap persists despite the fact that women, in many cases, have better labor profiles than men, suggesting the existence of gender biases. It is also observed that this gap is greater among individuals with tertiary education, those living in urban areas, and those who are not self-employed. However, there is a heterogeneous income difference in favor of men in most occupations.

To analyze the gender earnings gap in Chile between 1990 and 2020, this study uses the National Socioeconomic Characterization Surveys (CASEN) harmonized by the Inter-American Development Bank (IDB), and presents two methodologies to estimate it: the Blinder-Oaxaca decomposition and the Ñopo decomposition.

A total earnings gap between women and men in the analyzed period is evident, and the existence of possible gender biases has also been shown. This indicates that additional efforts are required to understand the recorded disparity.

The analysis shows that while the total gap has decreased, as has happened in many other countries in the region, this reduction is generally related to the explained gap (derived from individuals' endowments in education, work experience, age) and not to a reduction in the gap that cannot be explained by these variables. The latter could be associated with gender-differentiated regulations, prejudices, biases, or discrimination, so determining its components with specific methodologies is a requirement for implementing policies to address it since it persists over time.

JEL Classification: J16, J31, J71.

Keywords: Gender economics, wage differences, discrimination.

*The opinions expressed in this publication are of a exclusive responsibility of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent.

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** Inter-American Development Bank

Introduction

Previous studies have documented the presence of a labor earnings gap affecting women in the region (Ñopo, 2012). These studies have shown that women, even when working in similar positions and having a comparable level of education, tend to earn lower incomes than their male counterparts. Therefore, it is crucial to analyze the factors contributing to this situation.

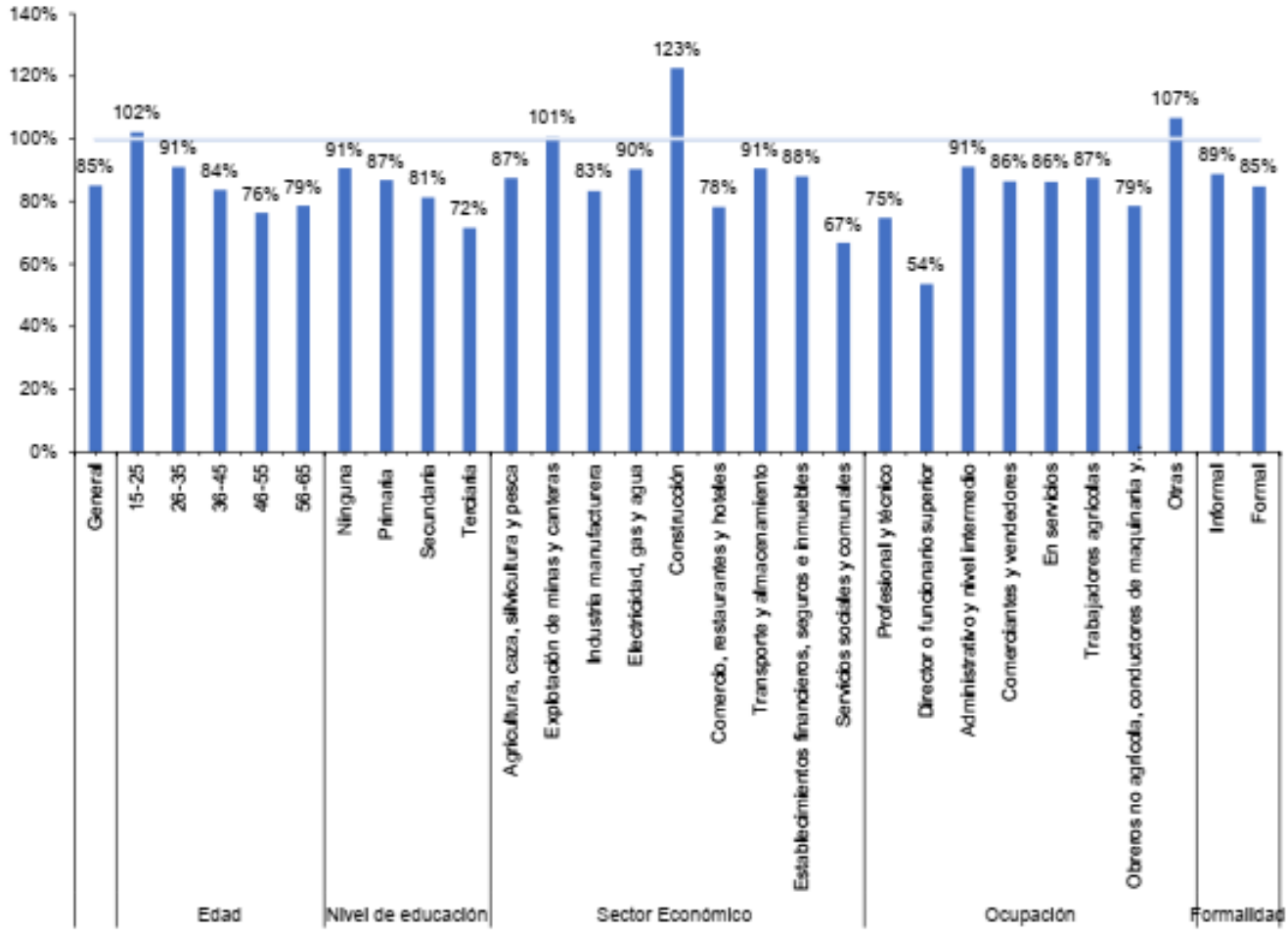
When examining the challenges related to women's labor inclusion and their professional development opportunities, (Ñopo, 2012) points out that a latent problem in Latin America and the Caribbean (LAC) is occupational and hierarchical segregation. This means that women work in a higher proportion in the informal sector and occupy a smaller proportion of executive positions compared to men. Additionally, there are considerable differences in women's labor earnings compared to men, even when they perform similar jobs. Despite improvements in gender equality indicators in LAC since the late 20th century (Chioda, 2011) and increased political and labor participation of women (Ñopo, 2012), income disparities persist for equivalent jobs in most countries in the region, constituting an unjustifiable form of inequality (ILO, 2019c).

Moreover, the crisis generated by COVID-19 has had a significant impact on women's labor force participation. It is estimated that 13 million women in the region lost their jobs, and the female labor force participation rate decreased by 16 percentage points, compared to a 10 percentage point decrease for men. This crisis has highlighted that women are in more vulnerable labor sectors, exacerbating gender gaps and partially reversing previous progress (Bustelo, Suaya, and Vezza, 2021). The concentration of women in part-time jobs has also deepened.

Regarding the situation in Chile, the country currently ranks 47th out of 146 countries in the World Economic Forum's Global Gender Gap Index (WEF, 2022). In the Latin America and Caribbean region, Chile ranks twelfth out of 22 countries, with a score of 0.736 out of 1. Comparing to 2006 when the index was first implemented, and it scored 0.6455, Chile has improved by 0.0905 points and moved up 31 positions (78)[1]. In the fields of economic participation and opportunities, Chile is ranked 105th, primarily due to women's low labor force participation (102nd place) and income inequality between men and women in similar jobs (107th place). Regarding political representation, the country ranks 34th, with women occupying 35.5% of parliamentary seats. In terms of educational achievements, Chile ranks 62nd, although it has high enrollment rates in tertiary education.

[1] It is relevant to note that in the first year of index implementation, only 115 countries were measured.

Graph 1. Hourly labor earnings of women versus men in Chile in 2017*



Source: Own elaboration based on harmonized household surveys in Chile by the IDB.

*Only individuals with occupation and income were included.

The data analyzed from the harmonized household surveys in Chile, provided by the IDB, support these facts. As shown in Figure 1, in 2017, women's hourly earnings were, on average, 85% of men's. The widest earnings gap is observed among people aged 46 to 55 (76%), those with tertiary education (72%), in the trade, restaurants, and hotel sector (78%), in social and community services (67%), among directors or top executives (54%), and in the formal sector (85%)[2]. Some results that may seem counterintuitive, such as women in the construction sector earning on average 123% of men's hourly earnings, can be explained by selection bias. As will be analyzed in more detail in the methodology section, when there are few women in an economic sector or in certain regions, it is not uncommon for the few who enter to do so in higher hierarchical positions and with better salaries. This can be seen when studying women's participation in the sector (see Annex Tables A1 and A2) and can have direct effects on their overall labor force participation. However, the analysis requires a specific methodology different from the one used in this study.

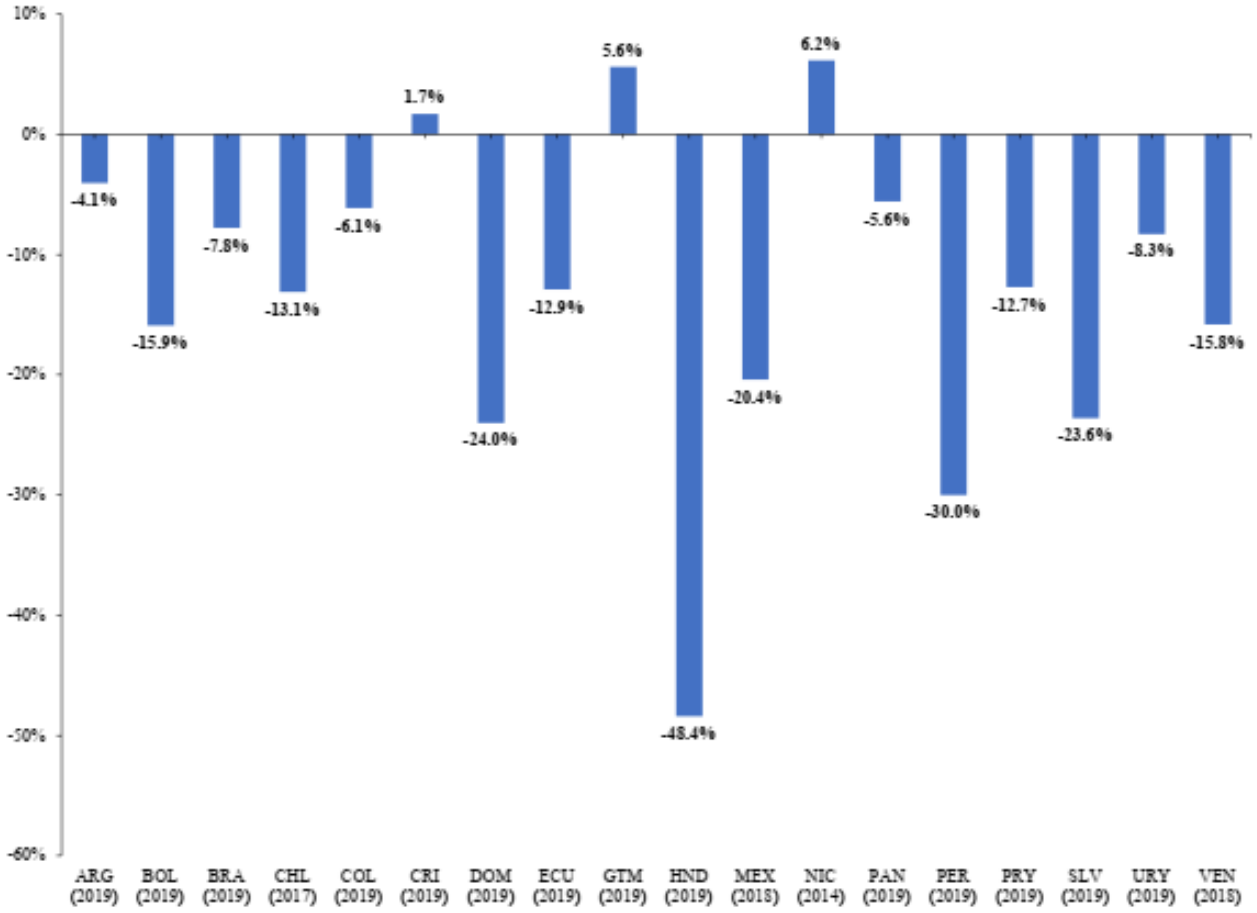
[2] Informal workers in Chile are considered as economically active individuals who are not affiliated to and do not contribute to the pension system.

Although the availability of information is still limited, the number of studies on this topic in LAC and worldwide has increased considerably in recent years. For the case of Chile, the quantity of existing research documents is above the regional average, and most of them use the National Socioeconomic Characterization Survey (CASEN) as their source of information. However, since there are different ways to approach this topic, it is challenging to compare the results of different studies and track the evolution of the gender earnings gap.

In this work, we seek to enrich current knowledge about gender earnings disparity in Chile through a rigorous analysis of the evolution of the earnings gap from 1990 to 2020. To do this, three previous studies are used as references: the first one on Bolivia (Urquidi, Valencia, and Durand, 2021), the second one on Paraguay (Urquidi, Chalup, and Durand, 2022), and the third one on eighteen countries in the region (Urquidi and Chalup, 2023). In addition, two analysis methodologies are employed: the Blinder-Oaxaca decomposition and the Ñopo decomposition, which means that results will be obtained from both a parametric and a non-parametric model. This allows for year-by-year comparisons as well as comparisons between the methodologies themselves, in order to better identify the main variables affecting the earnings gap.

The previous regional study provides comparable information between countries (see Figure 2). The present analysis expands the age range of this data, examines the evolution over time, and provides information with greater geographic disaggregation for the country.

Graph 2. Total hourly earnings gap estimated using the Blinder-Oaxaca decomposition model*



Source: Urquidi and Chalup, 2023.

***Only individuals with occupation and income were included.**

The results of the analysis show that this pay gap persists, even when women often have a better labor profile than men, suggesting the presence of possible gender biases in selection. It is also observed that this gap is greater among individuals with tertiary education, living in urban areas, and who are not self-employed (salaried workers). Additionally, there appears to be a heterogeneous income difference, albeit in favor of men, in most occupations.

The earnings gap is not explained by the different control variables used, such as experience, personal and family characteristics, sector and economic activity, and region of the country. Therefore, it is likely related to normative factors, cognitive biases, and/or potential discrimination (Becker, 1957). However, it is not possible without specific analyses with other methodologies and experiments to determine what these factors are, specify them, and propose specific policy responses, making further study urgent to address these findings.

On the other hand, it is evident that if only the labor profile were considered, women's wages should be higher. Among the possible factors contributing to this gap are

normative aspects, cognitive biases, and labor costs related to childcare[3] that are not visible to society. A total earnings gap between women and men is evident in the analyzed period. This indicates that additional efforts are needed to understand the disparity recorded.

The present study is organized as follows. The first section provides a review of the literature related to the gender earnings gap in Chile and Latin America and the Caribbean (LAC). The second section describes the data used and presents descriptive statistics of the evolution of the earnings gap in Chile over the years analyzed. The third section briefly describes the methodologies used to estimate the gender earnings gap, while the fourth section presents the results of the analysis. Finally, the fifth section analyzes the study's conclusions and implications.

[3] For strictly stylistic reasons, this document uses the inclusive, unmarked masculine gender, regardless of individuals' actual gender.

1. Literature Review

Regarding the gender earnings gap, the literature has sought to distinguish between the gap generated by differences in individual characteristics and human capital endowment among individuals, and the unexplained portion, which was originally considered to be primarily related to gender biases, prejudices, and discrimination (Atal, Ñopo, and Winder, 2009). To address this issue, two econometric techniques have gained popularity in analyzing this topic using household surveys in different countries: i) the Blinder-Oaxaca decomposition presented by Oaxaca (1973), and ii) more recently, the Ñopo decomposition presented in Ñopo (2008).[4]

Additionally, new studies have emerged to identify previously unexplored components contributing to the gender earnings gap. These studies explore topics such as the motherhood penalty and its effect on the earnings gap (Kleven, Landais, and Søgaard, 2019), differences in socioemotional skills and their impact on the earnings gap (Ajayi et al., 2022), organizational barriers and the glass ceiling[5] that limits women's professional development (Ammerman and Groysberg, 2021), and the effect of occupational and career choices on income, as demonstrated in the studies by Bustelo et al. (2021) and Bordón, Canals, and Mizala (2020) in Latin America and the Caribbean (LAC).

In the Latin American context, Frisancho and Queijo (2022) compiled a series of studies documenting persistent gender inequalities in the Southern Cone countries of Latin America[6] and explored how reducing these gaps would significantly boost economic growth and development in the region. These studies show that gender gaps in access to public services, the accumulation of human capital, and the labor market limit overall productivity and economic growth, making policies that mitigate these inequalities potential drivers of economic development and well-being.

An earlier study by Chioda (2011) observed an increase in women's labor force participation in LAC from 1980 onwards, facilitated by economic growth, trade liberalization, urbanization, reduced fertility rates, and increased educational levels. This trend became more evident after 2000, due to the region's high growth rates, which generated greater labor demand and allowed more women to enter the labor market, as well as the promotion of women's work through public policies (Gasparini and Marchionni, 2015). However, Ñopo (2012) points out that women are still overrepresented in informal and low-paid jobs, and the earnings gap remains significant.

A classic analysis on this topic was conducted by Psacharopoulos and Tzannatos (1992), who studied the income gap in fifteen LAC countries in the late 1980s. Among their key findings was that, for equal work, women earned on average 65% of what men earned.

[4] These techniques are explained in detail in the third section.

[5] The glass ceiling refers to the set of implicit rules within organizations that hinder women's advancement to high-ranking positions. For this reason, it is considered a gender barrier to progress in the corporate hierarchy.

[6] Argentina, Brasil, Chile, Paraguay y Uruguay.

Moreover, it was observed that two-thirds of this difference could not be explained by educational level or human capital, suggesting the possible influence of norms, prejudices, or discrimination. Importantly, the literature shows that a significant part of the reduction in the income gap is explained by the increase in women's educational levels (Chioda, 2011; Gasparini and Marchionni, 2015).[7]

Despite a significant reduction in the explained gap, the unexplained portion only decreased from 34% to 30%. This reduction was more pronounced among workers who met one or several of the following characteristics: they were at the lower end of the income distribution, had children at home, were self-employed, worked part-time, or lived in rural areas. These are the segments of the labor market that previously exhibited greater gender disparities.

Most of the reduction in the unexplained component of the gap occurred within different segments of the labor market, rather than due to a restructuring or structural change in labor markets.

The International Labour Organization (ILO, 2019a) presented one of the most recent analyses on this topic in LAC, studying 17 countries using the Ñopo decomposition technique (2008) and comparing salaries between individuals with the same observable characteristics. Firstly, it was found that the gender wage gap unexplained by gender decreased by a few percentage points between 2012 and 2017 in Latin America. Secondly, it was observed that this gap is generally greater for self-employed workers than for employees and also increases when there are children under 6 years old in the household, when working part-time, and in informal jobs. Finally, for the case of Chile, it was found that the unexplained gender earnings gap for employees is the second highest among these 17 countries, with a concentration at the extremes of the wage distribution.

Following this line of analysis, the International Labour Organization (ILO, 2019b) also conducted a study on the same topic using the Firpo, Fortin, and Lemieux (2009) methodology, based on the classic Oaxaca-Blinder approach. Through an analysis of the explained and unexplained components, results varied among countries. The explained part is related to differences in endowments, such as educational achievements, work experience, age, among others, and is accompanied by polarization and professional segregation that tends to assign women to lower-paid occupations and industries. On the other hand, the unexplained part carries more weight in determining the earnings gap and suggests the existence of wage discrimination against women.

The study conducted by Carrillo, Gandelman, and Robano (2014) addresses the gender earnings gap in 12 Latin American countries, using the quantile regression decomposition method. The results reveal the existence of a significant wage gap favoring men in all studied countries, with differences along the wage distribution.

[7] As can be seen in Table A1 of the appendix, the average years of education for women have consistently been lower than those for men, although this gap has been decreasing and has disappeared in recent years of the study.

Evidence of sticky floor[8] and glass ceiling phenomena is found, with the former being more common and strongly correlated with economic development indicators such as GDP per capita and the Gini coefficient. In poorer and more unequal countries, the gender earnings gap tends to be more pronounced at the lower percentiles of the wage distribution, while in wealthier countries, it becomes more accentuated at the higher percentiles.

In the case of 18 Latin American countries, Hoyos and Ñopo (2010) estimated gender earnings gaps between 1992 and 2007 using the Ñopo methodology. During this study period, there was an average decrease of 7 and 4 percentage points in the explained and unexplained gaps, respectively. The largest unexplained gender disparities were observed at the lower end of the income distribution, among self-employed workers, part-timers, those with children at home, and those in rural areas. Finally, there was significant heterogeneity among countries, with the unexplained gap not changing in twelve countries, decreasing in four, and increasing in two.

In another study specific to Chile, Ñopo (2006) provides relevant information about the gender earnings gap in the country. The author used data from the National Socioeconomic Characterization Survey (CASEN) from 1992 to 2003 and applied a decomposition approach with classic control variables. The study indicated that approximately 25% of women's average wages are composed of an unexplained component favoring men, despite women's higher educational levels, which did not show a clear trend over time. Additionally, it was found that the earnings gap is greater in the higher percentiles of the wage distribution, suggesting the presence of a glass ceiling. No clear evidence of territorial differences by regions was found. Within the explained component of the wage gap, occupational experience was a relevant variable.

A recent study in Chile conducted by Salce (2021) examined the evolution and gender wage discrimination. Using CASEN data from 1990 to 2017, various versions of the Oaxaca-Blinder decomposition were applied. Subsequently, selection bias was corrected for, and a quantile decomposition of income was performed. The results revealed a decrease in wage discrimination over time, especially between 1997 and 2003, followed by minimal changes. In 2017, the unexplained component accounted for almost 50% of the wage gap, and this difference was accentuated in the lowest and highest income percentiles. Occupational experience was the most relevant variable. It was concluded that estimating without correcting for selection bias underestimates the unexplained component. Additionally, as in various other studies, women on average have a higher level of education than men.

The work by Sánchez, Finot, and Villena (2020) for Chile used the Unemployment Insurance database from 2010 to 2019 to analyze the gender earnings gap at the company level. The study employed a dynamic monopsony model to estimate labor supply elasticities. The results revealed that men earn between 19% and 28% more than

[8] The term "sticky floor" refers to the set of barriers that women face when entering or, alternatively, staying in the labor market. This theory is related to the responsibilities traditionally attributed to women, such as domestic and caregiving duties, which can be considered as unfavorable time constraints for them.

women due to differences in labor supply elasticities, while keeping other variables constant.

Another study related to Chile is by Fuentes, Palma, and Montero (2005), which examined the evolution of gender wage discrimination from 1990 to 2003 using CASEN data. Both the Oaxaca-Blinder and Oaxaca and Ransom (1994) methods were applied, along with corrections in wage estimates to avoid selection biases. Confidence intervals for observed discrimination were constructed through bootstrapping[9]. The results revealed that although gender wage discrimination had decreased over the study period, it was still considerable and stood at 27.5% in 2003, comprising an average underpayment of 14.3% to women and an average overpayment of 13.2% to men. Similar results were found by Contreras and Puentes (2001), who found evidence of wage discrimination against women in the Chilean labor market between 1958 and 1996, despite women having higher education levels. Although a decreasing trend was observed over time, there was an upturn during the 1990s. These authors did not make corrections for selection bias in their study.

A contemporaneous study is Montenegro's (2001), which focuses on analyzing gender differences in returns to education, experience, and wage differences across the wage distribution in Chile from 1990 to 1998. The results show that returns to education are different for men and women depending on quantiles. Women have higher returns to education in lower quantiles and similar returns in higher quantiles. Men have higher return rates to experience in higher quantiles. Additionally, the unexplained wage gap increases as we move from lower to higher wage distribution quantiles.

There are more recent studies with different techniques, such as the one conducted by Kristjanpoller, Michell, and Olson (2023), which aims to determine the gender wage gap through a causal inference model based on Potential Outcomes (PO) and Metalearners (ML) using CASEN survey data from 1990 to 2017. The results reveal the existence of a wage gap between men and women over the past three decades, and it has been observed that this gap has widened over time, unlike findings from other authors. The analysis also shows that the magnitude of the gap varies by age, industry, and occupation. Specifically, the wage gap is more pronounced in the public sector, large companies, and those related to natural resource exploitation.

A study with an innovative methodology is Siravegna's (2021), which uses a quantile-copula methodology to address women's self-selection in employment. The results reveal that men in Chile earn approximately 10% to 25% more than women in terms of wages. However, after correcting for self-selection, the gender wage gap widens, ranging from 25% to 35% in lower quantiles, and even greater in higher quantiles, with a maximum difference of approximately 50% in wage logarithms, highlighting the presence of a glass ceiling. The study also decomposes the wage gap corrected for self-selection into structural and compositional effects. The results suggest that the

[9] Bootstrap is a statistical and econometric technique that focuses on resampling data within a random or random sample.

differences in wages between men and women in Chile can mainly be explained by rewards associated with workers' characteristics, such as education and age, and not by differences in the distribution of these characteristics.

Another interesting contribution to the literature in the country is by Boncompte and Paredes (2020), who use a nonlinear version of the Blinder-Oaxaca decomposition to analyze the impact of disparities in human capital between men and women. Findings indicate that the gender gap in life satisfaction, which predominantly favors men, can be fully explained by differences in endowments like income and education. However, structural disparities are also observed in how men and women perceive and value their endowments, especially in terms of income and employment status. Men value personal income and belonging to the workforce more; the authors suggest the presence of significant sexism in Chile.

In conclusion, the studies analyzed consistently reveal the existence of a gender earnings gap in Chile that favors men. This earnings gap persists over decades, despite women having a higher level of education, and is evident in both the explained and unexplained components of the earnings gap. Polarization in the income distribution is observed, and phenomena like the glass ceiling and sticky floor are evident. These disparities are particularly noticeable at the extremes of the wage distribution. Finally, reducing gender gaps represents a significant challenge in achieving gender equity in the Chilean labor market.

2. Data and Descriptive Statistics

The figures used in this study come from the database of CASEN surveys harmonized by the IDB. Information from 14 surveys from years between 1990 and 2020 was used. 1990 was chosen as the first year because that's when information from CASEN surveys in Chile began to be collected.

It's important to highlight the challenges associated with the data since for data to be comparable, both across different years and among different countries in Latin America and the Caribbean, harmonization is required. This harmonization is carried out by the IDB's data harmonization system.

The design and level of representativeness of these surveys are similar for different years since they are all representative of the urban population of Chile and are based on data from the country's main regions[10]. In Table 1, the sample taken for individuals between 15 and 65 years old is presented, which is the age range that will be used in the analysis for each of the years, along with their representativeness in the total Chilean population[11], broken down by gender and age group.

You can see that the proportions of the sample closely match the proportions of the population they represent. Additionally, the sample is evenly distributed between genders, while the variation in the proportions of age groups aligns with the aging population trend observed in Chile and most countries in Latin America and the Caribbean (Cardona Arango and Peláez, 2012). There is also a gradual increase in the number of samples over time, in line with population growth.

As a first approach to calculating the gender earnings gap, Table 2 presents the estimation of hourly labor earnings for women versus men[12]. The analysis is disaggregated by age group, educational level, economic activity, occupation, formality, self-employed status, and regions. Additionally, Table A1 in the annex presents the distribution by year and gender of the characteristics of the employed population that earns income, providing an overview of the general characteristics of both men and women.

[10] The regions included in the survey are Tarapacá, Antofagasta, Atacama, Coquimbo, Valparaíso, Libertador General Bernardo O'Higgins, Maule, Bío Bío, La Araucanía, Los Lagos, Aysén del General Carlos Ibáñez del Campo, Magallanes and Chilean Antarctica, Metropolitan Region of Santiago, Los Ríos, Arica and Parinacota, and Ñuble.

[11] Frequency weights are used for weighting the data.

[12] Labor earnings from the primary activity and frequency weightings are used in the analysis.

Table 1. Number of Observations in Surveys and Their Representativeness by Gender and Age Group

	1990		1992		1994		1996		1998		2000		2003	
	N	***%***	**N**	***%***	***N***	***%***	**N**	***%***	**N**	***%***	**N**	***%***	**N**	***%***
Gender														
Men	33,043	49%	45,062	49%	55,540	49%	42,338	49%	59,565	49%	81,008	50%	83,403	50%
Representativity	4,069,482	48%	4,224,151	48%	4,388,734	48%	4,562,582	49%	4,672,020	48%	4,822,464	49%	5,118,119	49%
Women	34,981	51%	47,085	51%	58,184	51%	43,749	51%	61,871	51%	81,894	50%	84,927	50%
Representativity	4,444,852	52%	4,592,222	52%	4,740,416	52%	4,828,417	51%	5,023,292	52%	5,113,641	51%	5,392,113	51%
Age														
15-25	22,271	33%	28,840	31%	33,637	30%	25,948	30%	35,727	29%	46,046	28%	47,383	28%
Representativity	2,781,718	33%	2,746,371	31%	2,756,013	30%	2,815,281	30%	2,861,430	30%	2,790,626	28%	2,982,094	28%
26-35	17,384	26%	23,465	25%	28,492	25%	21,233	25%	29,346	24%	37,692	23%	36,279	22%
Representativity	2,168,230	25%	2,259,840	26%	2,264,668	25%	2,321,758	25%	2,341,594	24%	2,293,458	23%	2,343,495	22%
36-45	12,509	18%	17,263	19%	22,694	20%	17,659	21%	25,714	21%	35,440	22%	37,694	22%
Representativity	1,533,368	18%	1,648,654	19%	1,798,677	20%	1,973,589	21%	2,098,589	22%	2,298,130	23%	2,357,829	22%
46-55	8,923	13%	12,877	14%	16,630	15%	12,231	14%	17,780	15%	24,871	15%	26,982	16%
Representativity	1,144,617	13%	1,227,431	14%	1,356,637	15%	1,346,035	14%	1,428,762	15%	1,516,278	15%	1,690,269	16%
56-65	6,937	10%	9,702	11%	12,271	11%	9,016	10%	12,869	11%	18,853	12%	19,992	12%
Representativity	886,401	10%	934,077	11%	953,155	10%	934,336	10%	964,937	10%	1,037,613	10%	1,136,545	11%
Total	68,024	100%	92,147	100%	113,724	100%	86,087	100%	121,436	100%	162,902	100%	168,330	100%
Representativity	8,514,334	100%	8,816,373	100%	9,129,150	100%	9,390,999	100%	9,695,312	100%	9,936,105	100%	10,510,232	100%

Table 1 (Continuation)

	2006		2009		2011		2013		2015		2017		2020	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Gender														
Men	88,447	49%	81,047	49%	64,801	48%	70,267	47%	85,584	48%	69,444	48%	57,500	46%
Representativity	5,344,495	48%	5,431,874	48%	5,517,647	48%	5,567,039	47%	5,628,770	47%	5,733,372	47%	6,082,654	46%
Women	91,127	51%	84,982	51%	71,021	52%	77,942	53%	94,175	52%	76,446	52%	68,036	54%
Representativity	5,696,199	52%	5,913,592	52%	6,095,346	52%	6,205,694	53%	6,317,441	53%	6,375,316	53%	7,278,675	54%
Age														
15-25	50,807	28%	46,625	28%	38,941	29%	41,424	28%	47,323	26%	36,127	25%	29,995	24%
Representativity	3,193,736	29%	3,266,623	29%	3,385,251	29%	3,261,173	28%	3,210,789	27%	3,016,487	25%	3,197,278	24%
26-35	34,721	19%	29,765	18%	24,832	18%	27,292	18%	33,927	19%	28,733	20%	25,625	20%
Representativity	2,199,315	20%	2,125,330	19%	2,122,402	18%	2,240,026	19%	2,368,922	20%	2,545,878	21%	2,923,180	22%
36-45	38,810	22%	34,226	21%	26,417	19%	27,846	19%	33,076	18%	26,128	18%	22,038	18%
Representativity	2,366,863	21%	2,291,851	20%	2,220,393	19%	2,226,771	19%	2,179,640	18%	2,167,371	18%	2,391,516	18%
46-55	31,807	18%	31,828	19%	26,266	19%	29,621	20%	36,193	20%	29,186	20%	24,033	19%
Representativity	1,958,531	18%	2,166,047	19%	2,279,800	20%	2,307,180	20%	2,330,378	20%	2,338,799	19%	2,508,645	19%
56-65	23,429	13%	23,585	14%	19,366	14%	22,026	15%	29,240	16%	25,716	18%	23,845	19%
Representativity	1,322,249	12%	1,495,615	13%	1,605,147	14%	1,737,583	15%	1,856,482	16%	2,040,153	17%	2,340,710	18%
Total	179,574	100%	166,029	100%	135,822	100%	148,209	100%	179,759	100%	145,890	100%	125,536	100%
Representativity	11,040,694	100%	11,345,466	100%	11,612,993	100%	11,772,733	100%	11,946,211	100%	12,108,688	100%	13,361,329	100%

Source: Own elaboration based on CASEN surveys from Chile harmonized by the IDB.

Table 2. Hourly Labor Earnings of Women versus Men*

	1990	1992	1994	1996	1998	2000	2003
General	75.0%	76.0%	80.9%	83.3%	83.6%	74.4%	81.0%
Age							
15-25	93.2%	92.9%	88.2%	108.9%	97.7%	100.4%	94.0%
26-35	81.7%	86.7%	93.2%	88.9%	91.5%	94.2%	102.4%
36-45	77.0%	67.9%	96.2%	79.0%	89.3%	69.6%	78.8%
46-55	65.2%	76.2%	58.7%	78.7%	68.3%	60.8%	67.5%
56-65	62.3%	65.6%	68.6%	79.6%	81.5%	71.9%	69.1%
Level of Education							
None	76.8%	75.6%	100.0%	93.2%	89.0%	85.8%	84.5%
Primary	75.7%	79.0%	83.3%	78.8%	84.1%	85.3%	80.0%
Secondary	72.8%	78.7%	82.0%	74.9%	83.7%	77.1%	78.0%
Tertiary	45.7%	49.9%	44.8%	63.7%	55.9%	48.7%	63.7%
Economic Sector							
Agriculture, hunting, forestry, and fishing	84.1%	79.8%	89.7%	88.5%	82.0%	67.5%	90.3%
Mining and quarrying	97.1%	83.6%	81.9%	59.5%	102.8%	131.7%	89.3%
Manufacturing industry	79.4%	77.1%	57.5%	92.0%	91.5%	76.9%	83.8%
Electricity, gas, and water	69.5%	72.1%	110.7%	89.7%	43.5%	56.9%	61.7%
Construction	103.4%	156.4%	110.3%	347.8%	193.5%	159.6%	164.8%
Trade, restaurants, and hotels	76.4%	74.0%	93.3%	75.8%	73.5%	70.4%	69.9%
Transport and storage	105.7%	129.8%	86.2%	103.7%	141.6%	119.7%	99.2%
Financial establishments, insurance, and real estate	62.0%	78.8%	63.6%	63.4%	55.5%	43.5%	73.2%
Social and community services	57.5%	58.6%	67.2%	63.7%	73.1%	68.8%	67.1%
Occupation							
Professional and technician	52.1%	58.9%	63.3%	70.0%	67.1%	63.5%	72.9%
Director or senior official	73.2%	67.3%	64.6%	64.6%	55.4%	43.6%	44.6%
Administrative and intermediate level	68.1%	79.9%	82.6%	82.5%	80.4%	80.4%	84.8%
Merchants and salespersons	76.8%	76.2%	96.9%	83.0%	79.1%	87.1%	80.3%
In services	57.2%	80.8%	75.2%	85.1%	91.7%	90.3%	92.4%
Agricultural workers	91.5%	81.1%	91.1%	91.0%	79.7%	73.2%	80.8%
Non-agricultural laborers, machinery operators, and transport services	82.6%	87.2%	89.3%	94.3%	111.9%	85.2%	93.0%
Armed Forces	74.3%	84.6%	55.2%	89.1%	115.1%	69.9%	94.8%
Others	167.3%	102.1%	191.6%	136.4%	81.5%	44.8%	95.3%
Formality							
Informal	81.8%	79.1%	79.1%	86.3%	84.6%	77.7%	83.6%
Formal	72.0%	74.0%	81.9%	82.2%	83.4%	73.1%	80.1%
Area							
Rural	83.6%	89.2%	101.6%	93.6%	102.5%	98.4%	94.6%
Urban	70.5%	71.4%	75.7%	78.6%	79.2%	70.5%	77.7%
Self-Employed							
Not self-employed	70.3%	70.6%	74.6%	80.7%	79.5%	70.6%	79.1%
Self-employed	96.5%	100.1%	110.1%	98.3%	105.6%	93.4%	93.1%
Regions							
Tarapacá	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Antofagasta	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Atacama	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Coquimbo	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Valparaíso	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Libertador General Bernardo O'Higgins	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Maule	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Bío bío	n.d	n.d	n.d	n.d	n.d	n.d	n.d
La Araucanía	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Los Lagos	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Aysén del General Carlos Ibáñez del Campo	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Magallanes y de la Antártica Chilena	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Metropolitana de Santiago	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Los Ríos	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Arica y Parinacota	n.d	n.d	n.d	n.d	n.d	n.d	n.d
Ñuble	n.d	n.d	n.d	n.d	n.d	n.d	n.d

Table 2 (Continuation).

	2006	2009	2011	2013	2015	2017	2020
General	87.6%	75.8%	86.0%	81.8%	84.1%	85.1%	89.0%
Age							
15-25	101.2%	86.5%	87.7%	95.3%	103.2%	102.1%	108.6%
26-35	104.2%	93.3%	86.8%	91.2%	89.9%	91.0%	92.2%
36-45	78.9%	74.9%	87.6%	82.4%	78.6%	83.7%	80.1%
46-55	80.6%	74.1%	81.4%	69.4%	75.1%	76.4%	84.4%
56-65	86.7%	58.2%	90.2%	80.4%	86.0%	78.6%	92.3%
Level of Education							
None	89.3%	86.4%	73.5%	91.3%	91.0%	90.6%	110.2%
Primary	82.8%	85.0%	84.2%	87.9%	86.7%	86.8%	104.2%
Secondary	85.3%	74.0%	82.5%	81.9%	82.8%	81.3%	91.7%
Tertiary	72.0%	55.3%	72.1%	63.6%	69.2%	71.6%	74.0%
Economic Sector							
Agriculture, hunting, forestry, and fishing	83.0%	76.0%	92.0%	75.5%	82.5%	87.5%	80.6%
Mining and quarrying	158.5%	97.0%	101.1%	119.9%	104.0%	100.6%	84.4%
Manufacturing industry	91.8%	84.0%	94.8%	80.4%	87.3%	83.3%	113.7%
Electricity, gas, and water	97.1%	73.5%	80.9%	91.7%	63.6%	90.3%	130.5%
Construction	161.5%	102.3%	179.6%	103.5%	125.4%	122.6%	170.6%
Trade, restaurants, and hotels	77.6%	66.1%	78.0%	81.7%	78.4%	78.2%	84.4%
Transport and storage	108.6%	89.8%	123.2%	96.7%	95.9%	90.6%	83.2%
Financial establishments, insurance, and real estate	78.5%	60.9%	85.4%	47.6%	73.1%	88.0%	67.5%
Social and community services	73.1%	69.7%	62.3%	62.1%	67.1%	66.8%	74.1%
Occupation							
Professional and technician	76.4%	60.5%	78.2%	66.7%	75.5%	74.8%	73.4%
Director or senior official	51.1%	46.0%	66.2%	58.0%	50.5%	53.6%	81.1%
Administrative and intermediate level	98.3%	72.8%	83.8%	95.4%	84.0%	91.1%	80.7%
Merchants and salespersons	81.0%	71.1%	74.0%	100.5%	84.0%	86.4%	81.0%
In services	97.9%	84.4%	93.7%	94.0%	87.5%	86.3%	92.4%
Agricultural workers	78.0%	81.2%	66.8%	78.8%	79.7%	87.5%	89.0%
Non-agricultural laborers, machinery operators, and transport services	94.0%	98.2%	92.9%	94.0%	82.4%	78.6%	87.5%
Armed Forces	98.6%	58.1%	80.6%	63.1%	95.5%	75.0%	101.4%
Others	129.5%	169.3%	76.7%	184.2%	169.4%	106.7%	n.d.
Formality							
Informal	89.3%	72.5%	83.7%	83.0%	89.7%	88.8%	94.0%
Formal	86.9%	77.9%	86.6%	80.9%	83.0%	84.8%	89.0%
Area							
Rural	88.6%	93.0%	87.4%	79.5%	96.5%	90.9%	108.3%
Urban	85.6%	73.0%	84.4%	80.2%	81.6%	83.4%	86.7%
Self-Employed							
Not self-employed	85.3%	75.5%	82.8%	80.8%	84.1%	84.3%	n.d.
Self-employed	96.7%	79.1%	95.5%	84.6%	83.7%	88.2%	n.d.
Regions							
Tarapacá	n.d	64.5%	88.4%	88.3%	69.3%	81.0%	81.8%
Antofagasta	n.d	72.0%	83.1%	94.6%	81.1%	65.2%	92.7%
Atacama	n.d	75.0%	78.7%	81.1%	81.3%	77.4%	89.7%
Coquimbo	n.d	81.3%	87.3%	76.3%	85.6%	74.9%	93.0%
Valparaíso	n.d	67.3%	88.8%	74.7%	79.1%	86.8%	87.0%
Libertador General Bernardo O'Higgins	n.d	86.2%	88.1%	88.0%	90.3%	89.2%	126.5%
Maule	n.d	95.6%	80.7%	95.4%	91.4%	92.5%	98.3%
Bío bío	n.d	83.3%	80.5%	83.8%	88.3%	93.0%	92.8%
La Araucanía	n.d	76.5%	107.8%	85.2%	104.4%	94.4%	73.8%
Los Lagos	n.d	86.4%	84.5%	85.2%	93.7%	98.8%	78.5%
Aysén del General Carlos Ibáñez del Campo	n.d	89.8%	81.0%	87.2%	82.1%	89.4%	87.9%
Magallanes y de la Antártica Chilena	n.d	61.5%	60.6%	83.7%	80.7%	83.7%	98.1%
Metropolitana de Santiago	n.d	70.5%	83.8%	77.8%	79.6%	81.8%	85.1%
Los Ríos	n.d	96.5%	109.2%	82.0%	96.8%	89.3%	99.0%
Arica y Parinacota	n.d	107.0%	82.1%	83.8%	89.3%	81.4%	111.5%
Ñuble	n.d	n.d	n.d	n.d	n.d	91.5%	109.9%

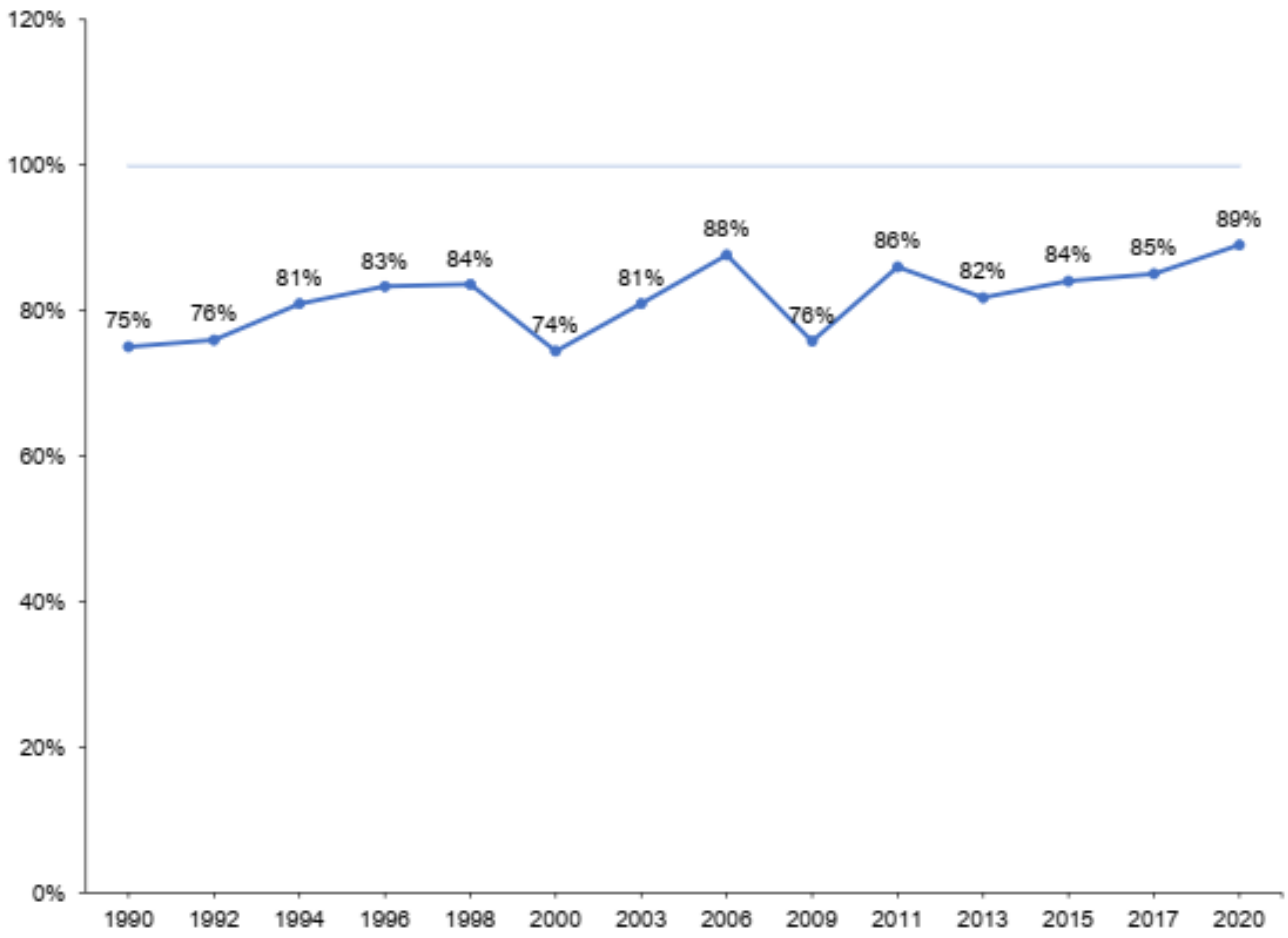
Source: Own elaboration based on CASEN surveys from Chile harmonized by the IDB.

n.d. Not Available. When the available data is not sufficient to calculate the percentage.

Only individuals with occupation and income, along with frequency weighting, were used in the analysis.

In Graph 3, you can observe the evolution of hourly earnings for women compared to that of men. It shows a relatively stable earnings gap over time, with a slight decrease. In the year 2020, when the crisis caused by COVID-19 emerged, there is a noticeable reduction in the earnings gap. This reduction may be related to the decrease in women's labor force participation in that year, which could have generated a selection bias where the women who remained in the labor market had higher labor profiles than the average for men (Table A1).

Graph 3. Hourly labor earnings of women versus those of men*

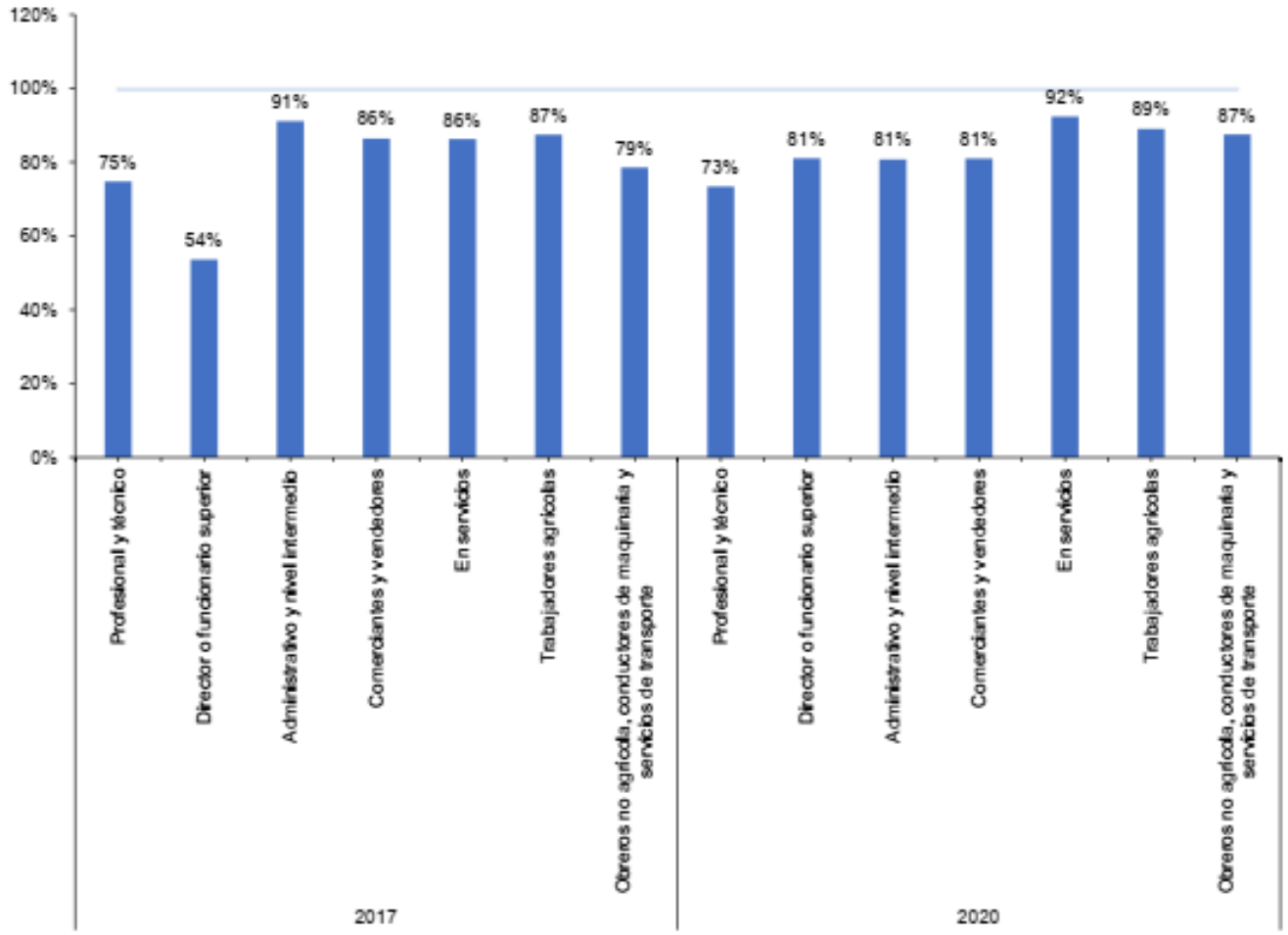


Source: Own elaboration based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.

*Only individuals with occupation and income were used.

The analysis is conducted by occupation, examining the situation before and during 2020, the year when the Chilean and global economies were affected by the emergence of COVID-19. In Graph 4, you can observe that in 2017, there was a gender gap in favor of men in all occupations, and this situation continued in 2020. Additionally, it is noticeable that the occupation where the gender gap saw the most significant reduction between 2017 and 2020 was in directors and top executives.

Graph 4. Hourly labor earnings of women versus those of men by occupation



Source: Own elaboration based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.

*Only individuals with occupation and income were used.

3. Methodology

As previously mentioned, two methodologies will be used to address the gender pay gap: the Blinder-Oaxaca decomposition and the Ñopo methodology.

Blinder-Oaxaca Decomposition

This first strategy for quantifying the evolution of the gender earnings gap allows us to decompose it into two parts. The first part is explained by the different control variables used to capture human capital, such as education, work experience, and occupation. The second part cannot be explained by these variables and could be associated with gender-differentiated regulations, prejudices, biases, or discrimination, as outlined by Becker (1957). This unexplained gap may originate from personal or statistical preferences, meaning that employers use group characteristics to evaluate individual characteristics. An example of this is the assumption that women of childbearing age are more likely to have children than older women, and therefore may interrupt their careers. Under this assumption, employers might pay lower wages to women of childbearing age to compensate for the higher probability of career interruptions, as explained by Hoyos, Ñopo, and Peña (2010).

The Blinder-Oaxaca method uses Mincer-type wage equations (Mincer, 1974), which, as described in Jann (2008), allows for the division of the difference in labor earnings into:

(i) a part explained by group differences and individual characteristics, such as education and work experience,

(ii) a second residual component that is unexplained.

Since there are two groups composed of men (H) and women (M), an explained variable (the logarithm of hourly labor earnings from the main activity), and a set of explanatory variables X, such as education and experience, among others, we seek to explain the average earnings difference between the two groups using the explanatory variables X.

$$EGap = E(Y_H) - E(Y_M) \quad (1)$$

Where $E(Y_g)$ denotes the expectation of the logarithm of labor earnings, which is the variable of interest, and g can be H if the equation is performed for men, or M if it is done for women. A Mincer-type equation is used to explain income in the form $Y_g = \alpha_g + \sum_{i=1}^{k} X_{ik}\ \beta_{gik} + \varepsilon_{gi}$. This expression can be substituted into equation [1]:

$$EGap = E\left(\alpha_H + \sum_{i=1}^{k} X_{ik}\beta_{Hik} + \varepsilon_{Hi}\right) - E\left(\alpha_M + \sum_{i=1}^{k} X_{ik}\beta_{Mik} + \varepsilon_{Mi}\right)$$

(2)

$$EGap = \widehat{\alpha_H} + \sum_{i=1}^{k} \overline{X_{ık}}\,\widehat{\beta_{Hık}} - \widehat{\alpha_M} - \sum_{i=1}^{k} \overline{X_{ık}}\,\widehat{\beta_{Mık}}$$

(3)

Reordering, it is possible to identify the contribution of the explanatory variables to the differences between the groups:

$$\mathrm{EGap} = (\widehat{\alpha_H} - \widehat{\alpha_M}) + \sum_{\mathrm{i=1}}^{\mathrm{k}} \overline{\mathrm{X_{ık}}}\left(\widehat{\beta_{Hık}} - \widehat{\beta_{Mık}}\right) + \sum_{\mathrm{i=1}}^{\mathrm{k}} (\overline{\mathrm{X}_{Hık}} - \overline{\mathrm{X}_{Mık}})\widehat{\beta_{Hık}}$$

(4)

where the last component of this equation corresponds to the earnings gap accounted for by the explanatory variables, while the first two components correspond to unexplained differences.

The model was estimated using the following specification:

$$yhora_i = \beta_0 + \sum_{i=1}^{3} \beta_i\, gaedu_i + \beta_4 exp_i + \beta_5 exp_i^2 + \sum_{i=6}^{9} \beta_i\, gedad_i + \beta_{10} casado_i + \beta_{11} men6_i + \beta_{12} cnt\_prop_i + \sum_{i=13}^{20} \beta_i rama_i + \sum_{i=21}^{28} \beta_i ocupa_i + \beta_{29} formal_i + \beta_{30} zona_i + \sum_{i=31}^{n} \beta_i region_i + \epsilon_i$$

(5)

Where:

- $yhora_i$ are the logarithm of nominal hourly labor earnings;

- $gaedu_i$ are dummy variables indicating the three highest levels of education attained as shown in table 2, relative to the base category, which is no educational level.

- exp_i are the estimated years of experience, which are calculated as age minus years of education.

- $gedad_i$ are four binary variables indicating age groups from table 2, using the 25-35 years segment as the base category.

- $casado_i$ is a binary variable that takes the value of 1 if the person is married.

- $men6_i$ is a binary variable that takes the value of 1 if there are children under six years of age living in the household.
- $cnt_{prop}{}_i$ is a binary variable that takes the value of 1 if the person is self-employed or an independent worker.

- $rama_i$ are binary variables related to the different economic activities in which people are engaged, with agriculture, hunting, forestry, and fishing as the base category.

- $ocupa_i$ are six binary variables related to the different occupations of the surveyed individuals.

- $formal_i$ is a binary variable that takes the value of 1 if the person works in the formal sector.

- $zona_i$ is a binary variable that takes the value of 1 if the person works in the urban area.

- and $region_i$ are binary variables that refer to the different regions of the country.

This decomposition is performed separately for women and men. While this method is widely popularized in the literature, it has some limitations. On the one hand, it assumes a relationship between explanatory characteristics and incomes that may not be true. On the other hand, the model is only informative in the sense that it addresses how the gap is decomposed, which does not imply a causal relationship. Lastly, the method does not restrict

its comparison to individuals with comparable characteristics. Ñopo's (2008) model was developed precisely when trying to address the first and last limitations mentioned.

Ñopo Decomposition

The method proposed by Ñopo (2008) is a non-parametric decomposition technique that, like the Blinder-Oaxaca model, aims to analyze earning differences between men and women across the income distribution, not just the mean.

This Ñopo approach restricts the comparison solely to differences between men and women with comparable characteristics, known as the "common support." This allows for the generation of a synthetic counterfactual of individuals by matching men and women who have identical observable characteristics, without the need to assume any functional form in the relationship between explanatory variables and income. This is done through discrete characteristics, and thus, it does not require matching by propensity score or any other notion of distance between men's and women's characteristics (Ñopo 2008).

This procedure generates three groups:

(i) Women and men matched in the "common support."

(ii) Women with observable characteristics for which there are no comparable men, referred to as the "maid effect."

(iii) Men for whom there are no comparable women, referred to as the "CEO effect."

The method allows men and women with identical characteristics to be part of a "common support," facilitating the breakdown of the income difference by observed and unobserved characteristics. On the other hand, the calculation of the maid and CEO effects is performed among those individuals who fall outside this "common support."

The "maid effect" refers to those women who, given their characteristics, do not have male counterparts with comparable characteristics. This is traditionally associated with women who have lower-ranking jobs that complement their household duties. On the other hand, the "CEO effect" refers to those men who, given their characteristics, hold top-level positions and do not have female counterparts with comparable characteristics.

In summary, this model decomposes the gender earnings gap into four elements:

- The portion explained by observable characteristics.

- The portion explained by unobservable characteristics.

- The "maid effect," representing women with characteristics for which there are no comparable men.

- The "CEO effect," representing men with characteristics for which there are no comparable women.

$$\delta = \delta_X + \delta_F + \delta_M + \delta_0 \qquad (6)$$

Where δ represents the total gender earnings difference; $\delta_X$represents the earnings difference related to observable characteristics; δ_F is the measurement of the maid effect; δ_M is the measurement of the CEO effect; and δ_0 represents the unexplained earnings difference. As mentioned earlier, this last component could be related to issues of bias and discrimination. It is worth noting that the unexplained component of this model follows the same logic as the Blinder-Oaxaca model, allowing for a comparison between both estimates.

The Ñopo model is not without limitations. Like the Blinder-Oaxaca model, it is solely informative about how the gap is decomposed but does not imply a causal relationship. Additionally, because matching is constructed with discrete variables, the probability of finding a person with the same characteristics and endowments, both for men and women, decreases as the number of explanatory variables increases, i.e., it reduces the common support, as noted by Enamorado, Izaguirre, and Ñopo (2009). This problem is known as the "curse of dimensionality," and it's the reason why the Ñopo model should carefully consider the inclusion of new variables.

Another limitation shared by both methodologies is that they can only control for observable characteristics, and in the specific case of this study, only for the characteristics included in the harmonized household surveys by the IDB. In this sense, the gender earnings gap could also be affected by characteristics that are not observed in the survey, such as attitudinal factors, effort, and preferences for tasks in the labor market or at home, among others, which could be omitted in the analysis and thus introduce bias in the estimators due to the omission of relevant variables. Chioda (2011) provides a relevant example showing that preferences and attitudes between men and women towards work in the labor market may not be identical.

To achieve greater comparability and consistency, this study decided to perform both estimations. This approach will allow both to be compared with other studies using either of the two methodologies, as well as compared with each other since they share a common logic. Both models used hourly earnings as the dependent variable, allowing the calculation of the gender earnings gap. The explanatory variables used in the Ñopo model are:

$$gaedu_i, gedad_i, casado_i, men6_i, cnt_{prop_i}, rama_i, ocupa_i, formal_i, zona_i, region_i.$$

Note that here, the experience variables are not added to keep the common support high, i.e., to avoid falling into the "curse of dimensionality." This is considering that the experience variable is constructed with information related to age and education, which are already part of the explanatory variables in the regression.[13]

In the case of Blinder-Oaxaca estimations, robust standard errors and probabilistic weights were used to be consistent with the survey structure, while in the Ñopo decomposition model, frequency weights were used, as that is what the methodology calls for.

[13] The calculations not included in the model showed that the aggregation of these variables significantly decreased the common support and increased the standard deviation of the variables but did not alter the overall results.

It is worth noting that by considering only the observed wages of employed individuals, both models may suffer from selection bias. Since labor force participation is higher among men, it can often be the case that women destined to receive lower wages do not enter the labor market, unlike men, for whom potential wages may have a smaller impact on labor force participation. If this is the case, the models presented in this study would underestimate the gap. However, the increase in female participation could be mitigating this bias, making it more challenging to compare over time.

Please note that this research uses similar control variables as those presented in past studies on the earnings gap in Latin America and the Caribbean, such as those by Hoyos and Ñopo (2010) and Ñopo (2012).

4. Results

In Table 3, the results of the Blinder-Oaxaca decomposition estimation are presented. It shows that over the 14 years covered by the calculation, the average hourly earnings gap between genders ranged from 35% to 12%[14], showing a decrease over time, as seen in Figure 5.

Except for 1990 and 1992, in all other periods, the explained variables would be helping to close the gap, and this effect appears to grow over time. On the other hand, the unexplained part would be representing the entirety of the gap.

Table 4 presents the gap decomposition according to different aggregated explanatory variables. It can be observed that the gap explained by education is negative and statistically significant, which means that the educational level of female workers, on average higher than that of men (Table A1), would be reducing the total earnings gap. Likewise, it is observed that experience, as well as the occupations in which most women work, would also be contributing to reducing the total earnings gap in most years.

On the other hand, personal and family characteristics such as age, marital status, and the presence of minors in the household have a positive and statistically significant effect on the earnings gap, meaning that they increase the gap, although their importance decreases in 2020, which could be related to the fact that they may have influenced the reduction in women's labor force participation due to caregiving responsibilities during the health crisis.

Finally, the region of the country where the workers (both men and women) reside has a negative and statistically significant effect on the gap, meaning that the fact that female workers are more concentrated in urban areas (Table A1) would also be reducing gender earnings inequalities.

[14] Calculated as $diferencia/yhora_{mujer}$, the explained gap is calculated as $diferencia_{explicada}/yhora_{mujer}$, while the unexplained gap is calculated as $diferencia_{no\ explicada}/yhora_{mujer}$.

Table 3. Blinder-Oaxaca Decomposition*

(Hourly Earnings)

	1990	1992	1994	1996	1998	2000	2003	2006	2009	2011	2013	2015	2017	2020
Differential														
Estimation for Men	475.1***	676.5***	961.9***	1394.8***	1483.2***	1641.9***	1829.5***	1892.0***	2779.5***	2774.6***	3456.0***	2928.6***	3342.8***	1488.4***
	(10.99)	(11.00)	(33.28)	(38.14)	(26.87)	(59.13)	(31.77)	(34.98)	(65.90)	(55.97)	(93.27)	(35.15)	(55.22)	(46.60)
Estimation for Women	351.9***	506.8***	765.6***	1146.8***	1240.0***	1221.9***	1481.3***	1658.3***	2106.5***	2386.4***	2826.5***	2461.6***	2843.4***	1325.1***
	(10.12)	(10.86)	(19.91)	(37.31)	(23.78)	(23.84)	(33.30)	(44.20)	(36.91)	(47.81)	(57.92)	(25.31)	(31.50)	(23.41)
Difference	123.1***	169.8***	196.3***	247.9***	243.1***	420.0***	348.2***	233.8***	673.0***	388.1***	629.5***	467.0***	499.4***	163.4**
	(14.94)	(15.46)	(38.78)	(53.36)	(35.88)	(63.76)	(46.02)	(56.36)	(75.54)	(73.61)	(109.8)	(43.32)	(63.58)	(52.15)
Decomposition														
Explained	-10.37	6.792	-49.51**	-50.53	-73.14**	-74.52*	-112.4***	-105.2***	-124.4*	-266.9***	-379.2***	-227.5***	-300.9***	-189.7***
	(12.20)	(11.22)	(17.06)	(36.39)	(24.61)	(31.00)	(27.93)	(28.97)	(50.39)	(51.11)	(77.54)	(29.19)	(35.44)	(29.52)
Unexplained	133.5***	163.0***	245.8***	298.5***	316.3***	494.5***	460.6***	339.0***	797.4***	655.0***	1008.6***	694.5***	800.3***	353.1***
	(21.17)	(18.29)	(43.75)	(65.60)	(40.27)	(69.48)	(51.25)	(65.63)	(88.46)	(96.44)	(154.8)	(50.89)	(75.12)	(61.41)
Decomposition (as a percentage of hourly labor earnings for women)														
Total	35%	34%	26%	22%	20%	34%	24%	14%	32%	16%	22%	19%	18%	12%
Explained	-3%	1%	-6%	-4%	-6%	-6%	-8%	-6%	-6%	-11%	-13%	-9%	-11%	-14%
Unexplained	38%	32%	32%	26%	26%	40%	31%	20%	38%	27%	36%	28%	28%	27%
Observations	34101	47502	57842	44354	60344	73103	79586	91259	80283	70178	79442	101518	83713	24333

t-Statistic in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Own elaboration based on harmonized CASEN surveys from Chile by the IDB.

Only individuals with occupation, income, and probabilistic weightings were used.

Table 4, Components of the Explained Difference in Blinder-Oaxaca*

(Hourly Earnings)

	1990	1992	1994	1996	1998	2000	2003	2006	2009	2011	2013	2015	2017	2020
Explained Difference	-10.37	6.792	-49.51**	-50.53	-73.14**	-74.52*	-112.4***	-105.2***	-124.4*	-266.9***	-379.2***	-227.5***	-300.9***	-189.7***
Education	-38.44***	-44.49***	-71.64***	-110.0***	-105.2***	-94.08***	-109.2***	-96.41***	-153.5***	-145.2***	-115.8***	-114.1***	-86.44***	-21.92**
Experience	-12.57*	-4.549	2.486	-10.02	-47.64***	-37.52	-44.36***	-35.40**	-42.36	-144.1***	-138.2***	-112.3***	-206.1***	-26.89
Personal and Family Characteristics	32.27***	31.28***	35.39***	34.79*	82.08***	84.97***	82.64***	71.09***	123.4***	163.1***	133.2***	116.2***	178.4***	11.63
Self-Employment	11.54***	8.137***	-1.043	21.78***	24.43***	7.369*	23.96***	16.12**	23.89**	4.695	1.294	0.258	-2.086	0
Economic Activity	57.86***	87.58***	114.3***	83.61*	161.7***	158.5***	136.7***	176.2***	188.5***	14.37	-17.58	67.45**	23.23	3.558
Occupation	-50.86***	-61.49***	-110.9***	-50.43	-172.9***	-171.7***	-187.8***	-234.9***	-228.6***	-135.9*	-216.9***	-152.8***	-195.6***	-150.5***
Region	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-17.28***	-20.04**	-29.28***	-26.35***	-19.91***	-1.883
Formality	-0.492	-1.987*	-4.604	-1.146	-3.101*	-1.500	-1.098	5.990	-6.417	-5.749	-0.600	1.282	-0.212	-1.201
Area	-9.676**	-7.689***	-13.42***	-19.09***	-12.49***	-20.60***	-13.19***	-7.884**	-12.07***	1.868	4.682	-7.211**	7.764	-2.537

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

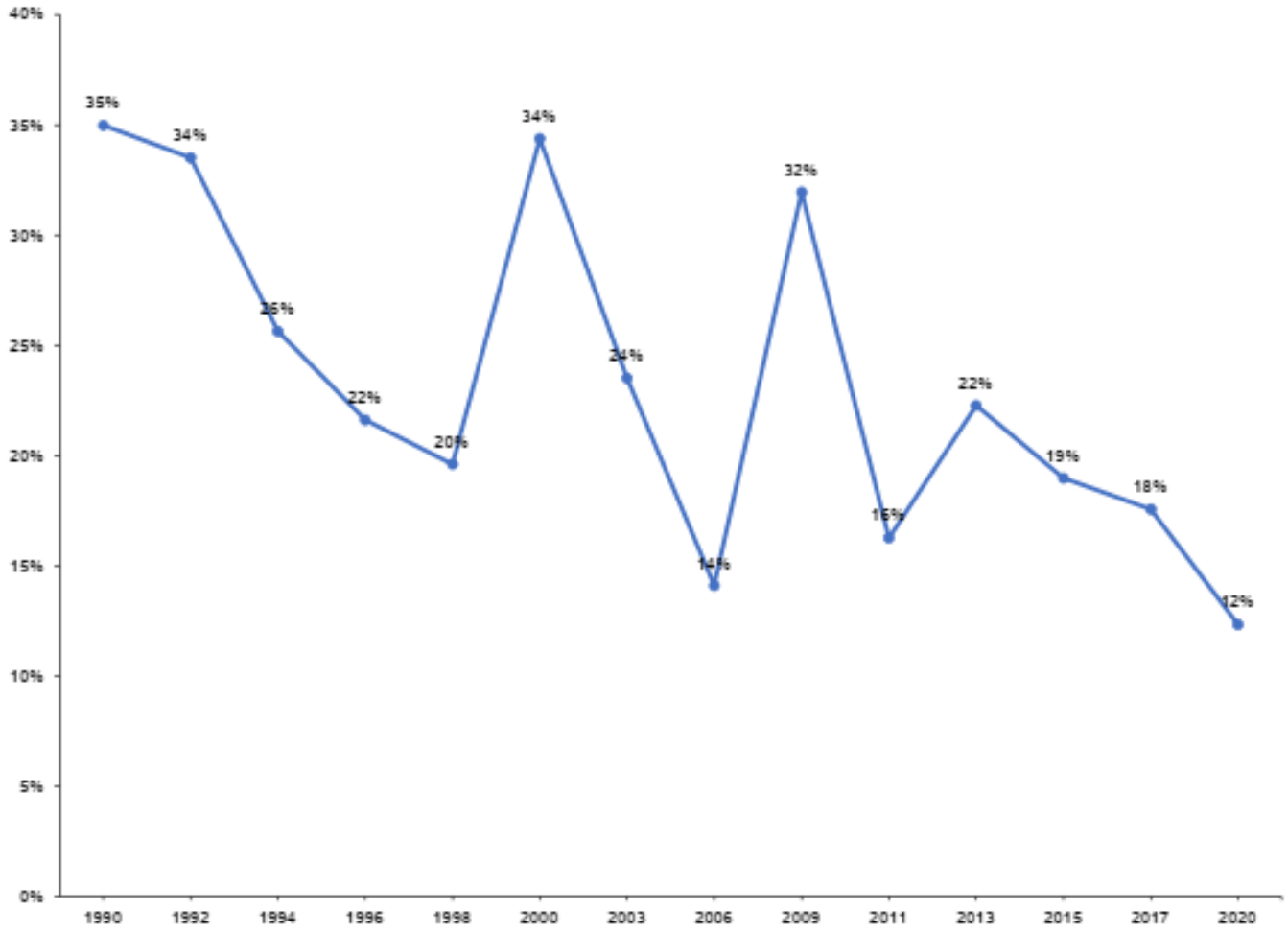
Source: Own elaboration based on harmonized CASEN surveys from Chile by the IDB.

Only individuals with occupation, income, and probabilistic weightings were used.

n.d. Not available. When the available data is insufficient to calculate the percentage.

Graph 5. Estimated total earnings gap using the Blinder-Oaxaca decomposition

Source: Own elaboration based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.



*Only individuals with occupation and income were included.

In Table 5, the results of the Ñopo decomposition are presented. It shows a gender earnings gap in all the years considered, reaching a value of 36%. Similar to the results of the Blinder-Oaxaca model, the reduction in the gap would be explained by explanatory variables, while the majority of it is due to factors not explained by the analyzed variables, as well as what Ñopo (2008) has termed the "Maid Effect." On the other hand, the "CEO Effect" seems to be helping to close the gap since at least the beginning of the previous decade. Although there are minor differences between the estimates obtained from Blinder-Oaxaca and those obtained from Ñopo, which are fundamentally related, both methods are used following common practices in the international literature, and their differences are due to methodological aspects.

The common support for different years, both for men and women, is never less than 44%. This value is similar to the models for countries in Latin America and the Caribbean used in Hoyos and Ñopo (2010) and Ñopo (2012), which use similar control variables to those presented in this study. Like the Blinder-Oaxaca model, a decreasing trend in the total gap over time is observed.

Table 5. Ñopo Decomposition

(Hourly Earnings)

	1990	1992	1994	1996	1998	2000	2003	2006	2009	2011	2013	2015	2017	2020
(Total)	36%	33%	26%	22%	20%	35%	24%	14%	32%	17%	24%	19%	17%	13%
(Unexplained)	23%	18%	11%	19%	15%	20%	16%	8%	22%	25%	33%	27%	23%	32%
(CEO Effect)	21%	13%	19%	6%	4%	7%	4%	6%	11%	-8%	-11%	-10%	-13%	-12%
(Maid Effect)	-4%	-3%	-2%	-4%	-1%	-2%	-1%	-4%	1%	2%	1%	4%	7%	4%
(Explained)	-5%	4%	-3%	1%	3%	10%	5%	4%	-2%	-2%	2%	-2%	0%	-12%
% Men	61%	62%	65%	64%	68%	71%	73%	76%	47%	44%	48%	54%	52%	65%
% Women	84%	87%	87%	87%	89%	90%	91%	91%	68%	64%	69%	73%	70%	76%
Standard Error	3%	2%	2%	3%	2%	1%	2%	2%	1%	2%	4%	1%	1%	2%

Source: Own elaboration based on harmonized CASEN surveys in Chile by the IDB.

Only individuals with occupation and income, using frequency weightings.

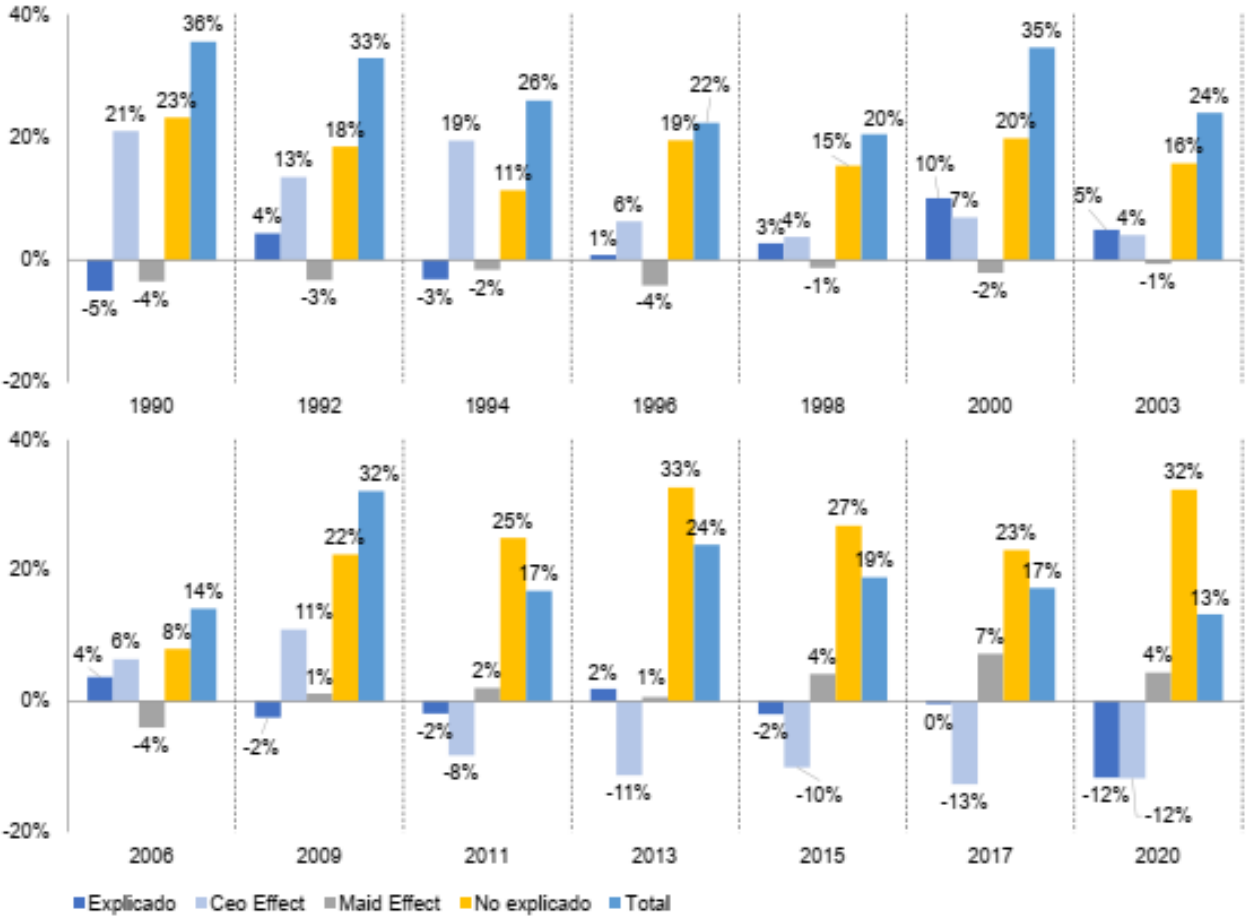
In Graph 6, the evolution of the gender earnings gap estimated using the Ñopo decomposition is also presented. It can be observed that the unexplained part (yellow bar) remained high in all analyzed years, without a clear pattern of reduction over time.

On the other hand, for 2020, the component explained by the variables used in the model would also be contributing to closing the gap by 12%, while the unexplained component would be generating a 32% gap. This latter part refers to the difference in income earned by women, which is due to other unobservable factors, such as the biases and discrimination mentioned earlier.

Taken together, without the higher level of education, the good labor profile, and the CEO effect, the gap would be 24% larger in 2020.[15]

[15] The 24% corresponds to the sum of the explained gap (12%) and the CEO effect (12%).

Graph 6. Total earnings gap estimated through the Blinder-Oaxaca and Ñopo decompositions*



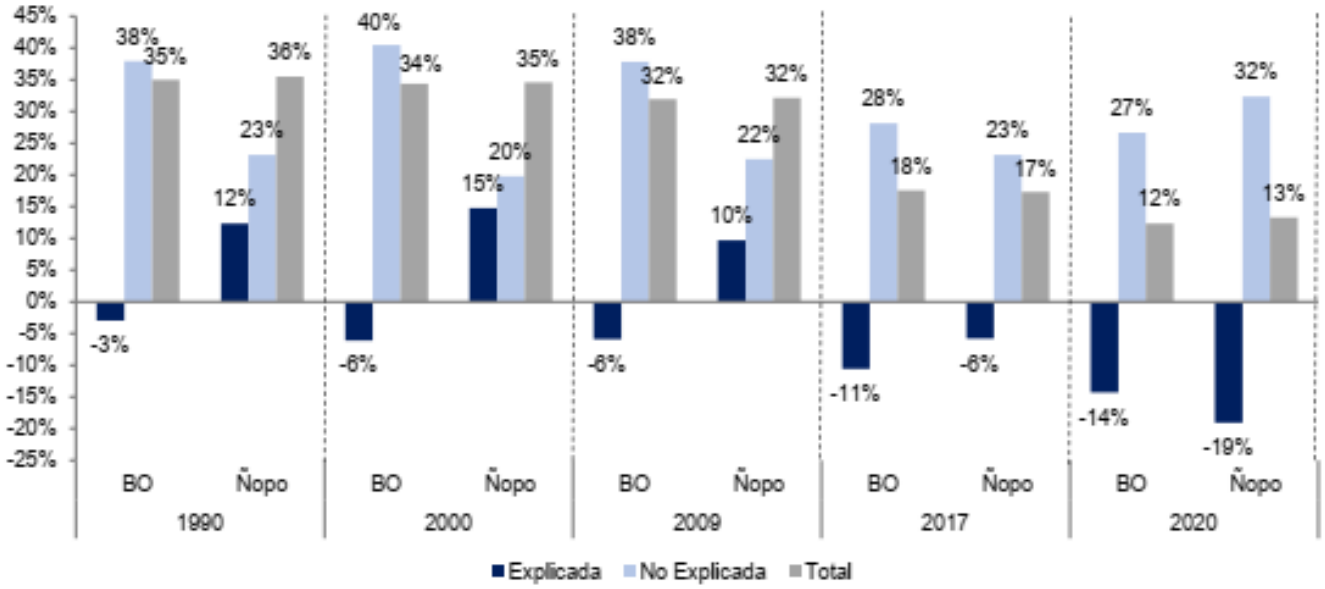
Source: Self-prepared based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.

*Only individuals with occupation and income were used.

In graph 7, earnings gender gaps calculated using both methodologies are compared for the years 1990, 2000, 2009, 2017, and 2020. These years were chosen to maintain constant time intervals and attempt to obtain a picture before and during 2020, the year the COVID-19 crisis emerged. Both the explained and unexplained components are included.

It is noteworthy that both methodologies consistently show that there is a total earnings gender gap, as well as an unexplained gap in favor of men for all the years. However, the effect of the explanatory variables is not as clear-cut, as the Ñopo model suggests that the sum of the effects of the explanatory variables, along with the effects of being a domestic employee and a top executive, would have increased the gap in 1990, 2000, and 2009.

Graph 7. Total earnings gap estimated through the Blinder-Oaxaca (BO) and Ñopo decompositions*



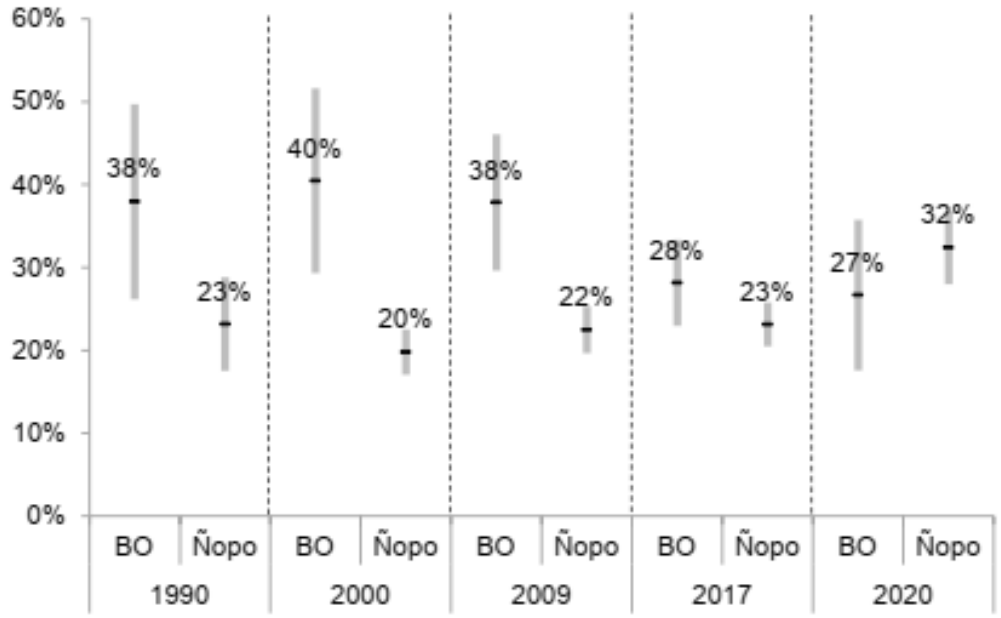
Source: Own elaboration based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.

*Only individuals with occupation and income were used.

Note: For Ñopo's methodology, the data for the explained component is calculated as the sum of the explained component, the CEO effect, and the maid effect.

In Graph 8, the evolution of the unexplained gap for the same periods used in Figure 6 is presented. Confidence intervals for 1.96 standard deviations above and below the estimator are included. This allows for the observation that both methodologies show a statistically significant unexplained earnings gap for the different years analyzed. Furthermore, it is important to note that there is no clear reduction in the unexplained gap over time, and the differences between both methodologies are not statistically significant at the 95% level of statistical significance.

Graph 8. Unexplained earnings gap estimated using the Blinder-Oaxaca and Ñopo decompositions.

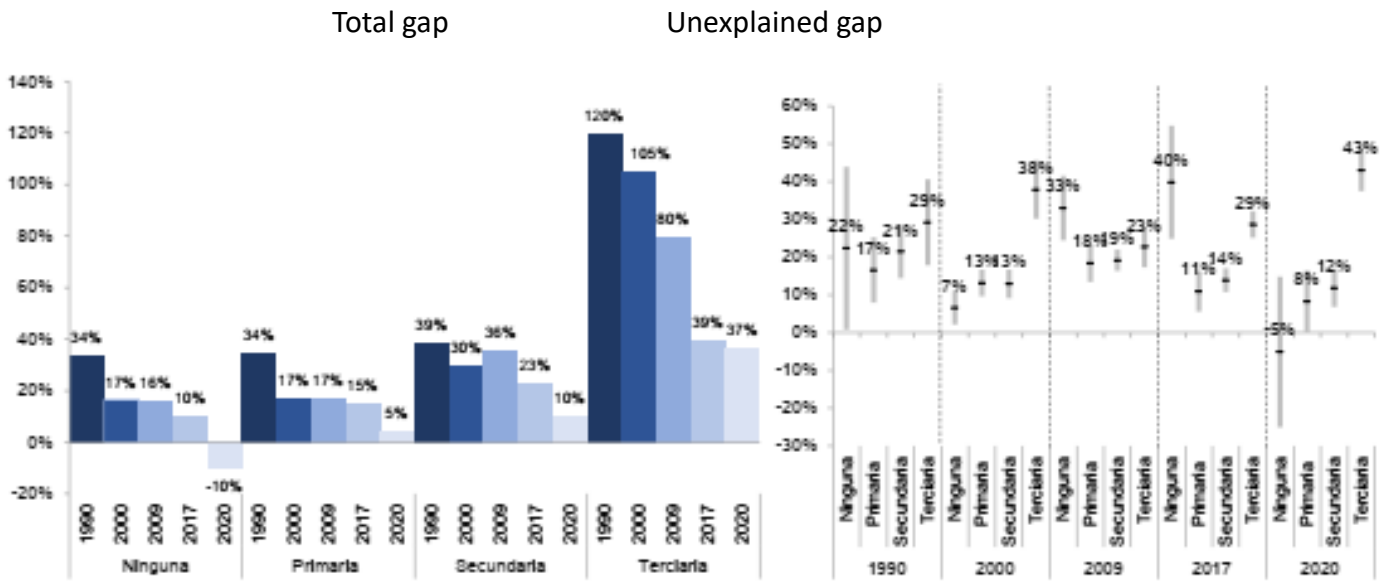


Source: Own elaboration based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.

Note: The bars represent the unexplained component at a 95% confidence level.

Furthermore, Ñopo's decomposition allows for disaggregating the earnings gap for different categories of explanatory variables. In Graph 8, the earnings gap, both total and unexplained, is presented broken down by educational level. It can be observed that the total gap is more pronounced among individuals with tertiary education, suggesting the presence of a "glass ceiling." On the other hand, the unexplained gap is statistically significant at all education levels, except for the year 2020, where there doesn't appear to be a gap among individuals with no educational attainment. This may also be related to the decrease in the proportion of workers with no educational degree (Table A1). In Graph 9, confidence intervals are added using 1.96 standard deviations above and below the estimator, representing a 95% significance level.

Graph 9. Earnings gap estimated through Ñopo's decomposition by education

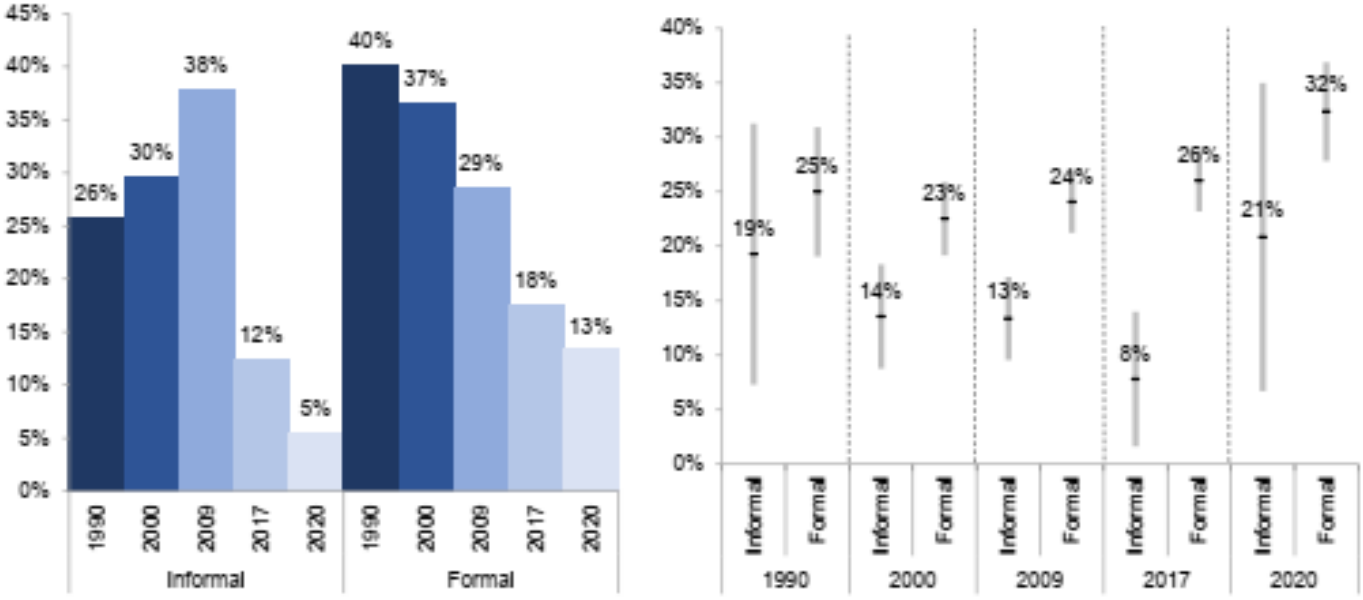


Source: Self-made based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.

Note: The bars represent the unexplained component at a 95% confidence level.

In Graph 10, the total and unexplained earnings gaps are presented by formality status. Unlike other countries in the region, in Chile, there is not such a clear distinction in the gap between the formal and informal sectors. However, it's important to note that the gap in the formal sector has been gradually decreasing since 1990, while the gap in the informal sector grew between 1990 and 2010. Additionally, the unexplained gap is statistically significant in both the formal and informal sectors.

Graph 10. Earnings gap estimated through the Ñopo decomposition by formality



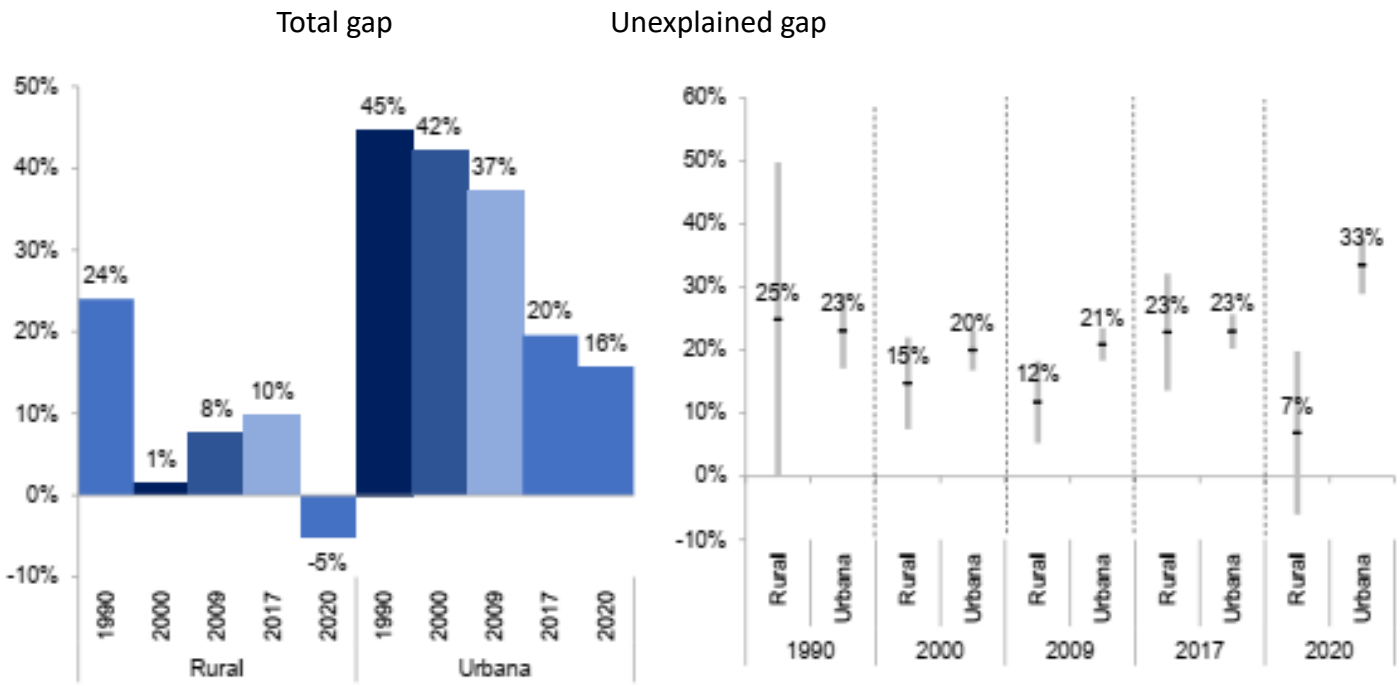
Total gap Unexplained gap

Source: Own elaboration based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.

Note: The bars represent the unexplained component at a 95% confidence level.

In Graph 11, the earnings gap is presented, both total and unexplained, by area status. It is evident that the total gap is higher in the urban area in all analysis periods. On the other hand, the unexplained gap is statistically significant both in the urban area and in the rural area, with the exception of the year 2020 where there is no statistical significance in the rural area.

Graph 11. Earnings gap estimated through the Ñopo decomposition by area

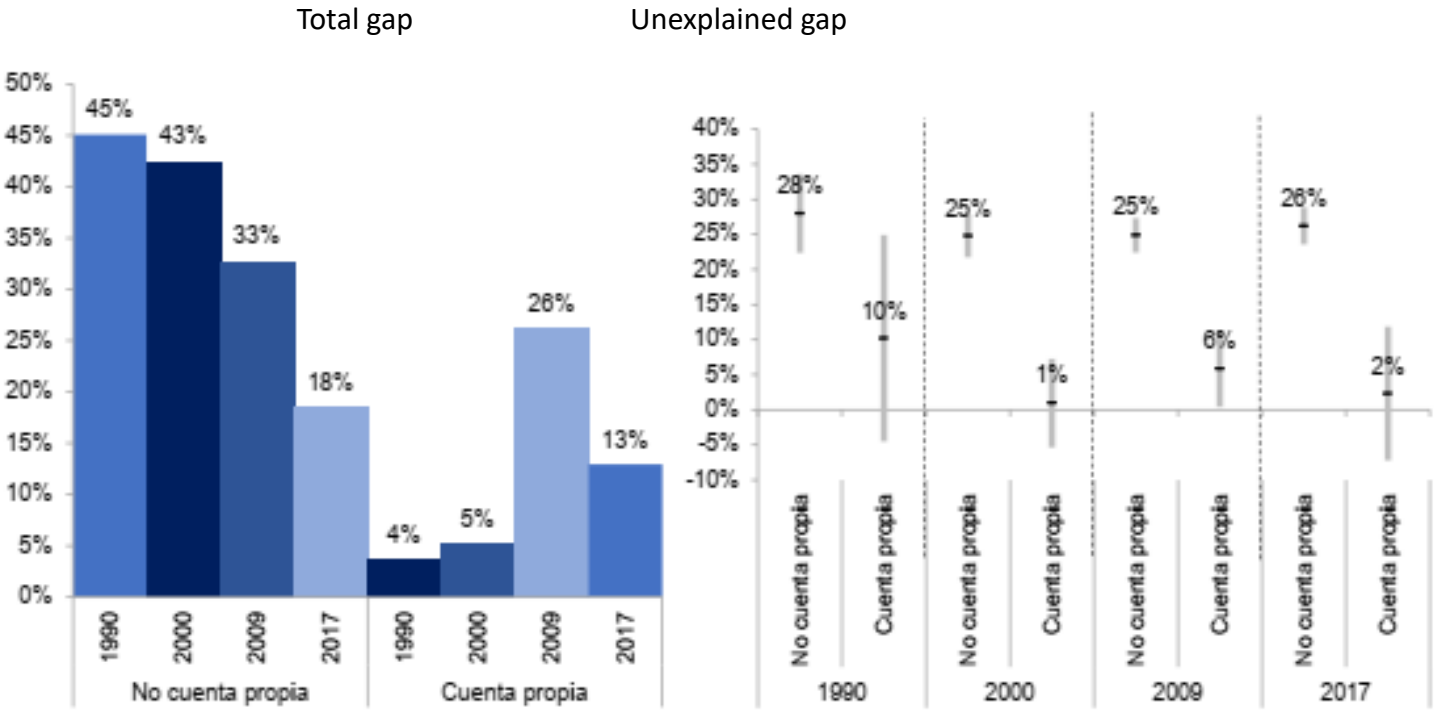


Source: Own elaboration based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.

Note: The bars represent the unexplained component at a 95% confidence level.

Finally, in graph 12, the earnings gap is presented both in total and unexplained terms by self-employment status. Unlike other countries in the region, in Chile, it appears that the gap is more concentrated in the non-self-employment sector, primarily wage earners. However, it is important to note that this gap has been gradually decreasing since 1990. On the other hand, the unexplained gap does not appear to be statistically significant among self-employed workers.

Graph 12. Earnings gap estimated through Ñopo's decomposition by self-employment status



Source: Own elaboration based on the Socioeconomic Characterization Survey of Chile harmonized by the IDB.

Note: The bars represent the unexplained component at a 95% confidence level.

5. Conclusions

According to the findings of this study, there is a gender earnings gap that seems to be decreasing over time. The persistent gap appears to be associated with unobservable factors, suggesting that it may be more related to regulations, potential biases, and/or discrimination rather than individual characteristics or preferences. This gap is more pronounced among individuals with tertiary education, those living in urban areas, and non-self-employed (wage) workers. It also varies across occupations but is statistically significant in most of them. The results indicate that the unjustifiable earnings gap between men and women in Chile has not consistently decreased over the past three decades, limiting income opportunities for women.

The main variables contributing to closing the gender earnings gap in Chile are education, experience, and the occupations where women are predominantly employed. On the other hand, personal and family characteristics such as age, marital status, and the presence of dependents in the household seem to generate a gender earnings gap in favor of men. Additionally, the regional variable also appears to help reduce the earnings gap due to the high proportion of women working in regions with strong economic dynamics.

These conclusions align with much of the existing literature on gender earnings gaps in Chile. Like Fuentes, Palma, and Montero (2005), Hoyos and Ñopo (2010), and Salce (2021), it was determined that the unexplained gap in favor of men remains significant in the country, despite expectations that women, given their human capital endowments as evidenced by Ñopo (2006) and Contreras and Puentes (2001), would earn higher salaries.

Consistent with authors such as Chioda (2011), Gasparini and Marchionni (2015), and Siravegna (2021), education is a crucial factor in closing the gap, given the increase in the proportion of women who have completed secondary and tertiary education in the country. Like Ñopo (2006), Salce (2021), and Siravegna (2021), this study concludes that the unexplained gap persists primarily among individuals with higher educational levels and, to a lesser extent, among those with lower educational attainment. Finally, as Ñopo (2006), Carrillo, Gandelman, and Robano (2014), and Siravegna (2021) have suggested, there is possible evidence in favor of the glass ceiling effect.

This document contributes to diagnosing the evolution of the gender wage gap in Chile between 1990 and 2020. The conclusions offered here are relevant because evidence-based policy formulation relies on reliable data and estimates that can inform decision-makers responsible for shaping public policies. The conclusions presented here are open to further investigation and deeper analysis of the income gap among groups with different specific characteristics. Future studies may also benefit from improved quantification of the earnings gap and its determinants. Finally, there is a need for a particular study on the consequences of the pandemic on the income gap in Chile.

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Table A1. Distribution of Characteristics of the Employed Population Receiving Income by Year and Gender, Men (M) and Women (W)

	1990		1992		1994		1996		1998		2000		2003		2006		2009		2011		2013		2015		2017		2020	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Years of Education	9.5	9.2	9.4	9.1	9.8	9.5	10.1	9.8	10.2	10.0	10.5	10.3	10.8	10.6	10.8	10.6	11.0	10.9	11.2	11.1	11.5	11.5	11.8	11.7	12.0	12.0	12.4	12.4
None	30%	32%	30%	32%	28%	30%	24%	26%	23%	24%	20%	22%	18%	19%	9%	10%	8%	9%	7%	8%	6%	7%	5%	6%	5%	6%	4%	5%
Primaria	32%	31%	35%	34%	30%	28%	30%	29%	30%	28%	31%	30%	32%	29%	38%	38%	35%	35%	36%	35%	33%	31%	31%	29%	29%	27%	26%	23%
Secondary	32%	34%	29%	30%	36%	37%	39%	40%	40%	42%	41%	42%	43%	45%	45%	46%	48%	49%	45%	45%	46%	47%	47%	46%	46%	46%	46%	46%
Tertiary	6%	4%	6%	4%	6%	4%	7%	5%	7%	6%	8%	6%	8%	7%	8%	7%	9%	8%	12%	12%	15%	15%	18%	19%	20%	21%	24%	26%
Years of Experience	18.9	19.5	19.4	20.1	19.3	20.0	18.9	19.5	18.8	19.6	19.1	19.8	18.9	19.9	19.4	20.4	19.7	20.7	19.6	20.8	19.7	20.9	19.7	21.0	20.0	21.2	19.5	21.1
15-25	33%	32%	32%	30%	31%	29%	31%	29%	31%	29%	29%	27%	30%	27%	30%	28%	30%	28%	31%	28%	29%	26%	28%	25%	26%	24%	26%	22%
26-35	26%	26%	26%	26%	25%	25%	24%	25%	24%	24%	23%	23%	22%	22%	20%	19%	19%	18%	18%	18%	19%	19%	20%	20%	21%	21%	22%	22%
36-45	18%	18%	18%	19%	19%	20%	21%	21%	21%	22%	23%	24%	22%	23%	21%	22%	20%	21%	19%	20%	18%	19%	18%	19%	17%	18%	17%	18%
46-55	13%	14%	14%	14%	15%	15%	14%	14%	14%	15%	15%	15%	16%	16%	17%	18%	19%	20%	19%	20%	19%	20%	19%	20%	18%	20%	18%	20%
56-65	10%	11%	10%	11%	10%	11%	10%	10%	9%	10%	10%	11%	10%	11%	11%	13%	13%	14%	13%	14%	14%	16%	15%	16%	16%	17%	16%	18%
Married	59%	56%	59%	56%	59%	57%	58%	57%	58%	56%	58%	57%	56%	55%	54%	53%	53%	51%	51%	49%	51%	48%	51%	48%	50%	48%	48%	43%
Children under 6 years old in the household	38%	40%	38%	40%	35%	38%	35%	39%	34%	37%	32%	37%	29%	34%	27%	31%	26%	30%	25%	31%	25%	30%	24%	29%	22%	27%	18%	22%
Agriculture, hunting, forestry, and fishing	22%	5%	20%	6%	19%	5%	19%	6%	18%	6%	17%	5%	17%	6%	16%	7%	14%	6%	12%	6%	12%	5%	12%	6%	12%	6%	16%	7%
Mining and quarrying	3%	0%	3%	0%	2%	0%	3%	0%	2%	0%	2%	0%	2%	0%	3%	0%	3%	0%	4%	1%	5%	1%	4%	1%	3%	0%	5%	6%
Manufacturing industry	19%	15%	18%	16%	17%	13%	17%	12%	16%	11%	16%	11%	15%	10%	16%	11%	12%	8%	12%	7%	14%	8%	12%	7%	12%	6%	12%	3%
Electricity, gas, and water	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	13%	2%
Construction	11%	1%	13%	1%	13%	1%	13%	1%	12%	1%	12%	1%	13%	1%	15%	1%	14%	1%	16%	1%	16%	1%	16%	1%	15%	1%	5%	1%
Trade, restaurants, and hotels	15%	21%	15%	22%	15%	23%	15%	24%	16%	25%	16%	24%	17%	25%	16%	26%	17%	27%	22%	30%	19%	29%	20%	29%	22%	29%	3%	2%
Transport and storage	9%	2%	9%	2%	10%	3%	10%	3%	11%	3%	10%	3%	11%	3%	11%	4%	11%	4%	11%	4%	11%	4%	11%	3%	10%	3%	6%	4%
Financial establishments, insurance, and real estate	4%	5%	4%	5%	5%	7%	6%	8%	7%	7%	7%	9%	7%	7%	8%	7%	9%	7%	2%	3%	2%	3%	2%	3%	2%	3%	4%	6%
Social and community services	17%	50%	16%	47%	17%	48%	17%	46%	17%	47%	17%	47%	17%	47%	16%	44%	18%	46%	20%	49%	21%	49%	23%	50%	23%	51%	35%	71%
Tarapacá	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Antofagasta	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	4%	4%
Atacama	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Coquimbo	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Valparaíso	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Libertador General Bernardo O'Higgins	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Maule	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Bío bío	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	12%	12%	12%	12%	12%	12%	12%	12%	9%	9%	8%	9%
La Araucanía	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	6%	5%	5%	6%	5%	6%	6%	5%	5%	5%	5%	5%
Los Lagos	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Aysén del General Carlos Ibáñez del Campo	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Magallanes y de la Antártica Chilena	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Metropolitana de Santiago	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	41%	41%	41%	41%	41%	41%	41%	41%	41%	41%	43%	43%
Los Ríos	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Arica y Parinacota	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Ñuble	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	3%	3%	3%	3%
Urban	83%	85%	84%	86%	85%	86%	85%	87%	85%	87%	86%	88%	87%	88%	87%	88%	87%	88%	87%	88%	87%	88%	87%	88%	87%	88%	88%	89%
Formal	61%	58%	60%	57%	63%	60%	63%	60%	59%	56%	57%	54%	61%	54%	65%	57%	61%	54%	67%	61%	69%	63%	67%	63%	67%	63%	69%	67%
Self-employed	18%	6%	17%	6%	17%	6%	16%	6%	15%	6%	14%	6%	15%	7%	14%	8%	14%	8%	14%	8%	13%	9%	13%	9%	15%	10%	15%	10%

Source: Prepared based on the harmonized CASEN surveys from Chile by the IDB.
n.d. Not Available. When the available data is insufficient to calculate the percentage.
Probabilistic weightings were used.

Table A2. Women's Participation by Occupation (%) and Average Hourly Earnings (ARS)

	1990		1992		1994		1996		1998		2000		2003		2006		2009		2011		2013		2015		2017		2020	
	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP	(%)	CLP
Professional and Technician	51%	508.9	43%	935.5	44%	1254.9	44%	2078.0	46%	2260.3	45%	2335.9	46%	2785.2	48%	3157.4	49%	3472.4	49%	4452.3	50%	5030.5	52%	4185.4	54%	4761.1	55%	1780.3
Director or Senior Official	16%	1846.4	30%	1722.7	32%	2392.9	33%	3342.0	37%	2713.2	33%	2263.3	44%	2864.2	40%	3379.1	33%	4491.5	48%	4896.7	45%	5079.6	47%	3370.6	43%	4589.7	49%	2867.3
Administrative and Intermediate Level	36%	419.5	58%	457.0	55%	664.8	60%	977.8	60%	988.9	62%	970.0	61%	1108.0	60%	1382.6	64%	1654.1	63%	1756.5	64%	2170.8	66%	2060.7	64%	2240.8	65%	851.3
Merchants and Salespersons	43%	422.6	48%	420.5	53%	643.2	53%	802.0	52%	880.0	53%	847.8	52%	854.7	55%	1184.4	55%	1654.7	57%	1791.9	60%	2207.9	59%	1720.1	61%	1834.8	60%	759.1
In Services	66%	187.9	63%	252.8	60%	400.1	58%	583.2	62%	678.6	63%	703.9	64%	822.1	63%	1036.3	61%	1399.1	67%	1514.2	67%	1689.7	66%	1659.5	66%	1879.3	65%	773.6
Agricultural Workers	12%	152.3	12%	252.5	13%	317.0	15%	474.5	15%	490.0	15%	447.9	17%	696.7	21%	740.6	22%	1074.8	25%	1181.0	24%	1301.5	26%	1279.9	27%	1499.4	30%	558.4
Non-Agricultural Laborers, Machinery Operators, and Transport Services	13%	275.8	13%	396.2	12%	574.3	11%	940.3	11%	1110.8	11%	837.6	11%	1113.6	12%	1301.9	12%	1933.4	11%	1956.3	11%	2281.4	12%	1767.5	13%	1878.7	15%	746.8
Others	18%	618.7	16%	293.2	26%	626.2	22%	1621.9	27%	1567.2	32%	1149.8	18%	1897.3	37%	2911.7	33%	2090.9	37%	1943.7	41%	5513.9	33%	3628.8	41%	2808.3	0%	0.0
Total	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0

Source: Own elaboration based on CASEN surveys from Chile harmonized by the IDB.

Probabilistic weightings are used.