Job creation and firm dynamics[1]

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Central Bank of Chile

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Labor Markets and the Macroeconomy in a Changing World

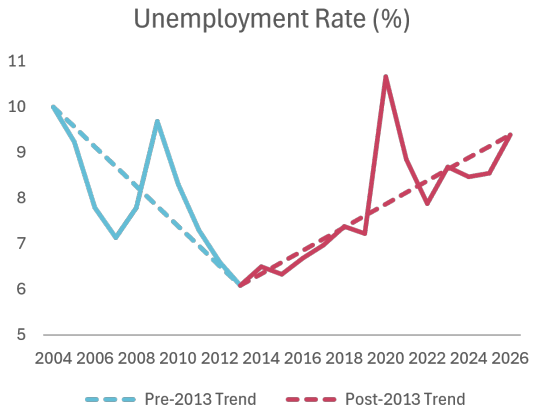
November 19, 2026

[1]The views expressed are those of the authors and do not necessarily represent the views of the Central Bank of Chile or its board members. This study was developed within the scope of the research agenda conducted by the CBC. The CBC has access to anonymized information from various public and private entities by virtue of collaboration agreements signed with these institutions.

Outline

1. Introduction
2. Stylized Facts
3. Model
4. Conclusions and next steps

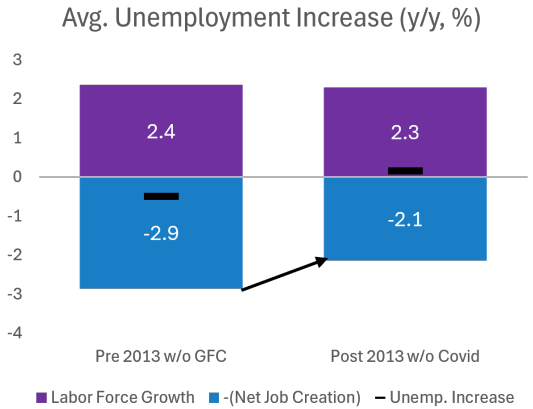
Long-lasting weakness in Chile's labor market



Note: Sample period 2004q1–2026q3 (latest available data). *Source:* Chile's National Institute of Statistics (INE).

- Current high rates of unemployment, among the highest in the OECD. Employment has not recovered its pre-COVID levels
- But there were signs of a change a decade earlier:
  - 2004–2013: unemployment **fell** from 10% to 6%
  - 2013–2026: unemployment **rose** steadily, back above 9%
- Labor market weakness coincides with other signs of a persistent slowdown: lower productivity growth and investment rates

Simple accounting: unemployment rose because employment growth slowed, not because the labor force grew faster



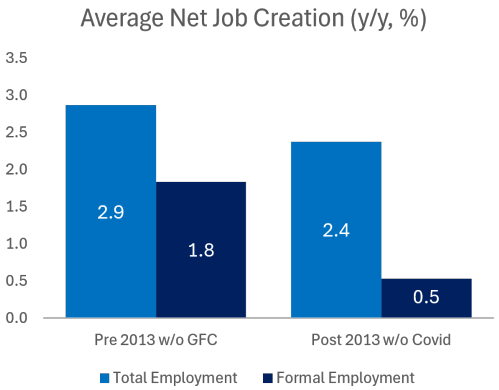
Note: Sample period 2004q1–2026q3 (latest available data). Averages exclude 2009–10 (GFC) and 2020–21 (COVID). *Source:* Chile's National Institute of Statistics (INE).

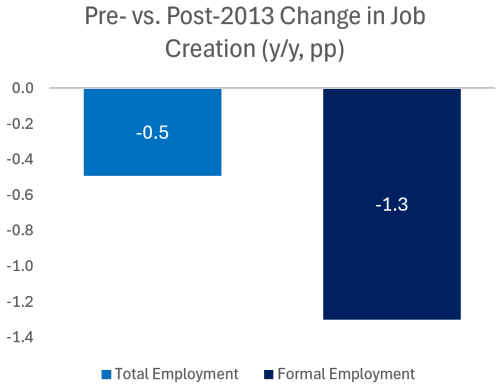
$$\Delta u_t \approx \underbrace{g_t^{LF}}_{\text{labor force}} - \underbrace{g_t^{E}}_{\text{net job creation}}$$

- Labor force growth was roughly unchanged: 2.4% $\rightarrow$ 2.3% per year (strong immigration in 2016–19 counteracted demographic trends)
- Net job creation falls: 2.9% $\rightarrow$ 2.1% per year

$\Rightarrow$ The change in the unemployment trend mostly comes from a **reduction in job creation**

The slowdown in job creation is concentrated in formal employment





Note: Sample period 2005–2025, restricted to the years covered by the SII administrative data; total employment therefore differs from the previous slide (2004–2026q3). Averages exclude 2009–10 (GFC) and 2020–21 (COVID). *Source:* Chile's National Institute of Statistics (INE) and Internal Revenue Service (SII).

- Formal net job creation falls from 1.8% to 0.5% per year (-1.3 pp), more than twice the drop in total employment (-0.5 pp)

$\Rightarrow$ This justifies our focus on **formal firms**, which we observe in administrative data

Several potential explanations for these developments

External/temporary shocks

- **End of the commodity boom (2012–13)**
- 2020 pandemic

Institutional framework

- Tax reforms
- **Labor regulation and labor costs**
- Business regulation
- Increased political uncertainty after 2019

Structural developments

- Loss of business dynamism
- Productivity slowdown
- Market power
- Technological change / labor substitution
- Demographic change

- These explanations can have different implications for **which firms** stop creating jobs and **through which margin**

$\Rightarrow$ Looking at firm-level job creation can help discipline the set of candidate explanations

- We start with two candidates whose timing seems to match the data:
  - **Terms of trade:** Chile is a commodity exporter, and the end of the commodity supercycle coincides with the 2013 macro slowdown
  - **Labor wedge:** recent regulatory changes have raised labor costs and will continue to do so in the future

This paper: what explains the decline in formal net job creation during the last decade?

1. **Accounting.** Using tax records (2005–2025), we split formal aggregate net job creation into the **extensive margin** (firm entry (creation) and exit (destruction)) and the **intensive margin** (net creation by incumbents)
2. **Stylized facts.** Two successive declines after **2005–2012**:
   - **2013–2021:** incumbents of all ages and sectors create fewer jobs, and new cohorts grow less over their life cycle; entry, exit and survival rates do not change. Robust to including crises (GFC and COVID)
   - **2022–2025:** incumbents keep weakening. Entry falls sharply, but mostly among small firms
3. **Mechanisms.** A small open economy model with firm dynamics, labor adjustment costs and wage rigidity:
   - the end of the commodity cycle accounts for most of the first step
   - the announced increase in labor costs matches the weakness of 2024–25
   - neither explains smaller firm sizes in post-2013 cohorts

Work in progress: we plan to explore additional mechanisms and empirical facts

Related literature

- **Business dynamism and job creation:** Haltiwanger, Jarmin & Miranda (2013); Decker et al. (2014, 2016); Akcigit & Ates (2021)
  → In Chile, the decline starts with weaker growth of incumbents; entry falls only after 2022
- **Firm life-cycle growth:** Hopenhayn (1992); Hsieh & Klenow (2014); Sedláček & Sterk (2017); García-Trujillo (2021); Smirnyagin (2023)
  → We document flatter life-cycle profiles for post-2013 cohorts
- **Labor wedges and employment:** Chari, Kehoe & McGrattan (2007); Shimer (2009); Karabarbounis (2014)
  → We embed a labor wedge in an SOE model with firm dynamics
- **Labor markets with microdata at the CBC:**

  Job transitions and reallocation: Crispi et al. (2026), Contreras et al. (2026), Gilmore et al. (2025), Albagli et al. (2023, 2024)

  Wage dynamics: Giarda et al. (2025), Castillo et al. (2024), García-Trujillo et al. (2024), Guzmán (2024), Huneeus et al. (2024), Albagli et al. (2022)

Outline

1. Introduction

2. Stylized Facts
   - Data
   - Accounting framework
   - Fact 1: A two-step decline, mostly through the intensive margin
   - Fact 2: Stable entry, exit and survival until the pandemic
   - Facts 3–5: 2013–2021, less job creation by incumbents
   - Summary and hypotheses

3. Model

4. Conclusions and next steps

Data

- Chilean IRS (SII) employer–employee records, 2005–2025 (latest year available)
- Cover all tax-paying firms and formal wage employment (about 80% of total wage employment)
- We measure annual employment at the firm level and compute firm-level job creation, job destruction, entry and exit
- Firm characteristics: industry and year of creation (left-censored at 1998)
- Sample: about 290 thousand firms per year, with 20 workers on average
- Periods: **2005–2012** **2013–2021** **2022–2025**

Accounting framework: two margins of net job creation at the firm level

Aggregate net job creation is the sum of employment changes in firms:

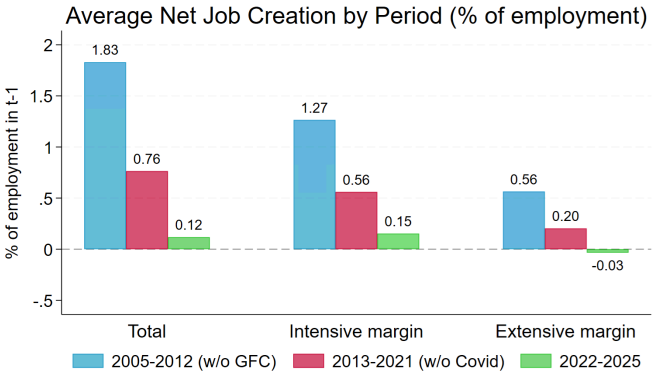
$$\frac{E_t - E_{t-1}}{E_{t-1}} = \underbrace{\sum_{i \in \text{Inc}_t} \frac{e_{it} - e_{i,t-1}}{E_{t-1}}}_{\text{Intensive margin: incumbents}} + \underbrace{\frac{\sum_{i \in \text{Ent}_t} e_{it}}{E_{t-1}}}_{\text{Entrants}} - \underbrace{\frac{\sum_{i \in \text{Exit}_t} e_{i,t-1}}{E_{t-1}}}_{\text{Exiters}}$$

- **Intensive margin: net** job creation from incumbent firms, which depends on the stage of their life cycle and their optimal size
- **Extensive margin:** job creation from entry and job destruction from exit. The contribution of entrants is

$$\underbrace{\frac{N_t^{ent}}{N_{t-1}}}_{\text{entry rate}} \times \underbrace{\frac{\bar{e}_t^{ent}}{\bar{e}_{t-1}}}_{\text{relative size of entrants}}$$

  so the employment effect of a fall in the *number* of entrants depends on their size
- Shocks to relative prices or labor costs affect both margins

Fact 1: Formal net job creation fell before and after the pandemic, mostly through the intensive margin



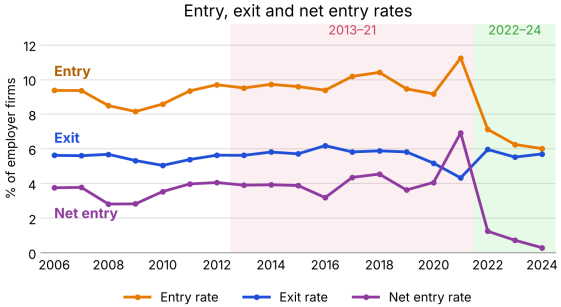
Sample: 2005–2025. Averages exclude 2009–10 (GFC) and 2020–21 (COVID). *Source:* SII employer–firm records.

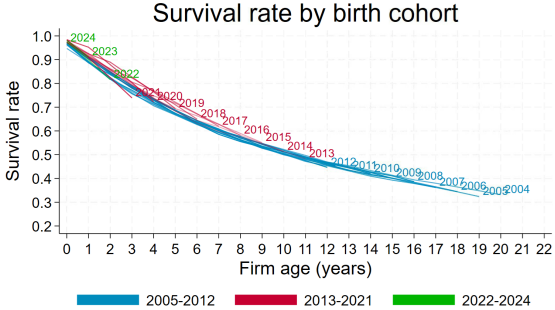
Change in net job creation (pp)

	2013–21 vs. 2005–12	2022–25 vs. 2013–21
Total	−1.07	−0.64
Intensive	−0.71 (66%)	−0.41 (64%)
Extensive	−0.36 (34%)	−0.23 (36%)
(of which)		
Entrants	−0.42	−0.24

- Net job creation: 1.8% → 0.8% → 0.1%
- Changes in job destruction from exit play a negligible role

Fact 2: Entry, exit and survival were stable until the pandemic



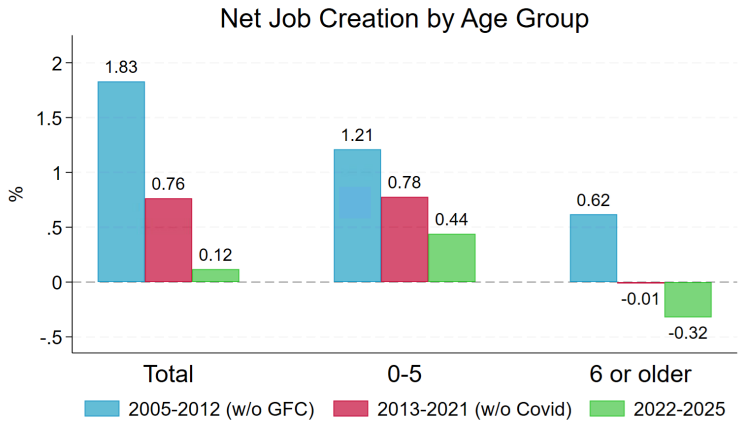


Source: SII employer-firm records.

- Entry and exit rates are flat around 2013, and post-2013 cohorts survive as much as (if anything, slightly more than) earlier ones: no loss of business dynamism in the US sense
- After the pandemic, firm entry falls by about a third, but the impact on employment has been bounded: the firms that stop entering are small, so entrants' job contribution falls by only about 17% Entry and employment

$\Rightarrow$ Firms are not dying at faster rates, but surviving firms create fewer jobs

Fact 3: Net job creation falls in firms of all ages and in all sectors

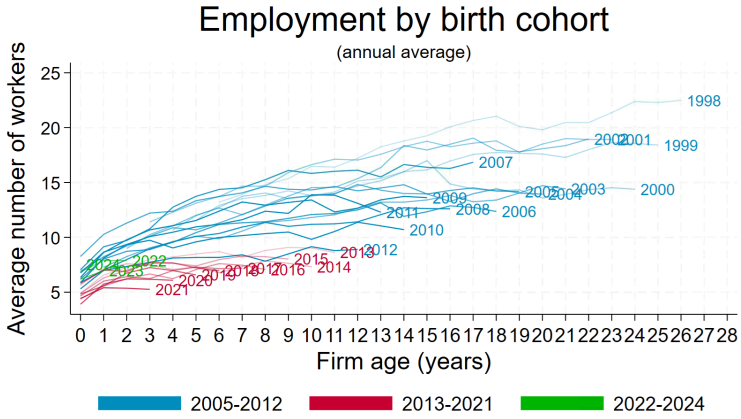


Note: Contributions to aggregate net job creation (% of employment). Age 0–5 includes entrants. *Sample:* 2005–2025. Averages exclude 2009–10 (GFC) and 2020–21 (COVID). *Source:* SII employer-firm records.

- **2013–21:** mature firms shift from net creators (+0.62) to net destroyers (−0.01); young firms create less because entrant cohorts are smaller
- **2022–25:** young firms fall further (0.78 → 0.44) and older firms keep shrinking (−0.32)
- **Across sectors:** the decline after 2013 is present in almost every sector, tradable and non-tradable By sector

⇒ Mostly **mature firms that stopped growing**, in a process with **aggregate** reach

Fact 4: Post-2013 cohorts started smaller and grew less over their life cycle



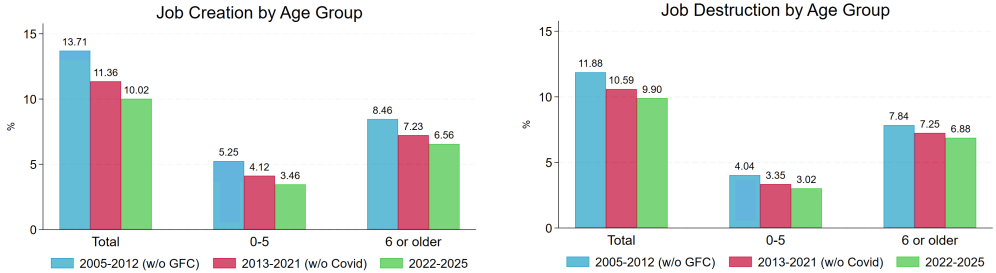
Note: Employment is observed from 2004 onward; cohorts born before 2004 enter the figure at their age in 2004. *Source:* SII employer-firm records.

- **Pre-2013** cohorts reach 10–15 workers by age 5–10
- **Post-2013** cohorts start somewhat smaller and plateau at 6–8 workers
- **2022–24** cohorts enter larger than 2013–21 cohorts, in line with Fact 2

⇒ The intensive margin operates through **flatter life-cycle growth**

- Interestingly, productivity by cohort shows a similar pattern (ongoing research)

Fact 5: Less job creation, not more job destruction



Sample: 2005–2025. Averages exclude 2009–10 (GFC) and 2020–21 (COVID). *Source:* SII employer-firm records.

- Gross job creation declines by 3.7 pp: 13.7% → 11.4% → 10.0%
- Gross job destruction declines by 2.0 pp: 11.9% → 10.6% → 9.9%

⇒ Creation falls almost twice as much as destruction, in young and mature firms alike: firms are **hiring less**, not shedding more jobs. This could suggest that there are no clear signs (yet) of widespread labor-saving automation and substitution.

- Therefore, job reallocation and turnover (not discussed today) have also declined

Summary of facts

2013–2021

- Net job creation rate falls by more than half ($1.8\% \rightarrow 0.8\%$)
- 66% of the decline comes from incumbents; no change in entry, exit or survival rates
- Observed across all firm cohorts and sectors
- Flatter firm life-cycle employment profiles

$\Rightarrow$ **Potential driver:** end of the commodity cycle

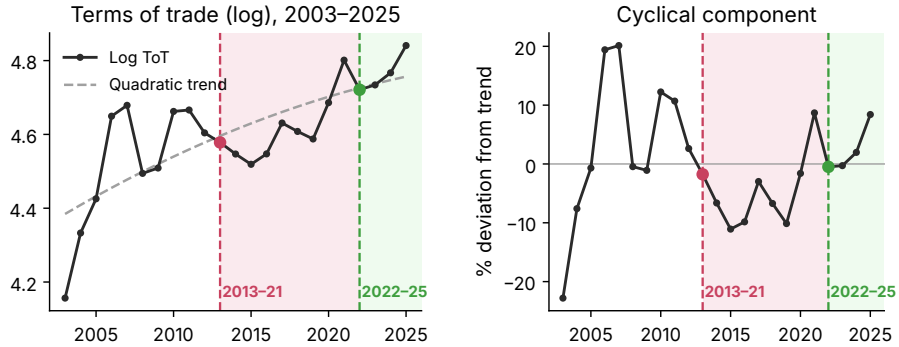
2022–2025

- Net job creation becomes almost nil (0.1%)
- Hiring further deteriorates at incumbents; mature firms are clearly net destroyers
- Entry falls sharply, mostly for small firms

$\Rightarrow$ **Potential driver:** rising labor costs

- We evaluate both with a small open economy model with firm dynamics, entry, exit and labor adjustment costs

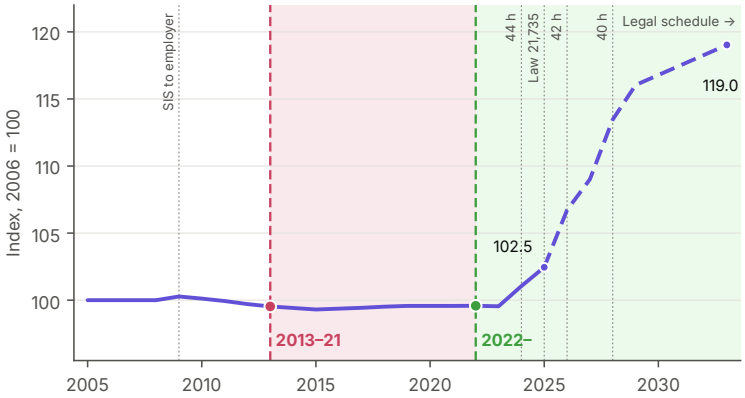
Potential driver: Evolution of terms of trade



Note: Annual log terms of trade. Quadratic trend fitted over 2003–2025, following Schmitt-Grohé and Uribe (2018). *Source:* Central Bank of Chile.

- Above trend in 2006–2012 (up to 20%) and below trend through 2013–2020 (down to −10%)
- In 2022–2025: above trend, unlikely driver of the 2nd decline in job creation
- Net job creation also fell after 2013 in most commodity-exporting countries Cross-country evidence

Potential driver: Evolution of a labor wedge



Note: Firm labor cost per hour relative to the worker's take-home pay, including employer- and worker-paid social security contributions and the effect of the reduction in the statutory workweek (Law 21,561). 2005–2025: historical; 2026–2033: legislated schedule (Laws 21,561 and 21,735). Representative worker. *Source:* Authors' calculations based on current legislation and the Superintendence of Pensions.

- We normalize the wedge to 100 in 2006 and track legislated changes in maximum weekly hours and social security contributions (minimum wage not included)
- The wedge is roughly constant until 2023. By 2025 it was 2.5% higher; the legislated schedule takes it 19% above its 2006 level by 2033
- Most of the increase is legislated but not yet in place, so **anticipation** matters for hiring today

Construction of the labor wedge

Outline

1. Introduction
2. Stylized Facts
3. Model
   - Setup
   - Calibration and mechanics
   - Results
4. Conclusions and next steps

The model: a small open economy with firm dynamics

Structure

- SOE with three sectors: importable (m), exportable (x), nontradable (n); household block as in Uribe & Schmitt-Grohé (2017)

  Details

- In each sector, firm dynamics as in Clementi & Palazzo (2016): idiosyncratic productivity, endogenous **entry** and **exit**, life-cycle growth
- Annual frequency; exact nonlinear perfect-foresight transitions

Two labor-market frictions

- **Firm-level labor adjustment costs**

$$AC(l, n) = \frac{\gamma}{2}\, \bar{w} \left(\frac{n}{l} - 1 \right)^2 l$$

  Employment becomes a firm state: **expected** labor costs affect hiring and exit **today**

- **Real wage rigidity** (Blanchard & Galí, 2007)

$$\log w_t = \gamma_w \log \bar{w} + (1 - \gamma_w) \log w_t^*$$

  Hours are set by labor demand

Two drivers fed into the model, 2005–2025

Terms of trade

$$\log \frac{tot_t}{\overline{tot}} = \rho_{tot} \log \frac{tot_{t-1}}{\overline{tot}} + \pi_{tot}\, e_t, \quad tot_t = \frac{p_{x,t}}{p_{m,t}}$$

- Observed innovations; each is a **surprise**, expected to revert ($\rho_{tot} = 0.47$)
- Effects on relative prices and income: exportables and nontradables expand, importables contract

Labor wedge

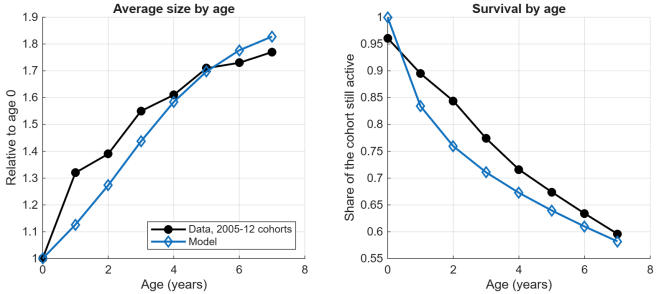
firms pay $w_{s,t}(1 + \tau_{l,t})$, workers receive $w_{s,t}$

- Legislated path (SS contributions and cap on max. working hours): 1% of the wage in 2024, 19% by 2033
- Full path **announced in 2022**: firms anticipate future costs
- Revenue rebated as lump sum

- Decomposition: $NJC_t^{data} = NJC_t^{tot} + NJC_t^{\tau} + \text{residual}_t$, data demeaned (no trend in the model)

Details

Calibration: the model reproduces the life cycle of Chilean firms

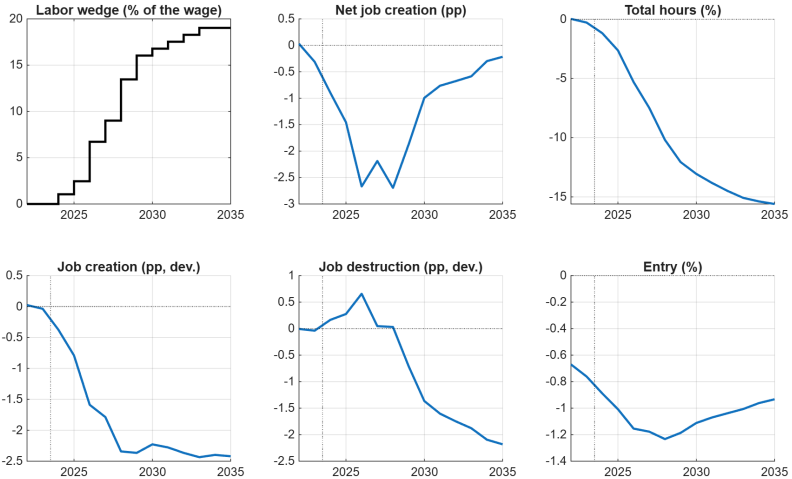


Note: Size relative to entry and share of the cohort still active, 2005–12 cohorts. *Source:* SII employer-firm records and model steady state.

Parameter	Value	Target / source
γ; $\Delta\mu_{cf}$; σ_{cf}	0.60; −0.53; 0.73	Size and survival, ages 1–7; exit rate 5.5%
γ_w	0.2	SD of NJC Grid
ρ_{tot}; π_{tot}	0.47; 0.076	Chilean *tot*
Frisch elasticity	1	USG (2017)
θ; ρ_z; σ_z	0.8; 0.55; 0.22	CP (2016)

- Size at age 7: 1.83 (data 1.77)
- Survival at age 19: 0.34 (data 0.34), untargeted
- Age-1 gaps reflect timing: data years are calendar years, the model's are full years Cohorts

Mechanics: the announced labor wedge lowers job creation before it takes effect

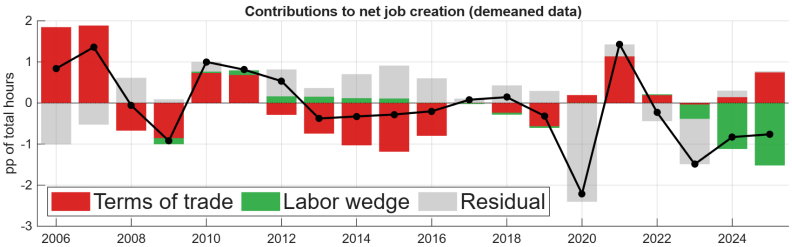


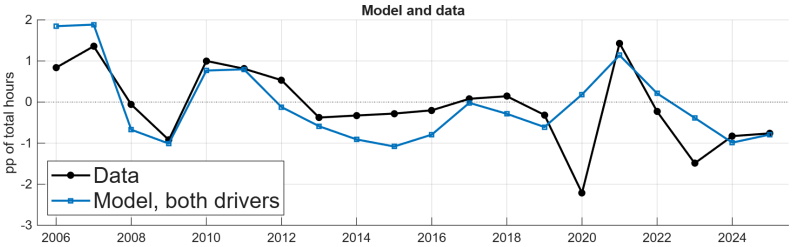
Note: Legislated path announced in 2022, no other shock. Dotted line: last year before the wedge takes effect.

- **2023**, before the wedge starts: net job creation falls by 0.3 pp, through **more exit and less entry**
- **2024–25**: -0.9 and -1.5 pp, mostly through **incumbents' hiring**
- Adjustment is gradual: job creation keeps falling as the wedge rises

Terms-of-trade shock

Decomposition of net job creation



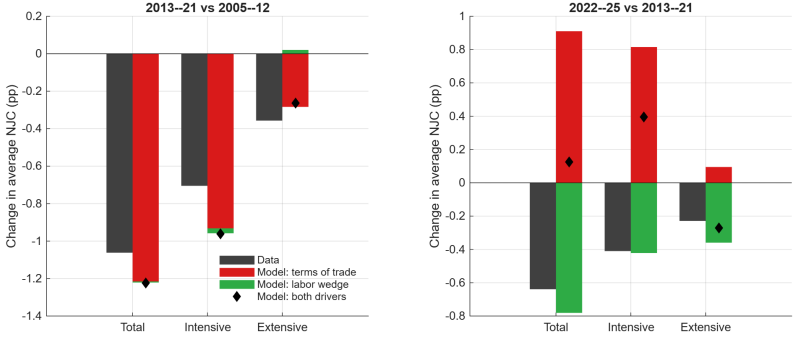


Note: Pp of steady-state hours; line: data, demeaned over 2005–2025.

- **Terms of trade** drive the cycle until 2021: boom in 2006–07, end of the boom in 2013–16
- **Labor wedge** accounts for the weakness of 2024–25: -1.1 and -1.5 pp; model within 0.2 pp of the data
- **Unexplained:** the pandemic and the 2023 fall (-1.5 pp; anticipation gives -0.35)
- Fit, excluding crises: correlation 0.80, 44% of the variance

The model accounts for the first decline; the wedge alone, for the second

Change in average net job creation between periods (pp): Data vs. Model

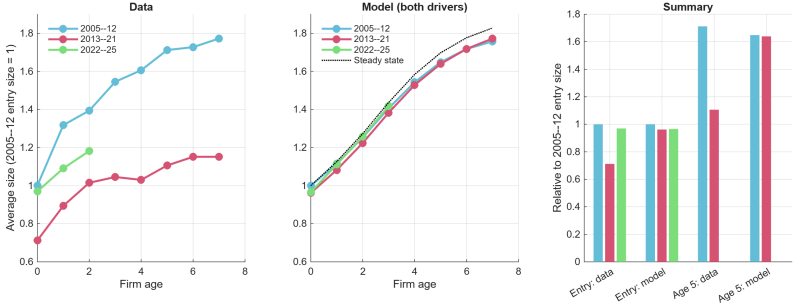


Sample: 2005–2025, excluding crisis years (2009–10 and 2020–21). *Note:* Gray: data. **Red** and **green**: contribution of each driver in the model. **Diamond**: model with both drivers.

- **2013–21:** model -1.22 vs. data -1.07; too much on the intensive margin, too little on the extensive
- **2022–25:** the wedge alone fits the fall (-0.78 vs. -0.64) and its split, mostly intensive
- What breaks the fit is the terms-of-trade recovery ($+0.91$), absent in the data

The drivers do not explain why post-2013 cohorts are smaller

Average firm size by age and birth cohort: Data vs. Model



Note: Average size of surviving firms by age and cohort, relative to the entry size of the 2005–12 cohorts.

- **Data:** 2013–21 cohorts enter 29% smaller and stay small
- **Model:** cohorts are almost identical (entry size −4%)
- Exportable entrants are smaller, but importable entrants are larger; wages absorb part of the price change; *tot* shocks are expected to revert

⇒ Smaller cohorts point to a mechanism outside the two drivers By sector

Conclusions

- Chile's labor market weakness largely predates the pandemic: since 2013, unemployment rises because **job creation slows**, and the slowdown is concentrated in formal employment
- Formal net job creation fell in two periods: 1.8% → 0.8% → 0.1%
  - **2013–2021:** two thirds of the drop comes from incumbents, across ages and sectors, with flatter life cycles; entry, exit and survival rates do not change
  - **2022–2025:** incumbents keep weakening and mature firms shed jobs; entry falls by about a third, but the firms that stop entering are small

⇒ Unlike the US "declining dynamism" story, the decline starts with the **employment decisions of existing firms**, not with business formation

- **Model** (SOE with firm dynamics, labor adjustment costs and wage rigidity):
  - **End of the commodity cycle** accounts for most of the first period, on both margins
  - **Announced rise in labor costs** accounts for the weakness of 2024–25; anticipation already lowers job creation in 2023, through exit and entry
  - **Not explained:** the 2023 fall in incumbents' hiring and the smaller post-2013 cohorts

Next steps and future research

- **Model and empirics**
  - Strengthen the calibration strategy
  - Further characterize heterogeneity in dynamics across firm cohorts
  - Account for other potential mechanisms
- **Extensions**
  - Worker heterogeneity; job ladders and wage dynamics
  - Gross job flows and reallocation patterns

Job creation and firm dynamics

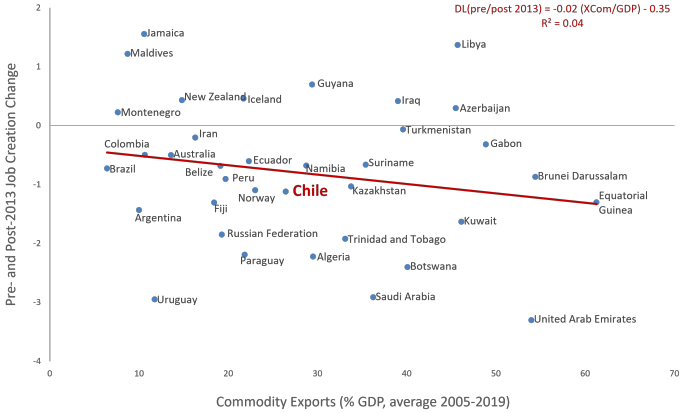
Thank you!

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Central Bank of Chile

Backup: Net job creation also fell after 2013 in most commodity exporters

Change in net job creation, pre- vs. post-2013 (pp)

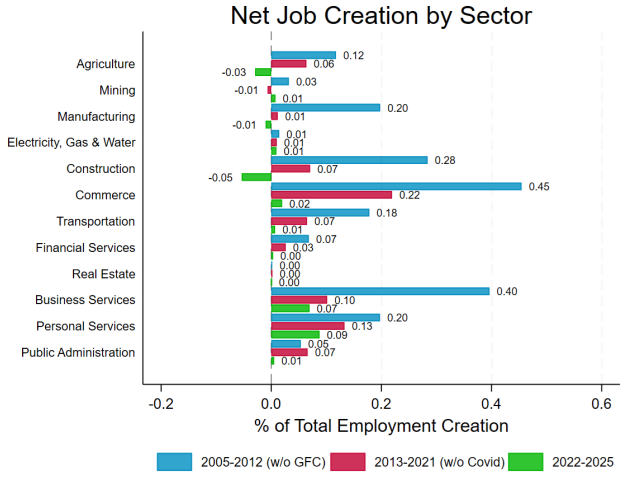


Note: Countries whose commodity exports exceed 60% of exports of goods and 6% of GDP, with GDP per capita above the 40th percentile (2005–2019 averages). Excludes countries with a change below −4 pp (outliers). *Source:* World Bank (World Development Indicators) and UNCTADstat (United Nations).

- About three out of four commodity exporters show lower net job creation after 2013
- Chile (-1.1 pp) is close to the fitted line
- The size of the decline is only weakly related to commodity exposure (slope -0.02, $R^2 = 0.04$)

Back

Backup: Net job creation declines across all sectors



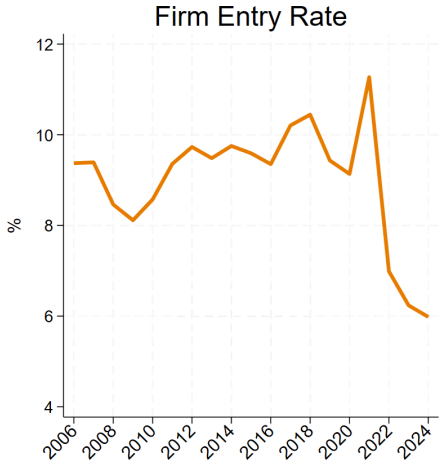
Sample: 2005–2025. Averages exclude 2009–10 (GFC) and 2020–21 (COVID). *Source:* SII employer-firm records.

- After 2013, net job creation falls in almost every sector, both tradable and non-tradable. Aggregate trend is not driven by a particular industry.
- Largest absolute declines are in retail, business services, construction and manufacturing, which are large employers
- Mining's direct contribution to employment is small throughout

$\Rightarrow$ This points to a mechanism with **aggregate** implications, not a sector-specific process

Back

Backup: Entry fell sharply after the pandemic, but the employment impact was bounded



Source: SII employer-firm records.

	2005–12	2013–21	2022–25
Annual entry rate (%)	9.26	9.76	6.40
Entrants' contribution (pp)	1.81	1.39	1.15
Rel. size of entrants (%)	20	14	18

Note: Relative size of entrants: $\bar{e}_t^{ent} / \bar{e}_{t-1}$ = entrants' contribution / annual entry rate (accounting framework). *Sample:* 2005–2025. Averages exclude 2009–10 (GFC) and 2020–21 (COVID). *Source:* SII employer-firm records.

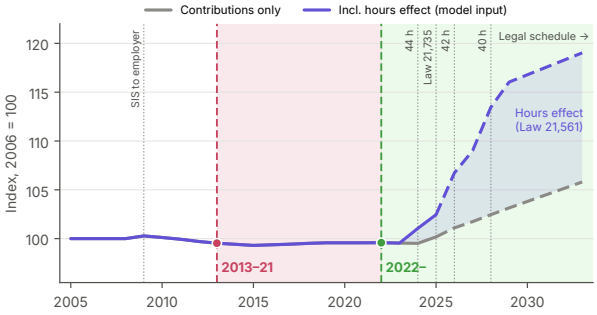
- After the pandemic, the entry rate falls by about 34%, but entrants' job contribution falls by only about 17%

$\Rightarrow$ Selection: the decline in entry is concentrated among small firms, so the relative size of entrants rises (14% $\rightarrow$ 18%)

- Still, lower entry accounts for over a third of the 2022–25 drop in net job creation (Fact 1). Impact can also compound over time.

Back

Backup: Construction of the labor wedge



$$B_t = \frac{1+\tau_t^e}{1-\tau_t^w} \times \frac{45}{\bar{h}_t}, \qquad 1+\tau_{l,t} = \frac{B_t}{B_{2006}}$$

τ^e	Unemployment insurance 2.4%; disability and survivor insurance (SIS, employer-paid since Jul-2009, Law 20,255); work-accident insurance, basic rate 0.95%; SANNA 0.03% (since 2018); Law 21,735: 1% (Aug-2025) → 8.5% (Aug-2033), SIS integrated from Aug-2026
τ^w	Pension 10%; health 7%; unemployment insurance 0.6%; pension fund fee (incl. SIS until 2009)
$\bar{h}$	Statutory workweek: 45 h → 44 (Apr-2024), 42 (Apr-2026), 40 (Apr-2028), with monthly pay protected

Assumptions: open-ended contract, earnings below the contribution ceiling and the income-tax exemption threshold. 2026–2033: legislated schedule, other parameters held at 2025 values. In the model, an exogenous path with $\tau_l = 0$ in the initial steady state.

Back

Backup: Household, goods aggregation and wages

Preferences (GHH, no wealth effects on labor supply), unit Frisch elasticity ($\omega = 2$):

$$U_t = \frac{1}{1-\sigma}\Big(c_t - \sum_{s\in\{m,x,n\}} \frac{h_{s,t}^{\omega}}{\omega}\Big)^{1-\sigma}, \qquad w_{s,t}^{*} = h_{s,t}^{\omega-1}$$

Wages: $\log w_{s,t} = \gamma_w \log \bar{w}_s + (1-\gamma_w)\log w_{s,t}^{*}$, $\gamma_w = 0.2$; hours set by labor demand

Final good: CES over tradable composite and nontradables; tradable composite is Cobb–Douglas over m and x

$$B_t = \Big(\chi_\tau a_{\tau,t}^{1-1/\mu_{\tau n}} + (1-\chi_\tau) a_{n,t}^{1-1/\mu_{\tau n}}\Big)^{\frac{1}{1-1/\mu_{\tau n}}}, \qquad A_t = a_{m,t}^{\chi_m} a_{x,t}^{1-\chi_m}$$

External sector: sector-specific capital with adjustment costs; debt-elastic premium

$$d_t = (1+r_{t-1})d_{t-1} + m_t - x_t, \qquad r_t = r^{*} + \psi\big(e^{d_t - \bar{d}} - 1\big)$$

Firms: $y = z\,(k^{\alpha} n^{1-\alpha})^{\theta}$; exit if operating cost $cf \sim \text{LogNormal}(\mu_{cf}, \sigma_{cf}^2)$ exceeds the continuation value; bounded logit entry from a pool of prospective entrants

Back

Backup: Decomposition, information and solution

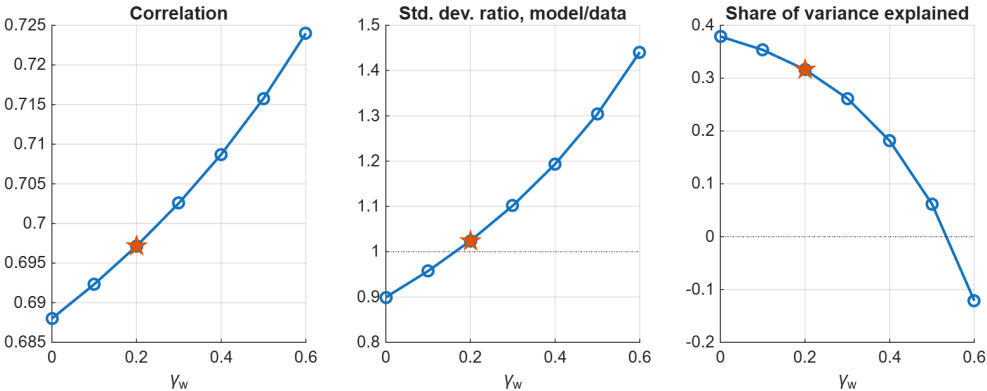
- Three simulations over 2005–2025, starting from the steady state in 2004: terms of trade only, wedge only, both

$$NJC_t^{data} = NJC_t^{tot} + NJC_t^{\tau} + \underbrace{\left(NJC_t^{both} - NJC_t^{tot} - NJC_t^{\tau}\right)}_{\text{interaction} \leq 0.02 \text{ pp}} + \underbrace{\left(NJC_t^{data} - NJC_t^{both}\right)}_{\text{unexplained}}$$

- $NJC_t = 100\,(H_t - H_{t-1})/\bar{H}$, additive across sectors; data demeaned
- **Information:** each year's terms-of-trade innovation is a surprise; before 2022 the small historical wedge is a surprise expected to persist; in 2022 the full legislated path to 2033 becomes known
- Solved as a sequence of nonlinear perfect-foresight problems in sequence space (MATLAB); validated against Dynare for the model without adjustment costs

Back

Backup: Choosing the degree of wage rigidity

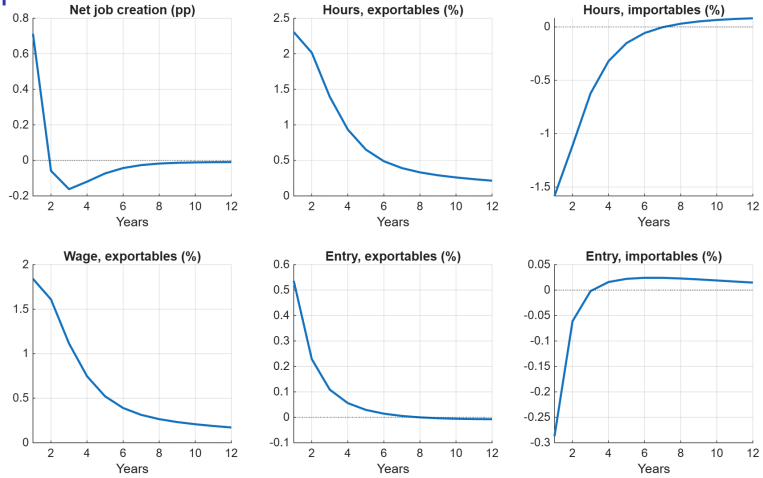


Note: Model with both drivers against the data, linear approximation, excluding 2008–09 and 2020–21. Star: baseline $\gamma_w = 0.2$.

- $\gamma_w = 0.2$ matches the volatility of net job creation; rigidity improves the timing but amplifies the response
- The data pin down $(1 - \gamma_w)(\omega - 1)$: the pass-through of *tot* into wages would separate the two

Back

Backup: Response to a terms-of-trade shock

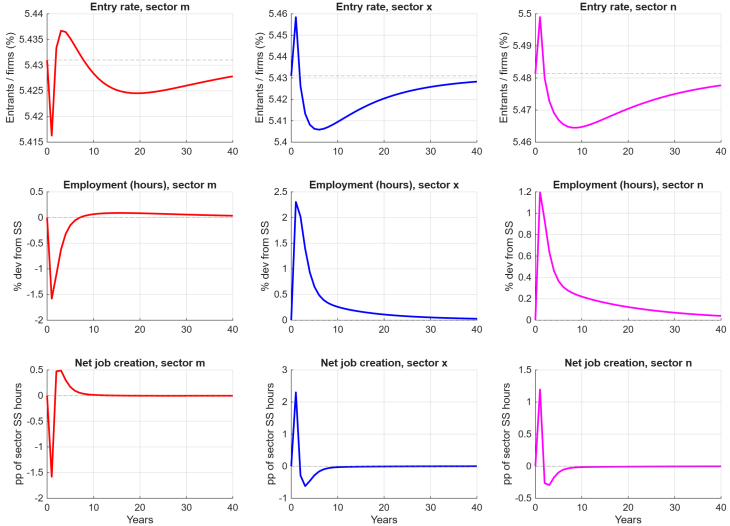


Note: One-time unanticipated 7.6% improvement in *tot* ($e_1 = 1$), $\rho_{tot} = 0.47$. % deviation from steady state; net job creation in pp of steady-state hours.

- Net job creation +0.7 pp on impact; exportables expand, importables contract; entry carries part of the adjustment because entrants choose their size at no cost

Sectors Back

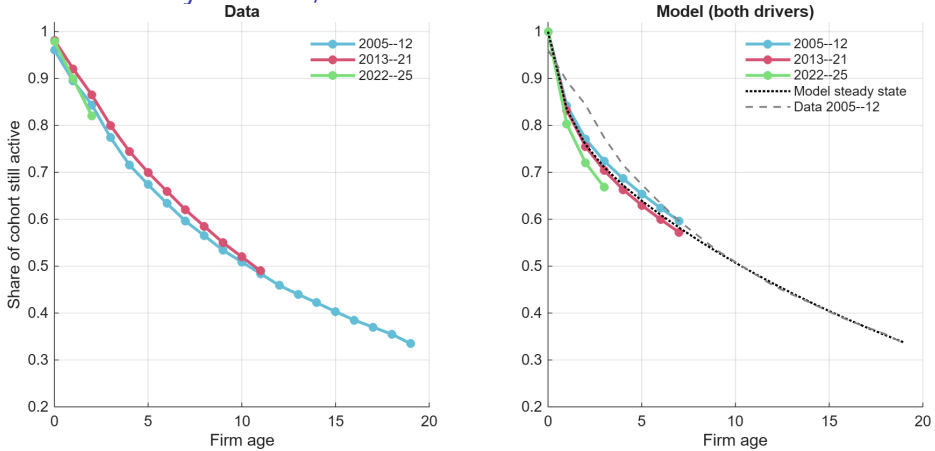
Backup: Response to a terms-of-trade shock, by sector



Note: Rows: entry rate, employment, net job creation. Columns: sectors m, x, n.

Back

Backup: Survival by cohort, model and data



Note: Model cohorts followed to age 7 (firms aged 8+ are pooled); dotted line: model steady state followed to age 19; dashed line: 2005–12 data.

- Steady state matches the data from age 7 to 19 (untargeted); too much exit in the first year
- The announcement raises exit for the 2022–25 cohorts, more than in the data

Back

Backup: Why entry size barely falls in the model after 2013

		05–12	13–21	22–25
Exportables	Entry size	7.2	−4.6	1.6
	p_x/w_x	2.4	−3.7	2.0
Importables	Entry size	−3.6	3.4	−2.5
	p_m/w_m	−2.9	0.7	−0.4
Nontradables	Entry size	4.0	−1.7	−0.7
	p_n/w_n	1.3	−2.4	1.0
All sectors	Entry size	2.9	−1.0	−0.6
Log $tot \times 100$		13.6	−8.2	3.4

Note: Period averages, % deviation from steady state, model with both drivers.

- Lower *tot* shrinks exportable entrants (−12% between periods), but **importable entrants grow** (+7%)
- **Wages absorb** most of the price change: p_x/w_x falls only 6%
- **Entrants look ahead**: shocks revert ($\rho_{tot} = 0.47$) and resizing is costly, so they catch up by age 5
- Selection plays almost no role

Back