



Lifetime inequality measures for an emerging economy: The case of Chile[☆]



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HIGHLIGHTS

- In the Chilean economy, lifetime inequality is as high as cross-section inequality.
- High lifetime inequality is due to lack of mobility in skilled and unskilled workers.
- Lifetime welfare is higher for skilled workers compared with unskilled workers.

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ABSTRACT

Even though the Chilean economy has experienced a sustained economic growth and made enormous progress in reducing poverty in the last 25 years, its income inequality continues to be among the highest in the world. Given its importance, the literature has paid considerable attention to income inequality in Chile. Nevertheless, all of the existing studies use a cross-section distribution of earnings when analyzing inequality. Cross-section and lifetime measures of inequality are different. While the latter reflects long run resources available to individuals, the former does not. This emphasizes the dynamic dimension of inequality. This paper focuses on the analysis of income inequality from a lifetime perspective for the Chilean economy using a search-theoretic framework. The model, which is structurally estimated with Chilean data, captures the dynamic of the labor market of male workers actively participating in the market and is used to simulate careers to construct lifetime measures of inequality. The results indicate that inequality is not only high in a cross-section perspective, but also in a lifetime perspective; and that low mobility is the main source of lifetime inequality in the Chilean labor market. Hence, regulation of the labor market matters because it affects the degree of mobility in the market.

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1. Introduction

Since its return to democracy in 1990, the Chilean economy has experienced a significant and sustained economic growth, which has resulted in an average per capita GDP growth rate of 4.1% during the 1991–2011 period. This high economic growth experienced during these 20 years far exceeded the world's average per capita

growth (1.4%) and the OECD's average per capita growth (1.6%). This important economic progress, combined with an increased social expenditure particularly targeting lower income households, has helped to reduce the absolute poverty from 38.6% in 1990 to 14.4% in 2011 (Gammage et al., 2014). Despite these important advances, the income distribution in Chile has not improved and it continues to be among the most unequal in Latin America, a region with the highest level of inequality in the world. Furthermore, in the late 2000s, Chile's Gini coefficient exceeded the average Gini coefficient for OECD countries (excluding Chile) by 14 points.¹

In the last decade, there has been an ongoing discussion on the decreasing trend of income inequality in Chile, but any consensus on this issue is far from being achieved. When the Gini coefficient

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¹ Chile became an OECD member on May 7th, 2010.

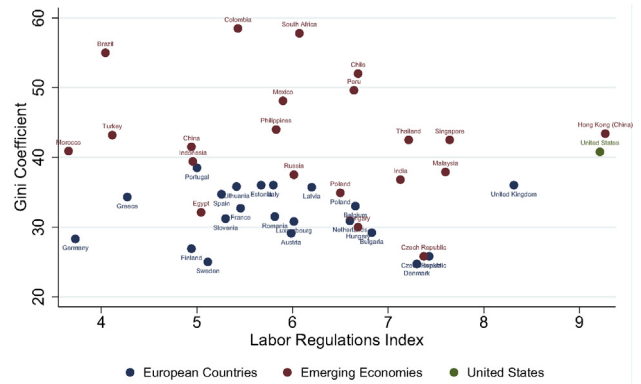
is used, inequality decreased from 57.2 observed in 1990 to 55.2 in 2000 and even further to 50.8 in 2011. Despite the improvement, the level of this indicator is still high. When an alternative indicator of inequality is used, the level of inequality shows an increase in the last 20 years. In effect, in 1990 the income of the wealthiest decile was 30 times that of the poorest decile (D10/D1), while in 2000 and 2011 the difference in income between these two groups was 25 and 35.6 times, respectively. This discrepancy occurs since the Gini coefficient is less sensitive to changes in income (Gammage et al., 2014). Moreover, Palma (2011) shows that, historically, improvements in inequality in the Chilean case have been minor and temporary most of the time (on the contrary, deteriorations have been more permanent).² Therefore, there is no doubt that income inequality in Chile has been very persistent and its level is still very high.

Given its importance, the literature has paid considerable attention to income inequality in Chile. Nevertheless, all existing studies have used a cross-section distribution of earnings (or wages) to analyze inequality. However, cross-section and lifetime measures of inequality are different because the latter reflects long run resources available to individuals while the former does not. Moreover, cross-section distributions of earnings are just snapshots of the workforce (Gottschalk and Moffitt, 1994). Therefore, using current income to perform inequality studies can be misleading due to the existence of a transitory component in the current income (Blundell and Preston, 1998; Krueger and Perri, 2006). This emphasizes the dynamic dimension of inequality. Along these lines, Flabbi and Leonardi (2010) indicate that earnings inequality is not simply described by the current earnings but also by mobility across jobs and labor market states. Therefore, lifetime inequality measures should take into account labor market states and lifetime wage profiles. Buchinsky and Hunt (1999) and Bowlus and Robin (2004) complement this idea and suggest that individual welfare not only depends on the current employment position but also on the expected evolution of this position over time. Given this discussion, the question that arises is whether the Chilean economy shows a distribution of lifetime earnings that is as highly unequal as its cross-section counterpart.

Many studies have analyzed and compared economies using this lifetime perspective, but they all focus on the United States, Canada or Europe. In the case of emerging economies, the literature is scarce, perhaps because of data limitations. These economies also have the uniqueness that, in general, they have relatively more regulated labor markets and high cross-sectional measures of inequality as can be seen in Fig. 1. This paper seeks to fill this gap by analyzing income inequality from a lifetime perspective in the Chilean economy, thereby improving the standard empirical measures of inequality for Chile. When analyzing income inequality in Chile, the focus is on the labor market because labor income is an important part of earnings (it represents more than 80% of household income, Bravo and Marinovic, 1997), mobility in this market is relatively low,³ and labor income is very persistent (Huneus and Repetto, 2005). Therefore, total household inequality is driven mainly by the wages distribution (according to Fig. 2, 90% of the Chilean Gini coefficient is explained by labor income). Additionally, I narrowed the sample to

² In addition, López et al. (2013) analyze data from the Internal Tax Service and show that the inequality measures based on household surveys (as those discussed above) tend to underestimate the level of income concentration. This occurs because of the lack of information on the “very wealthy” in household surveys.

³ According to the data used for estimation, during the 2002–2005 three-year window, only 12% of all transitions in the Chilean labor market were job-to-job. According to Table 1 in Jolivet et al. (2006), this level of transitions would categorize Chile as a country with low job turnover (the window period was chosen for comparison purposes).



Sources: WDI World Bank 1997–2009, IEF Economic Freedom Annual Report 2002–2008

Fig. 1. Cross-section inequality and labor market structure.

only male workers because this group has a high participation rate and tend to have full time jobs (Ruiz-Tagle, 2007).⁴

This paper uses a search-theoretic framework to analyze long run inequality through the lens of the labor market. In particular, a structural search model with on-the-job search is estimated using the Social Protection Survey dataset for Chile and simulations of careers are used to construct lifetime measures of inequality. The lifetime welfare is then measured as the sum of the discounted values of the simulated labor incomes (Flabbi and Leonardi, 2010; Flinn, 2002). The estimation controls for (observed) heterogeneity in education assuming segmented markets for skilled and unskilled workers. As is usual in the estimation of this type of models, two issues emerge: the first is the right censoring problem and the second is the so called Initial Conditions Problem (Flinn, 2002); the estimation controls for both problems. Finally, the model is used to quantitatively evaluate the mobility and distribution effects on inequality by calculating the marginal effects of the model parameters on lifetime inequality.

The results indicate that inequality is not only high in a cross-sectional perspective, but also in a lifetime perspective and that the regulation of the labor market, reflected in the estimated parameters of the model, matters and has an impact on the degree of mobility in the labor market. This, in turn, has an impact on lifetime measures of inequality: a more flexible labor market generates a less unequal lifetime earnings distribution. This holds regardless of the skill level.

The paper is organized as follows. Section 2 briefly summarizes the related literature. Section 3 presents the model and its equilibrium. Section 4 describes the data and presents the likelihood function. Section 5 discusses the results of the estimation, the lifetime inequality measures and the marginal effect of the estimated parameters in the lifetime inequality measure. Finally, Section 6 concludes.

2. Related literature

This paper is closely related to the literature on structural estimation of partial equilibrium search models. The two closest articles are Flinn and Heckman (1982) and Flinn (2002). The former was the first to present a method to estimate this type of model and the latter extends that procedure to estimate models with on-the-job search.

⁴ Participation rates for female workers are particularly low in Chile. According to OECD statistics, the average participation rates in Chile in the 2000s were 77.6 and 42% for men and women, respectively. Comparatively, the average participation rates for the OECD countries were 80% for men and 60.2% for women in the 2000s.

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