COCHILCO
Ministerio de Minería

Gobierno de Chile

THE CHILEAN MINING INDUSTRY

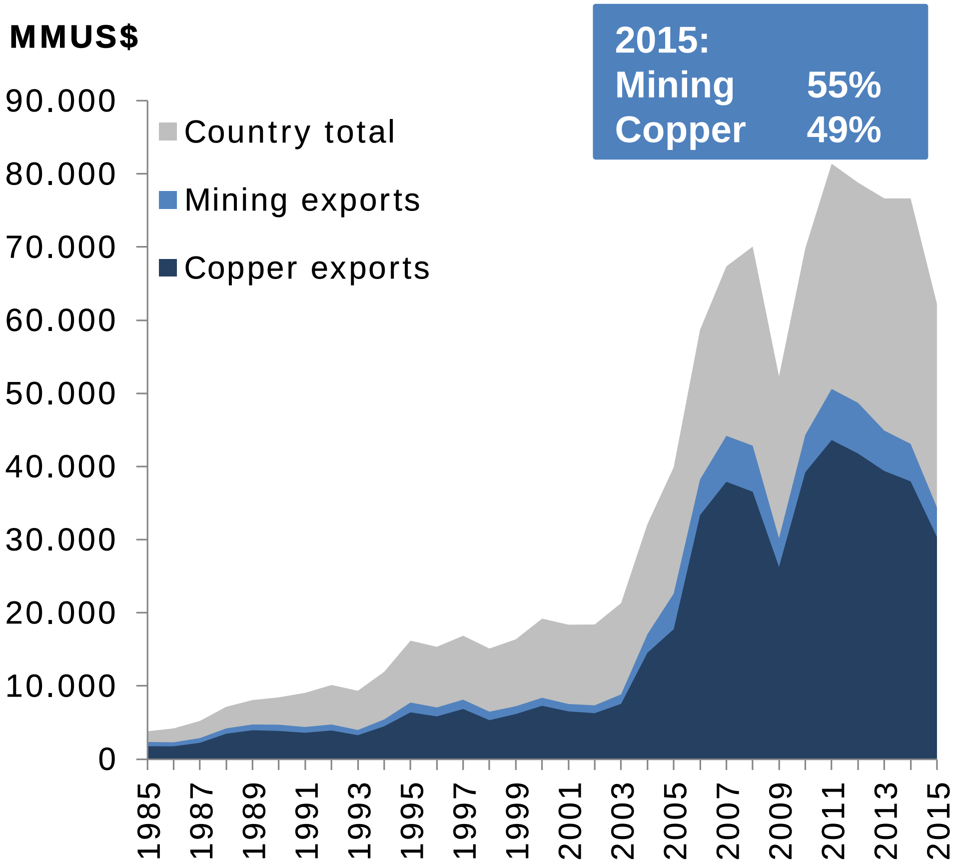
Jorge Cantallopts
Director of Research and Policy Planning
Chilean Copper Commission

Brussels 28-29 June, 2016

CONTENTS

1 | IMPORTANCE OF MINING IN CHILE

ECONOMIC DEVELOPMENT



TESORERIA GENERAL DE LA REPUBLICA

Income tax 2015

- 6% (US$ 3,048 millions)

Direct foreign investment 2006 - 2015

- Authorized: US$ 52,446 millions
- Materialized: US$ 17,991 millions

BANCO CENTRAL DE CHILE

Mining participation in GDP 2006 - 2015

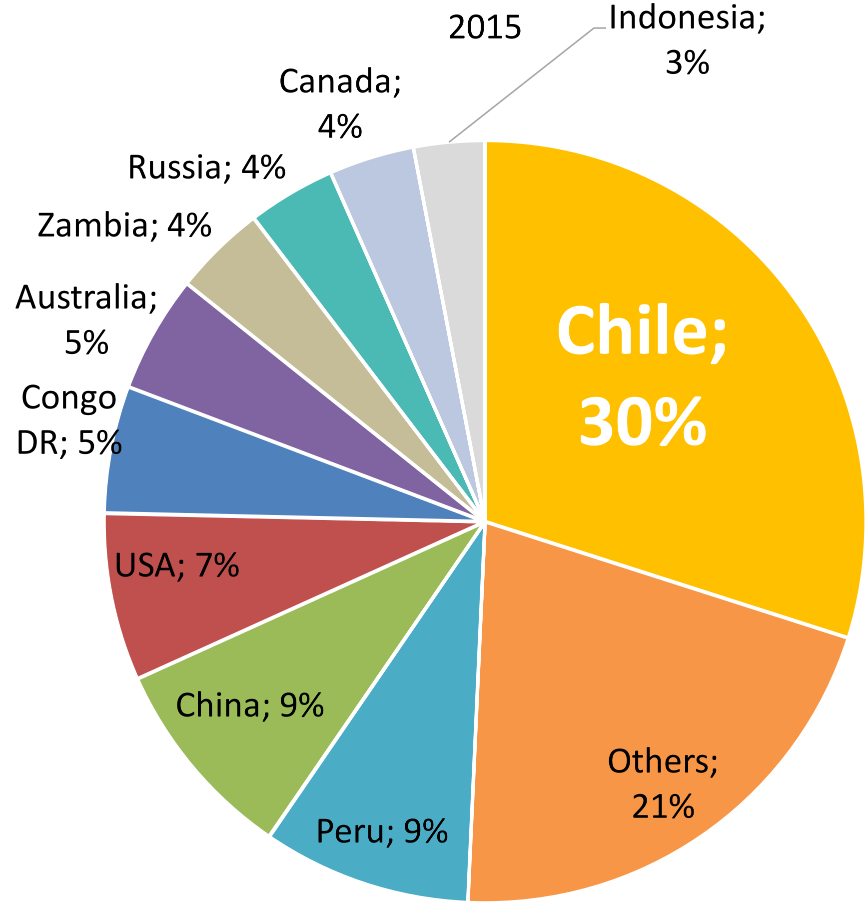
- 14,3% average (9% in 2015)

Source: Central Bank of Chile

2 | IMPORTANCE OF CHILE IN MINING

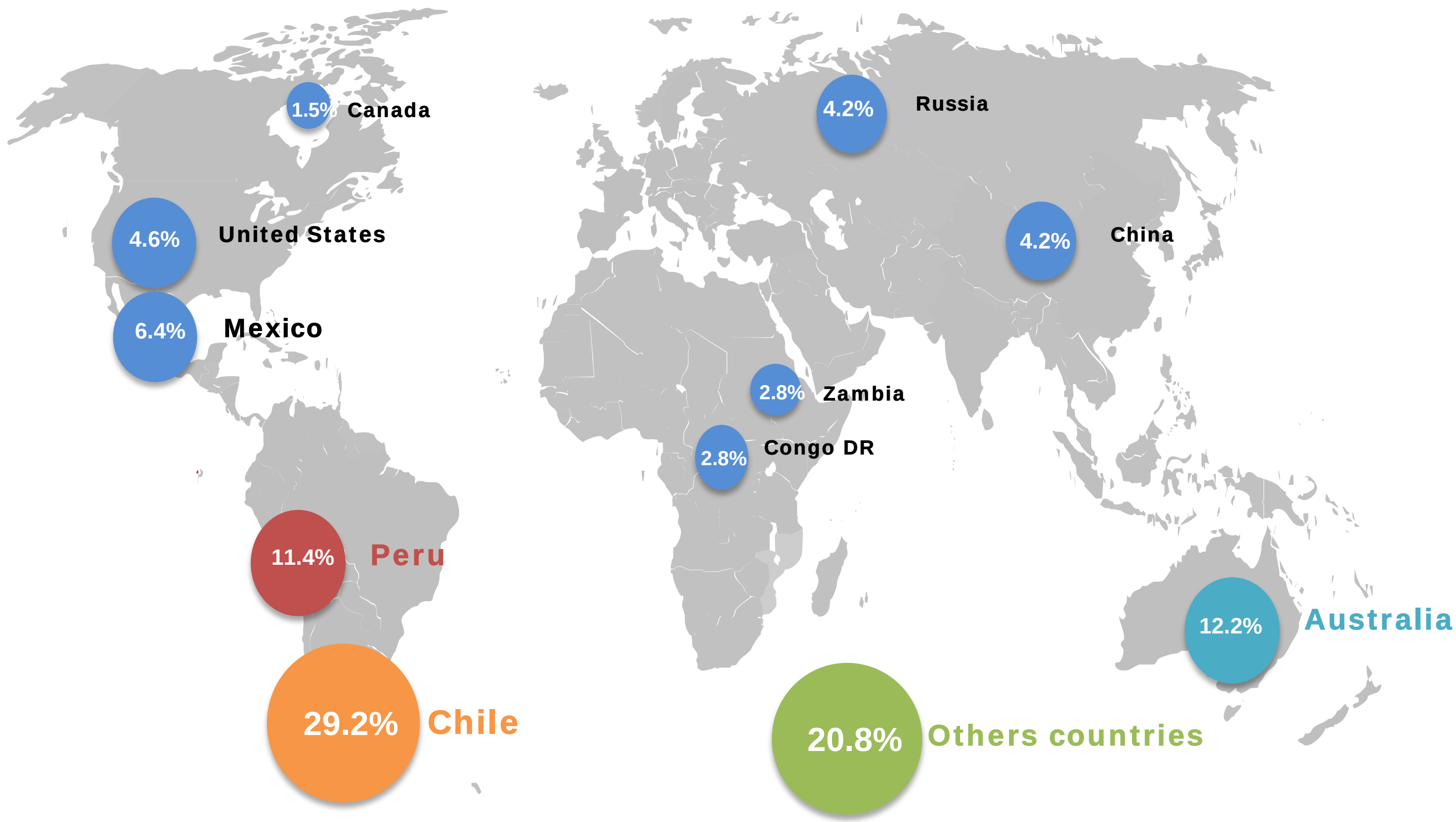
PRODUCTION

País	2014	2015
Chile	**5,750**	**5,764**
Peru	1,380	1,705
China	1,632	1,669
USA	1,383	1,373
Congo DR	996	1,039
Australia	965	957
Zambia	756	754
Russia	720	720
Canada	696	697
Indonesia	366	580
Others	3,835	4,008
Total world	**18,478**	**19,265**



Source: World Metal Statistics and COCHILCO

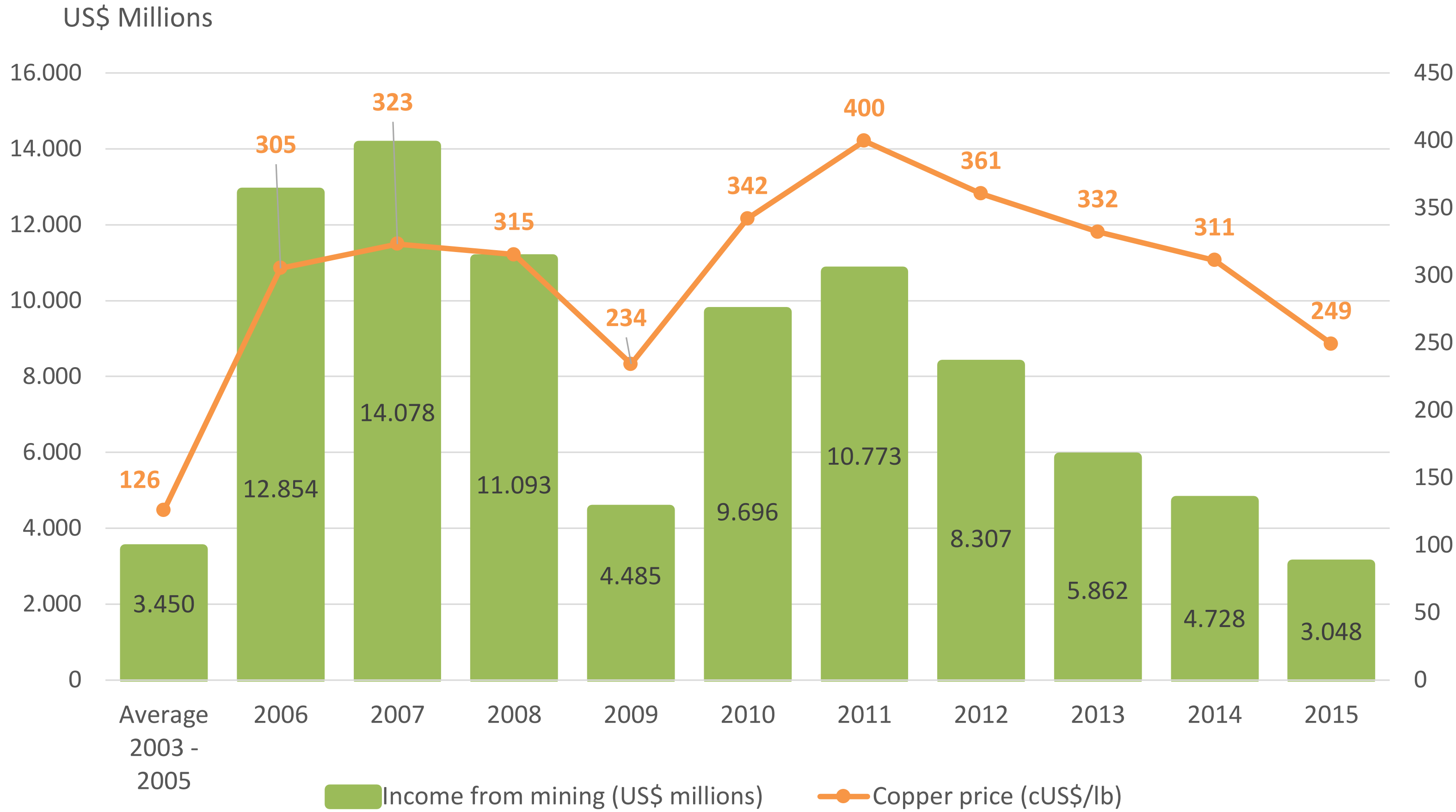
RESERVES - GEOLOGICAL POTENTIAL



Source: USGS Mineral Commodity Summaries (2015)

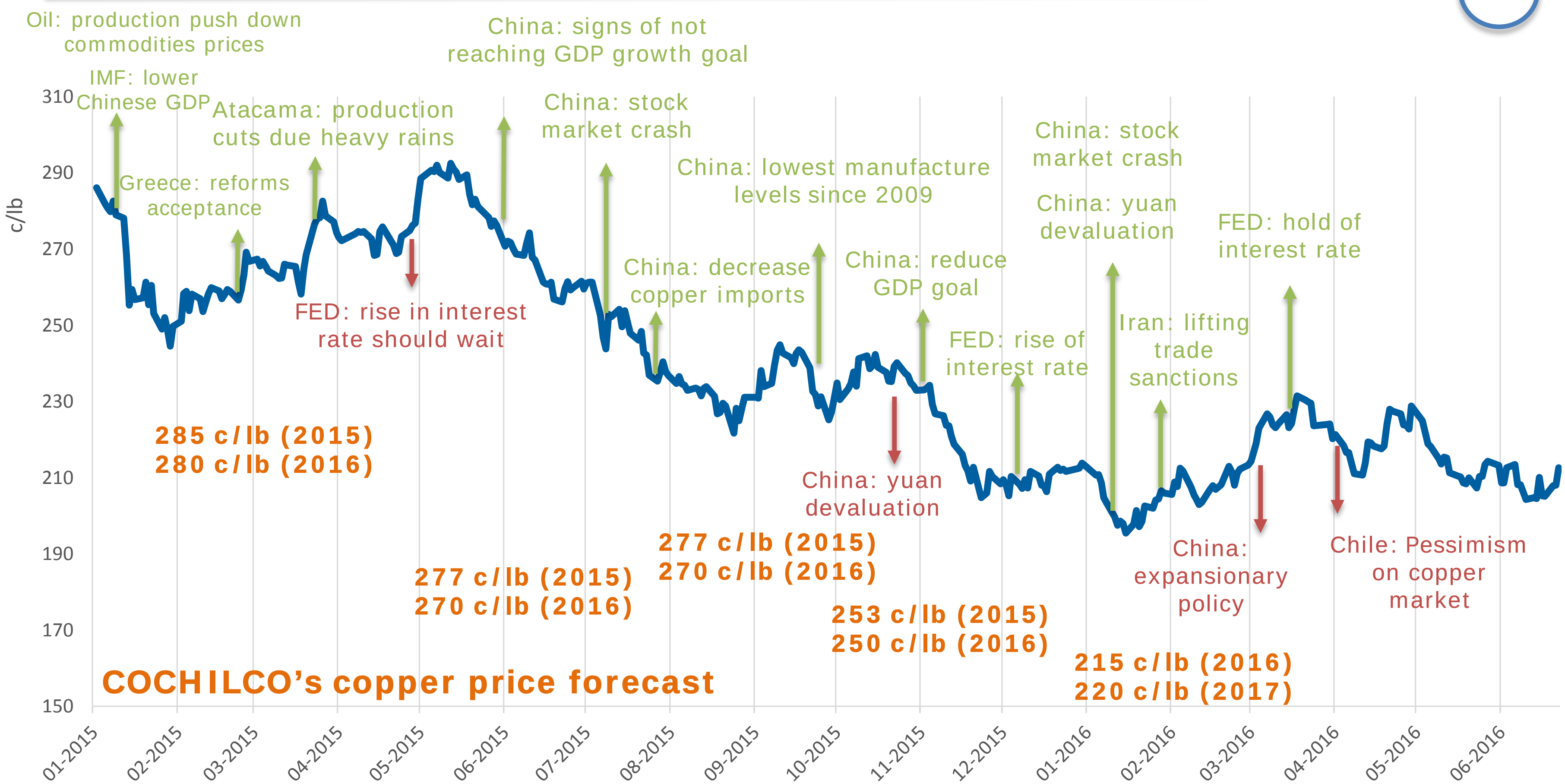
3 | IMPACT OF LOWER COPPER PRICES

TAX COLLECTION



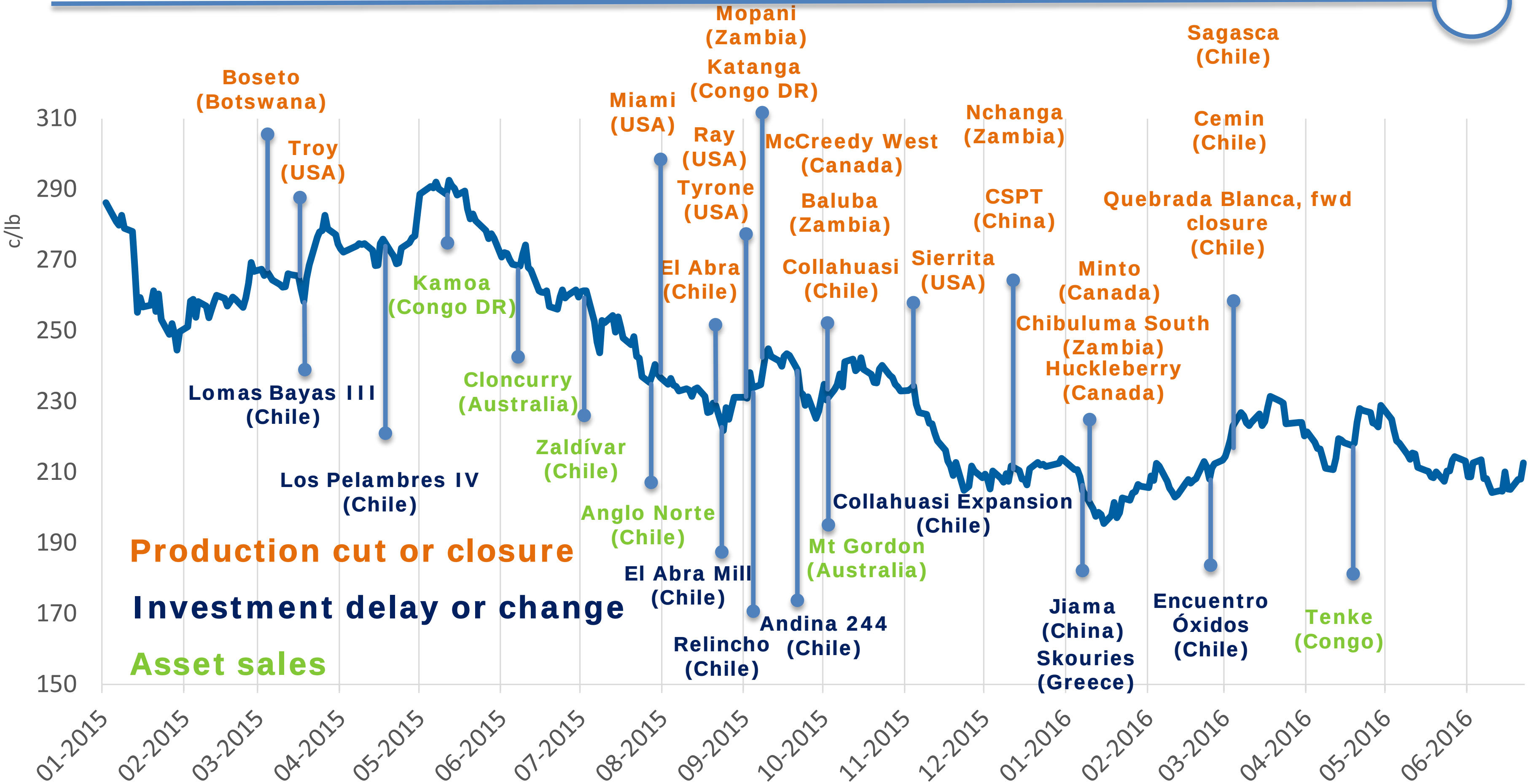
Source: USGS Mineral Commodity Summaries (2015)

COPPER PRICE CHANGES 2015 - 2016



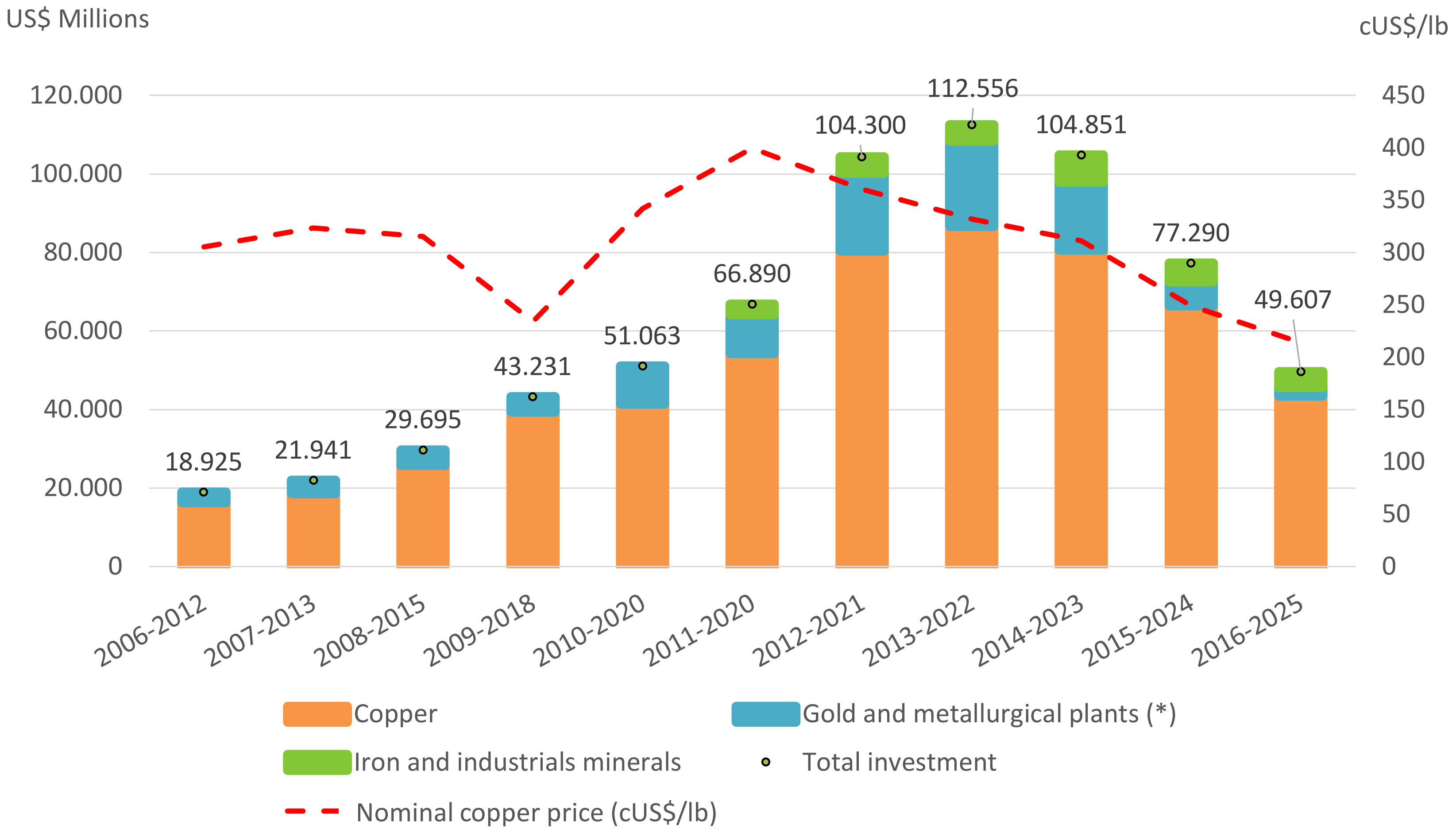
Source: COCHILCO with LME information

CHANGES IN SUPPLY AT A LOWER COPPER PRICE



Source: COCHILCO, CRU Copper Monitor, Companies press releases

MINING INVESTMENT - INVESTMENT PORTFOLIO VS COPPER PRICE



Source: COCHILCO

MINING INVESTMENT - PROJECT PORTFOLIO

Iron and Ind. Min.	Mill $ 3,984 5 projects
Gold and Met. Plants	Mill US$ 2,101 7 projects
Copper	Mill US$ 43,522 24 projects

Under review

- **Pascua** (Gold, mill US$4,500)
- **El Abra Mill** (Priv. Cu Min., mill US$5,000)
- **Relincho** (Priv. Cu Min., mill US$4,500)
- **Andina 244** (State, mill US$6,524)
- **Romeral Fase V** (Iron, mill US$198)
- **Pampa Blanca Exp.** (Ind. Min., mill US$665)
- **Sierra Gorda 220 ktpd** (Priv. Cu Min., mill US$1,500)

Budget constraints

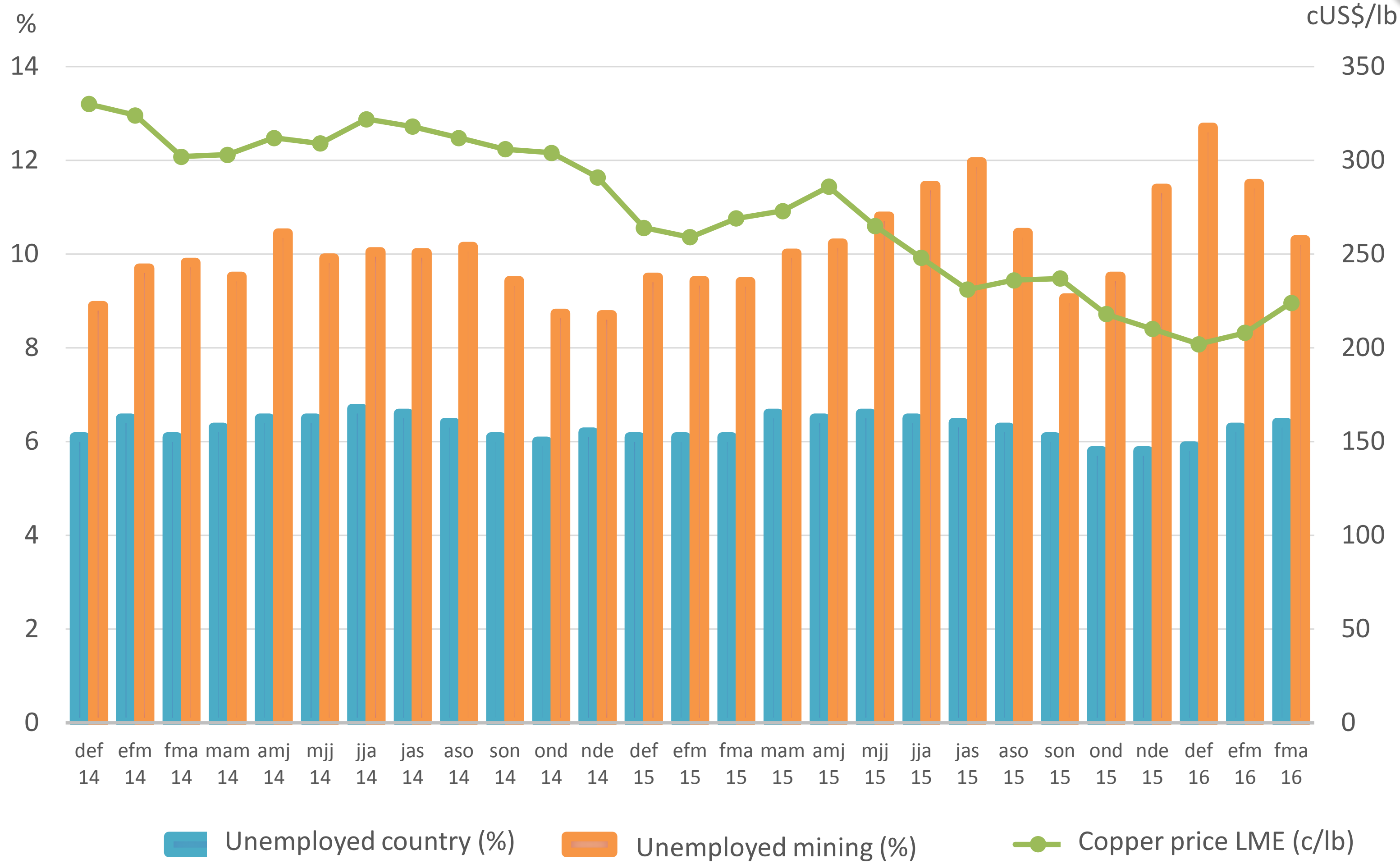
- **QB Hypogene** (Priv. Cu Min., mill US$ 55,000)
- **Los Pelambres Marg. Exp. I** (Priv. Cu Min., mill US$1,100)
- **Arbiodo** (Ind. Min., MMUS$396)

New

- **Orcoma** (Ind. Min., mill US$ 230)
- **Molynor Extension** (Met. Plants, mill US$ 240)
- **Los Pelambres Marg. Exp. II** (Priv. Cu Min., mill US$500)
- **Mantoverde Growth Project** (Priv. Cu Min., mill US$938)

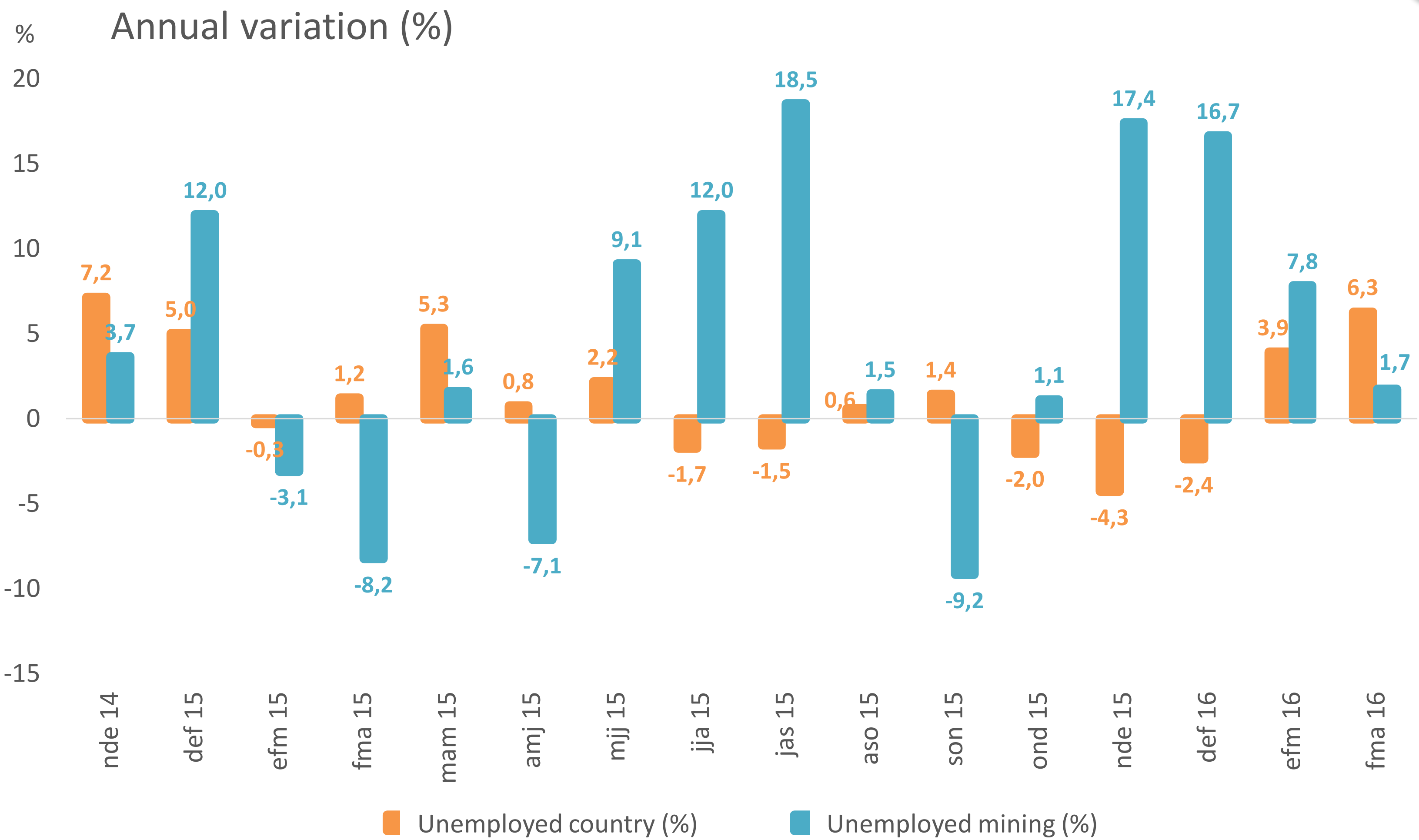
Source: COCHILCO

CHANGES IN UNEMPLOYMENT AT A LOWER COPPER PRICE



Source: COCHILCO with National Statistical Institute INE and LME information

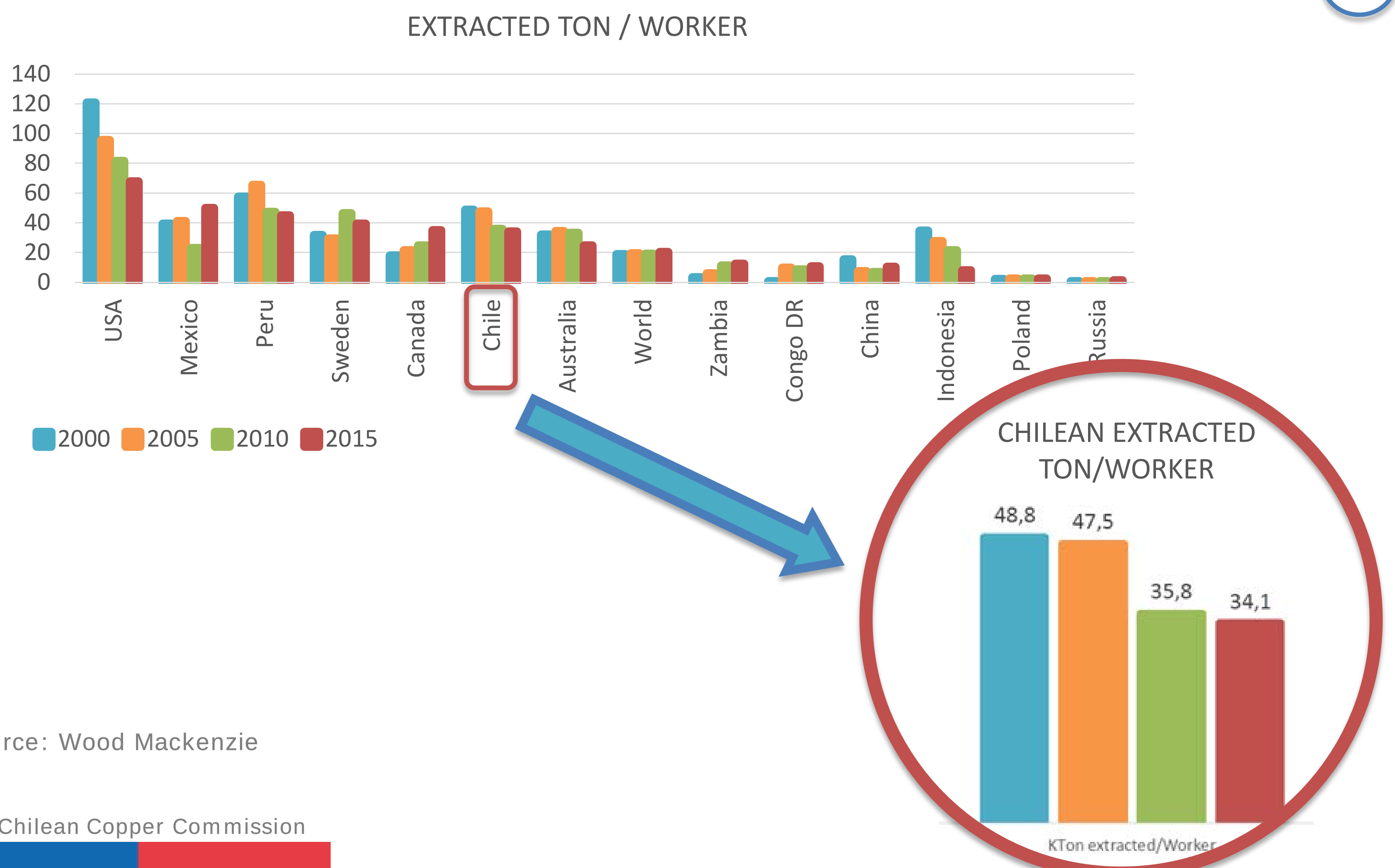
CHANGES IN UNEMPLOYMENT AT A LOWER COPPER PRICE



Source: COCHILCO with National Statistical Institute INE and LME information

4 WHAT ARE WE DOING? CREATING VALUE

NATIONAL COMMISSION ON PRODUCTIVITY



Source: Wood Mackenzie

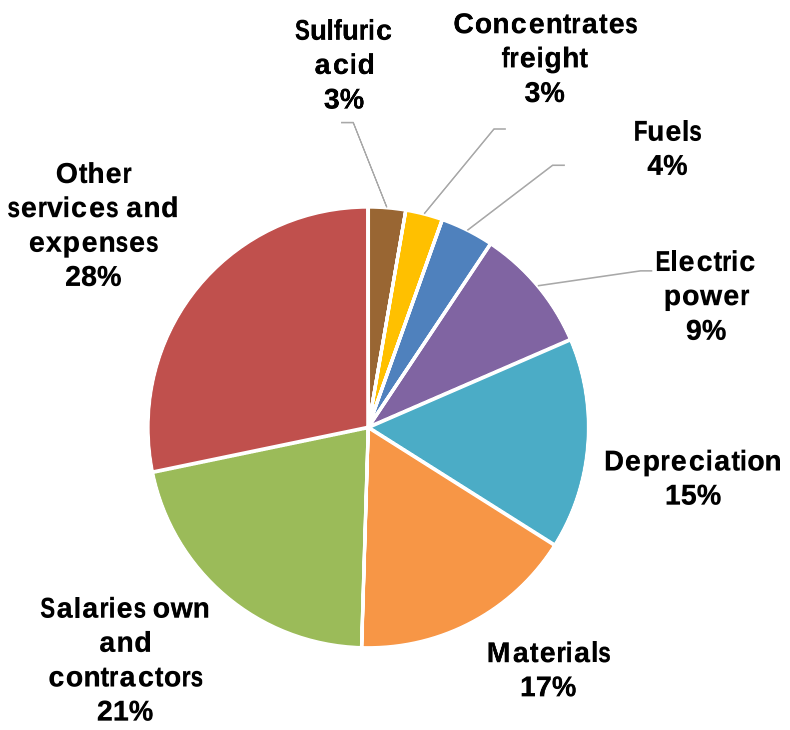
NATIONAL COMMISSION ON PRODUCTIVITY

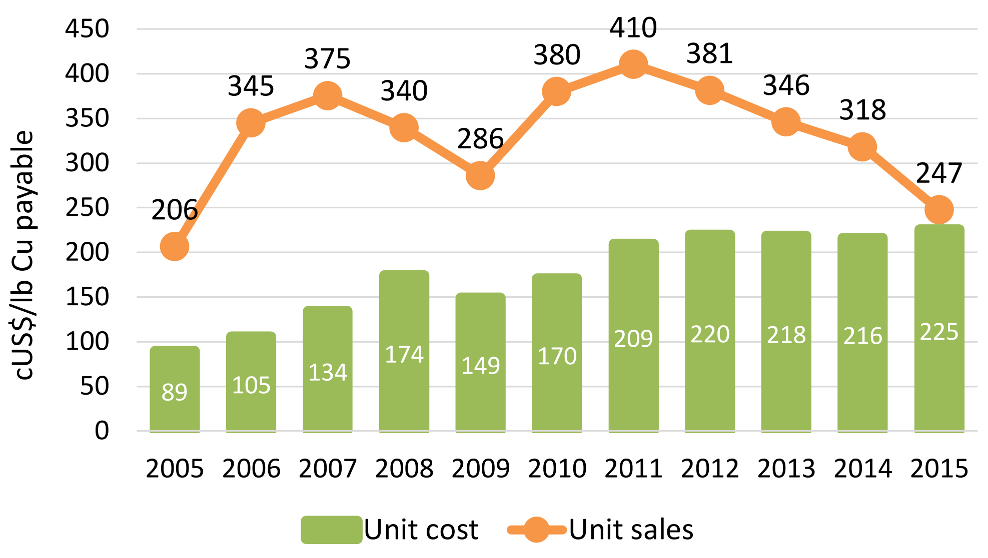
Comisión Nacional de **Productividad**

- Permanent
- Independent and autonomous
- Transversal
- Technical capacity
- Participative

COSTS CONTROL

COMPOSITION OF THE OPERATING COST AVERAGE 2005-2015





Source: COCHILCO

COCHILCO´S COSTS OBSERVATORY ON COPPER MINING

- Quarterly monitoring Cash Cost
- Public information, specialized databases and proprietary information Cochilco
- Modeling of the main elements of Cash Cost
- Aggregated results
- Quarterly results publication

Source: COCHILCO

PROVIDER DEVELOPMENT– ROADMAP 2015 - 2035

CHALLENGES

- TAILINGS
- SMELTER AND REFINERY
- MINING OPERATIONS AND PLANNING
- CONCENTRATION OF MINERALS
- HIDRO

PROVIDER DEVELOPMENT– ROADMAP 2015 - 2035

TAILINGS

1. Facing the increasing scarcity of water and surface.

2. Minimize the impact of infiltrations and ensure the stability of deposits.

3. Promoting from a passive to an active conversion.

4. Promote inclusion and community acceptance.

PROVIDER DEVELOPMENT– ROADMAP 2015 - 2035

SMELTER AND REFINERY

1. Increase the efficiency of smelting and refining processes.

2. Reduce environmental impact.

3. Improve working conditions.

PROVIDER DEVELOPMENT– ROADMAP 2015 - 2035

MINING OPERATIONS AND PLANNING

1. Increased productivity.
2. Increased resources and mineral reserves.
3. Environmental care and social responsibility.
4. Increased safety and quality in the workplace.

PROVIDER DEVELOPMENT– ROADMAP 2015 - 2035

CONCENTRATION OF MINERALS

1. Increased productivity.

2. increased resources and mineral reserves.

PROVIDER DEVELOPMENT– ROADMAP 2015 - 2035

HIDRO

1. Environmental care and social responsibility.

2. Increased productivity.

3. Increased resources and mineral reserves.

05 CONCLUSIONS

CONCLUSIONS

- Mining remains as the main economic activity in Chile despite the fall in the commodities prices.
- Chile remains as the main cooper producer in the world; nevertheless, its participation is declining.
- The end of the Super cycle impacted the Chilean economy, reducing tax revenues, labor and investing portfolio.
- Chile is working in enhancing the Mining performance, reducing costs and increasing productivity.
- The national mining program has developed an strategy to increase added value in the mining process, and to providers too.

COCHILCO
Ministerio de Minería
Gobierno de Chile

THE CHILEAN MINING INDUSTRY

Jorge Cantallopts
Director of Research and Policy Planning
Chilean Copper Commission

Brussels 28-29 June, 2016