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Socio-demographic Drivers of Labor Earnings Disparities across Income Quantiles in Chile and Mexico*

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Abstract This paper offers a comprehensive snapshot of the valuation of workers' socio-demographic characteristics within the Chilean and Mexican labor markets, focusing on variations across different income quantiles over time. Utilizing nationally and regionally representative household survey data, we employ quantile regression techniques to estimate Mincerian wage equations. Our analysis reveals that in both countries, male workers, individuals possessing at least some college education, wage earners, and residents of more populous areas consistently earn more than their counterparts who are female, less educated, self-employed, and living in less populated areas. Notably, the degree of these earnings disparities significantly varies across income quantiles and evolves over time. Considering the historical emphasis on market-driven rather than redistributive policies in these countries, our findings suggest the need for policy measures specifically designed to address each critical determinant of earnings across diverse income quantiles.

Keywords Labor earnings, Chile, Mexico, quantile regression.

JEL Classification J31, O15, O54.

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1. INTRODUCTION

Despite being categorized as a middle-income region, Latin America has exhibited pronounced income inequality, exceeding that of other regions for decades (Williamson, 2015). This persistent income inequality presents substantial economic and political challenges for the countries within the region and has sparked extensive scholarly discussions concerning its trajectory and determinants. Chile and Mexico, with their histories of moderate yet sustained economic growth and prolonged commitment to neoliberal economic policies, are pivotal for this analysis. Even with relatively stable economies, their Gini coefficients—though they have declined in recent decades—remain high by OECD standards.

Income inequality not only hampers economic development but also leads to significant political and social consequences. In Chile and Mexico, the persistence of market-oriented economic policies, in the absence of effective pro-equality measures, has incited widespread protests and social movements advocating for a fairer distribution of income. This was strikingly evident in the scale and intensity of the unrest in Chile in October 2019, which was dominated by calls for substantial reforms to tackle income inequality.

Despite its significance, scholarly research on income inequality trends in Chile and Mexico remains limited, especially studies that explore how labor markets evaluate workers' socio-demographic attributes. This paper aims to bridge this gap by analyzing trends in labor earnings inequality in both countries over the past two decades. It provides essential insights into variations in labor earnings across different income levels, categorizing individual workers by observable socio-demographic characteristics in Chile and Mexico over various periods. Our analysis primarily examines the relationship between labor earnings and factors such as gender, education, type of employment, and area of residence.

A deeper comprehension of these trends is crucial, particularly in countries like Chile and Mexico where market-oriented policies have tended to predominate over redistributive government interventions. As illustrated in Figure 1, these two nations exhibit only slight differences between the average Gini index estimates for equivalized household market income and that of household disposable income from 2017 to 2022. Additionally, the gradual decline of labor unions and the prevalence of informal employment without social security benefits underscore structural challenges that intensify income disparities across different strata (Sánchez-Ancochea, 2017).

The academic discussion regarding income inequality in Latin America is

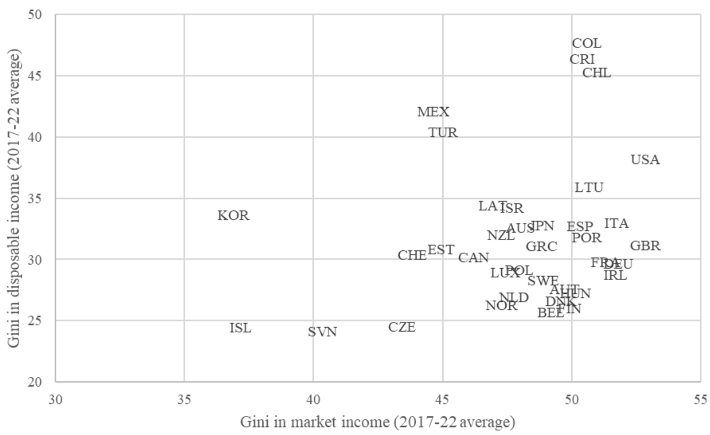


Figure 1: GINI INDEX OF HOUSEHOLD MARKET AND DISPOSABLE INCOME OF OECD COUNTRIES. This figure displays the positions of OECD countries based on their average Gini index estimates for equivalized household market income (x-axis) and household disposable income (y-axis) over the period 2017 to 2022. Source: Authors' own elaboration based on Solt (2020).

extensive, driven by the region's persistent income disparities and a significant inflection point observed in inequality trends since the early 2000s. Numerous studies have documented the evolution of income inequality in several Latin American countries (Gasparini *et al.*, 2009; Lopez-Calva and Lustig, 2010; Gasparini and Lustig, 2011; Lustig *et al.*, 2013; Cord *et al.*, 2017; Messina and Silva, 2021). These studies, which utilize diverse household-level survey data, generally concur that following periods of escalating or stagnant inequality, a notable inflection point occurred around the early 2000s through the early 2010s, instigating a phase of relative stabilization. This observation is robust across various periods, inequality measures, and data sources (Cord *et al.*, 2017). Recent inquiries have focused on the deceleration in inequality reduction across Latin America since the early 2010s, with scholars such as Gasparini et al. (2016) attributing this slowdown to factors including the diminishing real value of the minimum wage, reduced fertility rates among the poor, and worsening terms of trade.

The prevailing consensus in the existing literature asserts that the recent decrease in income inequality arises primarily from the convergence of labor earnings, especially due to a decline in the skill premium (Lopez-Calva and Lustig, 2010; Azevedo *et al.*, 2013; Rodriguez-Castelan *et al.*, 2016). As indicated in the World Bank (2011) and by Cord *et al.* (2017), labor earnings constitute approximately 80 percent of total household income in most Latin American countries, prompting numerous studies to examine shifts in labor income distribution across the region.

Country-specific studies focusing on the evolution of labor earnings inequality in Chile and Mexico are well-represented. Several researchers demonstrate that a reduction in the wage gap accounts for the majority of the decline in income inequality in Chile post-2000 (Parro and Reyes, 2017)and in Mexico since the 1990s (Esquivel and Cruces, 2011; Campos-Vazquez *et al.*, 2014).[1] Campos-Vazquez *et al.* (2014) further identify the drivers of the decrease in the hourly wage gap, arguing that it resulted primarily from an increased supply of high-skilled labor and a rise in demand for low-skilled workers, leading to a reduction in the skill premium. They contend that an expansion in manufacturing activities such as *maquiladoras*, catalyzed by NAFTA, fostered this change.

This pattern of narrowing wage disparities is also evident in broader studies across Latin America, where Lopez-Calva and Lustig (2010) identify decreasing wage gaps and more effective targeting of government transfer programs as central equalizing factors in countries such as Argentina, Brazil, and Peru. Azevedo *et al.* (2013) extend their analysis to thirteen Latin American countries, attributing roughly half of the reduction in inequality to decreases in labor income, with government transfers and pensions also contributing significantly.

The primary contributions of this paper are twofold. First, it offers a comprehensive snapshot of the valuation of workers' socio-demographic characteristics in the labor markets of Chile and Mexico across various earnings segments. Understanding the differential impacts of labor earnings determinants across distinct income groups is crucial for designing targeted and effective policy interventions, given that the influences of these determinants frequently vary significantly across income categories. Unlike previous studies that primarily examine mean effects, this paper underscores quantile effects. Second, while prior research often focuses on cross-sectional settings or shorter time spans, this paper elucidates the longer-term trends of labor earnings inequality in the 21st century through the use of repeated cross-sectional data. This methodology permits the identification of trends in income disparities across various segments of the

[1] Several important studies have examined income inequality in Chile, particularly focusing on the role of wage gaps, including Beyer *et al.* (1999) and Chumacero and Paredes (2005). However, these studies primarily analyze the pre-2000 period, a time when income inequality was on the rise. In contrast, this paper focuses on the post-2000 period, characterized by a declining trend in inequality.

income distribution.[2]

We estimate Mincerian wage equations for working individuals using quantile regression techniques, based on representative household survey data both nationally and regionally. Quantile regression techniques accommodate the plausible variation in the impact of socio-demographic variables across different income groups. In contrast, standard OLS methods neglect this heterogeneity and solely offer an estimate of the mean effect of socio-demographic variables, considerably weakening the analysis (Koenker and Bassett, 1978). We employ household income and expenditure data from Chile's Household Budget Survey (*Encuesta de Presupuestos Familiares*) supplied by the Chilean National Statistical Office (*Instituto Nacional de Estadísticas*) for the periods 2006-07, 2011-12, and 2016-17, and from Mexico's National Survey of Household Income and Expenditure (*Encuesta Nacional de Ingresos y Gastos de los Hogares*) provided by the National Statistics Institute of Mexico (*Instituto Nacional de Estadística y Geografía*) for the periods 2008, 2010, 2012, 2014, 2016, and 2018.

Studies such as Falaris (2008), Tensel and Bodur (2008), and Garza-Rodriguez et al. (2021) illuminate the relevance of quantile regression techniques for empirical analysis in this research. Falaris (2008) and Tensel and Bodur (2008) investigate wage evolution in relation to various worker characteristics using quantile regression models in Turkey and Panama, respectively. Garza-Rodriguez et al. (2021) examine the differential impacts of key poverty determinants across income distributions in Mexico.[3] Recent academic efforts in the realm of income inequality have increasingly adopted quantile regression techniques to analyze the diverse effects of crucial variables across income and poverty spectra in varied international settings such as Trinidad and Tobago, Rwanda, India, and Hong Kong (Kedir and Sookram, 2013; Habyarimana et al., 2015; Heshimati et al., 2019; Peng et al., 2019).

Our findings indicate that, in Chile and Mexico, male workers, individuals with at least some college education, wage earners, and residents of more populous regions consistently earn more than their female, less-educated, self-employed counterparts, and those residing in less populous regions. However, the magnitude of these labor earnings disparities varies significantly across income quantiles and over time in both countries. For instance, while the gender

[2] Admittedly, it is difficult to capture a fully systematic dynamic aspect of labor income inequality using repeated cross-sectional data. However, it still provides meaningful snapshots of labor income inequality trends over time, offering insights into broader patterns of change.

[3] While they rely on single cross-sectional data, we leverage repeated cross-sectional data to explore longer-term trends in labor income inequality, allowing us to observe changes across income strata over an extended period.

labor income gap tends to be most pronounced in the lowest quantile in both nations, it consistently narrows as one ascends to higher quantiles in Mexico, whereas in Chile, the quantile at which the male premium is most reduced varies across different time periods. We also observe a significant widening of the gender labor earnings gap across the upper quantiles over time in Chile.

In both countries, the skill premium for individuals with college education, compared to those with at most a high school diploma, generally increases towards the higher income quantiles. Additionally, the skill premium generally declines over time in both countries. The labor earnings penalties for self-employed workers relative to wage earners are less pronounced in the higher income quantiles, particularly in Mexico. Over time, Chile has experienced an increasing labor earnings penalty for independent work. In Mexico, however, the trend indicates a decreasing penalty for self-employed work from 2014 onwards, especially among the upper quantile groups. Lastly, in both countries, the regional labor income discrepancy is particularly notable among lower income groups.

This paper is structured as follows. The next section discusses the data used and delineates the empirical methodology implemented for analysis. Section 3 presents our empirical findings, while Section 4 concludes with policy implications.

2. DATA AND EMPIRICAL STRATEGY

For our empirical analysis, we utilize household income and expenditure data from Chile's Household Budget Survey (*Encuesta de Presupuestos Familiares*) provided by the Chilean National Statistical Office (*Instituto Nacional de Estadísticas*) for the periods 2006-07, 2011-12, and 2016-17, which is the most recent survey conducted before the COVID-19 pandemic. For Mexico, we use the National Survey of Household Income and Expenditure (*Encuesta Nacional de Ingresos y Gastos de los Hogares*) provided by the National Statistics Institute of Mexico (*Instituto Nacional de Estadística y Geografía)* for the periods 2008, 2010, 2012, 2014, 2016, and 2018, which is the latest survey conducted before the COVID-19 pandemic.

As detailed in the Introduction, Chile and Mexico have consistently pursued market-driven policies to address income inequality, distinguishing them from other Latin American nations like Argentina and Brazil. Their similar institutional frameworks make these two countries ideal candidates for comparative analysis, alleviating concerns about differing institutional factors influencing outcomes. We focus on pre-COVID data to analyze longer-term tendencies

Year	Variables	Mean	Std. Dev.	Min	Max	Median	IQR	N
2016–17	Real monthly income	665,225	834,832	2,415	23,500,000	402,494	504,039	13,077
	Age	39.23	8.73	25	54	39	15	13,077
	Male	0.52	0.50	0	1			13,077
	College	0.48	0.50	0	1			13,077
	Wage earner	0.76	0.42	0	1			13,077
	Santiago	0.53	0.50	0	1			13,077
	Household size	3.85	1.69	1	17	4		13,077
2011–12	Real monthly income	517,534	738,886	260	29,800,000	309,833	395,633	9,979
	Age	39.47	8.62	25	54	40	15	9,979
	Male	0.57	0.50	0	1			9,979
	College	0.28	0.45	0	1			9,979
	Wage earner	0.78	0.41	0	1			9,979
	Santiago	0.42	0.49	0	1			9,979
	Household size	4.06	1.73	1	15	4		9,979
2006–07	Real monthly income	513,884	685,256	3,391	13,100,000	299,516	384,059	10,186
	Age group	8.4	1.65	6	11	8	3	10,186
	Male	0.60	0.49	0	1			10,186
	College	0.34	0.47	0	1			10,186
	Wage earner	0.76	0.43	0	1			10,186
	Santiago	0.65	0.48	0	1			10,186
	Household size	4.18	1.83	1	30	4		10,186

Table 1: DESCRIPTIVE STATISTICS: CHILE'S HOUSEHOLD BUDGET SURVEY. Monthly income includes both earned and business income; Real monthly income was calculated by applying the annual Consumer Price Index (CPI) (with 2010 as the base year, set at 100) to monthly income. Age groups for the period 2006-07 are defined in 5-year increments: 6 represents ages 25 to 29 years, 7 represents ages 30 to 34 years, 8 represents ages 35 to 39 years, 9 represents ages 40 to 44 years, 10 represents ages 45 to 49 years, and 11 represents ages 50 to 54 years. For Male, 0 refers to female and 1 refers to male. For College, 1 refers at least some college education and 0 refers to at most a high school diploma. For Wage earner, 0 refers to self-employed workers and 1 refers to wage earners. For Santiago, 1 refers to Santiago and 0 refers to non-Santiago areas.

in labor market trends without the confounding effects of the pandemic. The COVID-19 pandemic caused significant disruptions to labor markets, potentially obscuring the structural patterns of earnings determinants that are the focus of this study. While the absence of pandemic-related effects constrains our capacity to investigate how COVID-19 has impacted labor earnings and inequalities, the selected time frame remains representative of broader, stable trends in the labor market.

Household-level surveys generate comparable data concerning monthly income and various socio-demographic characteristics of household members in

Year	Variables	Mean	Std. Dev.	Min	Max	Median	IQR	N
2018	Real monthly income	6,216	11,838	0.72	899,153	4,477	5,232	55,929
	Age	38.94	8.41	25	54	39	14	55,929
	Male	0.58	0.49	0	1			55,929
	College	0.19	0.39	0	1			55,929
	Wage earner	0.63	0.48	0	1			55,929
	Bigger city	0.40	0.49	0	1			55,929
	Household size	4.25	1.84	1	22	4		55,929
2016	Real monthly income	6,188	11,125	0.8	1,146,429	4,406	5,326	53,526
	Age	38.86	8.32	25	54	39	14	53,526
	Male	0.58	0.49	0	1			53,526
	College	0.18	0.39	0	1			53,526
	Wage earner	0.63	0.48	0	1			53,526
	Bigger city	0.42	0.49	0	1			53,526
	Household size	4.29	1.85	1	21	4		53,526
2014	Real monthly income	6,190	13,196	0.7	1,166,458	4,223	5,444	14,964
	Age	38.93	8.2	25	54	39	14	14,964
	Male	0.59	0.49	0	1			14,964
	College	0.20	0.40	0	1			14,964
	Wage earner	0.65	0.48	0	1			14,964
	Bigger city	0.47	0.50	0	1			14,964
	Household size	4.35	1.85	1	17	4		14,964
2012	Real monthly income	5,948	9,081	0.91	242,311	3,892	5,908	6,640
	Age	38.86	8.27	25	54	39	14	6,640
	Male	0.59	0.49	0	1			6,640
	College	0.17	0.37	0	1			6,640
	Wage earner	0.55	0.50	0	1			6,640
	Bigger city	0.40	0.49	0	1			6,640
	Household size	4.39	1.94	1	21	4		6,640
2010	Real monthly income	6,526	8,979	1	314,558	4,567	5,768	20,295
	Age	38.73	8.32	25	54	38	14	20,295
	Male	0.60	0.49	0	1			20,295
	College	0.21	0.40	0	1			20,295
	Wage earner	0.64	0.48	0	1			20,295
	Bigger city	0.54	0.50	0	1			20,295
	Household size	4.50	1.98	1	21	4		20,295
2008	Real monthly income	8,151	17,736	0.92	1,585,608	5,260	6,174	24,486
	Age	38.45	8.23	25	54	38	13	24,486
	Male	0.61	0.49	0	1			24,486
	College	0.19	0.39	0	1			24,486
	Wage earner	0.67	0.47	0	1			24,486
	Bigger city	0.55	0.50	0	1			24,486
	Household size	4.61	2.06	1	43	4		24,486

Table 2: DESCRIPTIVE STATISTICS: MEXICO'S HOUSEHOLD BUDGET SURVEY. Monthly income includes both earned and business income; Real monthly income was calculated by applying the annual Consumer Price Index (CPI) (with 2010 as the base year, set at 100) to monthly income. For Male, 0 refers to female and 1 refers to male. For College, 1 refers at least some college education and 0 refers to at most a high school diploma. Bigger city has a value of 1 if an individual lives in a city that has a population bigger than 100,000 and 0 otherwise.

both Chile and Mexico, including sex, education level, and employment type. Tables 1 and 2 present descriptive statistics for these variables of interest, together with age, area of residence, and household size based on individual-level data sourced from the respective Chilean and Mexican samples utilized in our analysis. Our sample is restricted to working individuals aged between 25 and 54 who receive earned or business income on a monthly basis.

We estimate Mincerian wage equations for those who receive earned or business income on a monthly basis employing quantile regression techniques as proposed by Koenker and Bassett (1978). This method is chosen due to the potential variability in the effects of socio-demographic covariates across different income brackets. For instance, a tertiary education may prove more beneficial to high-income workers, whose roles typically necessitate such qualifications, whereas it may surpass the requirements for most low-income positions. Similarly, the negative impact of gender may be distinctly pronounced within a certain stratum of the income distribution. For example, the influence of gender on labor income might be exacerbated by a glass ceiling effect in high-income groups relative to other income groups.

Standard OLS techniques overlook this heterogeneity and provide only an average effect of socio-demographic covariates, significantly weakening the analysis (Garza-Rodriguez *et al.*, 2021). Furthermore, if OLS-based estimation is performed separately for specific quantiles, it may inadvertently introduce sample selection bias by only including observations from those quantiles. In contrast, quantile regression offers a more comprehensive characterization of the regression relationship than OLS-based estimation, as it allows the parameters to vary at different points in the conditional distribution of the dependent variable (Koenker and Bassett, 1978; Falaris, 2008; Garza-Rodriguez *et al.*, 2021). Additionally, it includes all observations in the sample, thus overcoming the limitations associated with OLS (Falaris, 2008; Tansel and Bodur, 2012).

The natural logarithm of real monthly income is regressed on variables such as age, sex, education level, employment type, area of residence, and number of household members. The following quantile regression analysis equation has been estimated in this study:

$$\ln y_i = \beta_0^{(\tau)} + \beta_i^{(\tau)} x_i + \varepsilon_i^{(\tau)}. \tag{1}$$

In (1), y_i denotes the individual's real monthly income, and x_i represents a vector of independent variables including age, sex, education level, employment type, area of residence, and number of household members. $\varepsilon_i^{(\tau)}$ refers to the error term, and τ indicates a specific quantile for y_i within the range $0 < \tau < 1$.

An estimate of the quantile regression coefficient can be acquired by solving (2) at a specified quantile τ.

$$\min \frac{1}{n} \left(\sum_{y_i \geq \beta^{(\tau)} x_i} \tau \left| y_i - \beta^{(\tau)} x_i \right| + \sum_{y_i < \beta^{(\tau)} x_i} (1-\tau) \left| y_i - \beta^{(\tau)} x_i \right| \right). \tag{2}$$

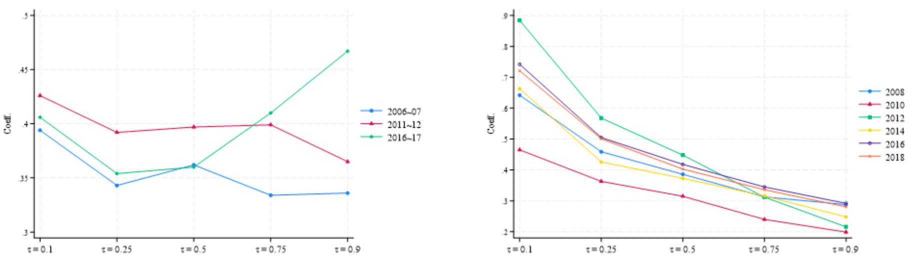
3. EMPIRICAL RESULTS

3.1. "WHOLE" SAMPLE ANALYSIS

In this section, we graphically represent the results of the estimated quantile regressions for each variable of interest. The complete quantile regression results for Chile are presented in Tables A.1 through A.3, while those for Mexico are provided in Tables A.4 through A.9 in the Appendix A.

Figure 2 illustrates the variations in the coefficient for the gender dummy variable (male) within our Mincerian wage equation across different income quantiles and time periods in Chile and Mexico. It is clear that, all else being equal, male workers consistently earn more than their female counterparts in both countries. The coefficients for the gender dummy variable are positive and statistically significant across all quantiles and during all periods analyzed in each country. These findings augment the extensive literature on the gender income gap in Latin America (Ñopo, 2012; Frisancho and Queijo von Heideken, 2022), underscoring the persistent issues of employment segregation, inferior job quality, and precarious working conditions faced by women. Despite significant advances in political and labor participation since the early 2000s, the gender earnings gap remains substantial in the region.

Furthermore, our analysis reveals that the severity of the gender labor income disparity varies across quantiles. In both countries, the gender labor earnings gap is most pronounced at the lowest quantile, except in Chile during the 2016–17 period, when the disparity is more pronounced at the upper quantiles. However, the patterns of this disparity differ between the two countries. In Mexico, the gender gap consistently decreases as one ascends to higher quantiles. In Chile, the quantile at which the male premium is highest varies across time periods—appearing at $\tau = 0.1$ during the 2006–07 and 2011–12 periods, but shifting to $\tau = 0.9$ in the 2016–17 period. Temporal analysis indicates that in Chile, the gender gap widened across the upper quantiles, while it first widened between 2006–07 and 2011–12, before narrowing at the 10th, 25th, and 50th percentiles. Conversely, in Mexico, no clear temporal trend is evident, although the income disparity at higher quantiles appears less volatile.

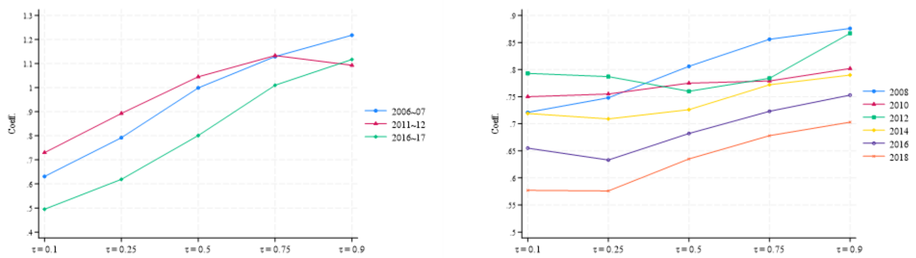


(a) Chile (b) Mexico

Figure 2: COEFFICIENTS FOR MALE DUMMY VARIABLES IN CHILE AND MEXICO. The figure displays the coefficients for the variable "Male" at $\tau = 0.1, 0.25, 0.5, 0.75$, and 0.9 across multiple time periods for Chile and Mexico. Complete regression results corresponding to these estimates are provided in Appendix A.

We next explore the income disparity between workers possessing at least some college education and those with a maximum of a high school diploma. This educational dichotomy allows us to directly examine the role of skill premiums. Prior discussions have noted a reduction in these premiums as a key factor in reducing labor income inequality across Latin America (Esquivel and Cruces, 2011; Lopez-Calva and Lustig, 2010; Azevedo *et al.*, 2013; Campos-Vazquez *et al.*, 2014; Rodriguez-Castelan *et al.*, 2016). Figure 3 illustrates how the coefficient for the educational attainment dummy variable (some college) varies within our wage equation across different income quantiles and time periods in both countries. In both nations, with other factors held constant, there is a significant and sustained labor earnings gap favoring individuals with some college education. The coefficients for the college dummy variable are positive and statistically significant across all quantiles and years analyzed in both countries.

In Chile, the skill premium increases toward the higher income quantiles, except during the 2011-2012 period when it narrows at the highest quantile. In Mexico, the premium for college education increases as one moves from $\tau = 0.25$ upward. These findings are consistent with multiple studies that suggest returns to education rise at higher income quantiles (Martins and Pereira, 2004; Budría and Telhado Pereira, 2005; Falaris, 2008; Tansel and Bodur, 2012). Generally, the skill premium diminishes over time in both countries, which can be attributed to an increased relative supply of educated labor, further supported by Campos-Vazquez *et al.* (2014), who link a decrease in skill premiums to a significant reduction in wage inequality.



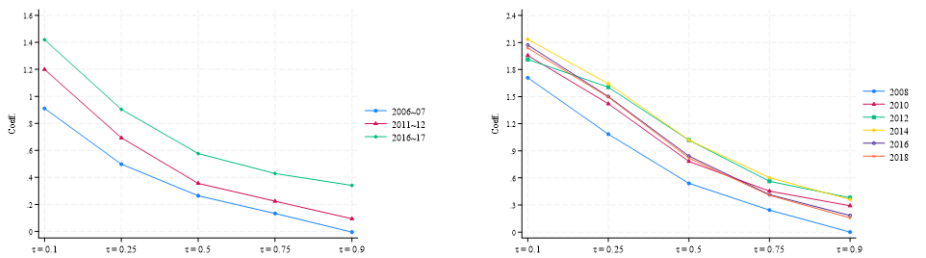
(a) Chile (b) Mexico

Figure 3: COEFFICIENTS FOR COLLEGE DUMMY VARIABLES IN CHILE AND MEXICO. The figure displays the coefficients for the variable "College" at $\tau = 0.1, 0.25, 0.5, 0.75$, and 0.9 across multiple time periods for Chile and Mexico. Complete regression results corresponding to these estimates are provided in Appendix A.

Next, we focus on the labor earnings disparities between wage earners and self-employed workers. Figure 4 illustrates the variation in the coefficient for the wage earner dummy variable within our wage equation across different income quantiles and time periods in the two countries. Controlling for other factors, wage earners consistently outearn self-employed individuals. The coefficients for the wage earner dummy variables are both positive and statistically significant across all quantiles and throughout the periods examined in each country. Given that a significant proportion of self-employed workers operate within the informal sector,[4] these findings are consistent with the segmented labor market theory, which suggests that informal employment—often adopted as a survival strategy—generally results in lower earnings compared to formal employment (Perry et al., 2007). Narita (2020) further points out that self-employment in Latin America is frequently associated with informality, as most self-employed individuals neither contribute to social security nor operate registered businesses. These self-employed workers typically manage single-person businesses and exhibit lower levels of education, factors typically associated with lower productivity. Meghir *et al.* (2015) also classify unregistered employees and the self-employed as part of the informal sector.

An additional observation is that although self-employed workers generally

[4]Meghir *et al.* (2015) define the informal sector as encompassing employment arrangements that operate outside the scope of formal labor regulations. These include the absence of protections such as minimum wage laws, firing regulations, and access to social security benefits, regardless of whether individuals are self-employed or wage earners.



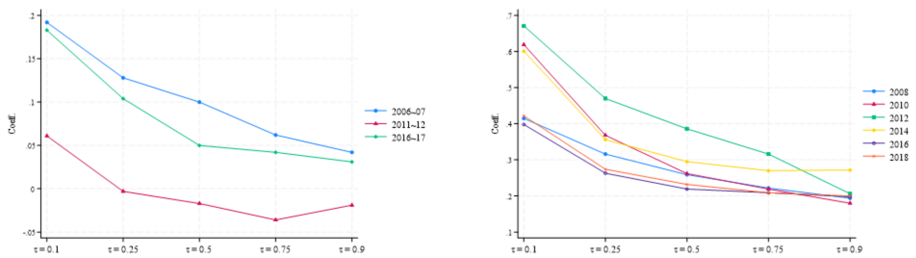
(a) Chile (b) Mexico

Figure 4: COEFFICIENTS FOR WAGE EARNER DUMMY VARIABLES IN CHILE AND MEXICO. The figure displays the coefficients for the variable “Wage earner” at $\tau = 0.1, 0.25, 0.5, 0.75$, and 0.9 across multiple time periods for Chile and Mexico. Complete regression results corresponding to these estimates are provided in Appendix A.

incur labor earnings penalties relative to wage earners, this disparity lessens at higher income quantiles, with a more pronounced effect observed in Mexico. This pattern partially aligns with Fields (1990), which characterizes the informal sector as heterogeneous, comprising both a voluntarily informal upper-tier and a compulsorily informal lower-tier, with the latter often engaged in informal activities out of necessity. While self-employment in Latin America predominantly falls within the compulsorily informal tier, as described by Narita (2020), it is crucial to recognize that for some individuals, the choice between self-employment and waged employment may reflect personal decisions rather than merely structural limitations. Consequently, attributing all observed earnings disparities solely to informality risks oversimplifying the complex dynamics of self-employment.

Furthermore, temporal analysis reveals distinct trends in the earnings disparities between wage earners and self-employed workers in the two countries. In Chile, the gap has widened across all income quantiles, indicating an increasing economic penalty for independent work. Conversely, in Mexico, although the labor earnings disparities generally expanded between 2008 and 2014, it subsequently narrowed in most quantiles from 2014 onwards, particularly in the higher income brackets. This trend suggests a decreasing penalty for self-employed work in recent years, particularly among the upper quantile groups.

Finally, we examine the labor earnings disparities based on the area of residence. Figure 5 illustrates the variation in the coefficient for the area dummy



(a) Chile (b) Mexico

Figure 5: COEFFICIENTS FOR AREA DUMMY VARIABLES IN CHILE AND MEXICO. The figure displays the coefficients for the variable "Bigger city" at $\tau = 0.1, 0.25, 0.5, 0.75$, and 0.9 across multiple time periods for Chile and Mexico. Complete regression results corresponding to these estimates are provided in Appendix A.

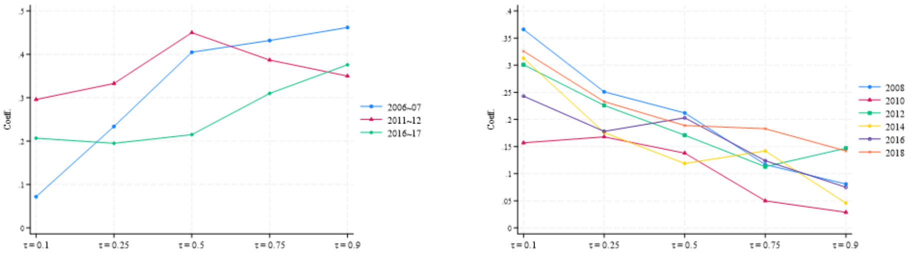
variable within our wage equation, across various income quantiles and time periods in the two countries. For Chile, the analysis focuses on the labor earnings gap between workers residing in the capital city, Santiago, and those in other areas.[5] In Mexico, the comparison involves residents in areas with a population exceeding 100,000 and those in less populous regions.[6] In both countries, workers living in more populous areas generally earn more than those in less populous ones. The regional labor earnings gap is particularly pronounced among lower income groups. In Chile, the penalties associated with area of residence declined between 2006-07 and 2011-12 but increased between 2011-12 and 2016-17. In Mexico, the labor earnings inequality on a regional basis has shown a downward trend since the early 2010s.

3.2. SUB-SAMPLE ANALYSIS

While our empirical strategy leverages data from the entire population to elucidate broad patterns in labor earnings determinants across different quan-

[5]While it may be overly simplistic to classify Santiago as a "more populous area" and non-Santiago areas as "less populous areas," Santiago is by far the largest city in Chile, with a population of nearly 5 million. In contrast, the second most populous city, Puente Alto, has fewer than 600,000 residents.

[6]Regional classifications differ between Chile and Mexico, making direct comparisons challenging. These classifications are dictated by the structure of the respective household survey data, which do not allow for a fully harmonized regional definition. The differing definitions may affect cross-country comparability, particularly in the interpretation of regional earnings disparities. Thus, while broad patterns can be observed, direct comparisons should be made with caution.



(a) Chile (b) Mexico

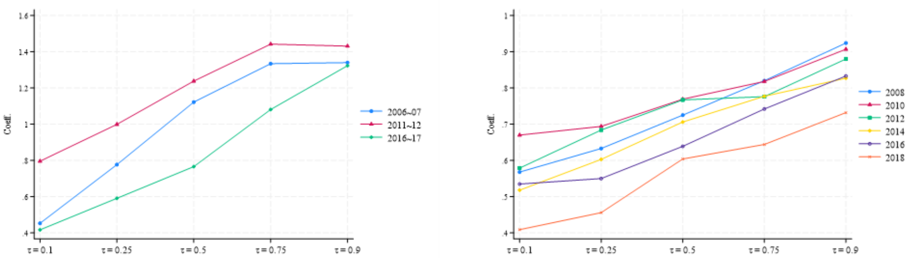
Figure 6: COEFFICIENTS FOR "MALE" IN SUB-SAMPLE ANALYSIS. The figure displays the coefficients for the variable "Male" at $\tau = 0.1, 0.25, 0.5, 0.75$, and 0.9 across multiple time periods for Chile and Mexico. The analysis is based on a sub-sample restricted to individuals for whom College = 1, Wage earner = 1, and Bigger city = 1.

tiles of the income distribution, we acknowledge the potential for significant heterogeneity within specific sub-groups. For instance, prior research has established marked differences in earnings distributions between genders. Moreover, the economic value attributed to a college degree may fluctuate between younger and older workers. Similarly, the gender labor earnings gap tends to vary markedly between more and less populous regions. To address these disparities, we perform additional sub-group analyses, imposing restrictions on the dataset to generate more homogeneous sub-samples.

First, we analyze gender-specific earnings disparities within the sub-sample restricted to wage earners aged 25 to 54 living in more populous areas, with at least some college education (College=1; Wage earner=1; Bigger city=1; Aged 25 to 54, Figure 6).[7] This sub-sample primarily consists of individuals who are likely to be "better off" in terms of labor earnings potential. We find that, even within this sub-sample, male workers consistently earn more than their female counterparts in both Chile and Mexico.

In Chile, restricting the sample to those with better earnings potential reveals a more pronounced gender earnings gap from the middle to upper quantiles across all periods. This finding contrasts with the prior analysis with the "whole" sample, where disparities tended to be more severe at the lower end of the earnings distribution except for the most recent period. In Mexico, however, the pattern remains largely consistent with the "whole" sample: females face the greatest labor earnings penalties in the lowest quantile, and the gender gap

[7]Complete regression results for the entire sub-sample analysis are available upon request.



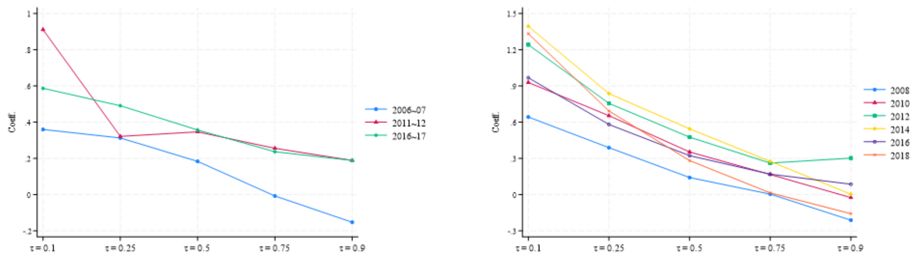
(a) Chile (b) Mexico

Figure 7: COEFFICIENTS FOR "COLLEGE" IN SUB-SAMPLE ANALYSIS. The figure displays the coefficients for the variable "College" at $\tau = 0.1, 0.25, 0.5, 0.75$, and 0.9 across multiple time periods for Chile and Mexico. The analysis is based on a sub-sample restricted to individuals for whom Male=1, Wage earner=1, and Bigger city=1.

narrows as one moves up the income distribution. Over time, Chile exhibits a widening gender labor earnings gap between 2006-07 and 2011-12, followed by a narrowing of the gap from 2011-12 to 2016-17 at the 10th, 25th, and 50th percentiles, mirroring trends observed in the "whole" sample. However, at the 75th percentile, the gender gap decreased over time, whereas at the 90th percentile, it first narrowed and then widened again. Conversely, no clear temporal trend is evident in Mexico.

Subsequently, we investigate how labor earnings vary between individuals possessing some college education and those with lower educational levels, within the sub-sample restricted to male wage earners aged 25 to 54 residing in more populous regions (Male=1; Wage earner=1; Bigger city=1; Aged 25 to 54, Figure 7). The findings coincide with those observed in the "whole" sample for both countries: a significant and persistent labor income disparity favoring individuals with some college education and a tendency for this educational premium to escalate towards higher income quantiles. In Mexico, the premium for a college education becomes more pronounced starting from the lowest quantile. Similar to the "whole" sample, the educational premium generally diminishes over time in both countries.

Third, we examine the earnings disparities between wage earners and self-employed individuals within the sub-sample restricted to males aged 25 to 54, who have attended some college and reside in more populous areas (Male=1; College=1; Bigger city=1; Aged 25 to 54, Figure 8). In alignment with the findings from the "whole" sample, wage earners generally earn more than self-



(a) Chile (b) Mexico

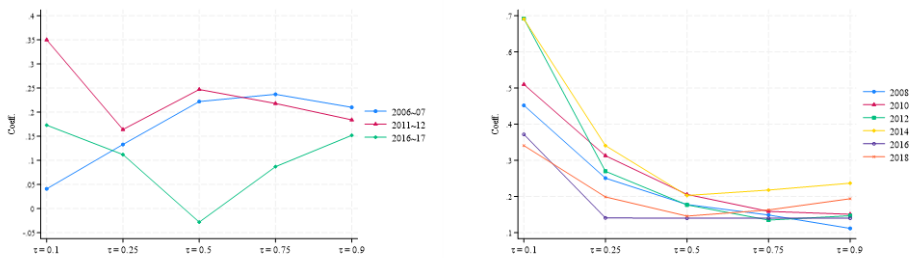
Figure 8: COEFFICIENTS FOR "WAGE EARNER" IN SUB-SAMPLE ANALYSIS. The figure displays the coefficients for the variable "Wage earner" at $\tau = 0.1, 0.25, 0.5, 0.75$, and 0.9 across multiple time periods for Chile and Mexico. The analysis is based on a sub-sample restricted to individuals for whom Male=1, College=1, and Bigger city=1.

employed individuals. This gap tends to diminish towards higher income quantiles, particularly in Mexico, where self-employed individuals in select high quantiles surpass wage earners in earnings. Like the "whole" sample, over time, increasing earnings penalties associated with self-employment are observed in Chile, while in Mexico, despite a widening income disparity between 2008 and 2014, it has narrowed across most quantiles since 2014.

Lastly, we analyze labor earnings disparities between individuals residing in more and less populous areas within the sub-sample limited to male wage earners aged 25 to 54 with some college education (Male=1; College=1; Wage earner=1; Aged 25 to 54, Figure 9). Consistent with the findings from the "whole" sample, individuals residing in more populous areas generally earn higher wages than those in less populous areas. The regional labor earnings gap in Mexico becomes more pronounced at the lowest quantile, whereas in Chile, clear patterns of regional income disparities across quantiles disappear. Over time, the regional gap in Mexico has declined since the mid-2010s, while in Chile, no distinct temporal trend is observed.

For additional robustness checks, we divide each of the four sub-samples into three distinct age groups—25 to 34, 35 to 44, and 45 to 54—and perform another sub-sample analysis within these age groups. The results in Appendix B are largely similar to the overall trends observed in the sub-sample analysis for both countries.[8]

[8] We present the results in graphs in Appendix B. Complete regression results are available



(a) Chile (b) Mexico

Figure 9: COEFFICIENTS FOR "BIGGER CITY" IN SUB-SAMPLE ANALYSIS. The figure displays the coefficients for the variable "Bigger city" at $\tau = 0.1, 0.25, 0.5, 0.75$, and 0.9 across multiple time periods for Chile and Mexico. The analysis is based on a sub-sample restricted to individuals for whom Male=1, College=1, and Wage earner=1.

4. CONCLUSION

We investigate factors influencing labor earnings across various income groups in Chile and Mexico, aiming to provide a nuanced understanding of recent trends in labor income inequality. By examining critical socio-demographic variables - such as gender, education, employment type, and area of residence - and employing quantile regression techniques, we elucidate the varying impacts of these determinants across income distribution. Our findings indicate that in both countries, male workers, individuals with higher educational levels, wage earners, and residents of more populous areas tend to earn significantly more than their counterparts.

Notably, the degree of these labor earnings disparities varies significantly across income quantiles and over time. Our analysis identifies several key patterns. The gender labor earnings gap tends to be most pronounced in the lowest quantile in both countries. Labor earnings disparities favoring workers with some college education intensify in higher quantiles, suggesting an increasing skill premium at upper income levels. While self-employed workers generally incur earnings penalties relative to wage earners, this disparity decreases in higher quantiles. Additionally, the regional labor earnings gap is particularly severe among lower income groups in both countries.

These detailed findings highlight the complex nature of labor income in-

upon request.

equality and underscore the necessity for precise policy prescriptions across diverse segments of the income distribution to promote more equitably labor market outcomes. Given the historical focus on market-driven policies over redistributive strategies in Chile and Mexico, there is an urgent need for policies specifically crafted to address each crucial determinant of labor income across varying income levels.

In light of our findings, we propose a set of policy recommendations tailored to the key determinants of labor income at different income levels. For instance, addressing gender income disparities in Chile requires distinct strategies for different income groups. At the highest end of the income distribution, the widening gender labor earnings gap points to a potential "glass ceiling" effect, as seen in other contexts such as Sweden (Albrecht *et al.*, 2003) and Europe more broadly (Arulampalam *et al.*, 2007; Christofides *et al.*, 2013).

In response to these challenges, the Chilean government has recently implemented several policy measures aimed at reducing gender disparities, particularly at the upper end of the income distribution. Notably, Law No. 21.356, enacted in 2021, mandates that no more than 60% of board members in state-owned or state-majority companies belong to the same gender. This legislative reform was introduced after the launch of the *Agenda Mujer* program in 2018, which represents a comprehensive package of reforms to advance gender equality. Among its various initiatives, this program has prioritized increasing women's representation in senior leadership roles and traditionally male-dominated fields. This policy focus is particularly relevant, as the gender earnings penalty becomes more pronounced with age.

In Mexico, policy attention should focus more on lower income quantiles, where the gender labor earnings gap is more pronounced. According to Rodriguez Perez and Meza Gonzalez (2021), the narrowing of this gap from 2005 to 2017 was chiefly attributed to reduced wage disparities in cognitive tasks, while disparities in manual task wages remained unchanged.[9] Given that cognitive tasks typically command higher wages (Acemoglu and Autor, 2011), individuals involved in these activities often belong to higher income quantiles.

This underscores the importance of investing in human capital development to enhance women's access to better-compensated employment opportunities.

[9] According to Acemoglu and Autor (2011), cognitive tasks are divided into non-routine cognitive and routine cognitive tasks. The former tasks require problem-solving skills, intuition and creativity. Examples of occupations that perform these tasks include professional, technical and managerial jobs such as medical, legal and sales work. The latter tasks require setting limits and tolerances as an indicator since they follow precise and well-understood procedures. Examples include bookkeepers, bank tellers and librarians.

To address this issue, Mexico should scale up existing initiatives that provide formal skills certification and vocational training tailored to women, particularly those in lower-income segments. A key initiative in this regard is run by the National Council for Standardization and Certification of Labor Skills (CONOCER), which facilitates the acquisition of recognized professional credentials aimed at enhancing employability.

Concerning educational attainment, our analysis in both countries demonstrates that a significant skill (college) premium exists in the upper quantiles, which typically involve positions requiring enhanced skills. This finding is consistent with the expectation that sectors demanding higher skills would exhibit a greater skill premium. Although there has been a decline in the skill premium over time, addressing this inequality necessitates policies that bolster higher education and training for unskilled workers. Additionally, given that the skill premium tends to increase with age, policy efforts should place particular emphasis on older workers, ensuring they have opportunities for continuous skill development and career advancement. Conversely, our results show an anomalously large college premium in the lowest quantile in Mexico, an outcome that is counterintuitive, considering that workers in this quantile are typically employed in less skill-intensive sectors. This surprising finding calls for further research to understand the factors driving this phenomenon.

Regarding the type of employment, the substantial earnings penalty faced by self-employed workers in the lower income quantiles in Chile and Mexico underscores the urgency of policies that extend social security benefits to those in informal employment, which is common in low-paid self-employed positions. Formal workers not only secure higher wages but also benefit from more comprehensive coverage by social protection schemes (OECD, 2024). Self-employed individuals in the informal sector generally evade paying taxes and insurance contributions, including those allocated for future pensions, thereby intensifying social challenges and contributing to tax evasion (ILO, 2019).

In the long term, it is crucial for governments to enhance the labor market's ability to absorb the formal job demands of informal workers. Nonetheless, it remains uncertain whether the labor market can accommodate this excess workforce (Cantillo *et al.*, 2022). Considering that most informal workers earn below the minimum wage, formalization would necessitate an increase in their earnings. Policymakers must assess whether the minimum wage and current market dynamics restrict the effective distribution of labor resources.

Another consideration is the productivity of the informal workers and their potential for integration into the formal sector. Implementing policies that encourage transitioning into the formal sector, while also improving their productivity, is crucial. An exemplar is the Chilean National Mining Company (ENAMI)'s sustained efforts to formalize informal copper miners in artisanal and small-scale mining operations. A fundamental component of ENAMI's strategy entails a robust incentive system, supported by a clearly defined pricing structure for miners and a price stabilization mechanism. Acting as a regulator and a market participant—serving as a buyer, producer, and trader—ENAMI has effectively encouraged artisanal and small-scale miners to formalize, thereby enhancing their market accessibility (Atienza *et al.*, 2023).

Policy implications can also be drawn regarding regional labor income disparities. Chile stands out as one of the most centralized nations, with a substantial concentration of its economic activities in Santiago. This centralization exacerbates educational disparities, particularly in higher education. In 2020, half of all university enrollments occurred in the metropolitan region where the capital is situated (Aroca and Eberhard, 2019). This centralization highlights the necessity for policies that encourage investment and enhance access to funding, essential resources, and educational opportunities in areas outside Santiago, which are crucial for reducing regional labor earnings disparities, especially among impoverished older age groups.

In Mexico, the pronounced regional labor income disparities observed in the lower quantiles underscore the urgent need to address rural poverty as a strategic priority to mitigate regional income inequality, especially among older age groups. According to IFAD (2020), approximately 25% of Mexico's population resides in rural areas, yet these regions account for nearly two-thirds of the country's extreme poverty. Moreover, the prevalence of extreme poverty among rural indigenous populations is particularly severe, with 40% living in extreme poverty, compared to 20% among non-indigenous rural residents.

These targeted interventions aim to address the multifaceted nature of labor income inequality in Chile and Mexico, potentially offering valuable insights for other countries grappling with similar challenges in their pursuit of more equitable income distribution. Our research also highlights areas where further research is necessary. Future studies should focus on developing more detailed mechanisms to explain the principal findings of this paper, thereby deepening the understanding of the underlying dynamics driving labor income disparities across different quantiles. Additionally, it is essential to update the data to reflect the most recent trends.

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A. "WHOLE" SAMPLE ANALYSIS

This section presents the complete quantile regression results for Chile (covering the periods 2006–07, 2011–12, and 2016–17) and Mexico (covering the periods 2008, 2010, 2012, 2014, 2016, and 2018). Figures 2 through 5 are based on these regression estimates.

Variable	$\tau = 0.1$	$\tau = 0.25$	$\tau = 0.5$	$\tau = 0.75$	$\tau = 0.9$	Linear
Age	0.057***	0.049***	0.056***	0.077***	0.098***	0.082***
	(0.009)	(0.006)	(0.005)	(0.007)	(0.009)	(0.004)
Male	0.406***	0.354***	0.360***	0.410***	0.467***	0.447***
	(0.031)	(0.014)	(0.013)	(0.014)	(0.026)	(0.014)
College	0.495***	0.619***	0.801***	1.010***	1.117***	0.844***
	(0.029)	(0.016)	(0.015)	(0.021)	(0.015)	(0.015)
Wage earner	1.420***	1.904***	0.577***	0.429***	0.341***	0.695***
	(0.072)	(0.031)	(0.022)	(0.021)	(0.033)	(0.021)
Santiago	0.183***	0.104***	0.050***	0.042***	0.031	0.093***
	(0.027)	(0.020)	(0.016)	(0.015)	(0.027)	(0.014)
Household size	-0.012**	-0.022***	-0.032***	-0.034***	-0.031***	-0.026***
	(0.005)	(0.031)	(0.005)	(0.006)	(0.009)	(0.004)
Observations	13,077	13,077	13,077	13,077	13,077	13,077

Table A.1: QUANTILE AND LINEAR REGRESSION RESULTS: CHILE 2016-17. Bootstrap standard errors are presented in parentheses. Statistical significance levels are denoted as *,** , and *** corresponding to 10%, 5%, and 1%, respectively.

Variable	$\tau = 0.1$	$\tau = 0.25$	$\tau = 0.5$	$\tau = 0.75$	$\tau = 0.9$	Linear
Age	0.052***	0.040***	0.047***	0.070***	0.093***	0.066***
	(0.005)	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)
Male	0.426***	0.392***	0.397***	0.399**	0.365***	0.449***
	(0.031)	(0.021)	(0.013)	(0.016)	(0.023)	(0.016)
College	0.730***	0.893***	1.045***	1.133***	1.093***	0.990***
	(0.035)	(0.022)	(0.017)	(0.022)	(0.032)	(0.019)
Wage earner	1.200***	0.693***	0.356***	0.224***	0.094***	0.497***
	(0.056)	(0.040)	(0.020)	(0.022)	(0.027)	(0.025)
Santiago	0.061**	-0.003	-0.017	-0.036**	-0.019	-0.003
	(0.025)	(0.014)	(0.016)	(0.016)	(0.026)	(0.016)
Household size	-0.012***	-0.019***	-0.030***	-0.039***	-0.044***	-0.027***
	(0.005)	(0.005)	(0.005)	(0.006)	(0.009)	(0.005)
Observations	9,979	9,979	9,979	9,979	9,979	9,979

Table A.2: QUANTILE AND LINEAR REGRESSION RESULTS: CHILE 2011-12. Bootstrap standard errors are presented in parentheses. Statistical significance levels are denoted as *,** , and *** corresponding to 10%, 5%, and 1%, respectively.

Variable	$\tau = 0.1$	$\tau = 0.25$	$\tau = 0.5$	$\tau = 0.75$	$\tau = 0.9$	Linear
Age	0.026***	0.033***	0.047***	0.068***	0.086***	0.060***
	(0.007)	(0.005)	(0.005)	(0.009)	(0.013)	(0.005)
Male	0.394***	0.343***	0.362***	0.334***	0.336***	0.401***
	(0.031)	(0.016)	(0.014)	(0.022)	(0.029)	(0.016)
College	0.631***	0.792***	0.999***	1.129***	1.218***	0.971***
	(0.033)	(0.026)	(0.025)	(0.027)	(0.042)	(0.018)
Wage earner	0.911***	0.498***	0.264***	0.133***	-0.005	0.364***
	(0.060)	(0.026)	(0.020)	(0.030)	(0.045)	(0.022)
Santiago	0.192***	0.128***	0.100***	0.062***	0.042	0.136***
	(0.030)	(0.022)	(0.016)	(0.021)	(0.030)	(0.016)
Household size	-0.026***	-0.028***	-0.032***	-0.034***	-0.032***	-0.033***
	(0.007)	(0.006)	(0.004)	(0.005)	(0.005)	(0.004)
Observations	10,186	10,186	10,186	10,186	10,186	10,186

Table A.3: QUANTILE AND LINEAR REGRESSION RESULTS: CHILE 2006-07. Bootstrap standard errors are presented in parentheses. Statistical significance levels are denoted as *,** , and *** corresponding to 10%, 5%, and 1%, respectively.

Variable	$\tau = 0.1$	$\tau = 0.25$	$\tau = 0.5$	$\tau = 0.75$	$\tau = 0.9$	Linear
Age	0.050***	0.029***	0.024***	0.031***	0.042***	0.036***
	(0.004)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Male	0.721***	0.501***	0.403***	0.336***	0.281***	0.582***
	(0.022)	(0.009)	(0.005)	(0.010)	(0.012)	(0.009)
College	0.577***	0.576***	0.635***	0.678***	0.703***	0.683***
	(0.018)	(0.013)	(0.011)	(0.015)	(0.016)	(0.011)
Wage earner	2.038***	1.495***	0.820***	0.408***	0.157***	0.957***
	(0.028)	(0.017)	(0.009)	(0.011)	(0.014)	(0.011)
Bigger city	0.422***	0.274***	0.232***	0.209***	0.200***	0.344***
	(0.017)	(0.010)	(0.008)	(0.009)	(0.008)	(0.009)
Household size	-0.033***	-0.027***	-0.024***	-0.020***	-0.020***	-0.028***
	(0.005)	(0.004)	(0.002)	(0.002)	(0.002)	(0.003)
Observations	55,929	55,929	55,929	55,929	55,929	55,929

Table A.4: QUANTILE AND LINEAR REGRESSION RESULTS: MEXICO 2018. Bootstrap standard errors are presented in parentheses. Statistical significance levels are denoted as *,** , and *** corresponding to 10%, 5%, and 1%, respectively.

Variable	$\tau = 0.1$	$\tau = 0.25$	$\tau = 0.5$	$\tau = 0.75$	$\tau = 0.9$	Linear
Age	0.047***	0.029***	0.024***	0.032***	0.047***	0.035***
	(0.004)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)
Male	0.742***	0.505***	0.418***	0.345***	0.292***	0.590***
	(0.020)	(0.014)	(0.009)	(0.010)	(0.011)	(0.010)
College	0.655***	0.633***	0.682***	0.723***	0.753***	0.728***
	(0.019)	(0.012)	(0.011)	(0.011)	(0.021)	(0.011)
Wage earner	2.072***	1.502***	0.842***	0.415***	0.184***	0.979***
	(0.026)	(0.018)	(0.013)	(0.006)	(0.014)	(0.012)
Bigger city	0.398***	0.263***	0.219***	0.209***	0.198***	0.317***
	(0.016)	(0.010)	(0.008)	(0.005)	(0.013)	(0.009)
Household size	-0.035***	-0.031***	-0.026***	-0.027***	-0.024***	-0.031***
	(0.006)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
Observations	53,526	53,526	53,526	53,526	53,526	53,526

Table A.5: QUANTILE AND LINEAR REGRESSION RESULTS: MEXICO 2016. Bootstrap standard errors are presented in parentheses. Statistical significance levels are denoted as *,** , and *** corresponding to 10%, 5%, and 1%, respectively.

Variable	$\tau = 0.1$	$\tau = 0.25$	$\tau = 0.5$	$\tau = 0.75$	$\tau = 0.9$	Linear
Age	0.057***	0.041***	0.044***	0.059***	0.069***	0.055***
	(0.008)	(0.006)	(0.004)	(0.005)	(0.006)	(0.006)
Male	0.663***	0.426***	0.373***	0.316***	0.248***	0.512***
	(0.050)	(0.021)	(0.014)	(0.014)	(0.019)	(0.019)
College	0.719***	0.709***	0.726***	0.772***	0.790***	0.790***
	(0.027)	(0.017)	(0.021)	(0.022)	(0.022)	(0.020)
Wage earner	2.136***	1.643***	1.019***	0.603***	0.361***	1.138***
	(0.077)	(0.040)	(0.034)	(0.027)	(0.024)	(0.023)
Bigger city	0.601***	0.356***	0.295***	0.270***	0.272***	0.427***
	(0.043)	(0.017)	(0.018)	(0.019)	(0.028)	(0.018)
Household size	-0.040***	-0.033***	-0.031***	-0.036***	-0.036***	-0.038***
	(0.009)	(0.005)	(0.005)	(0.004)	(0.007)	(0.005)
Observations	14,964	14,964	14,964	14,964	14,964	14,964

Table A.6: QUANTILE AND LINEAR REGRESSION RESULTS: MEXICO 2014. Bootstrap standard errors are presented in parentheses. Statistical significance levels are denoted as *,** , and *** corresponding to 10%, 5%, and 1%, respectively.

Variable	$\tau = 0.1$	$\tau = 0.25$	$\tau = 0.5$	$\tau = 0.75$	$\tau = 0.9$	Linear
Age	0.042**	0.040***	0.038***	0.039***	0.053***	0.042***
	(0.016)	(0.010)	(0.010)	(0.009)	(0.010)	(0.009)
Male	0.884***	0.568***	0.448***	0.312***	0.216***	0.625***
	(0.073)	(0.037)	(0.037)	(0.032)	(0.035)	(0.031)
College	0.793***	0.787***	0.760***	0.784***	0.867***	0.837***
	(0.064)	(0.037)	(0.041)	(0.034)	(0.042)	(0.036)
Wage earner	1.913***	1.605***	1.019***	0.563***	0.380***	1.080***
	(0.078)	(0.057)	(0.043)	(0.028)	(0.052)	(0.033)
Bigger city	0.671***	0.470***	0.386***	0.316***	0.206***	0.511***
	(0.086)	(0.038)	(0.024)	(0.018)	(0.030)	(0.030)
Household size	-0.032**	-0.033***	-0.026***	-0.016**	-0.021***	-0.025***
	(0.013)	(0.009)	(0.008)	(0.007)	(0.008)	(0.008)
Observations	6,640	6,640	6,640	6,640	6,640	6,640

Table A.7: QUANTILE AND LINEAR REGRESSION RESULTS: MEXICO 2012. Bootstrap standard errors are presented in parentheses. Statistical significance levels are denoted as *,** , and *** corresponding to 10%, 5%, and 1%, respectively.

Variable	$\tau = 0.1$	$\tau = 0.25$	$\tau = 0.5$	$\tau = 0.75$	$\tau = 0.9$	Linear
Age	0.070***	0.050***	0.040***	0.049***	0.067***	0.053***
	(0.007)	(0.005)	(0.003)	(0.004)	(0.008)	(0.005)
Male	0.465***	0.363***	0.315***	0.240***	0.199***	0.397***
	(0.042)	(0.017)	(0.014)	(0.013)	(0.020)	(0.016)
College	0.750***	0.755***	0.775***	0.779***	0.802***	0.815***
	(0.023)	(0.017)	(0.014)	(0.015)	(0.024)	(0.017)
Wage earner	1.956***	1.421***	0.783***	0.454***	0.292***	0.963***
	(0.041)	(0.029)	(0.023)	(0.016)	(0.024)	(0.018)
Bigger city	0.619***	0.368***	0.262***	0.219***	0.180***	0.402***
	(0.033)	(0.019)	(0.013)	(0.010)	(0.020)	(0.015)
Household size	-0.029***	-0.024***	-0.030***	-0.027***	-0.030***	-0.034***
	(0.011)	(0.004)	(0.003)	(0.004)	(0.005)	(0.004)
Observations	20,295	20,295	20,295	20,295	20,295	20,295

Table A.8: QUANTILE AND LINEAR REGRESSION RESULTS: MEXICO 2010. Bootstrap standard errors are presented in parentheses. Statistical significance levels are denoted as *,** , and *** corresponding to 10%, 5%, and 1%, respectively.

Variable	$\tau = 0.1$	$\tau = 0.25$	$\tau = 0.5$	$\tau = 0.75$	$\tau = 0.9$	Linear
Age	0.023***	0.021***	0.035***	0.055***	0.067***	0.036***
	(0.006)	(0.003)	(0.004)	(0.004)	(0.005)	(0.004)
Male	0.642***	0.459***	0.386***	0.313***	0.288***	0.517***
	(0.035)	(0.017)	(0.012)	(0.015)	(0.019)	(0.014)
College	0.721***	0.748***	0.806***	0.856***	0.876***	0.861***
	(0.033)	(0.016)	(0.017)	(0.020)	(0.021)	(0.016)
Wage earner	1.710***	1.085***	0.540***	0.240***	0.0	0.696***
	(0.054)	(0.025)	(0.017)	(0.013)	(0.019)	(0.017)
Bigger city	0.415***	0.316***	0.259***	0.222***	0.194***	0.352***
	(0.027)	(0.014)	(0.008)	(0.011)	(0.013)	(0.013)
Household size	-0.039***	-0.029***	-0.026***	-0.029***	-0.034***	-0.038***
	(0.006)	(0.003)	(0.003)	(0.002)	(0.005)	(0.003)
Observations	24,486	24,486	24,486	24,486	24,486	24,486

Table A.9: QUANTILE AND LINEAR REGRESSION RESULTS: MEXICO 2008. Bootstrap standard errors are presented in parentheses. Statistical significance levels are denoted as *,** , and *** corresponding to 10%, 5%, and 1%, respectively.

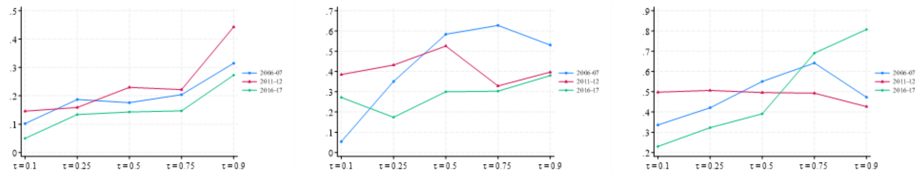
B. SUB-SAMPLE ANALYSIS BY AGE GROUP

This section illustrates the coefficients for the variables “Male”, “College”, “Wage earner”, and “Bigger city” at $\tau = 0.1, 0.25, 0.5, 0.75$, and 0.9 across various time periods for Chile and Mexico. Each of the four sub-samples has been further divided into three distinct age groups—25 to 34, 35 to 44, and 45 to 54—and an additional age-specific sub-sample analysis has been conducted.

While the results are largely similar to the overall trends observed in the sub-sample analysis for both countries, some additional insights emerge. In Chile, the gender penalty and the college premium become more pronounced in the upper quantiles as individuals move towards older age groups. Another notable finding is that the earnings gap between wage earners and self-employed workers in the upper quantiles becomes particularly pronounced among individuals aged 45 to 54. Similarly, the earnings gap between individuals residing in Santiago and those in non-Santiago regions widens in the upper quantiles as workers age.

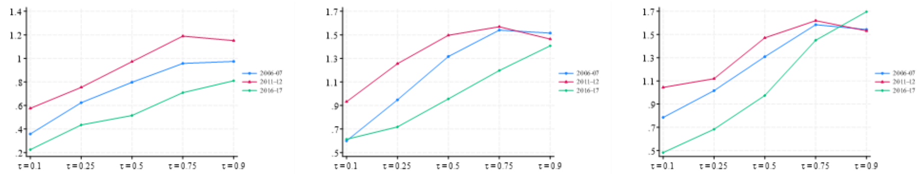
In Mexico, the college premium increases with age, as evidenced by larger coefficients for “College” across all quantiles in older cohorts. A similar pattern emerges for the “Bigger city” premium, where earnings differentials between more and less populous areas tend to be larger for older age groups, suggesting that location-based earnings advantages accumulate over time.

B.1. CHILE



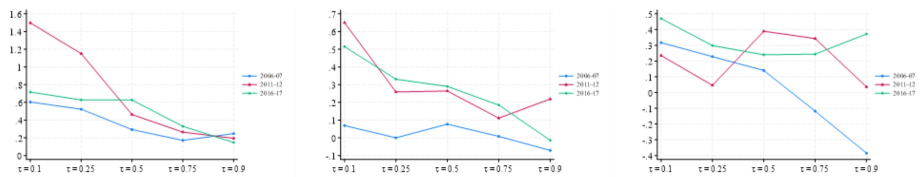
(a) Aged 25 to 34 (b) Aged 35 to 44 (c) Aged 45 to 54

Figure B.1: COEFFICIENTS FOR MALE" (COLLEGE=1; WAGE EARNER=1; BIGGER CITY=1).



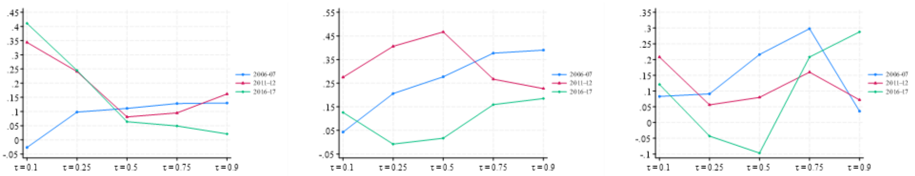
(a) Aged 25 to 34 (b) Aged 35 to 44 (c) Aged 45 to 54

Figure B.2: COEFFICIENTS FOR "COLLEGE" (MALE=1; WAGE EARNER=1; BIGGER CITY=1).



(a) Aged 25 to 34 (b) Aged 35 to 44 (c) Aged 45 to 54

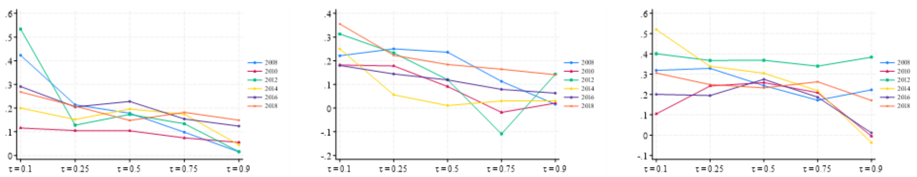
Figure B.3: COEFFICIENTS FOR "WAGE EARNER" (MALE=1; COLLEGE=1; BIGGER CITY=1).



(a) Aged 25 to 34 (b) Aged 35 to 44 (c) Aged 45 to 54

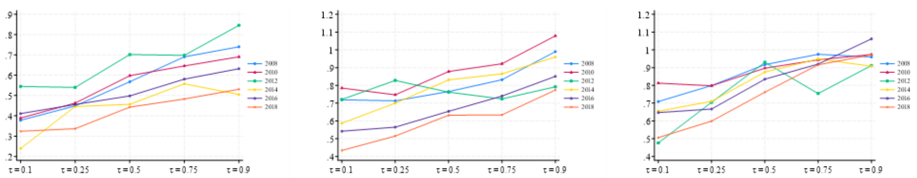
Figure B.4: COEFFICIENTS FOR "BIGGER CITY" (MALE=1; COLLEGE=1; WAGE EARNER=1).

B.2. MEXICO



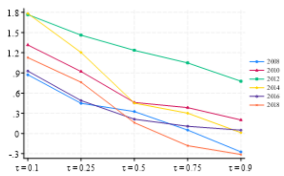
(a) Aged 25 to 34 (b) Aged 35 to 44 (c) Aged 45 to 54

Figure B.5: COEFFICIENTS FOR "MALE" (COLLEGE=1; WAGE EARNER=1; BIGGER CITY=1).

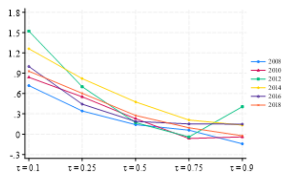


(a) Aged 25 to 34 (b) Aged 35 to 44 (c) Aged 45 to 54

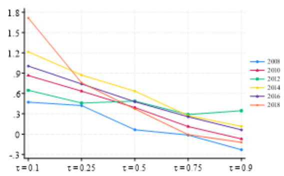
Figure B.6: COEFFICIENTS FOR "COLLEGE" (MALE=1; WAGE EARNER=1; BIGGER CITY=1).



(a) Aged 25 to 34

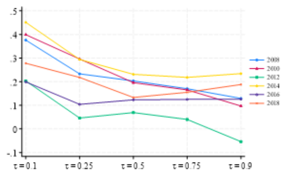


(b) Aged 35 to 44

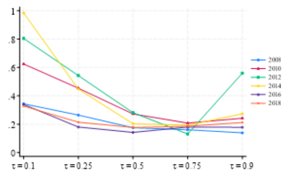


(c) Aged 45 to 54

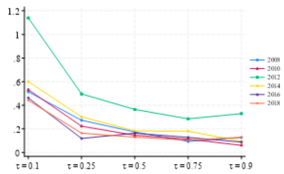
Figure B.7: COEFFICIENTS FOR "WAGE EARNER" (MALE=1; COLLEGE=1; BIGGER CITY=1).



(a) Aged 25 to 34



(b) Aged 35 to 44



(c) Aged 45 to 54

Figure B.8: COEFFICIENTS FOR "BIGGER CITY" (MALE=1; COLLEGE=1; WAGE EARNER=1).