

Introduction

- Chile has a “very high” level of human development, with the highest Human Development Index among countries in Latin America and the Caribbean.
- However Chile is an unequal country not only in terms of income distribution, but also in social services which are highly segmented among municipalities, in particular when looking at the concentration of state-of-the-art private health providers.
- This paper intends to provide a measure of inequality in life expectancy to assess whether differences in income and other socioeconomic conditions in a context of high coverage but segregated social services are having an effect on the life spans.
- Our hypothesis is that this segmentation has a static and dynamic effect on inequalities in life expectancy.

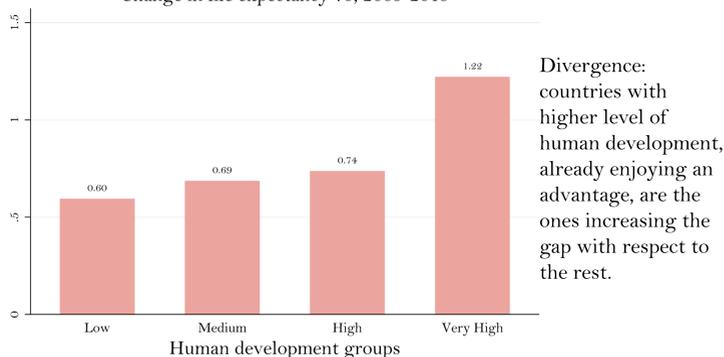
Divergence in Old-Age Life Expectancy

The divergence in life expectancy at older ages is a new phenomenon and mirrors progress taking place in the top segment of the global population.

Between Countries

- Internationally comparable data shows that since year 2000 approximately, the life expectancy at older ages is increasing faster in countries of very high human development in comparison to the rest (United Nations 2017).

Change in life expectancy 70, 2005-2015



- People over age 60 are the fastest growing age segment of the global population. The implications of having a new form of inequality affecting precisely the fastest growing segment of the population could be not only unfair, but also destabilizing from an economic and social point of view.

Within Country

- There is limited but strong evidence coming from within-country studies that analyses inequality in life expectancy, with an emphasis in old ages.
- Chetty et al. (2016) using matched tax and social security data from the U.S. find:
 - Higher income is associated with greater longevity.
 - Gaps of 15 years in life expectancy at 40 have been found between men at the top 1% and those at the bottom 1%.
 - Among low-income people, life expectancy varies up to 5 years between those live in the best and worst cities. Poor people who live in affluent cities tend to live longer.

Chile, A Middle-Income Country

- We contribute to this literature along two dimensions:
 - Data on mortality at older ages is hard to process and often unavailable.
 - To link disparities in life expectancy to socioeconomic status, it is important to define meaningful groups for the comparisons. Disaggregated good quality data however is often difficult to find.
- We take advantage of a unique dataset from Chile that provides the opportunity to learn more about the inequality in life expectancy at different ages based on the differences in socioeconomic status of “comunas” (municipalities).

Data and Method

- Official Chilean vital statistics death data 2001-2016 and census population data in 2002 and 2017 were used.
- Mortality rates were constructed using 3-year averages of death counts to smooth out outliers or the effects of shocks. There is a small downward bias in mortality rates for 2017, as information about deaths for that year is not yet publicly available (to be corrected in next version).
- The estimation procedures outlined in Preston et al. (2000) and Human Mortality Database (2017) were followed to estimate period life tables for each comuna.
- Life expectancy for different ages for all Chilean comunas were computed. The final sample was restricted to comunas with at least 30,000 people in 2002 in order to improve the stability of the estimates, covering 80% of the population.

Findings

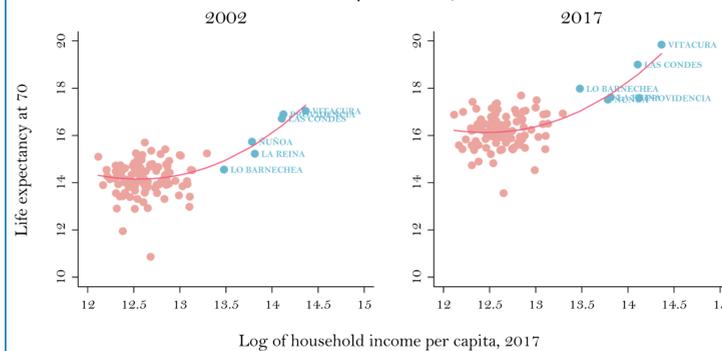
- Comparing life expectancy around two census years (2002 and 2017), we find consistent differences linked to socioeconomic factors.
- People living in wealthiest comunas have on average increased their already high life expectancy at old age, significantly more than those living in poorer comunas.

Finding 1

- There are significant inequalities in life expectancy in Chile.
- For life expectancy at birth, the difference between comunas with minimum and maximum was 10 years in 2017. For life expectancy at 70, the gap was 6.3 years.

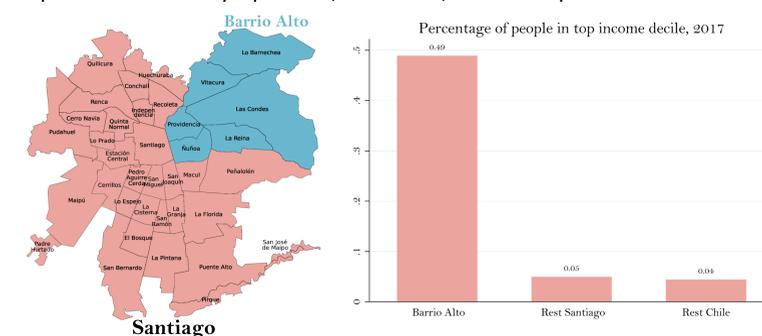
Finding 2

- Differences in life expectancy tend to be associated with socioeconomic factors and in particular, **income**.



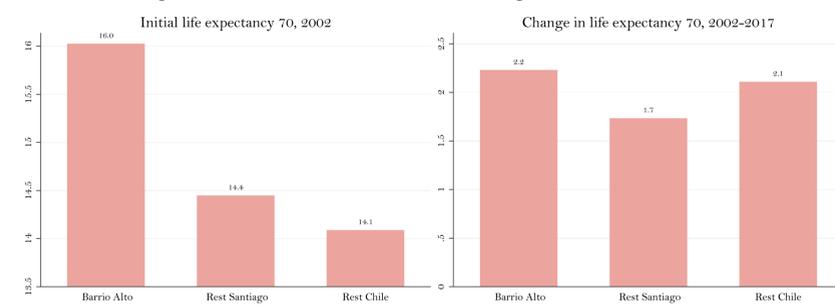
Finding 3

- The bulk of the differences in life expectancy are explained by a small number of comunas when compared with the rest: **Vitacura, Las Condes, Providencia, Lo Barnechea, La Reina, and Ñuñoa**.
- These comunas represent what is known as the “**Barrio Alto**” in Santiago. These are adjacent comunas that concentrate a significant part of the country’s political, economic, cultural capital.



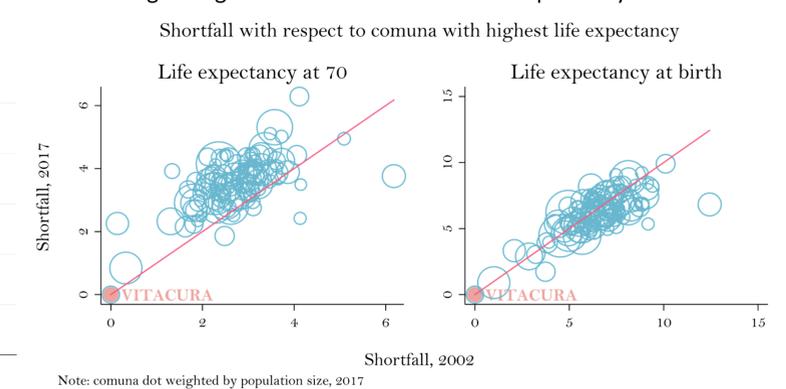
Finding 4

- Divergence at the top:** the “Barrio Alto”, with already high life expectancy at 70 in 2002, was the group with the largest increase, in particular in comparison to the rest of Santiago.
- Convergence at the bottom:** the rest of the country had a similar increase, keeping its distance with respect to the “Barrio Alto”, but erasing differences with the rest of Santiago.



Finding 5

- When the comparison is made one-to-one with respect to **Vitacura**, the country’s wealthiest comuna, using a short-fall indicator measuring the gap with respect to the country’s frontier in life expectancy at 70 in 2002 and 2017, there is clear a pattern of **divergence** from the 45-degree line. This suggests life expectancy gap increased with respect to most of the country.
- This strong divergence does not exist with life expectancy at birth.



Policy Implications: Regressive Effects on Pensions

- In Chile pensions are predominantly managed through a system of individual capitalization, managed by private companies (the so-called AFP: Administradoras de Fondos de Pension), introduced in the early 1980s.
- A key parameter to determine the level of the pension is life expectancy. This process is regulated through the use of official life tables, which are disaggregated by sex and disability status, but not by socioeconomic conditions.
- Our work has important implications for the system:
 - There is a regressive intra-group subsidy due to significant inequalities in life expectancy at old age. Current regulations make that high income groups (with life expectancy above the national average) see their pensions going up and low income groups (with life expectancy below the average) see their pensions going down, when using a common life table.
 - The regressive effect has intensified over time as inequality in life expectancy is increasing for older ages.

Conclusion

- We find evidence of **growing within-country inequalities at older ages**. This is an emerging pattern in the world, likely associated with unequally distributed improvements in healthcare resource, health knowledge, and healthy habits.
- This new generation of inequality has implications for government entitlement programs and other public policy and lifetime benefits. In the case of Chile, not accounting for these differences introduces a regressive bias in the computation of pensions that, *de facto*, makes poor people with low pensions give a subsidy to wealthier individuals.

References

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