Historia Agraria, 89 • Abril 2023 • pp. 223-246 • DOI 10.26882/histagrar.089e04c © 2023 The Author(s)

Income poverty and sectoral income differentials in Chilean agricultural sector (1935–1968)

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KEYWORDS: **Chile, income poverty, sectoral income differentials, rural labor.**

JEL CODES: **N01, N36, N56.**

The main aim of this study is to analyse sectoral income differentials and income poverty in Chilean agricultural between 1935 and 1968. The food share method of the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) is used as a methodological approach. The conclusions are as follows: (1) contrary to what the existing literature suggests, the Chilean agricultural sector was not entirely an agrarian subsistence economy; (2) the cost of agricultural labour began to increase in the mid-1930s, but less than in the industrial and manufacturing sectors in urban areas; (3) maintaining tenants above the poverty line in rural areas from 1935 to 1955 was as expensive as paying the average wage of blue-collar workers; and (4) if days worked per year and household size are considered, agricultural wages rose but remained below the poverty line for rural areas.

Pobreza de ingresos y diferenciales sectoriales de ingresos en el sector agrícola chileno, 1935-1968

PALABRAS CLAVE: **Chile, pobreza de ingresos, diferenciales sectoriales de ingresos, trabajo rural.**

CÓDIGOS JEL: **N01, N36, N56.**

El objetivo principal de este estudio es examinar las diferencias sectoriales de ingresos y la pobreza de ingresos en el sector agrícola chileno entre 1935 y 1968. El food share method *de la Comisión Económica para América Latina y el Caribe de las Naciones Unidas (CEPAL) es utilizado como enfoque metodológico. Las conclusiones son las siguientes: a) contrariamente a lo que sugiere la literatura, el sector agrícola chileno no era enteramente una economía agraria de subsistencia; b) el costo del trabajo agrícola aumenta desde mediados de la década de 1930, pero este incremento no es tan marcado como en los sectores industrial y manufacturero de las zonas urbanas; c) mantener a un inquilino viviendo por encima de la línea de la pobreza para zonas rurales entre 1935 y 1955 era igual de costoso que pagar el salario promedio de trabajadores urbanos formales; y d) si se consideran los días trabajados por año y el tamaño de las familias, los salarios agrícolas crecen pero no alcanzan el nivel de la línea de la pobreza para zonas rurales.*

Received: 2021-07-01 ▪ Revised: 2022-01-14 ▪ Accepted: 2022-02-03

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1. DISCUSSION

The real wages of agricultural workers and rural/urban sectoral income differentials have not played a central role in Chilean historiography. Economic history has focused on the role of agriculture in the national economy, particularly during the so-called *nitrate era* (1880-1930), while scholars specializing in agricultural history have centered the debate on whether rural society from 1930 onward remained traditional or was part of the state-led industrialization process (Robles, 2020). Overall, researchers agree that living standards of agricultural workers in mid-twentieth-century Chile were low. Some authors even suggest that most of workers in non-urban areas lived close to subsistence levels. Tinsman, for instance, stressed that "farmers fought for the most meager survival. They started to work at an early age, had an average life expectancy of 45, and suffered from the highest rates of illiteracy, malnutrition, and infant mortality" (Tinsman, 2009: 30). According to Bellisario, workers of the external peasant enterprises "were –and still are– the typical manifestation of an agrarian economy of subsistence" (Bellisario, 2006: 178).

Most researchers assume that the traditional socioeconomic structure inherited from colonial times remained unchanged until the Agrarian Reform (Bengoa, 2015a, 2015b; Bauer, 1994). It is argued that "up to the early 1960s the hacienda system had not finished its transition to modern capitalism" (Bellisario, 2006: 170), and that workers in non-urban areas "were left out of the political transactions" (Mallon, 2004: 13). According to this dualistic approach, "wage-workers and the industrial bourgeoisie (the modern classes) did not seek alliances with the poor rural classes to pressure landowners for a structural transformation of the obsolete agricultural system" (Bellisario, 2006: 193).

Recently, these arguments have been challenged. Robles argue that from 1930 onward "the hacienda system began transitioning to agrarian capitalism through a Junker road" (Robles, 2020: 100). Robles and Kay (2018) stress that modernization was indeed a crucial aspect of the post-1930 period. Kay, in a previous work, had already shown that "the landlord enterprise managed to dominate the hacienda system by modernizing the expanding its economy and effectively proletarianizing the internal peasant enterprise" (Kay, 1978: 123). However, despite their critique, Robles and Kay agree with the existing literature regarding the existence of low living standards in the agricultural sector. They argue that the landowners' veto power over agricultural policy and the employment supply provided by the external peasant economies pushed wages down. The increase in agricultural productivity did not cause "a similar increase in agricultural wages, whose difference was appropriated by the landowners" (Robles & Kay, 2018: 118).

Thus, most of researchers agree that agricultural wages were "lower than other productive areas [and] tended to stagnate and diverge even further since the mid-1950s" (Rojas, 2016: 149). As stated by Bellisario, "if we compare the annual income of inquilinos with those of other workers, we find that [it] was an extremely low income (Bellisario, 2006: 173). In Bengoa's studies, as argued by Robles, agricultural workers "remained a quiet and submissive peasantry until the twentieth century" (Robles, 2020: 103). Nevertheless, the authors have not provided quantitative evidence on the labor value of agricultural workers in the medium- and long-term. There have been some attempts to fill these gaps in recent years (Rodríguez Weber, 2013; Reyes, 2015), but the real and comparative values of agricultural wages remain unclear. For instance, according to Salazar and Pinto, "the average wage of the industrial sector was three times higher than in the agricultural sector" (Salazar & Pinto, 2002: 180), but the argument is based on an unpublished study quoted by Mamalakis (1976: 219). Neither Salazar nor Pinto nor Mamalakis used any reference to the cost of living in non-urban areas. As stated by Reyes, "to date there is little empirical information on the incomes of agricultural workers" (Reyes, 2015: 122).

2. SOURCES AND METHODOLOGY

Robles claims that Chilean scholars should "be able to study Chilean rural history in ways that would make it relevant for foreign researchers. Thus, scholarship on rural Chile would not only be 'useful' for comparative purposes, but also by offering transportable knowledge, that is, insights that can be adopted, or adapted, to study other countries" (Robles, 2020: 114). Following this recommendation, this article proposes a general methodological approach to study income poverty in rural areas in mid-twentieth-century Latin America.

Scholars have used two procedures to estimate real wages from an historical perspective: first, elaborate an index of real wages; and second, divide nominal wages by the cost of a "recommended" consumption basket. The former has been used by Rodríguez Weber (2013) and Reyes (2015). Matus (2012) carried out the same procedure to estimate real wages during the nitrate era (1880-1930). The latter was initially proposed by Allen (2001) to study the divergence in European wages from the Middle Ages to the First World War and then applied to analyze the Great Divergence between the most advanced economic regions of Europe and Asia (Allen *et al.*, 2011). Over the past decade, several historians have attempted to apply this methodological approach (Allen, 2015) to Latin American reality. The studies focus on Argentina (Santilli, 2020; Santilli & Gelman, 2016; Gelman & Santilli, 2018), Uruguay (Moraes & Thul, 2018), Chile (Llorca & Na-

varrete, 2015), Peru (Arroyo, 2014; Zegarra, 2020), Venezuela (Arroyo, 2013), Mexico (Challú & Gómez Galvarriato, 2015), and Brazil (Pereira, 2020). Essentially, the authors divide nominal wages by the cost of the *money price of subsistence*. This *subsistence line* is estimated by designing a basic consumption basket containing food items (carbohydrate sources, fat products, animal protein, and legumes) and non-food items (cloth, soap, and fuel). Real wages are expressed in *welfare ratios* (WRs): the number of *subsistence baskets* that workers were able to obtain with nominal wages in a certain time and place.

This methodological approach has been useful for studying real wages from a global and historical perspective, though there are certain limitations that should be highlighted. It is difficult to select products in a consumption basket that contains a reduced group of food items. The use of four-product baskets, common in recent literature, makes the cost of the subsistence basket extremely sensitive to the price volatility of certain products, such as wheat or meat. Historians utilize four-product baskets because there is no reliable information on national consumer prices prior to the emergence of national statistical offices. The WR method was mainly designed for the study of pre-modern economies, in which the diet was based on cereals. In mid-twentieth-century Latin America, the situation was different, and there is no methodological reason to persist in the utilization of four-product baskets.

In this article, the methodological approach of the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) (Altimir, 1978, 2001) was used. This approach was chosen for two reasons. First, the money price of subsistence initially proposed by Allen (2001) is inadequate for application to mid-twentieth-century Latin America. The WR obtained using Allen's methodology is similar to what the ECLAC defines as *extreme poverty*. The WR could appropriately express the historical oscillations in the value of the labor force, as could the index of real wages, but these are less helpful when linking wages and absolute poverty. Allen's methodology has been designed to study the historical transition from pre-modern to modern economies in Europe and Asia, while ECLAC's proposal has been specifically designed to analyze the incidence of poverty in Latin American countries since the 1950s. Some of ECLAC's theoretical definitions are still used in the official statistics of Latin American countries, especially in Chile.

Second, ECLAC's proposal was chosen over the Allen's methodology because a more complete and varied food basket was used. As discussed below, the four-product food basket is inappropriate for mid-twentieth-century Latin American standards, and carries important methodological difficulties. In this study, the basic food basket proposed by ECLAC (1990) was utilized. However, at this point, we should distinguish between short

and long routes. The *short route*, implemented by Altimir and the ECLAC's studies, consists of assessing the cost of the minimum food budget in a given base year and then shifting the poverty line backward using indicators of medium-term growth and the consumer price index for food. The relationship between food and non-food requirements is maintained in constant proportions over time. This "highly debatable" (Altimir, 2001: 123) criterion was preferred because of the lack of information on consumer prices. The *long route*, instead, consists of assessing the cost of the minimum food budget corresponding to each year using consumer prices reported by official statistics. This *historiographical route* allows us to have a more precise estimation of the cost of the poverty line. However, it is important to mention that in certain periods, there are no data on certain goods included in the basic food basket proposed by ECLAC. Therefore, we had to adapt the food basket as to the bundle of goods included in the official statistics, maintaining the standard reference requirement of protein and calories of both the Food and Agriculture Organization (FAO) and the ECLAC. This historiographical preference is also *highly debatable* since food baskets change over time. However, these changes are insignificant. For instance, in certain years, the price of *queso mantecoso* (buttery cheese) is available, while in others, *queso mantecoso* is replaced by *queso fresco* (fresh cheese). In any case, as analyzed in the next section, the cost of the poverty line for rural areas proposed in this study is slightly higher, but not to a significant degree, than the official living wage for agricultural workers.

In this article, the consumer prices of Santiago de Chile (Instituto Nacional de Estadísticas, 1932-68) are used to estimate the cost of the minimum food budgets (see Table 1). The poverty lines for rural areas were drawn at 1.75 times the cost of the basic food basket, while the minimum private consumption budget used as poverty line for urban areas was assessed as twice the basic cost of food. Essentially, what is proposed is to estimate the cost of the poverty line by "blowing up the food budget to obtain a consumption budget that may cover all basic needs currently attended to privately, based on the food/non-food allocation of resources by households which spend on food just the amount of the minimum food budget" (Altimir, 2001: 117). The minimum food budget for rural areas was set at 25% below that of the capital city. The number of consumption units attributed to each additional person is 0.7 for adults and 0.5 for children (Mancero, 2001). Consequently, the household poverty line for a four-member family was assessed as 2.7 times the cost of the individual poverty line. Despite recent criticism of the food sharing method, we consider that this procedure is appropriate for the study of mid-twentieth-century Latin America: "There are arguments for and against using nutrient intakes as an indicator of wellbeing. As with the food share, a practical advantage in countries with high rates of inflation, or inadequate price data, is that distributional data on food-energy intakes do not need to be adjusted for inflation" (Ravallion, 2016: 178).

Nominal wage data used in this research come from Rodríguez Weber (2013) and Reyes (2015). Rodríguez Weber (2013: 35-7) utilizes the 1950 wage data (International Labour Organization, 1950) and agricultural and consumer prices (1935-71) to estimate the money value of non-monetary payments (*regalías*). Reyes uses the annual reports of the Blue-collar Insurance Fund (Caja de Seguro Obrero) and the Social Security Service (Servicio de Seguridad Social) to collect wage data. Nominal wages are deflated (including non-monetary payments) by Reyes (2015) using an index that comprises the agricultural GDP deflator (80%) and the index of consumer prices (20%) of the National Statistics Institute.

TABLE 1
Basic food basket

Food item	Grams	Calories	Proteins
Flour wheat	11.2	39.1	0.9
Bread	291.4	813.0	18.8
Rice	36.1	130.9	2.3
Pasta	20.6	73.9	2.5
Mote	11.6	15.2	0.4
Cow meat	53.5	93.2	12.6
Lamb meat	6.2	16.1	1.6
Congrio colorado	18.1	13.9	2.8
Cheese	1.2	4.3	0.3
Eggs	19.7	27.5	2.3
Milk	91.4	52.1	2.9
Butter	1.5	11.0	0.0
Fat	3.3	23.7	0.0
Oil	35.0	313.7	0.0
Beans	11.9	37.8	2.5
Potatoes	125.0	77.0	3.1
Sugar	68.1	262.3	0.0
Salt	10.9	0.0	0.0
TOTAL	**816.8**	**2,004.8**	**53.1**

Source: author's elaboration from ECLAC (1990) and Instituto Nacional de Estadísticas (1932-68).

It is worth mentioning that the standard approach of economic historians consists in estimating the cost of the poverty line by using the official consumer price index (CPI) and then backdating the minimum food budgets of a given base year. In this article, however, "a bundle of goods corresponding to the level of consumption at the poverty line" (Altimir, 2001: 122) is used. This "is augmented by a modest allowance for non-food"

(Lipton & Ravallion, 1995: 2576). We suggest that this procedure allows us to obtain a more precise estimation of the poverty line.

There are two different official CPI for food for the period covered by this research: the National Statistical Office CPI (1928-57) and the Central Bank CPI (1960-2000). These two indices were elaborated using different food baskets. Therefore, it is difficult to make an historical comparison. For this reason, we suggest that assessing the cost of the minimum food budget corresponding to each year using consumer prices is a better alternative than the standard approach. Indeed, as seen in Table A1, the cost of the minimum food budget obtained using retail prices is slightly lower than that derived from CPI. Hence, real wages are higher. Nonetheless, even though this method resulted in lower poverty lines, most of the rural workers, as shown in the next section, lived in poverty.

The ECLAC suggests the use of retail prices in the capital city to establish the value of the minimum food budget: "Minimum food budgets […] estimated by CEPAL (1991) at 1988 prices for the capital cities or the urban areas were expressed at current prices of the reference periods of the income distribution data to be used in the estimates, by means of the CPI for food of each country" (Altimir, 2001: 122). This decision was based on the lack of retail price data in regional areas. To date, it is not clear whether there are substantial differences in retail prices between capital cities and agricultural regions. Table 2 shows the procedure adopted here, using the retail prices of a traditional agricultural zone of central Chile (Talca). The cost of the household poverty line ($798) was slightly higher than the average nominal wage of agricultural workers ($710) (Rodríguez Weber, 2013). The WR (0.89) is similar to that obtained using the retail prices of the capital city (0.83), as shown in Figure 1. The retail prices of Talca were lower than those of the capital city, but not to a significant degree.

To sum up, living below the poverty line means that income is insufficient to allow for an adequate livelihood. The definition of *adequate livelihood*, according to ECLAC, is relative and depends on the food share of urban households merely meeting the food budget. The money price of subsistence, instead, is based on a normative basket of goods needed to maintain "a barely acceptable (in both the social and biological senses) standard of living" (Allen, 2001: 427). If a subsistence line is used and the WRs are below the money price of subsistence for a long period of time, we could have the false impression that the population was not able to sustain itself. However, despite these differences, the concepts of *subsistence* and *poverty* are often used interchangeably in the literature. Allen, for instance, bases his proposal on the *money price of subsistence* and a *bare-bones basket*, but nonetheless indicates that "a welfare ratio greater than one indicates an income above the poverty line, while a ratio less than one means the family is in poverty" (Allen, 2001: 425).

TABLE 2

Poverty line in rural areas (Talca, 1960)

Item	Grams	Calories	Proteins	Grams in statistics	Retail prices in 1960	Price of the basket
Flour	11.2	39.1	0.9	1,000	126	1.4
Bread	291.4	813	18.9	1,000	150	43.7
Rice	36.1	131	2.3	1,000	300	10.8
Pasta	20.6	73.9	2.5	500	191	7.9
Mote	11.6	15.2	0.4	1,000	190	2.2
Cow meat	53.5	93.2	12.6	1,000	610	53.5
Lamb	6.2	16.1	1.6	1,000	865	5.4
Fish	18.1	13.9	2.8	1,000	833	15.1
Cheese	1.2	4.3	0.3	1,000	1,140	1.4
Eggs	19.7	27.5	2.3	60	52	17.1
Milk	91.4	52.1	2.9	1,000	90	8.2
Butter	1.5	11	0	1,000	1,982	2.9
Fat	3.3	23.7	0	1,000	709	2.4
Oil	35	313.7	0	1,000	621	21.7
Beans	11.9	37.8	2.5	1,000	243	2.9
Potatoes	125	77	3.1	1,000	117	14.6
Sugar	68.1	262.3	0	1,000	198	13.5
Salt	10.9	0	0	1,000	69	0.8
Total	**816.8**	**2,004.8**	**53.1**			**225.4**
Minimum food budget in rural areas						169
Poverty line in rural areas						295.8
Household poverty line in rural areas						798.7
Nominal wage						710
Welfare ratio						0.9

Source: author's elaboration from ECLAC (1990), Instituto Nacional de Estadísticas (1932-68), and Rodríguez Weber (2013).

3. RESULTS

Figure 1 shows the real wages of agricultural workers (expressed in WRs) using a poverty line. The WR of 0.7 is considered as an income level equivalent to 70% of the cost of the poverty line. The graph indicates that tenant laborers (hereinafter, called *inquilinos*) saw their wages rise from 1.0 to almost 1.5 between 1935 and 1953, while wages of volunteer workers (hereinafter, called *voluntarios*) rose from 0.5 to approximately 1.1

throughout the same period[1]. The average wage reported by Rodríguez Weber (2013) and Reyes (2015) ranged between 0.7 and 1.2. In the second stage (1953-68), the situation changed. *Voluntarios*' wages decreased from 1.1 to 0.7 (1953-60) and then recovered (1960-68) and reached the same level as in the early 1950s. The recovery of *inquilinos*' was less marked. In 1968, their wages were 25% lower than those in 1953.

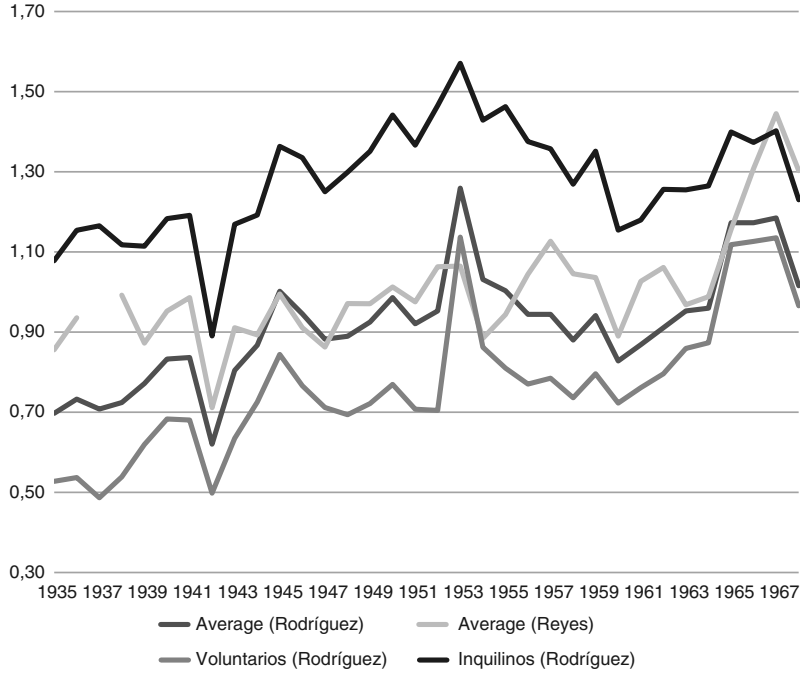
Kay argues that "labor legislation and mechanization from the 1950s onwards pushed up the cost of inquilino labor, and the economic advantage of inquilinaje disappeared, thus explaining its being superseded by voluntario and afuerino labor" (Kay, 1978: 119). This assumption was partially confirmed by the results of the present study. There were two cycles of growth (1935-53 and 1960-68), interrupted by one period of decrease (1953-60), but the second period of growth (1960-68) concluded with lower values than those of the first period (1935-53). In 1968 and 1947, the real wages of *inquilinos* workers were almost identical. This phenomenon can be explained by both monetary and methodological factors. On the one hand, the effect of the inflationary crisis of the 1950s –largely underestimated in the literature– is clearly observable in the results of this study. As far as wages are concerned, the 1960s were more a recovery phase than a period of sustained economic growth. On the other hand, it is important to recall that the ECLAC methodology is primarily based on the price of food, so the money value of the poverty line in rural areas could be overestimated during an inflationary crisis. In this respect, the cliometric approach turns out to be insufficient; a qualitative perspective on the cultural, political, and historical value of non-food items in rural areas (*e.g.*, housing) is needed.

As previously analyzed, the argument that the Chilean agricultural sector was an *economy of subsistence* does not apply to *inquilinos* workers. Between 1935 and 1945, as Robles and Kay argue (2018), mechanization and modernization pushed up the cost of *inquilino* labor, despite the absence of social legislation for the agricultural sector (Rengifo, 2017; Vergara, 2017; Arellano, 1985; Lavados, 1984). After a decade of growth, their wa-

1. Garret describes as follows the labor force in the countryside: "Permanent, resident workers are of two types. There are empleados who perform supervisory functions and who are further identified by the nature of their task. There are inquilinos who perform specialized or nonspecialized tasks. These workers usually receive a wage, paid in cash and/or in kind, access to a small amount of land for independent production, and the right to live in one of the houses within the farm boundaries. Temporary, resident workers usually live in the house of empleados or inquilinos. They may be the unmarried children of the head of house, a relative, or an unrelated person. Regardless of kindship, they are usually identified as voluntarios or obligados. They constitute the resident, reserve labor force for the central enterprise. Temporary, nonresident workers are employed at times of peak demand for agricultural labor. They may come from small holdings adjacent to the estates, from nearby villages or cities, or from rural or urban areas at a considerable distance from the states. They are usually called afuerinos to indicate that they come from outside the farm boundaries" (Garret, 1976: 7).

ges reached the poverty line. During the 1950s, real wages decreased and partially recovered during the 1960s, as already mentioned.

FIGURE 1
Real wages (WR) of agricultural workers, 1932-68



Source: author's elaboration from Rodríguez Weber (2013), Reyes (2015), Instituto Nacional de Estadísticas (1932-68), and ECLAC (1990).

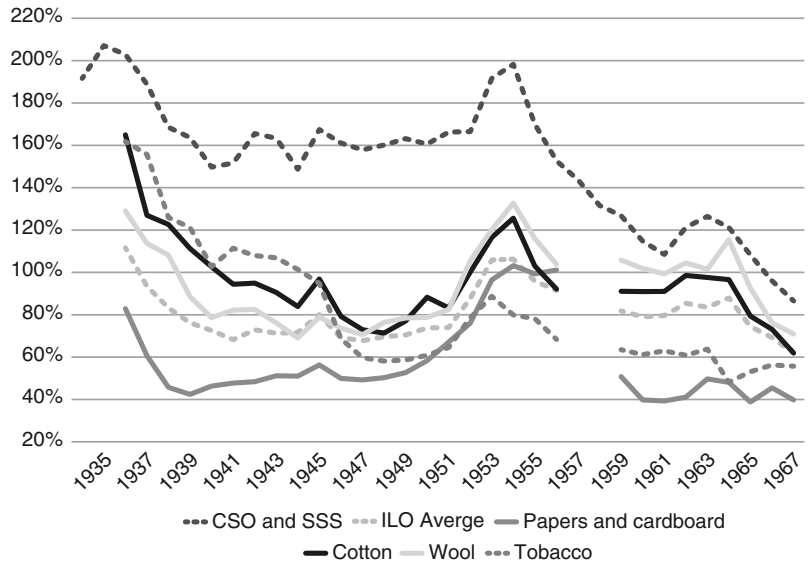
Figure 2 shows the real wages of *inquilinos* workers divided by those of different manufacturing sectors[2]. CSO and SSS correspond to Caja de Seguro Obrero (Blue-collar Insurance Fund, 1924-52) and Servicio de Seguridad Social (Social Security Service, 1952-82), the historical sources used by Reyes (2015) to collect wage data for blue-collar workers. ILO corresponds to the average wage of manufacturing workers reported by the International Labour Organization. As seen in the graph, the real wage of *inquilinos* workers was not lower than that of the CSO-SSS between 1935 and 1959. In fact, they were higher and ranged from 192% to 132%. This seems to confirm the thesis of Kay and Robles that *inquilino* labor was comparatively high. During the first decades of the ISI model, maintaining

2. Real wages are expressed in WRs. Nominal wages of manufacturing sectors were divided by the estimated poverty line for urban areas (twice the cost of the basic food basket) to obtain the WRs.

an *inquilino* (and family) living above the poverty line for rural areas was more expensive than paying the average wage of blue-collar workers. This phenomenon has been pointed out by most theories of industrialization and urbanization (Ogilvie, 1996, 1997).

Reyes argues "that agricultural wages maintained below industrial wages during the whole period (1939-1973)" (Reyes, 2015: 128), while Bellisario claims that "if we compare the annual income of inquilinos with those of other workers, we find that [it] was an extremely low income" (Bellisario, 2006: 173). This study's findings suggest that the difference was not as significant as previously suggested.

FIGURE 2
Sectoral income differentials (*inquilinos*), 1935-68



Note: CSO = Caja de Seguro Obrero (1924-52); SSS = Servicio de Seguridad Social (1952-82); ILO = International Labour Organization.

Source: author's elaboration from Rodríguez Weber (2013), Reyes (2015), Instituto Nacional de Estadísticas (1932-68), International Labour Organization (1935-68), and ECLAC (1990).

According to Kay (1971) and Robles and Kay (2018), *inquilinos* and *voluntarios* play a major role in the *hacienda* system[3]: "Large farms employ […] four basic categories of la-

3. *Inquilinos* represented 28% of the labor force and 46% of the days worked per year in the *hacienda* system, while *voluntarios* represented 20% of the labor force and 23% of the days worked per year. *Afuerinos* (temporary non-resident workers) were the main labor force in quantitative terms but

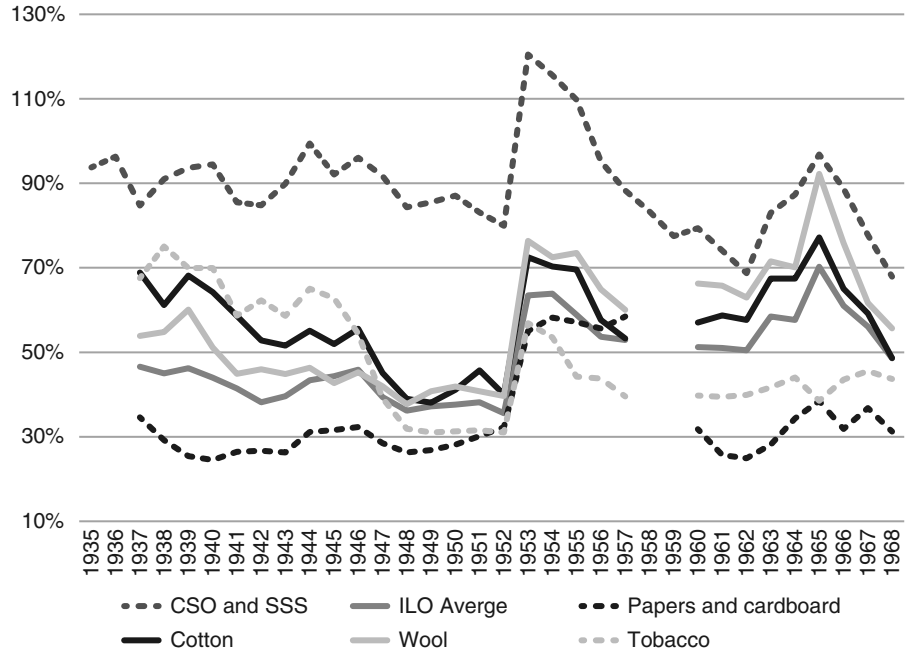
bor [*inquilinos, voluntarios, afuerinos*, and permanent non-resident workers], but actual employment is preferentially allocated to the resident labor force (inquilinos and voluntarios). That is, the opportunities for temporary, nonresident employment on large farms are very limited" (Garret, 1976: 7-8). Although the real wage of *voluntarios* tended to rise, it remained at low levels and diverged from the average wage of the manufacturing sector. This explains why *inquilino* labor was superseded by *voluntario* and *afuerino* labor. As seen in Figure 3, the real wage of *voluntarios* represented around 90% of the average wage of insurers of the CSO between 1935 and 1945. Afterward, the divergence increased (except in 1962-65), reaching 80% in the early 1950s and 68% in 1968. If their wages are compared with better-paid sectors of urban areas (wool, cotton, paper), the difference is less marked (20-30%). If the comparison is based on low-paid industrial workers (tobacco, textile, food), *voluntarios*' wages represent 30% to 70% of the industrial wage. Still, since "women [in rural areas] worked fewer hours outside the home than men" (Reyes, 2016: 103), low-paid industries of urban areas may have contributed to rural-urban migration. As a matter of fact, "women participated mostly in the textile and food industries" (Reyes, 2016: 98).

Salazar and Pinto's argument (2002) that the industrial wage was three times higher than the agricultural wage could be accurate only if low-paid industrial workers were compared with *voluntarios* workers from 1957 onwards. It is likely that the "unpublished study" quoted by Mamalakis (1976: 219) referred to these laborers.

As discussed in the first section of this paper, most researchers agree that industrial workers were better protected than agricultural workers. The process of divergence described below seems to confirm this argument. However, a closer examination is required. Table 3 shows the minimum legal wages for industrial and agricultural workers compared to the estimated poverty lines for urban and rural areas. In 1953, the minimum legal wage (MW) for agricultural workers was above (131%) to the poverty line for rural areas, but in the years that followed, the difference increased, reaching up to 79% in 1960. In the 1960s, the real value of the MW recovered, especially after the agrarian reform. In 1965-67, it represented 112% to 114% of the estimated poverty line for rural areas. The MW for industrial workers experienced a different pattern. Between 1956 and 1962, its real value increased from 78% to 92%. Then, it decreased continuously, reaching up to 66% of the estimated poverty line for urban areas in 1968. These comparisons show a clear path in social policies of that time: in the 1950s, industrial workers were better protected than agricultural workers, while in the 1960s, social protection, as far as minimum wages were concerned, tended to favor agricultural workers.

represented only 18% of the day worked per year (Robles & Kay, 2018).

FIGURE 3
Sectoral income differentials (*voluntarios*), 1935-68



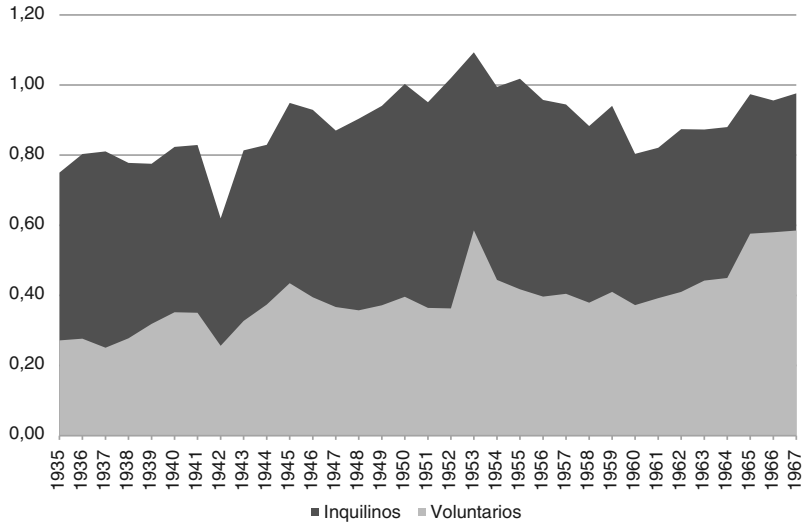
Note: CSO = Caja de Seguro Obrero (1924-52); SSS = Servicio de Seguridad Social (1952-82); ILO = International Labour Organization.

Source: author's elaboration from Rodríguez Weber (2013), Reyes (2015), Instituto Nacional de Estadísticas (1932-68), International Labour Organization (1935-68) and ECLAC (1990).

In the previous sections, we showed the income estimates based on day wages. However, it is also important to consider the number of days workers undertook per year to avoid the overestimation of real wages. Recently, Humphries and Weisdorf proposed a new method for estimating annual income in England and concluded that "annual income estimates based on day wages overestimate medieval labor incomes but underestimate labor incomes during the Industrial Revolution" (Humphries & Weisdorf, 2019: 2867). This argument calls into question the idea that modern economic growth only emerged between the late eighteenth century and the early nineteenth century (Clark, 2005; Allen, 2001; Broadberry & Gupta, 2006). The recent work of Humphries and Weisdorf (2019) illustrates the importance of the days worked per year when estimating real wages. In our case, Figure 1 is based on day wages, while Figure 4 is based on annual wages. Data on the days worked per year were obtained from Robles and Kay (2018: 122). Figure 4 shows that *inquilinos* workers saw their wages (expressed in WRs) rise from 0.7 to 1.0 between 1935 and 1953. During the inflationary crisis of 1953-60, wages decreased as much as to 0.8,

and then partially recovered during the 1960s. The wages of *voluntarios* increased slightly between 1935 and 1952, from 0.27 to almost 0.36. After a short period of increase (1953-54), they remained close to 0.3 (1953-60) and then rose to 0.4 in 1967. Thus, if the days worked per year are considered, *inquilinos* and *voluntarios* wages rose but failed to reach the poverty line for rural areas. More detailed studies on the days worked per year in the agricultural sector would allow us to better understand the different paths of industrialization in rural areas. Sugihara recognizes two types: "The first is the 'Western path' associated with capital- and energy-intensive industries. The second…is the 'East Asian path' based on labor-intensive industrialization that has built on quality labor resources cultivated in the traditional sector" (Sugihara, 2007: 121). The existence of a labor-intensive path to industrialization in rural areas has been indirectly suggested in Chilean historiography (Salazar & Pinto, 2002). In contrast, Robles and Kay (2018) have provided evidence of the existence of a capital-intensive path.

FIGURE 4
Real wages (WR) of agricultural workers (ECLAC method, on an annual basis), 1935-68



Source: author's elaboration from Rodríguez Weber (2013), Reyes (2015), Robles and Kay (2018), Instituto Nacional de Estadísticas (1932-68), and ECLAC (1990).

TABLE 3
Ratio of minimum wage to estimated poverty lines for urban and rural areas (Chile, 1953-68)

	Agricultural workers	Industrial workers
1953	1.31	
1954	0.92	
1955	0.87	
1956	0.84	0.78
1957	0.86	0.79
1958	0.81	0.76
1959	0.88	0.81
1960	0.79	0.77
1961	0.95	0.9
1962	0.91	0.92
1963	0.91	0.72
1964	0.93	0.7
1965	1.12	0.74
1966	1.13	0.74
1967	1.14	0.75
1968	1.01	0.66

Note: MW = minimum legal wage (Santiago de Chile); EPL = estimated poverty line (consumer prices of Santiago de Chile).

Source: author's elaboration from Rodríguez Weber (2013), Reyes (2015), Instituto Nacional de Estadísticas (1932-68), Banco Central de Chile (1953-68), and ECLAC (1990).

It is also important to consider income distribution when studying income poverty. Table 4 shows national income deciles in 1940 and 1954[4]. In 1940, the average income of agricultural workers (0.002 million pesos per year) and the annual income of *voluntarios* workers (0.001 million pesos per year) were in the poorest decile. *Inquilinos* workers were in the second decile (0.003 million pesos per year). In 1954, agricultural workers were in a better situation regarding the country's income distribution. *Inquilinos* and *voluntarios* wages (0.05 and 0.02 million pesos per year, respectively) were in the third decile. Now, it is not possible to infer from Table 4 that the living standards of agricultural workers improved over time. It is likely that, between 1940 and 1954, the poorest decile –low-income workers in urban areas– was affected by a "regressive redistribution of total income" (Jadue, 1960: 53). As shown in figures 2 and 3, the sectoral income differentials

4. The annual income of agricultural workers was obtained by multiplying nominal daily wages (Rodríguez Weber, 2013) by the number of days worked per year (Robles & Kay, 2018: 122).

decreased in the early 1950s in favor of agricultural workers. In 1950, the average wage in the agricultural sector was equivalent to 29% of that of the wool industry. In 1954, this proportion increased to 54%. In the final years of the radical governments (1938-52), the real income of agricultural workers rises, while the real wage of low-income workers in urban areas decreases. Table 4 shows that, in 1954, the annual income of at least 15% of workers in urban areas was lower than the average wage of the agricultural sector (0.03 million pesos per year). These data corroborate the argument that the cost of *inquilino* labor was higher than the average wage of low-paid urban workers. Indeed, the cost of *inquilino* labor in 1954 (0.05 million pesos per year) was higher than the average wage of approximately 35% of workers in urban areas.

TABLE 4
Income distribution (Chile, 1940 and 1954)

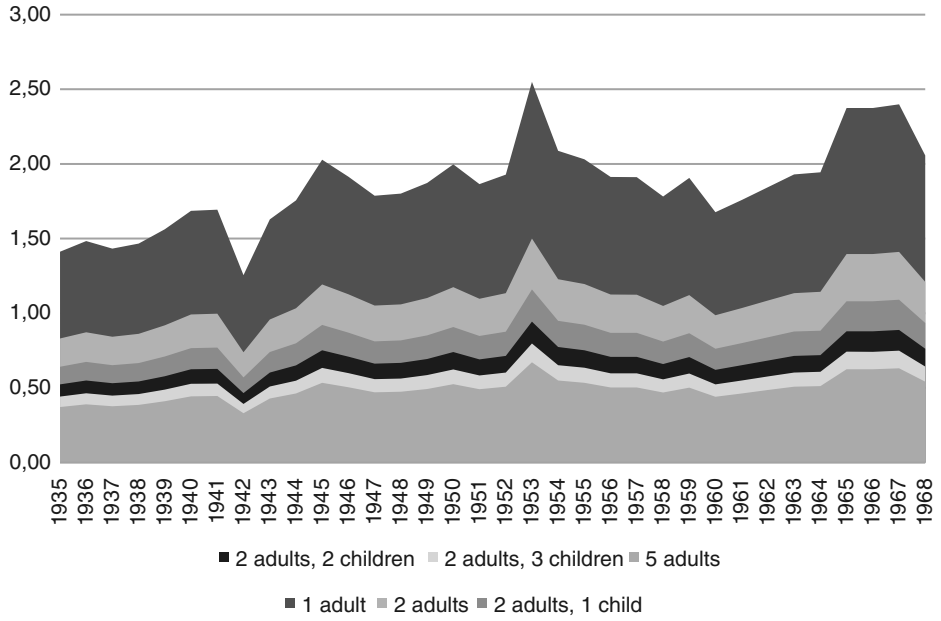
1940			1954		
Annual income per capita (millions of Chilean pesos)	**Number of persons**	**Percentage**	**Annual income per capita (millions of Chilean pesos)**	**Number of persons**	**Percentage**
0-0.002	472,779	20.11	0-0.01	190,458	6.11
0.002-0.005	1,440,265	61.27	0.01-0.02	309,717	9.94
0.005-0.02	415,814	17.69	0.02-0.05	594,515	19.09
0.02-0.1	16,182	0.69	0.05-0.1	616,714	19.80
0.1-0.6	2,533	0.11	0.1-0.2	1,014,503	32.57
0.6-1.0	1,806	0.08	0.2-0.3	218,803	7.02
1.0-2.0	1,064	0.05	0.3-0.6	89,390	2.87
2.0-4.0	251	0.01	0.6-8.0	80,050	2.57
4.0-8.0	57	0.002	8.0-20.0	665	0.021
8.0 and more	19	0.001	20 and more	95	0.003
Total	2,350,770	100.00	Total	3,114,910	100

Source: author's elaboration from Jadue (1959, 1960).

There is a final key point to draw out: real wages according to household size. It is well known that the number of children per family is higher in rural areas. However, it is extremely difficult to determine the average number of children due to the scarcity of historical archives in rural regions. In addition, this is not simply the difference between smaller and larger households. Traditional family models cannot be applied to the agricultural sector. Therefore, it is important to consider different household sizes when estimating the real wages of agricultural workers. Figure 5 shows the real wages according to household size. The graph was designed using the outmoded OECD equivalence scale (OECD, 2013). If nominal wages are contrasted with the individual poverty line, agri-

cultural real wages, expressed in WRs, are higher than one. However, if larger households are considered, nominal wages are far below the poverty line. A family of five adults lived in extreme poverty (WR ≤ 0.5).

FIGURE 5
Real wages (WR) of agricultural workers according to household size (on a daily basis)



Source: author's elaboration from Rodríguez Weber (2013), Mancero (2001), and OECD (2013).

Figure 5 shows that the performance of real wages in the agricultural sector during the period of state-led industrialization was ambivalent. On one hand, real wages rose. Mechanization and proletarization seems to have had a positive impact on wages, at least between 1935 and 1955. Indeed, as previously suggested by Robles and Kay (2018), *inquilino* labor was comparatively high. In the mid-1950s, it was higher than the average wage of approximately one-third of workers of urban areas. On the other hand, real wages failed to reach the poverty line, especially if large households are considered. Besides, the increase in real wages was not as marked as in the industrial and manufacturing sectors of urban areas. Over the years, the divergence between the agricultural sector and the rest of the economy increased.

4. CONCLUSIONS

The purpose of this article is to analyze the methodological procedures for studying income poverty in rural areas in mid-twentieth-century Latin America and provide historical comparative evidence to discuss with Chilean historiography. The major findings are as follows:

a) The real wages of agricultural workers rose since the mid-1930s, but this increment was not as marked as in the industrial and manufacturing sectors of urban areas. As a result, the divergence in real wages between rural and urban areas increased.

b) The Chilean agricultural sector was not entirely an agrarian subsistence economy. The cost of *inquilino* labor in the mid-1950s was higher than the average wage of approximately one-third of workers in urban areas.

c) In the 1950s, industrial workers were better protected than agricultural workers. In contrast, in the next decade, minimum wages tended to favor agricultural workers rather than industrial workers.

d) If the number of days worked per year and the household size were considered, agricultural wages rose but failed to reach the poverty line for rural areas. This could be a critical aspect for historians to consider. Robles and Kay (2018) only provide an approximate indication of the number of days worked per year. Further studies on this topic are needed. If the number of days worked per year increases, so does annual income. Are there significant changes in hours and days worked annually across time? Are there important differences in the hours and days worked annually between different types of agricultural workers? The answers to these questions could help to better understand the role of the agricultural sector during the state-led industrialization period.

What seems to be clear is that the *inquilino* labor, at least between 1935 and 1955, was comparatively high, as previously claimed by Kay, while *voluntarios* real wages rose slightly but continuously since the mid-1930s, as shown by Rodríguez Weber and Reyes. The idea, indirectly suggested in non-specialized literature, that agricultural wages remained unchanged after 1929, seems to be inaccurate. As Robles' recent works have shown, the agricultural sector was not excluded from the state-led industrialization model that arose in the mid-1930s. This article has shown that relevant changes occurred in the rural labor force in mid-twentieth-century Chile.

Finally, it is important to mention that the methodological approach of ECLAC can be applied to different contexts of Latin America and would lay the foundation for future comparative analyses. The historical sources needed to estimate real wages in rural areas in mid-twentieth-century Latin America using the ECLAC approach are as follows: a) nominal wages of rural workers (including both monetary and non-monetary payments); b) consumer prices of food in the main urban areas; c) a critical review of the ECLAC research on income and poverty in the country under study; d) macroeconomic data on the food/non-food allocation of resources; and e) nominal wages of urban workers (for comparative purposes).

ACKNOWLEDGMENTS

This study has received financial support from the University of Concepcion (Chile). The author would like to thank the anonymous referees and editors of Historia Agraria for the comments to improve this article.

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APPENDIX A

TABLE A1

Cost of the minimum food budget (Chile, 1930-68)

	Official CPI for food	Cost of the minimum food budget according to CPI for food	Minimum food basket (consumer prices)
1932	100	1.57	1.57
1933	128	2.9	1.64
1934	128	2.10	1.61
1935	132	2.17	1.71
1936	145	2.37	1.86
1937	169	2.76	2.13
1938	183	2.99	2.22
1939	181	2.96	2.30
1940	210	3.43	2.41
1941	238	3.89	2.82
1942	321	5.25	4.64
1943	373	6.11	4.20
1944	384	6.29	4.80
1945	403	6.59	4.77
1946	470	7.70	6.27
1947	652	10.68	7.83
1948	731	11.96	9.09
1949	847	13.86	10.64
1950	982	16.08	11.74
1951	1207	19.75	14.34
1952	1503	24.59	17.34
1953	1869	30.60	21.60
1954	3390	55.50	36.66
1955	5868	96.04	62.00
1956	8439	138.13	94.51
1957	11,206	183.42	121.87
1958			156.39
1959			200.01
1960	100		241.99
1961	113	296.63	263.14
1962	150	394.36	294.28
1963	232	611.71	420.52
1964	316	831.79	620.38
1965	399	1,049.81	822.83
1966	454	1,195.39	1,027.46
1967	545	1,435.29	1,193.12
1968	693	1,823.50	1,630.84

Note: the minimum food budget is the cost of the basic food basket (see Table 1) according to retail prices of each year (in Chilean pesos, CLP).

Source: author's elaboration from Instituto Nacional de Estadísticas (1932-68) and Banco Central de Chile