

# Chilean Economy: Evidence-Based Decisions?

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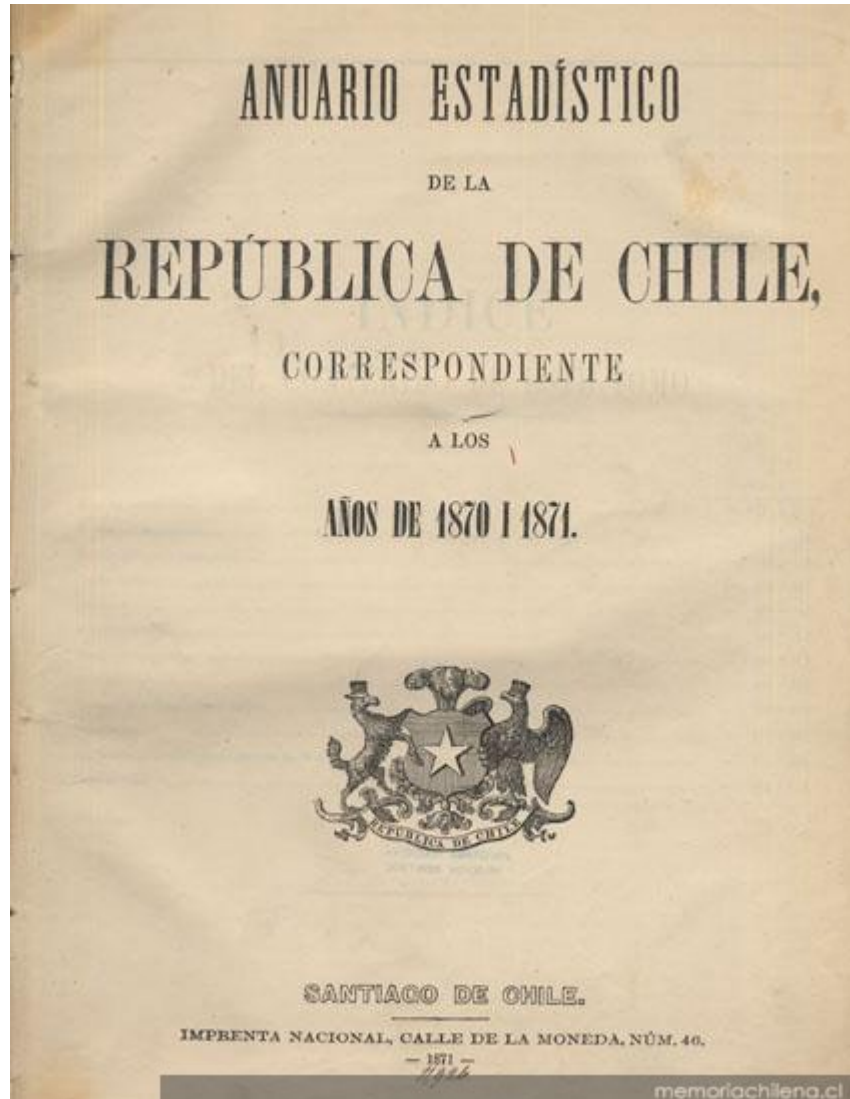
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# Introduction

- Objective: to show specific cases in which data availability and analysis influenced relevant economic decisions.
- How has the use of data, even if limited or rudimentary, been key in formulating public policies?
- Four cases.

# Two preliminary notes

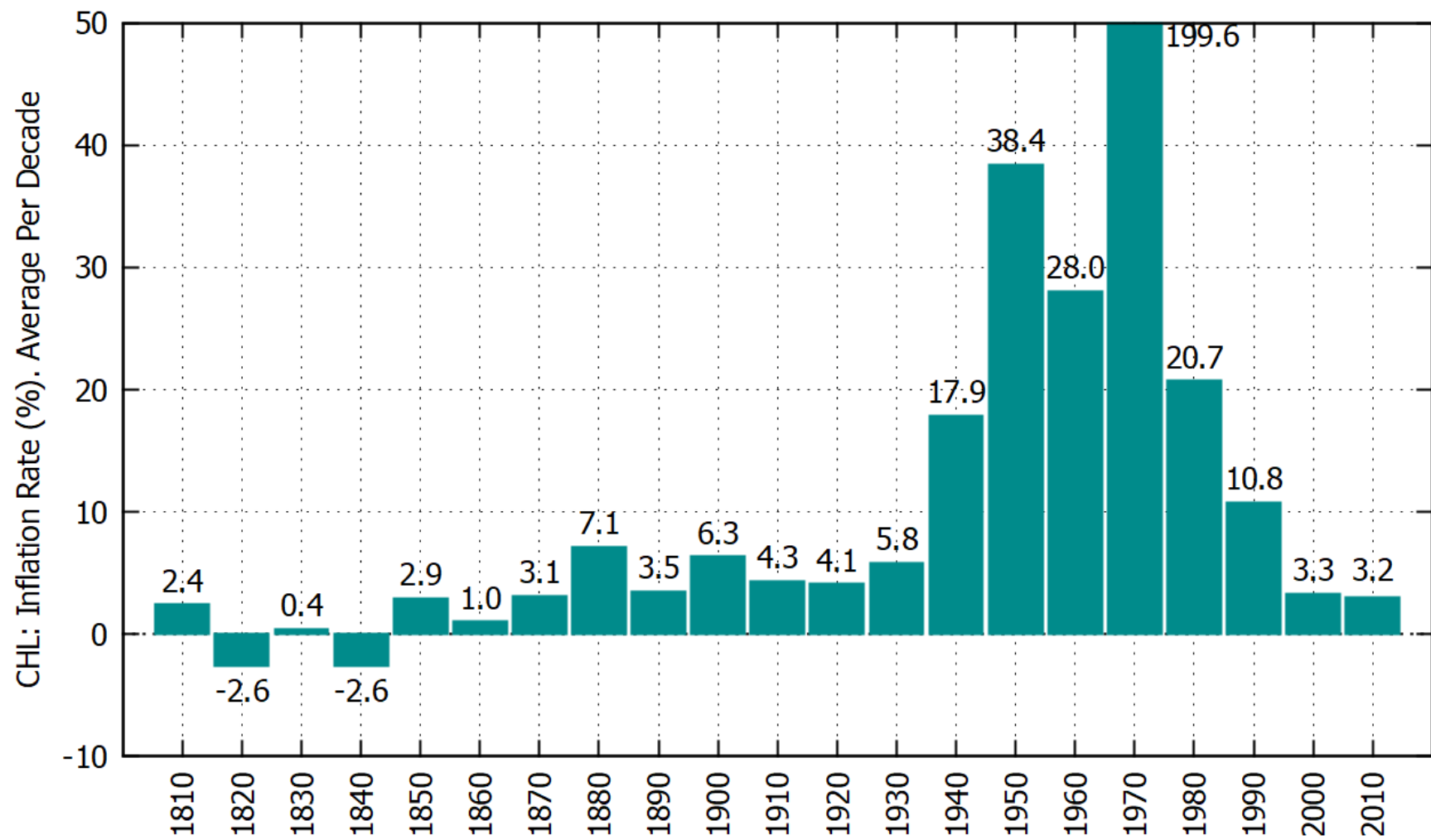


- Where does the data come from in Chile?
- Using data, do we have better public policies?
  - Not necessarily
  - Data is an input for the decision, but the decision is a process of collective discernment.

# Case 1: Banking situation in the 19th century

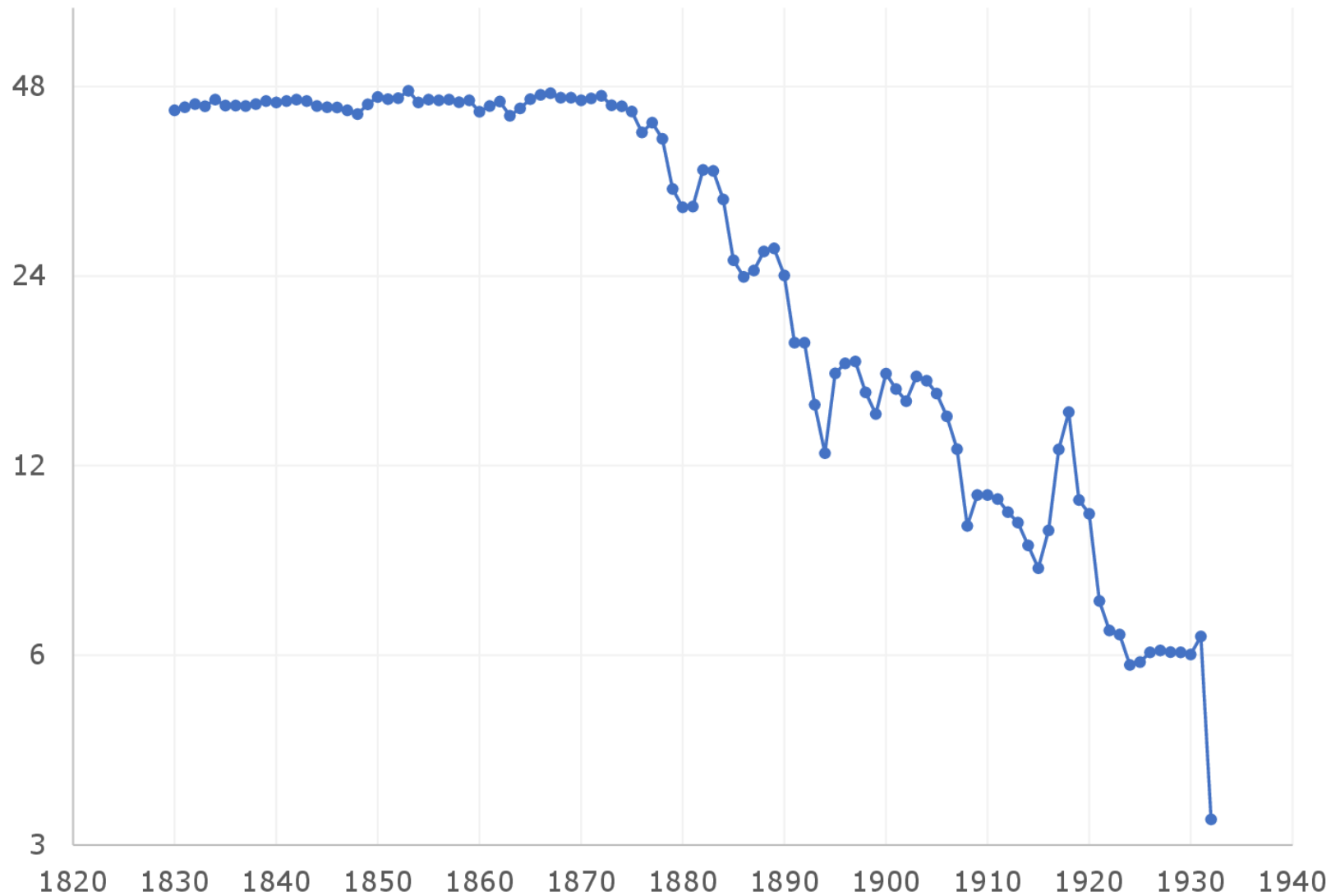
- Context
  - After independence, one of the challenges was to regulate the money supply in Chile and establish a banking system that would facilitate credit.
  - This process was complex and produced learnings along the way.
- Some milestones:
  - 1851, Monetary Act of 1851 (regulates the unit of account)
  - 1860, General Banking Law (free banking)
  - 1878-1895 & 1898-1925, inconvertibility

# Inflation rate



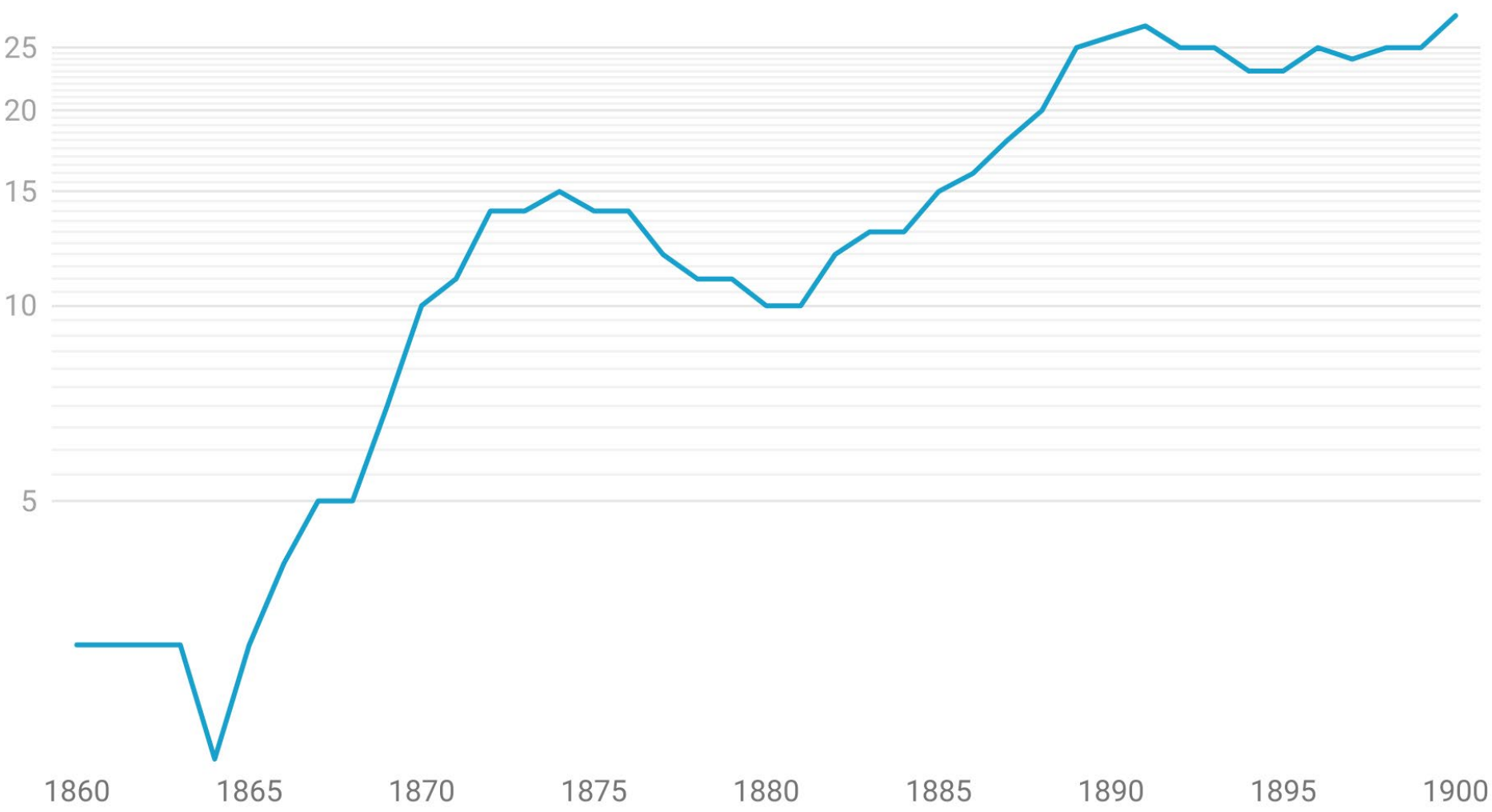
# GBP pennies per CLP

Peniques por Peso (escala logarítmica)



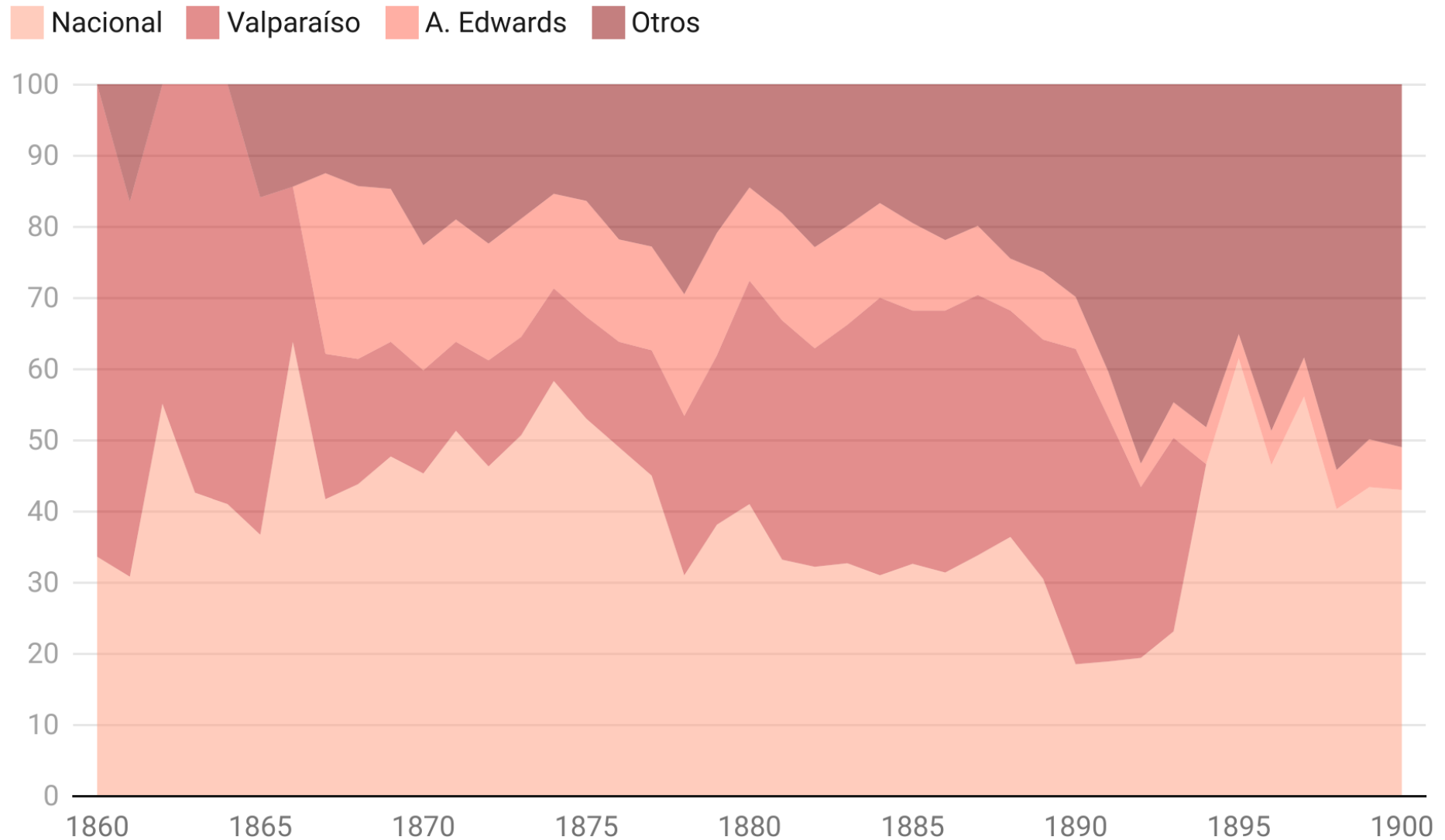
# Banks in Chile

Number (log scale)



# Banking Deposits

Percentage





# Bank capital investments

Percentage

| Sector             | 1860 | 1865 | 1870 | 1875 | 1880 | 1885 | 1890 | 1895 |
|--------------------|------|------|------|------|------|------|------|------|
| Agriculture        | 4    |      | 8    | 7    | 8    | 18   | 3    |      |
| Banking            | 2    | 12   | 6    | 29   | 10   | 4    | 1    |      |
| Commerce           | 50   |      | 7    | 19   | 20   | 5    |      |      |
| Church             | 10   |      | 2    |      |      | 2    |      |      |
| Industry           |      |      |      |      |      | 2    | 1    |      |
| Mining             |      |      |      | 19   |      |      | 4    |      |
| Various trades     | 6    |      | 8    | 0    | 5    | 7    | 3    | 2    |
| Professionals      | 2    | 28   | 11   | 0    | 6    | 3    | 5    | 12   |
| Rentists           |      |      |      |      |      | 1    |      | 19   |
| Unknown activities | 26   | 60   | 6    | 26   | 52   | 58   | 83   | 67   |
| Total              | 100  | 100  | 48   | 100  | 100  | 100  | 100  | 100  |

# Bank Capital Investments

Terms for a loan

| Years | 0.0-0.5 | 0.5-1.0 | 1.0-2.0 | 2.0-4.0 | 5.0-10.0 | 10.0-25.0 | Total |
|-------|---------|---------|---------|---------|----------|-----------|-------|
| 1870  | 64.5    | 32.9    |         |         | 2.6      |           | 100.0 |
| 1875  | 54.1    | 45.9    |         |         |          |           | 100.0 |
| 1880  | 32.7    | 11.6    | 55.7    |         |          |           | 100.0 |
| 1885  | 79.3    | 2.6     | 18.1    |         |          |           | 100.0 |
| 1890  | 26.5    | 28.6    |         |         |          | 44.9      | 100.0 |
| 1895  | 18.3    | 28.5    | 42.6    |         |          | 10.6      | 100.0 |

Source: Ross (2006) • Created with Datawrapper

# Case 2: Drinking water and sewage

## SANTIAGO DE CHILE, UNA CAPITAL EN EL MUNDO

*Proyecto y construcción de la red de alcantarillado  
y distribución de agua potable (1870-1910)*

ENRIQUE  
FERNÁNDEZ DOMINGO



UNIVERSITÉ  
PARIS 8  
VINCENNES-SAINT-DENIS

LABORATOIRE  
ROMANES

RIL editores

- Problem: High mortality from infectious diseases, especially among children.
- Strategy: State intervention to ensure drinking water supply and sewage networks.
- Challenge: Identify sources of funding and prioritize localities by population size.

Government intervention in the administration of public charity should be limited to supporting and regulating.

It is the private sector's responsibility to exercise charity so that the most fortunate can help the needy.

It would not be possible or convenient for the state to become the sole benefactor of the country.

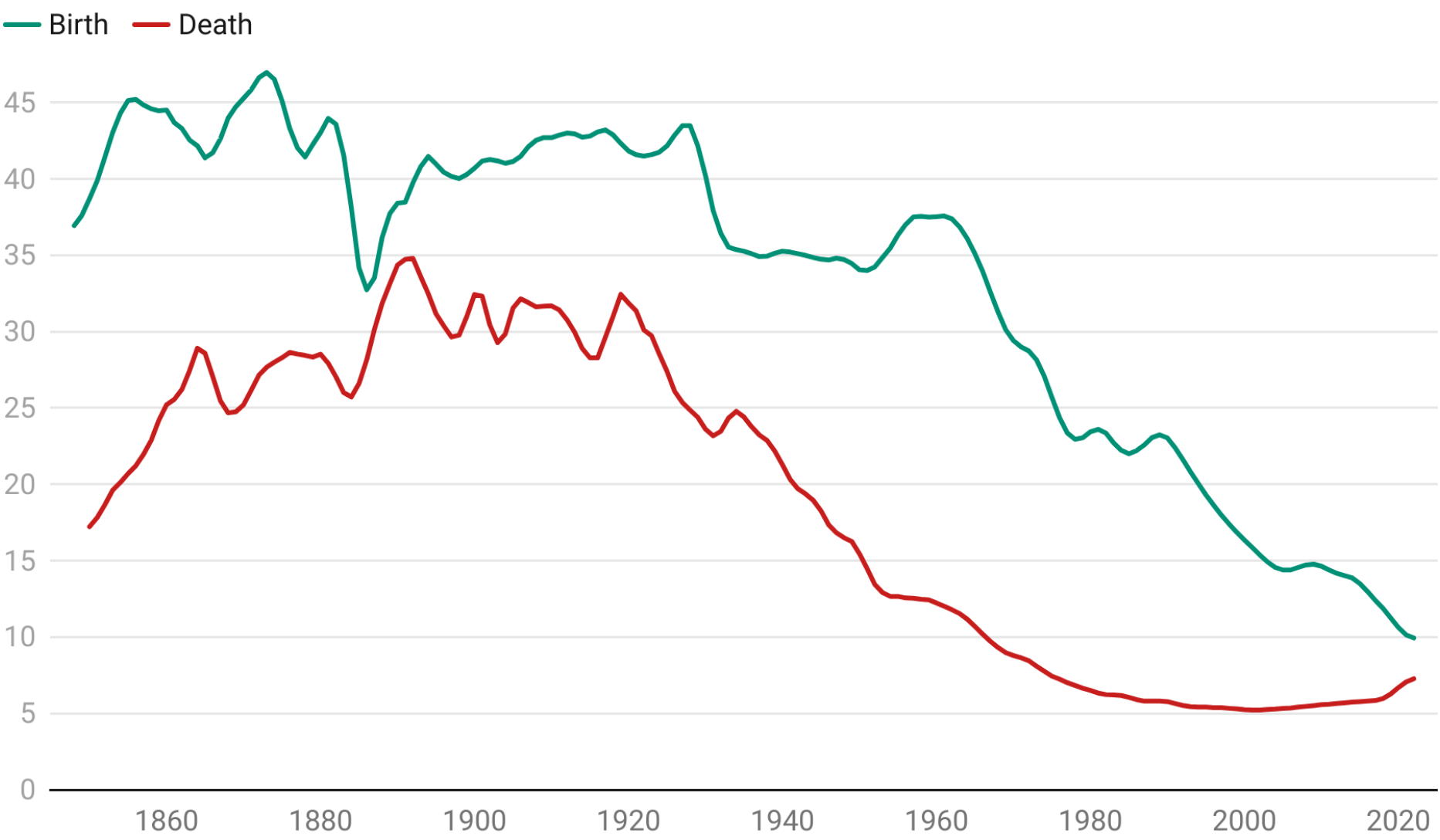
(Ministry of the Interior 1863)

Some milestones:

- 1880-1905, first interventions
- 1906-1952, Law 1835 (1906) authorizes Chilean borrowing to finance drinking water and sewage works
- 1953-1974, Directorate of Sanitary Works (1953)
- 1975-1993, extensive coverage and reforms toward privatization

# Chile: Birth & Death Rate 1840-2022

Per 1000, MA3x3



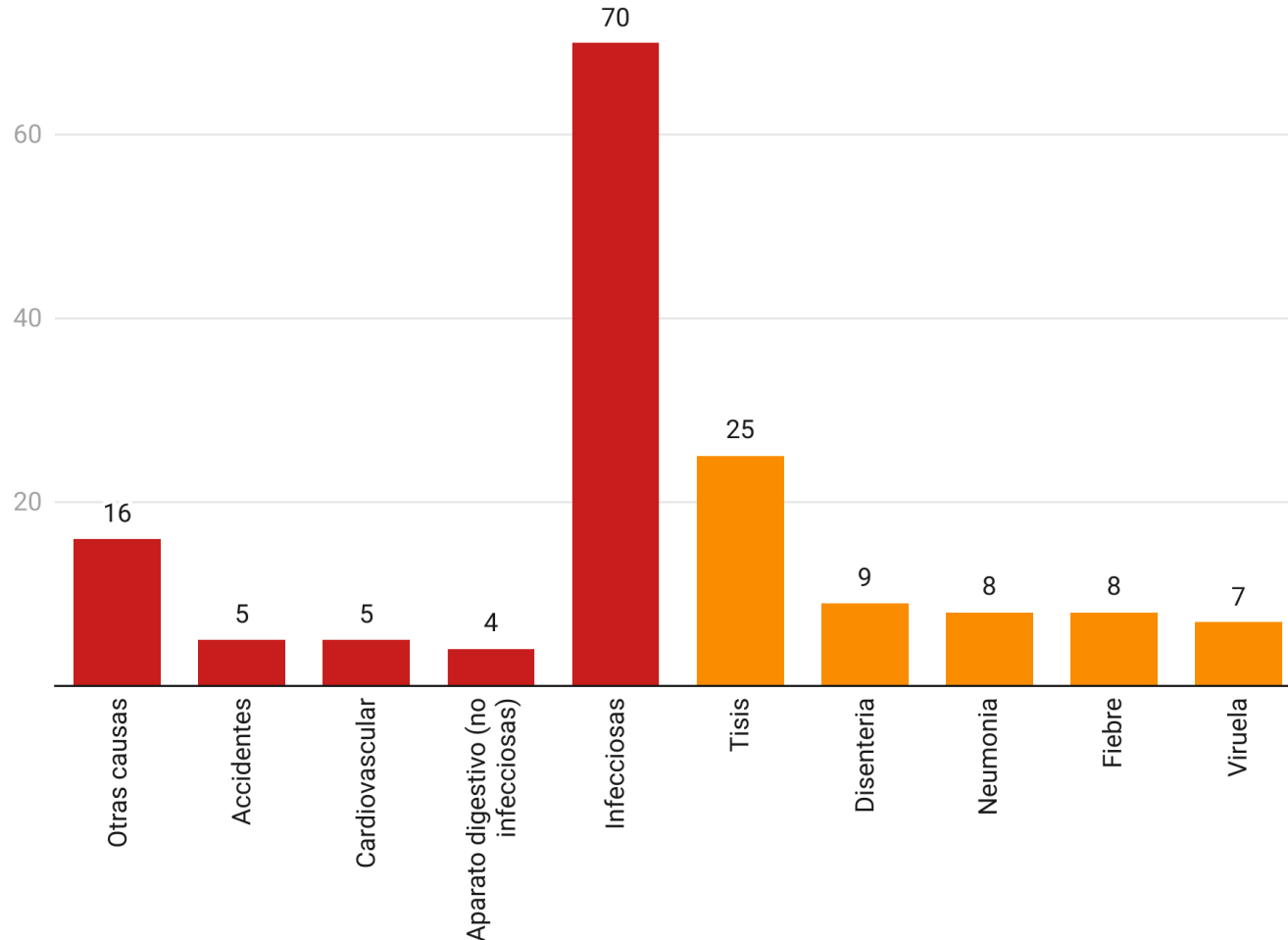
Source: Díaz, Lüders & Wagner (2016); INE • Created with Datawrapper

# Death Causes in Chilean Hospitals

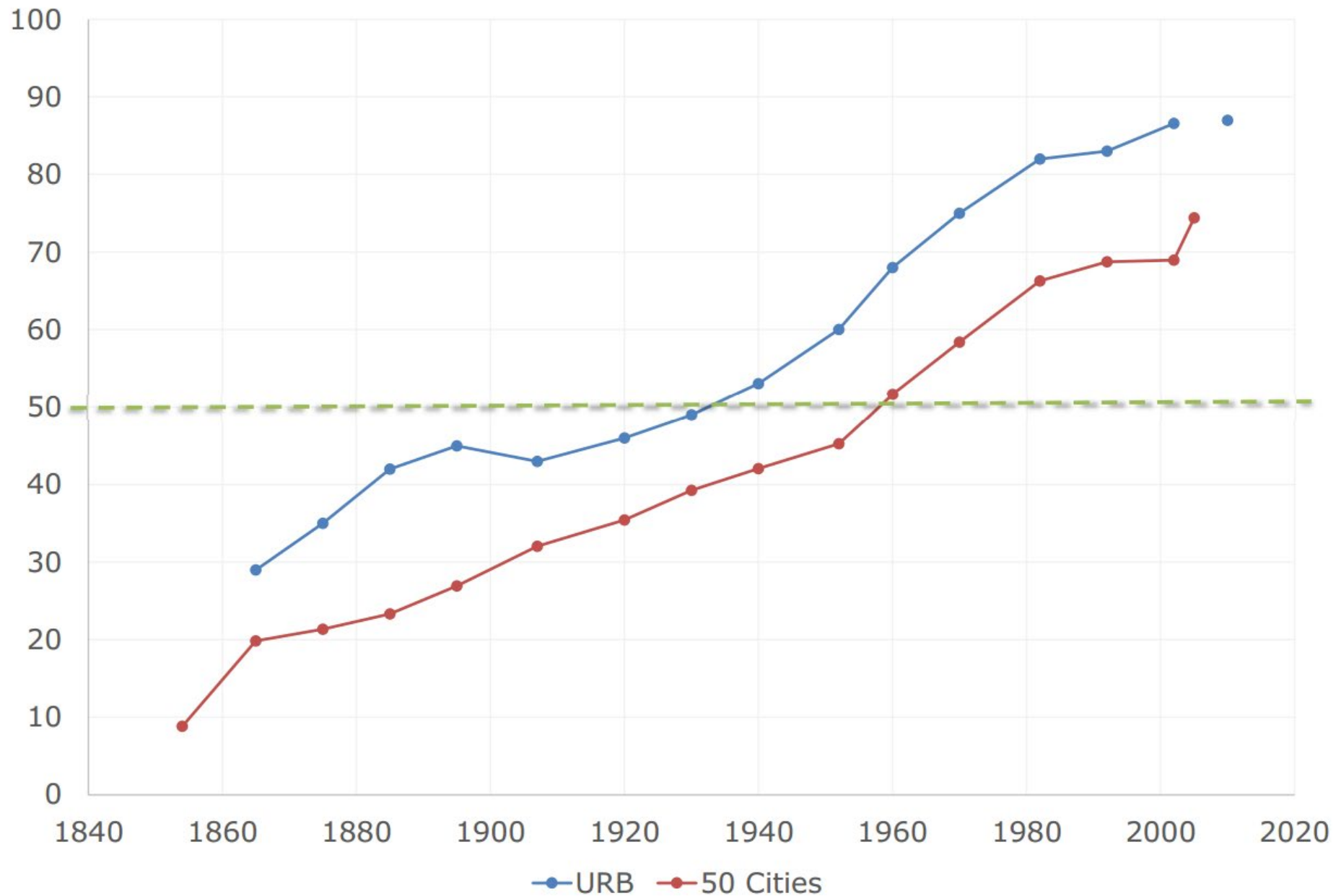
## Causas de muerte en hospitales de Chile

1873-1879, %

Tisis Disenteria Neumonia Fiebre Viruela

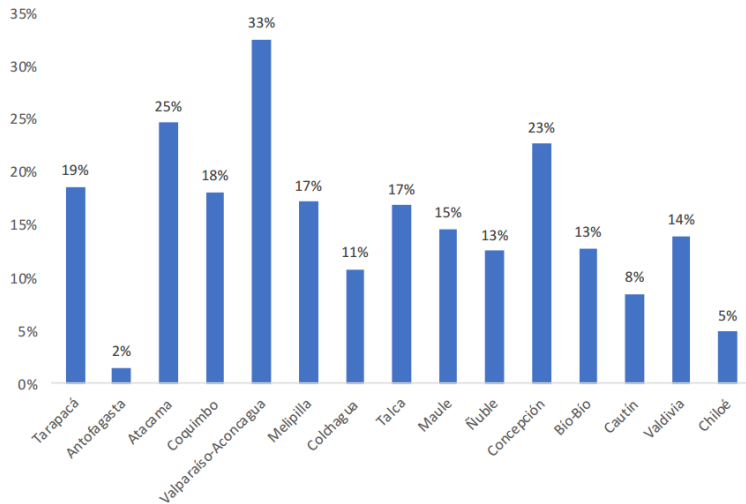


## CHL: urbanization (% of total population)



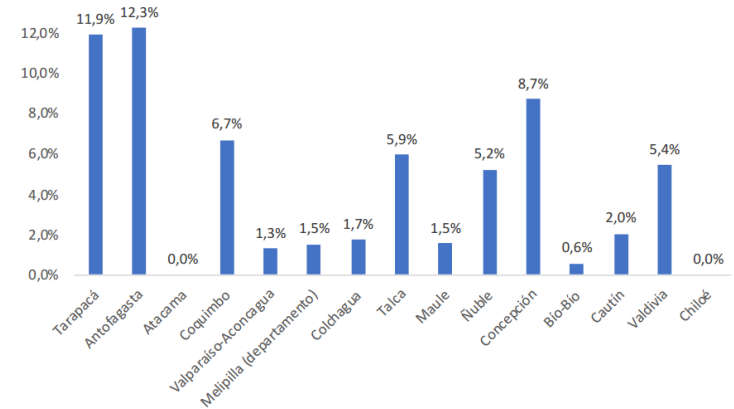
# Chile, 1930: drinking water and sewerage

Gráfico 1: Porcentaje de viviendas con agua potable en Chile, por provincias, 1930



Fuente: elaboración propia en Ministerio de Interior, *Memoria de la administración general de los servicios de agua potable y alcantarillado en explotación de 1930* (Santiago: 1931)

Gráfico 2: Porcentaje de viviendas conectada a alcantarillado en Chile, por provincias, 1932 (excluye Santiago y Magallanes)

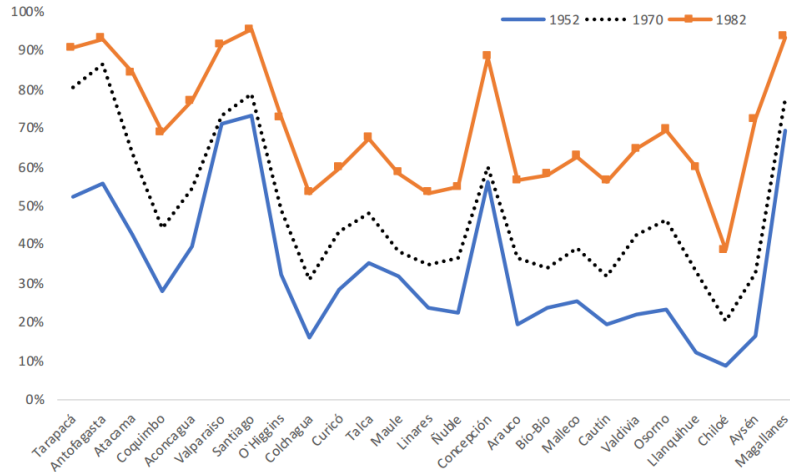


Fuente: elaboración propia en base Ministerio de Interior, *Memoria de la administración general de los servicios de agua potable y alcantarillado en explotación de 1932* (Santiago: Soc. Imp. y Lito. Universo, 1933).



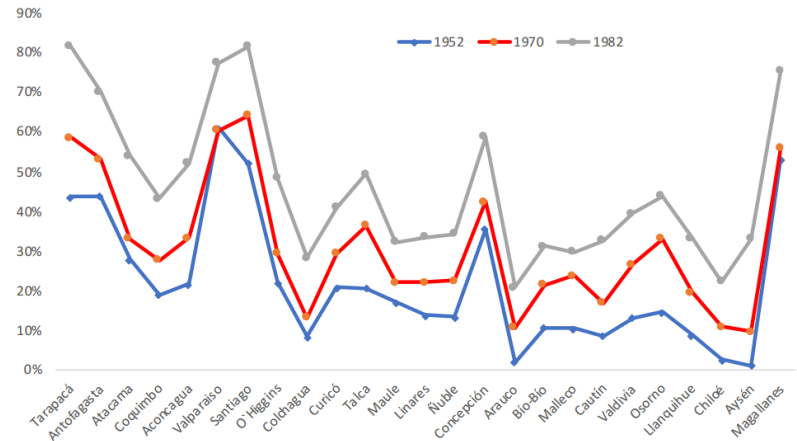
# Chile, 1952, 1970 & 1982: drinking water and sewerage

Gráfico 6. Porcentaje de viviendas con coberturas de agua potable, 1952, 1970 y 1982



Fuente: Instituto Nacional de Estadísticas, *Censos de la República de Chile* (Chile: INE, 1952, 1970 y 1980)

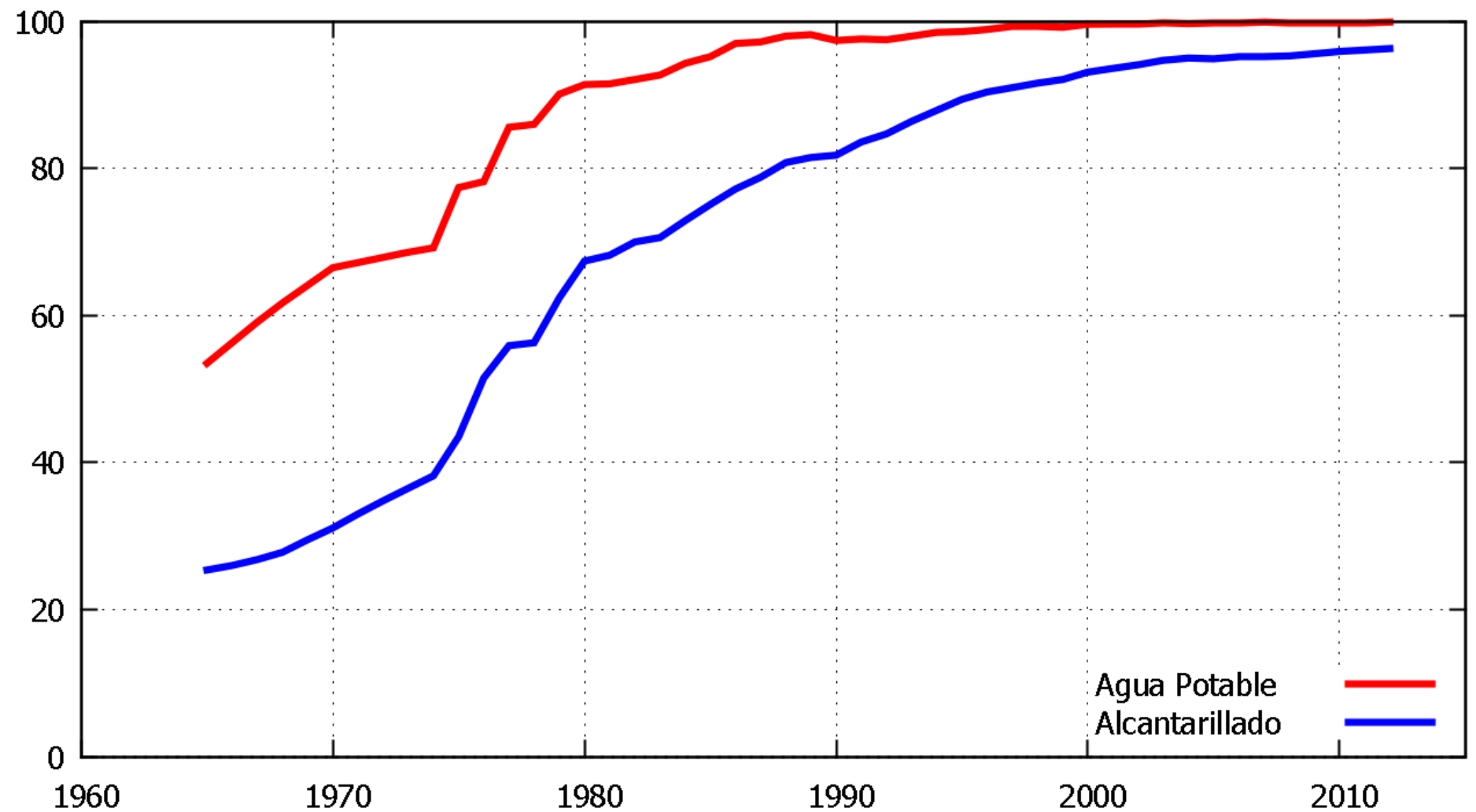
Gráfico 7. Porcentaje de viviendas con coberturas de alcantarillado, 1952, 1970 y 1982



Fuente: Instituto Nacional de Estadísticas, *Censos de la república de Chile* (1952, 1970 y 1980).

# Chile, 1965-...

Coberturas Agua Potable y Alcantarillado: Porcentaje Población Urbana

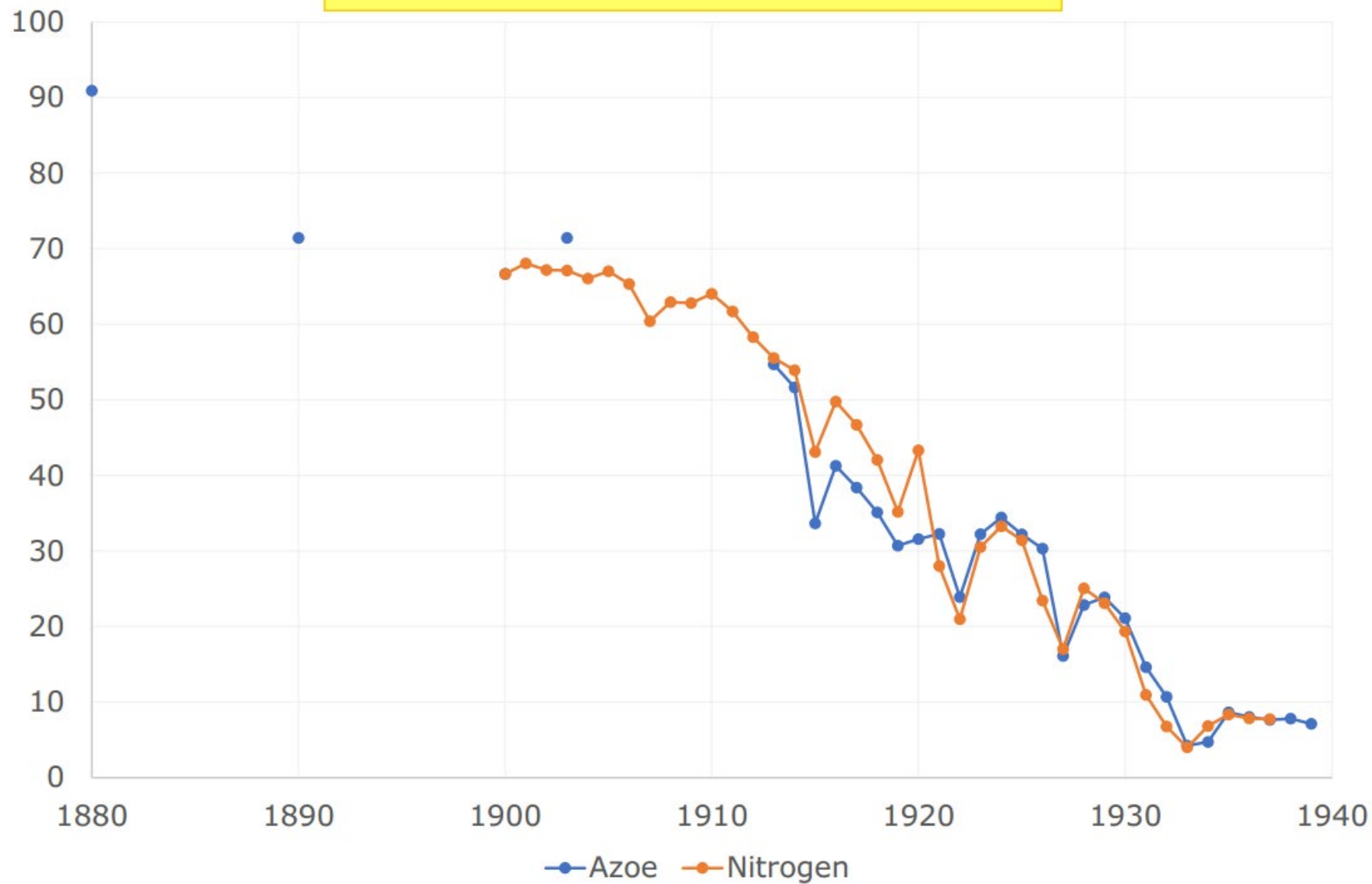


# Case 3: nitrate crisis and tax reform

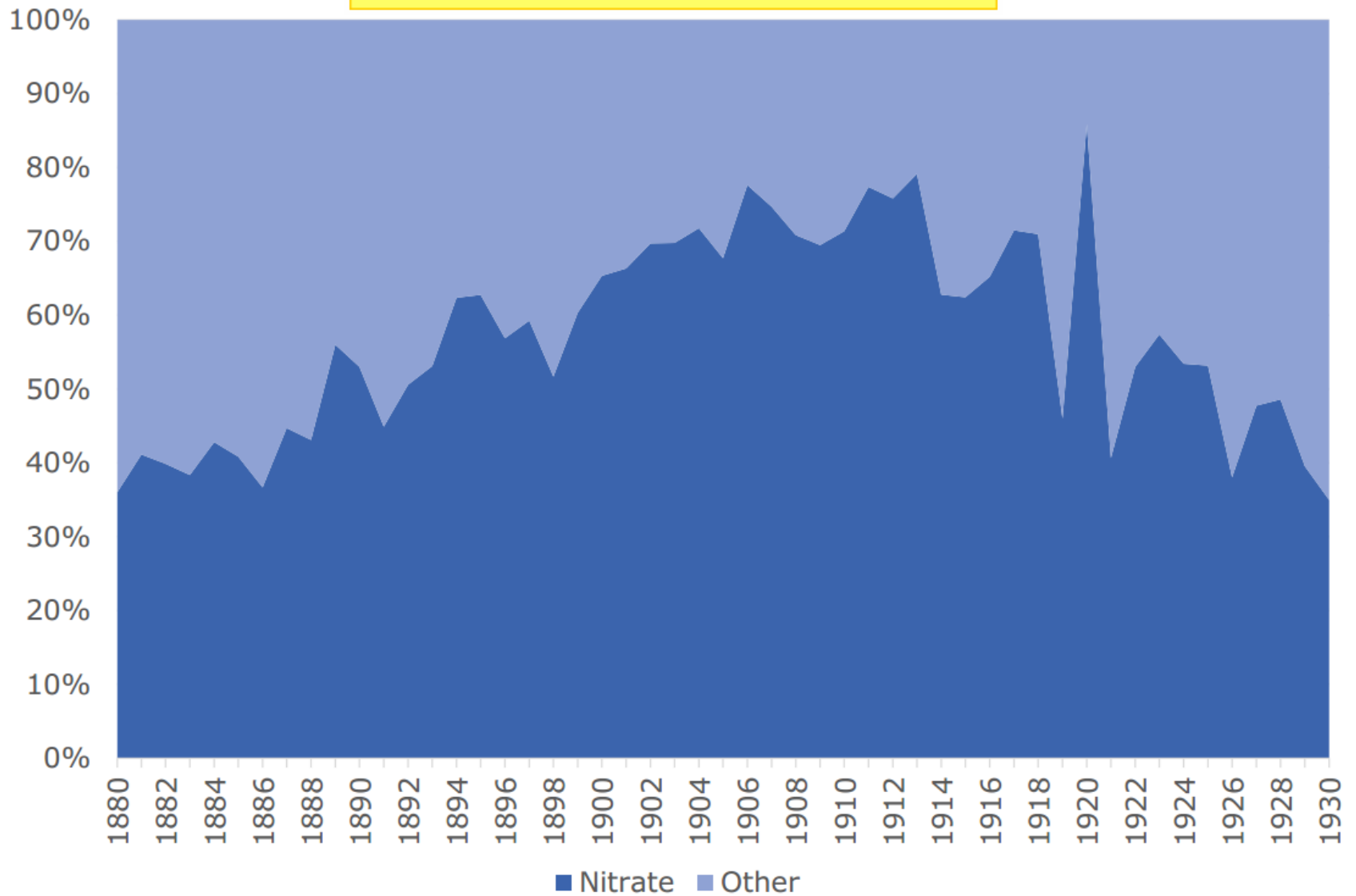


- After the war with Peru and Bolivia (1879-1883), Chile controlled the nitrate production area.
  - Applied model: private copper production with a tax on the amount exported.
  - The Chilean state's financing comes mainly from taxes on foreign trade.
- WW1 Crisis -> fall in tax revenues -> creation of new internal taxes.

**Nitrates: Chilean production  
as percentage of World production**

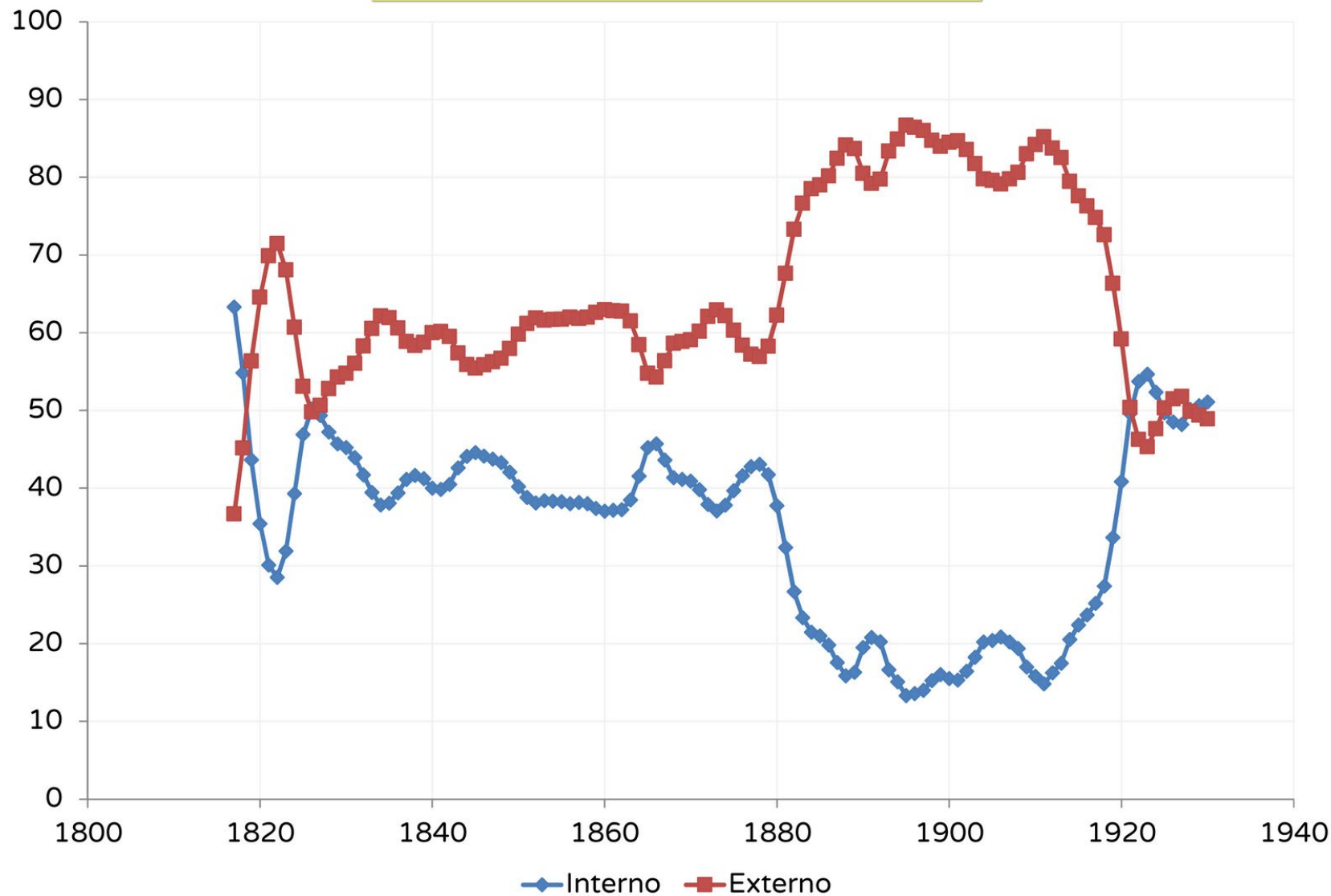


### CHL: composition of exports (%)



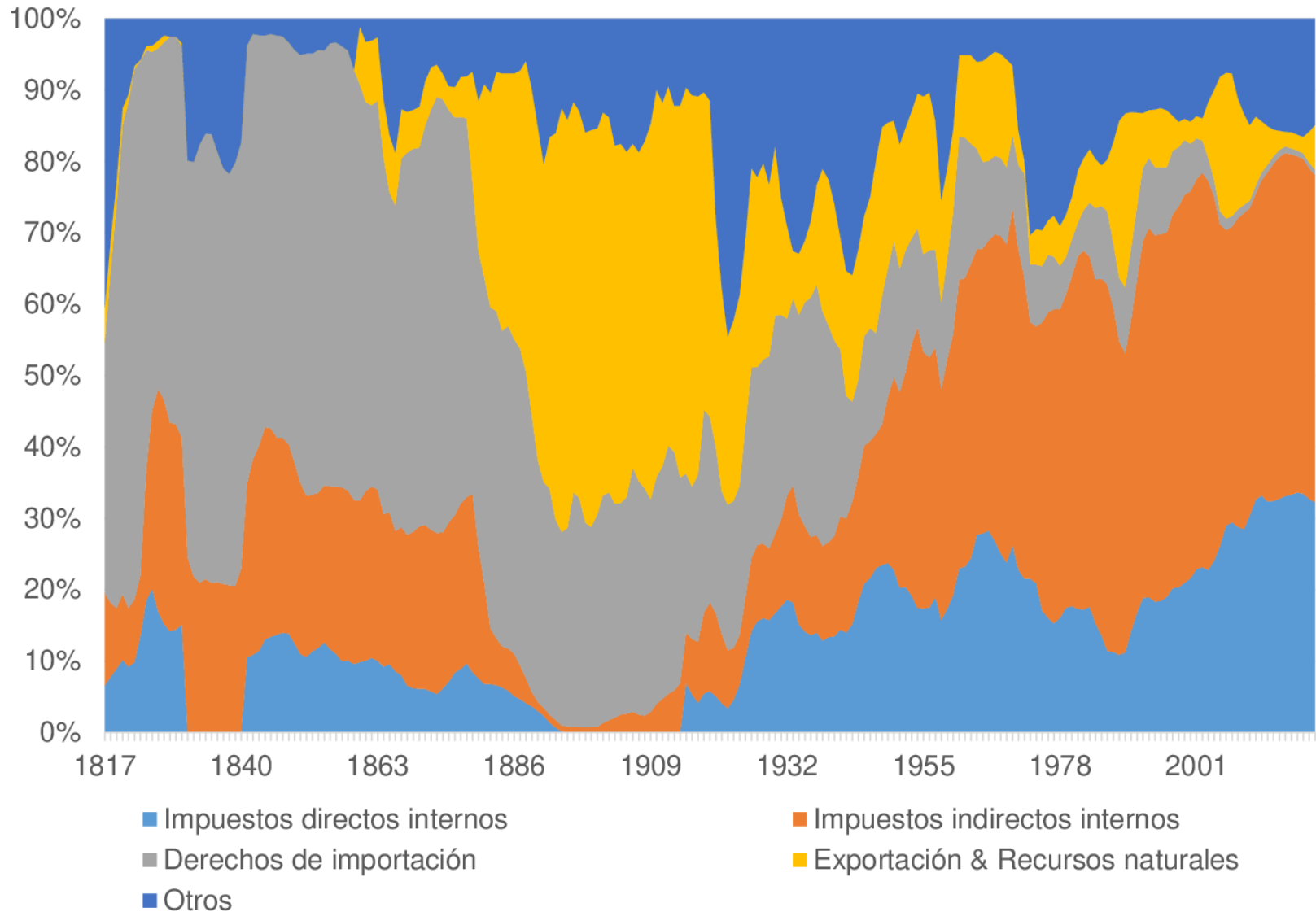
# Fiscal income per source (% of total)

Ingreso Fiscal por fuente (% del total)



# Fiscal income per source (% of total)

**Chile: composición de ingresos fiscales, 1817-2021 (MA3)**





# Case 4: Nationalization of copper

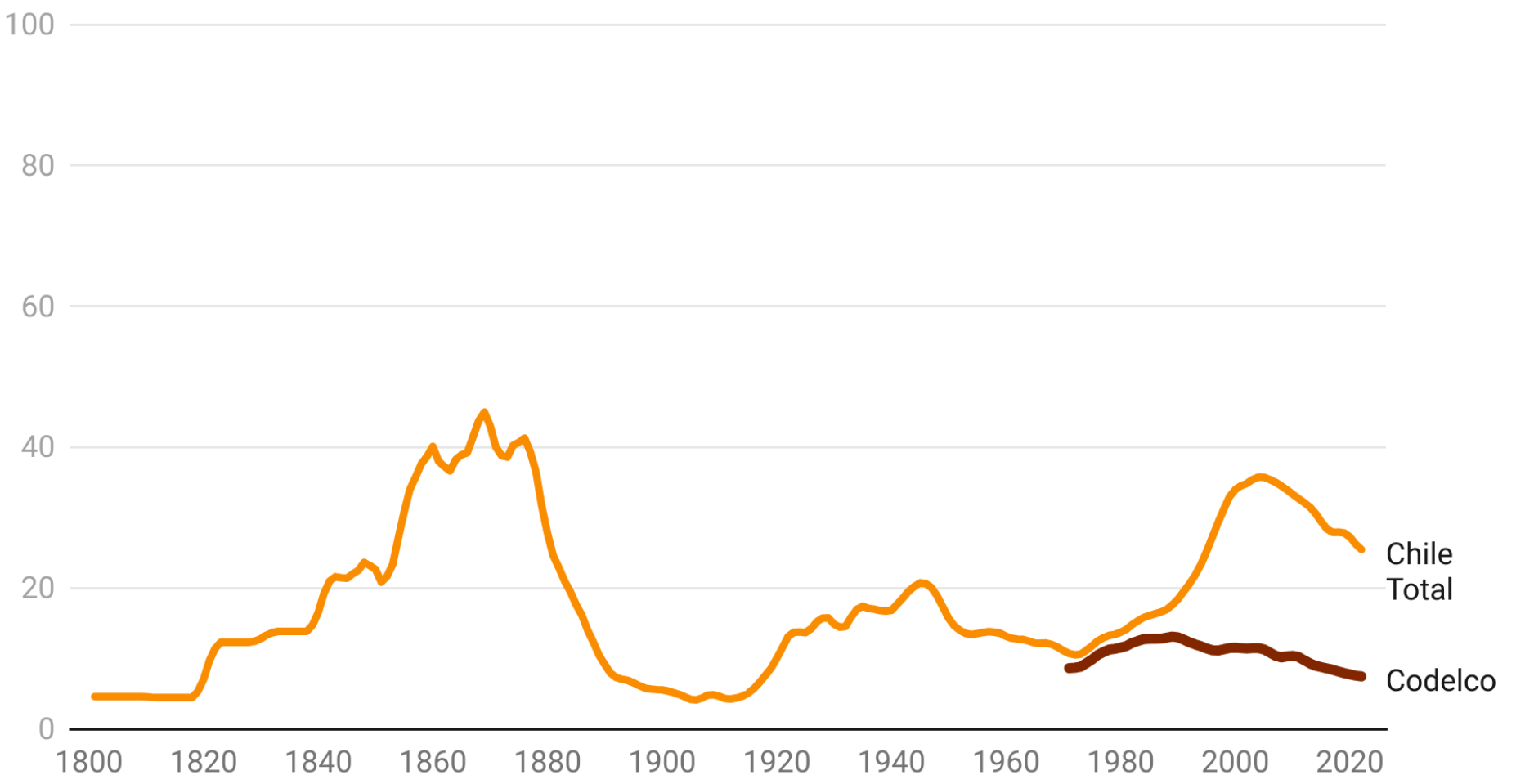


- Chile has produced copper since the 19th century but regained importance with investment from North American companies in the 20th century.
- Contribution to Chile?
  - There was no regular information
  - 1955, Copper Department
  - The profit margins of foreign companies were analyzed versus their actual tax contributions.
  - Concern: investment



# Chile: Copper Production by Main Producer

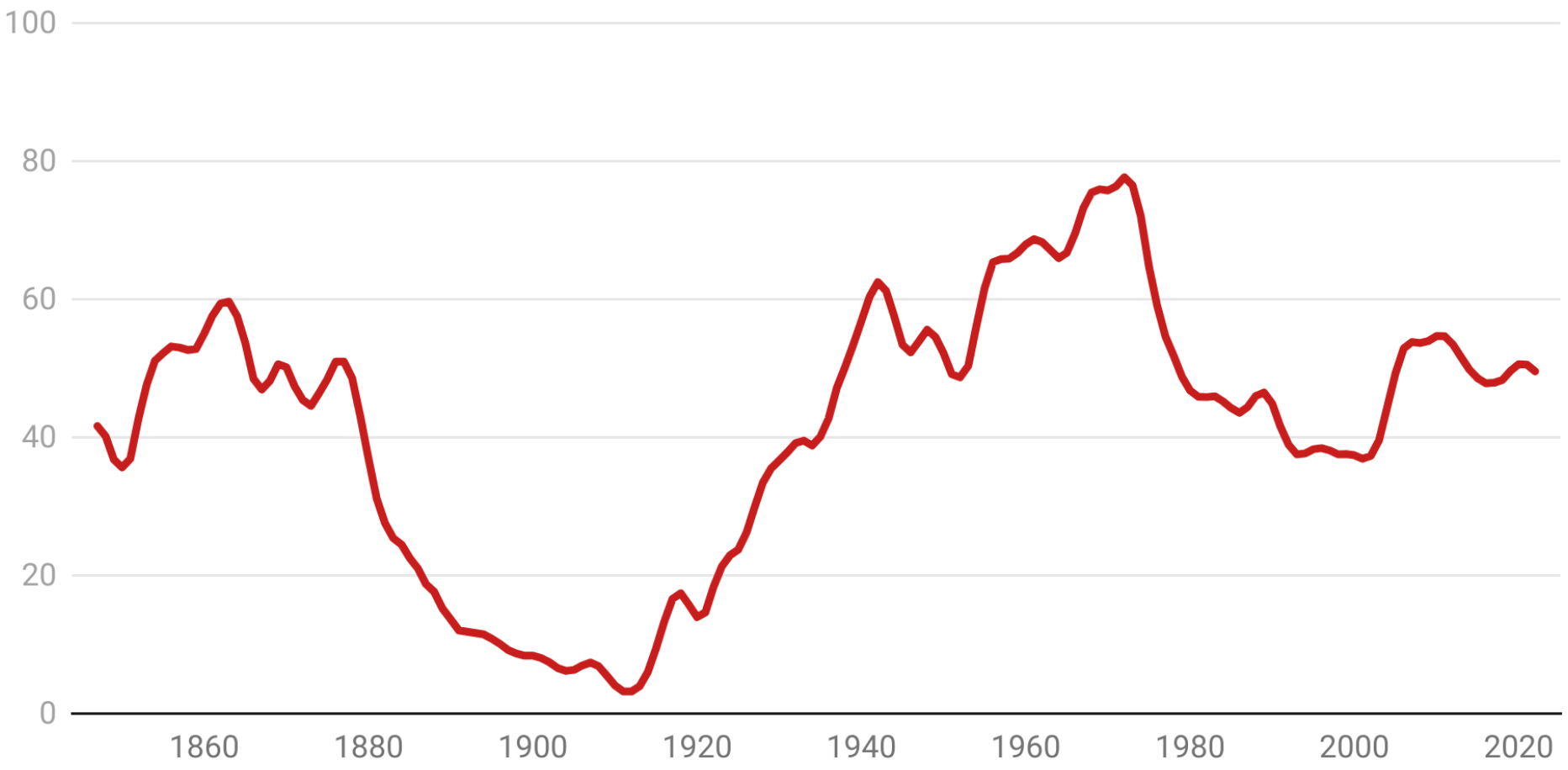
As Percentage of World Production, MA3x3



Source: Díaz. Lüders & Wagner (2016); Cochilco. • Created with Datawrapper

# Chile: Copper Exports

As Percentage of Total Exports, MA3x3



Source: Oficina Central de Estadística; Mamalakis & Reynolds (1965); Cortes et al. (1981); Banco Central de Chile. • Created with Datawrapper

# Case 4: Nationalization of copper

- Technical studies: Reports on excessive profits.

- Policies

- Chileanization (Frei Montalva Government).  
The state acquires stakes in foreign companies.
- Nationalization (Allende Government, 1971).  
Constitutional reform was approved unanimously.  
Expropriation without compensation for excessive profits.



# Compensation? (1971)

CHILE, GRAN MINERIA: CALCULO DE LA INDEMNIZACION  
A LAS EMPRESAS NACIONALIZADAS. 1971  
(Millones de dólares)

|                         | <i>Chuquicamata</i> | <i>Salvador</i> | <i>Exótica</i> | <i>Teniente</i> | <i>Andina</i> |
|-------------------------|---------------------|-----------------|----------------|-----------------|---------------|
| Valor libro             | 241,96              | 68,37           | 14,81          | 310,80          | 20,14         |
| <i>Deducciones por:</i> |                     |                 |                |                 |               |
| Derechos Mineros        | — 5,40              | — 0,35          | — 0,25         | — 0,22          | — 1,53        |
| Bienes mal estado       | — 13,06             | — 5,60          | — 4,55         | — 20,52         | — 0,34        |
| Revalorización          | — 0,00              | — 0,00          | — 0,00         | — 198,58        | — 0,00        |
| <i>Indemnización</i>    | 223,50              | 62,42           | 10,01          | 99,58           | 18,27         |
| <i>Deducción por:</i>   |                     |                 |                |                 |               |
| Rentabilidades          |                     |                 |                |                 |               |
| Excesivas               | 300,00              | 64,00           | 0,00           | 410,00          | 0,00          |

FUENTE: Contraloría General de la República.

FUENTE SECUNDARIA: C. Fortín: *La Nacionalización del Cobre en Chile y su Dinámica...*, op. cit., p. 23.

# Compensation? (1974)

**Table 3** Government payments under 1967–1969 Chileanization and Nationalization by Agreement, and final 1974 compensation settlements of the 1971 Nationalization (all figures in nominal US million dollars unless otherwise stated)

| Corporation<br><i>Operation</i>   | Kennecott<br><i>El Teniente</i> | Cerro Corp.<br><i>Andina</i> | Anaconda<br><i>Chuquicamata and El Salvador</i> | Anaconda/OPIC<br><i>Exotica</i> | Total<br>-   |
|---|---------------------------------|------------------------------|---|---------------------------------|--------------|
| <b>1967-1969 Chileanization and Nationalization by Agreement (A)</b>  |                                 |                              |   |                                 |              |
| Acquired ownership  | 51%                             | 30%                          | 51%   | 25%                             |              |
| Year(s) of agreement  | 1967                            | 1967-1969                    | 1969  | 1967                            |              |
| Initial capital contribution  |                                 | 6.3                          |   | 3.8                             | 10.1         |
| Expansion capital agreement   | 92.0                            | 47.1                         |   |                                 | 139.1        |
| To be paid in cash  |                                 |                              |   |                                 |              |
| To be paid with credit  | 92.0                            | 47.1                         |   |                                 |              |
| Mine acquisition agreement  | 80.0                            |                              | 174.6   |                                 | 254.6        |
| To be paid in cash  | 80.0                            |                              |   |                                 | 80.0         |
| To be paid with credit  |                                 |                              | 174.6   |                                 | 174.6        |
| <b>1974 Recognition of remaining debt steaming from Chileanization and Nationalization by Agreement (B)</b> |                                 |                              |   |                                 |              |
| Month of agreement  | Oct.                            | Mar.                         | Jul.  | Dec.                            |              |
| Remaining debt (incl. interests)  |                                 | 26.2                         | 194.1   | 4.7                             | 224.9        |
| To be paid in cash  |                                 |                              | 6.0   |                                 | 6.0          |
| To be paid with credit  |                                 | 26.2                         | 188.0   | 4.7                             | 218.9        |
| <b>1974 compensation settlements by virtue of the 1971 Nationalization (C)</b>                              |                                 |                              |   |                                 |              |
| Acquired ownership  | 49%                             | 70%                          | 49%   | 75%                             |              |
| Agreed compensation   | 54.0                            | 15.6                         | 59.3  | 14.0                            | 142.9        |
| To be paid in cash  |                                 | 1.0                          | 59.3  | 4.6                             | 64.9         |
| To be paid with credit  | 54.0                            | 14.6                         |   | 9.4                             | 77.9         |
| 1974 Recognition of unpaid dividends (D)  | 14.0                            |                              |   |                                 |              |
| To be paid in cash  | 6.5                             |                              |   |                                 |              |
| To be paid with credit  | 7.5                             |                              |   |                                 |              |
| <b>Total sum to be paid from 1974 onwards (B+C+D)</b>   | <b>68.0</b>                     | <b>41.8</b>                  | <b>253.4</b>                                    | <b>18.6</b>                     | <b>381.8</b> |
| To be paid in cash  | 6.5                             | 1.0                          | 65.4  | 4.6                             | 77.5         |
| To be paid with credit  | 61.5                            | 40.8                         | 188.0   | 14.0                            | 304.4        |

Source: Own based on Fleming (1973), Sutulov (1975), Fortín (1979; 1975), Irarrázabal (2013), Ministry of the Interior (1974c; 1974b; 1974a)

# Final Remarks



- Chile's economic history shows that data describes reality and transforms it.
- They are important:
  - The data
  - Human capital (which analyzes the data)
  - The policy decision-making mechanism