

# **Income, Poverty, and Inequality in Chile**

A Comparison of CASEN 2017 and 2024

Data Source: CASEN Survey

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## 1 Executive Summary

This report analyzes changes in income, poverty, and inequality in Chile between 2017 and 2024, using data from the CASEN (Caracterización Socioeconómica Nacional) surveys. The analysis covers three major dimensions: poverty reduction and state transfer effectiveness, income growth across the distribution, and labor market returns to education.

### Key Findings:

- **Poverty reduction:** Total income poverty fell from **9.8% to 4.6%**, with state transfer efficiency nearly doubling (from 27.8% to 45.4% of autonomous poverty eliminated). Poverty among elderly-only households is virtually eliminated (0.12%).
- **Pro-poor income growth:** Income growth was strongly progressive—the bottom decile grew 26% while the top decile grew only 7% (inflation-adjusted). This pattern held for both total and autonomous income, indicating market-driven compression.
- **Declining education premium:** The university wage premium fell substantially, from 125% to 99% at the median. Hourly wages for non-university workers grew 21% while university graduates saw only 7% growth. This represents a significant narrowing of education-based inequality.

Together, these findings suggest Chile experienced broad-based income compression between 2017 and 2024, with gains concentrated among lower-income households and less-educated workers.

## 2 Methodology

### 2.1 Income Definitions

- **Total income:**  $y_{totcorh} / \text{numper}$  (corrected household income per capita, including all sources)
- **Autonomous income:**  $(y_{totcorh} - y_{subh}) / \text{numper}$  (excluding state transfers)
- **State transfers (y<sub>subh</sub>):** Non-contributory pensions + subsidies
- **Contributory pensions (AFP):** Remain in autonomous income (self-financed)

### 2.2 Poverty Lines

- **2017:** \$107,347 per capita per month (2017 prices)
- **2024:** \$152,160 per capita per month (2024 prices)

Both poverty lines are equivalent to the World Bank's \$8.3 PPP per day standard, adjusted for Chilean prices in each year.

## 2.3 Household Categories

Category	Definition
No65	Households with NO members aged 65+
AtLeast1_65	Households with at least one member aged 65+
Only65	Households where ALL members are aged 65+
WorkAge	Households with only members aged 24–64

Table 1: Household age composition categories

## 3 Main Findings

### 3.1 Dramatic Reduction in Poverty (2017–2024)

Metric	2017	2024	Change
Total income poverty	9.80%	4.59%	-5.21 pp
Autonomous income poverty	13.57%	8.41%	-5.16 pp
Transfer impact	3.77 pp	3.82 pp	+0.05 pp

Table 2: National poverty rates comparison

Both total and autonomous poverty decreased by similar magnitudes (~5 pp), suggesting that poverty reduction was driven primarily by improvements in market income (wages, self-employment, contributory pensions) rather than expansion of state transfers.

### 3.2 State Transfer Efficiency Doubled

Metric	2017	2024
Transfer impact (pp)	3.77	3.82
% of autonomous poverty eliminated	27.8%	45.4%

Table 3: Transfer efficiency comparison

Although the absolute transfer impact remained nearly constant (3.77 pp vs 3.82 pp), efficiency increased dramatically because autonomous poverty fell. State transfers now eliminate 45.4% of pre-transfer poverty, compared to only 27.8% in 2017.

### 3.3 Near-Elimination of Poverty Among the Elderly

The most striking finding concerns **elderly-only households** (Only65):

Metric	2017	2024	Change
Total income poverty	0.85%	0.12%	-0.73 pp
Autonomous income poverty	10.45%	9.34%	-1.11 pp
Transfer impact	9.60 pp	9.22 pp	-0.38 pp
Transfer efficiency	91.9%	98.7%	+6.8 pp

Table 4: Elderly-only households poverty indicators

**Interpretation:**

- Without state transfers, ~9–10% of elderly-only households would be poor (similar in both years)
- State transfers now eliminate **98.7%** of autonomous poverty among elderly-only households
- Total income poverty among elderly-only households has been virtually eliminated (0.12%)
- This represents one of the most effective targeted transfer programs in Latin America

**3.4 Poverty Reduction Across All Household Types**

Household Type	2017	2024	Change
No elderly (No65)	11.49%	5.71%	-5.78 pp
At least 1 elderly	5.66%	1.73%	-3.93 pp
Elderly-only	0.85%	0.12%	-0.73 pp
Working-age only	2.78%	1.59%	-1.19 pp

Table 5: Total income poverty by household type

All household types experienced poverty reduction, with households without elderly members showing the largest absolute decrease (-5.78 pp).

**3.5 Transfer Efficiency by Household Type**

Household Type	2017	2024	Change
Overall	27.8%	45.4%	+17.6 pp
No elderly	17.6%	26.0%	+8.4 pp
At least 1 elderly	55.3%	82.9%	+27.6 pp
<b>Elderly-only</b>	<b>91.9%</b>	<b>98.7%</b>	+6.8 pp
Working-age only	28.5%	31.5%	+3.0 pp

Table 6: Transfer efficiency (% of autonomous poverty eliminated) by household type

**Key insight:** Households with elderly members benefit most from state transfers. For households with at least one elderly member, transfers now eliminate 82.9% of autonomous poverty, up from 55.3% in 2017.

## 4 Regional Analysis

### 4.1 Regions with Largest Poverty Reduction

Region	2017	2024	Change
La Araucanía	19.08%	9.30%	-9.78 pp
Los Lagos	12.58%	3.60%	-8.98 pp
Ñuble	15.84%	7.10%	-8.74 pp
Coquimbo	14.89%	6.47%	-8.42 pp
Biobío	13.31%	4.99%	-8.32 pp

Table 7: Regions with largest poverty reduction

Historically poor regions in southern Chile (La Araucanía, Los Lagos) and central-south Chile (Ñuble, Maule) showed the largest improvements.

### 4.2 Only Region with Poverty Increase

Region	2017	2024	Change
Magallanes	2.25%	2.43%	+0.18 pp

Table 8: Region with poverty increase

Magallanes was the only region where poverty increased slightly, though it remains among the lowest poverty regions.

### 4.3 Regions with Largest Increase in Transfer Effectiveness

Region	Impact 2017	Impact 2024	Change
Atacama	1.81 pp	3.09 pp	+1.28 pp
Biobío	5.03 pp	5.66 pp	+0.63 pp
Valparaíso	3.57 pp	3.95 pp	+0.38 pp

Table 9: Regions with largest increase in transfer effectiveness

## 5 Demographic Shifts

### 5.1 Household Composition Changes (2017–2024)

Category	2017	2024	Change
No elderly	71.09%	71.84%	+0.75 pp
At least 1 elderly	28.91%	28.16%	-0.75 pp
Elderly-only	5.59%	5.77%	+0.18 pp
<b>Working-age only</b>	<b>13.64%</b>	<b>17.92%</b>	<b>+4.28 pp</b>

Table 10: Population share by household composition

The share of working-age only households (24–64, no children or elderly) increased by 4.28 percentage points, reflecting demographic changes and possibly delayed childbearing.

## 6 Income Growth by Decile

This section analyzes how average per capita income changed across the income distribution between 2017 and 2024. All 2017 values are adjusted for inflation (factor 1.42) to express in 2024 Chilean pesos.

### 6.1 Total Income Growth by Decile

Decile	2017 (adj.)	2024	Change
1 (poorest)	111,534	141,011	+26.4%
2	172,535	221,021	+28.1%
3	215,890	275,883	+27.8%
4	258,262	330,271	+27.9%
5	304,404	386,745	+27.0%
6	359,338	451,587	+25.7%
7	431,036	532,548	+23.6%
8	535,356	649,377	+21.3%
9	732,837	862,796	+17.7%
10 (richest)	1,813,019	1,943,776	+7.2%

Table 11: Average total per capita income by decile (CLP, 2024 prices)

**Key finding:** Income growth was **strongly pro-poor**. The bottom deciles experienced gains of 26–28%, while the top decile grew only 7.2%. This represents a significant compression of the income distribution.

### 6.2 Autonomous Income Growth by Decile

Decile	2017 (adj.)	2024	Change
1 (poorest)	97,896	122,384	+25.0%
2	156,345	195,214	+24.9%
3	197,737	248,600	+25.7%
4	240,487	295,924	+23.1%
5	285,076	348,054	+22.1%
6	341,171	408,862	+19.8%
7	415,935	492,178	+18.3%
8	522,811	610,859	+16.8%
9	722,737	833,368	+15.3%
10 (richest)	1,807,877	1,931,629	+6.8%

Table 12: Average autonomous per capita income by decile (CLP, 2024 prices)

**Key finding:** Autonomous income (excluding state transfers) also showed pro-poor growth, though slightly less pronounced than total income. This indicates that market income improvements—wages, employment, contributory pensions—benefited lower deciles more than higher deciles.

### 6.3 Transfer Contribution by Decile

The difference between total and autonomous income growth reveals the role of state transfers:

Decile	Total Growth	Autonomous Growth
1	+26.4%	+25.0%
2	+28.1%	+24.9%
3	+27.8%	+25.7%
10	+7.2%	+6.8%

Table 13: Comparison of total vs autonomous income growth (selected deciles)

The small gap between total and autonomous growth (1–3 percentage points in lower deciles) suggests that while transfers contribute to poverty reduction, the bulk of income growth came from market sources.

## 7 Income Distribution Analysis

### 7.1 Elderly-Only Households by Income Decile

Using total income decile boundaries, elderly-only households shifted toward higher deciles:

Decile	Total 2017	Total 2024	Auton. 2017	Auton. 2024
1 (poorest)	0.85%	0.22%	10.51%	13.86%
2	2.08%	1.73%	5.39%	11.66%
3	4.93%	2.53%	7.05%	9.41%
<b>Bottom 3 total</b>	<b>7.86%</b>	<b>4.48%</b>	<b>22.95%</b>	<b>34.93%</b>

Table 14: Elderly-only household distribution by income decile

#### Critical observation:

- When measured by **total income**, elderly-only households moved UP the distribution (fewer in bottom deciles)
- When measured by **autonomous income**, elderly-only households moved DOWN (more in bottom deciles)

This divergence reveals that state transfers are doing more work to elevate elderly households out of poverty. Without transfers, 34.9% of elderly-only households would be in the bottom three deciles (up from 23% in 2017). Transfers move most of them to middle and upper deciles.

## 8 Labor Income and Education Premium

This section analyzes hourly labor income for employed workers (dependent on employer, ages 26–65) by age cohort and education level. All 2017 values are inflation-adjusted to 2024 Chilean pesos.

## 8.1 Hourly Labor Income by Age Cohort and Education

Cohort	2017			2024		
	Total	No Univ	Univ	Total	No Univ	Univ
26-30	729	586	1,002	866	722	1,050
31-35	820	621	1,230	1,010	722	1,283
36-40	807	615	1,342	1,050	722	1,443
41-46	729	615	1,366	1,050	722	1,575
46-50	729	598	1,366	945	722	1,575
51-55	697	583	1,458	866	722	1,443
56-60	685	574	1,458	825	722	1,540
61-65	692	583	1,528	787	722	1,575
<b>Average</b>	<b>736</b>	<b>597</b>	<b>1,344</b>	<b>925</b>	<b>722</b>	<b>1,436</b>

Table 15: Median hourly labor income by age cohort and education (CLP/hour, 2024 prices)

### Key observations:

- Median hourly income for workers **without university education** increased from 597 to 722 CLP/hour (+21%)
- Median hourly income for workers **with university education** increased from 1,344 to 1,436 CLP/hour (+7%)
- Non-university workers saw larger proportional gains, narrowing the education gap

## 8.2 University Education Premium

The education premium measures how much more university-educated workers earn compared to those without university education.

Cohort	2017	2024	Change
26-30	71.0%	45.4%	-25.6 pp
31-35	98.1%	77.7%	-20.4 pp
36-40	118.2%	99.9%	-18.3 pp
41-46	122.1%	118.1%	-4.0 pp
46-50	128.4%	118.1%	-10.3 pp
51-55	150.1%	99.9%	-50.2 pp
56-60	154.0%	113.3%	-40.7 pp
61-65	162.1%	118.1%	-44.0 pp
<b>Average</b>	<b>125.5%</b>	<b>98.8%</b>	<b>-26.7 pp</b>

Table 16: University education premium on median hourly income

**Striking finding:** The university education premium **declined substantially** across all age cohorts. On average, the median premium fell from 125.5% to 98.8% (a drop of 26.7 percentage points). This means:

- In 2017, university graduates earned  $2.25 \times$  the hourly wage of non-graduates
- In 2024, university graduates earn  $1.99 \times$  the hourly wage of non-graduates

### 8.3 Education Premium Across the Income Distribution

The following figures show how the education premium changed across different points of the hourly income distribution.

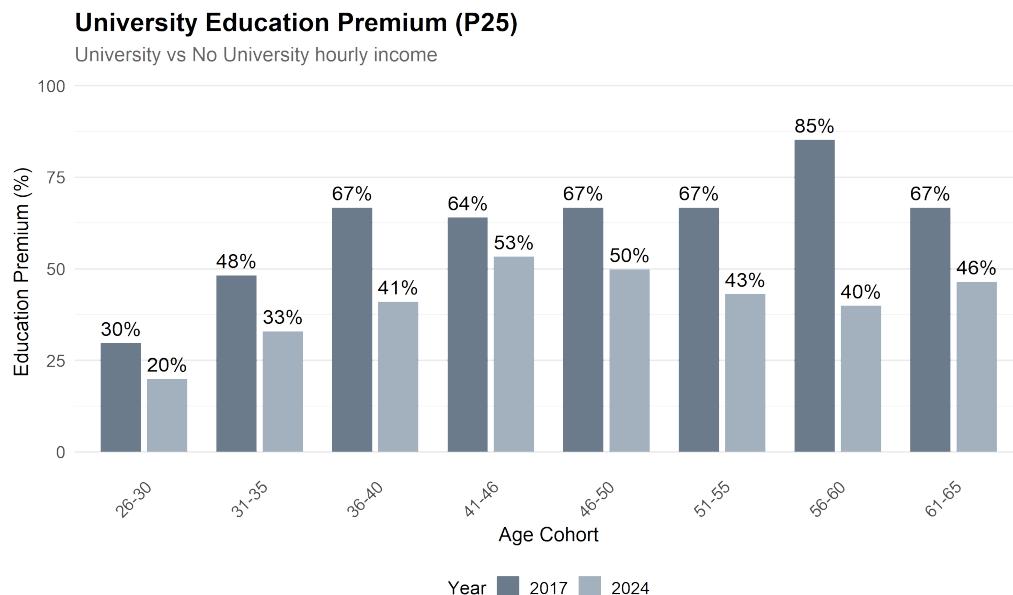


Figure 1: University education premium at P25 (lower-earning workers)

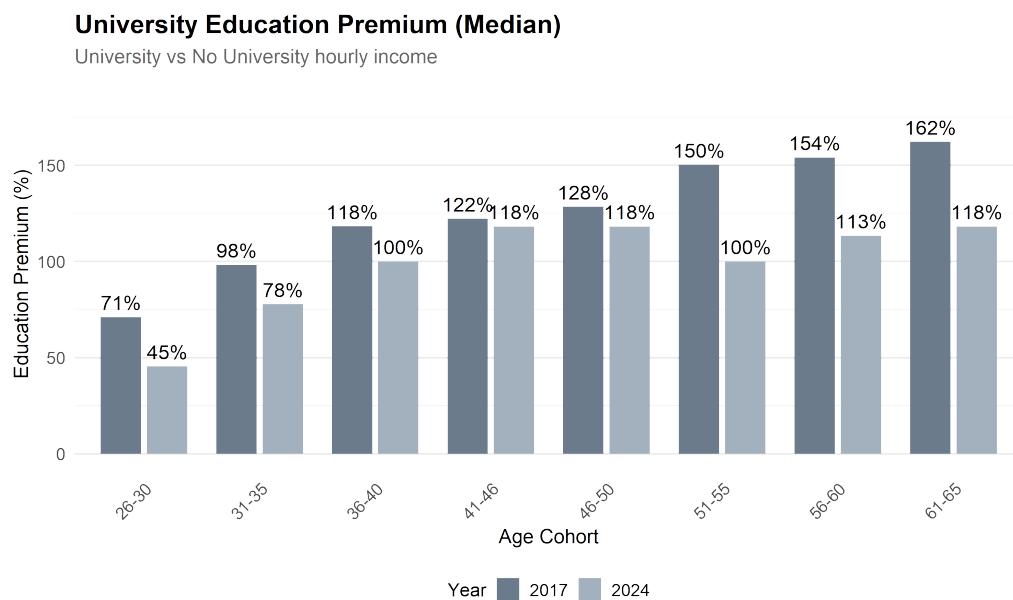


Figure 2: University education premium at median

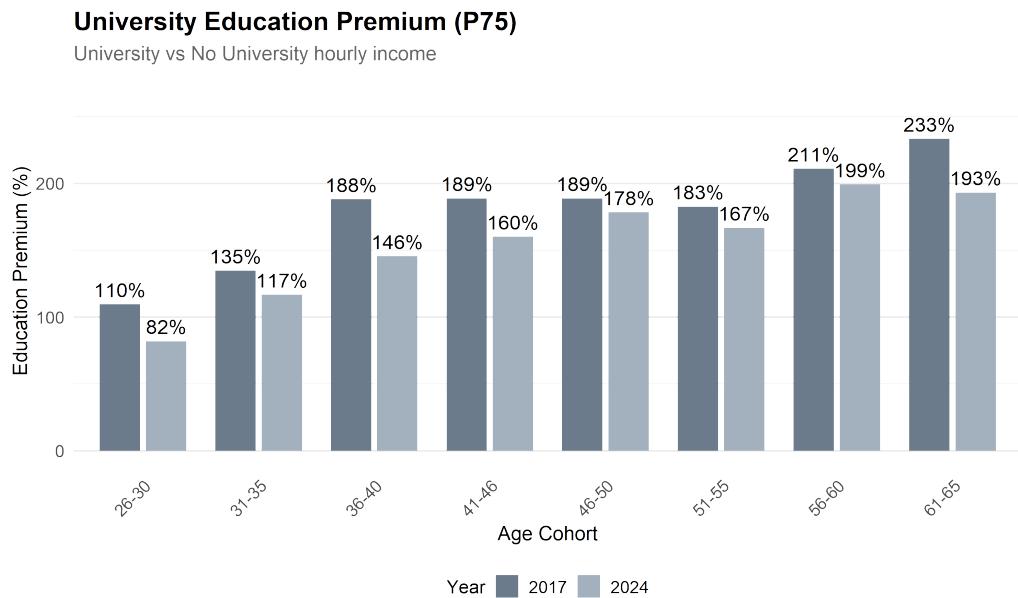


Figure 3: University education premium at P75 (higher-earning workers)

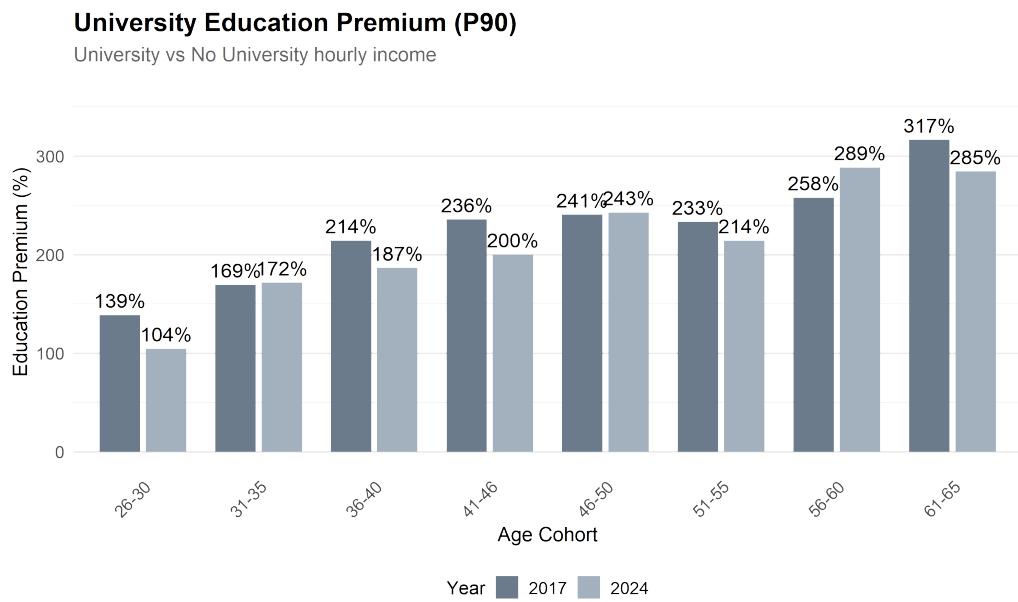


Figure 4: University education premium at P90 (top earners)

#### 8.4 Summary: Declining Returns to University Education

Percentile	Premium 2017	Premium 2024	Change
P25	61.7%	40.8%	-20.9 pp
Median	125.5%	98.8%	-26.7 pp
P75	179.6%	155.4%	-24.2 pp
P90	226.4%	211.8%	-14.6 pp

Table 17: Average education premium by percentile (all cohorts)

The education premium declined at all points of the distribution, with the largest decreases at the median and P75. This suggests:

- Wages for non-university workers grew faster than for university graduates
- The labor market may be experiencing compression at the middle and upper-middle of the distribution
- Minimum wage increases and labor market tightening may have disproportionately benefited lower-skilled workers

## 9 Key Takeaways

### 9.1 Chile's Transfer System for the Elderly is Highly Effective

State transfers eliminate 98.7% of autonomous poverty among elderly-only households, bringing total income poverty down to just 0.12%. This is a remarkably successful targeted policy.

### 9.2 Overall Poverty Reduction Driven by Market Income Improvements

The parallel decrease in both total and autonomous poverty (-5.2 pp each) indicates that economic growth, employment, and market wages improved substantially between 2017 and 2024.

### 9.3 Transfer Efficiency Nearly Doubled

Even though the absolute poverty reduction from transfers remained constant (~3.8 pp), transfers now eliminate a much larger share of autonomous poverty (45% vs 28%), as the base of autonomous poor decreased.

### 9.4 Regional Convergence

Historically poor regions (La Araucanía, Ñuble, Los Lagos) showed the largest poverty reductions, suggesting some regional convergence in living standards.

### 9.5 Growing Dependence of Elderly on Transfers

Without transfers, more elderly households would fall into poverty in 2024 than in 2017 (as measured by autonomous income distribution). The transfer system is compensating for what would otherwise be a deteriorating position of elderly households in the income distribution.

### 9.6 Declining Returns to University Education

The university wage premium fell from 125% to 99% at the median, driven by faster wage growth for non-university workers (+21%) compared to university graduates (+7%). This compression of the education premium occurred across all age cohorts and at all points of the wage distribution, suggesting structural changes in the labor market that favor less-educated workers.

## 10 Data Sources and Files

- **Raw Data:** raw\_data/CASEN\_2017.dta, raw\_data/casen\_2024.dta
- **Harmonized Data:** harmonized\_data/casen\_subset\_2017.dta, harmonized\_data/casen\_su
- **Poverty Analysis:** output/poverty\_comparison\_extended\_2017.xlsx, output/poverty\_co

- **Labor Income Analysis:** `output/labor_income_by_cohort.xlsx`, `output/labor_income_table.xlsx`
- **Analysis Code:** `codes/poverty_analysis.R`, `codes/compare_2017_2024.R`, `codes/labor_income.R`

## 11 Technical Notes

1. All poverty rates are weighted using survey expansion factors (`expr`)
2. Poverty lines are based on World Bank's \$8.3 PPP per day (moderate poverty)
3. Consistent methodology across both years: `ytotalcorh/numper` for total income, `(ytotalcorh-ysubh) / numper` for autonomous income
4. Regional analysis covers all 16 Chilean regions
5. Comunal analysis limited to Región Metropolitana