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Structural transformation through domestic value addition: Minerals, ores and metals

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UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

Structural transformation through domestic value addition

Mining commodities

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➤ Benefits to value addition



Optimize resource use

increasing the **unit value of processed products** derived from the commodity



Reduces dependence on raw commodity exports

mitigating price volatility and the impact of external market fluctuations



Increase **product complexity**

fostering **technological advancement** and job creation

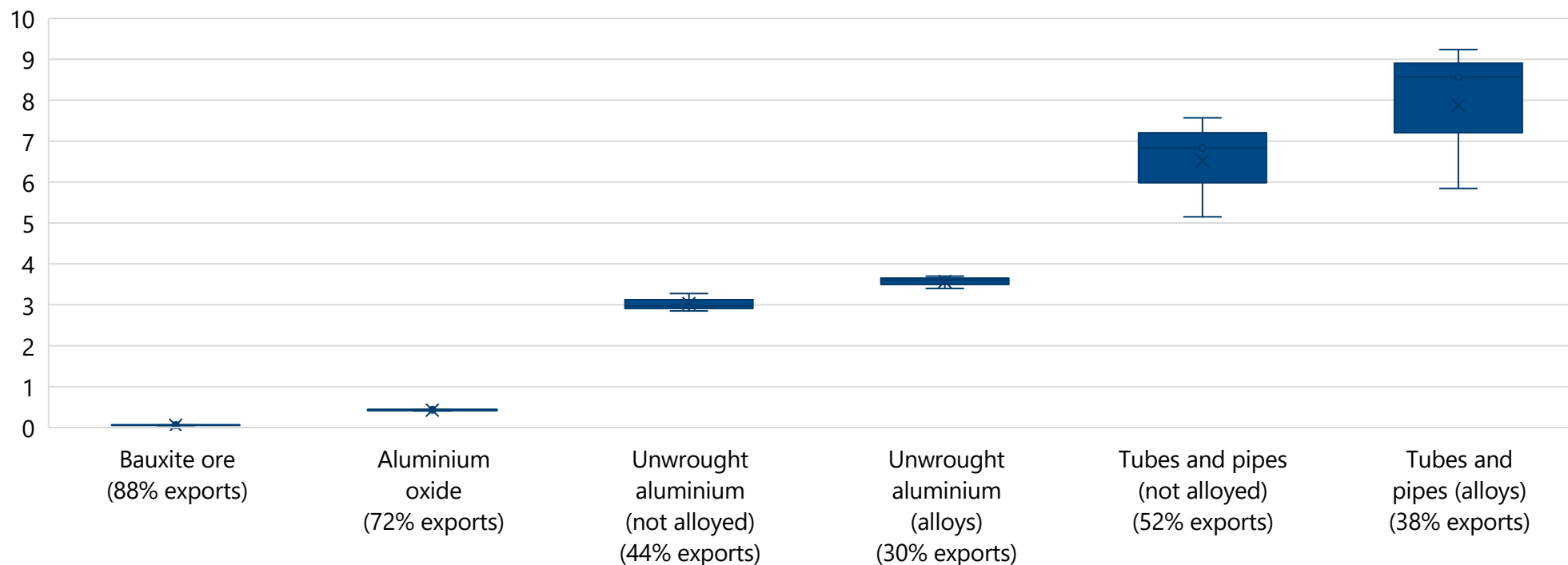


Twin transition presents opportunities

to leverage commodity value chains with products that align with decarbonization and digitalization efforts

➤ Greater unit value of processed products

Unit value of top three exporting countries of aluminium ore and selected aluminium products, 2022 (USD per kilogramme)



Source : UNCTAD secretariat calculations, based on data from the Comtrade database.

Note : The top three exporting countries are as follows: bauxite ore, Guinea, Australia and Indonesia; aluminium oxide, Australia, Brazil and Indonesia; unwrought unalloyed aluminium, India, Russian Federation and Canada; unwrought alloyed aluminium, United Arab Emirates, Norway and Canada; unalloyed tubes and pipes, China, United States of America and United Arab Emirates; and alloyed tubes and pipes, China, United States and Germany. Unit values calculated by dividing trade value by net weight, using the following Harmonized System codes: 260600, bauxite ore; 281820, aluminium oxide; 760110, unwrought aluminium (not alloyed); 760120, unwrought aluminium (in alloys); 760810, tubes and pipes (not alloyed); and 760820, tubes and pipes (in alloys).

➤ Lower price volatility

Price volatility of lithium carbonate and lithium-ion battery packs, 2019-2022

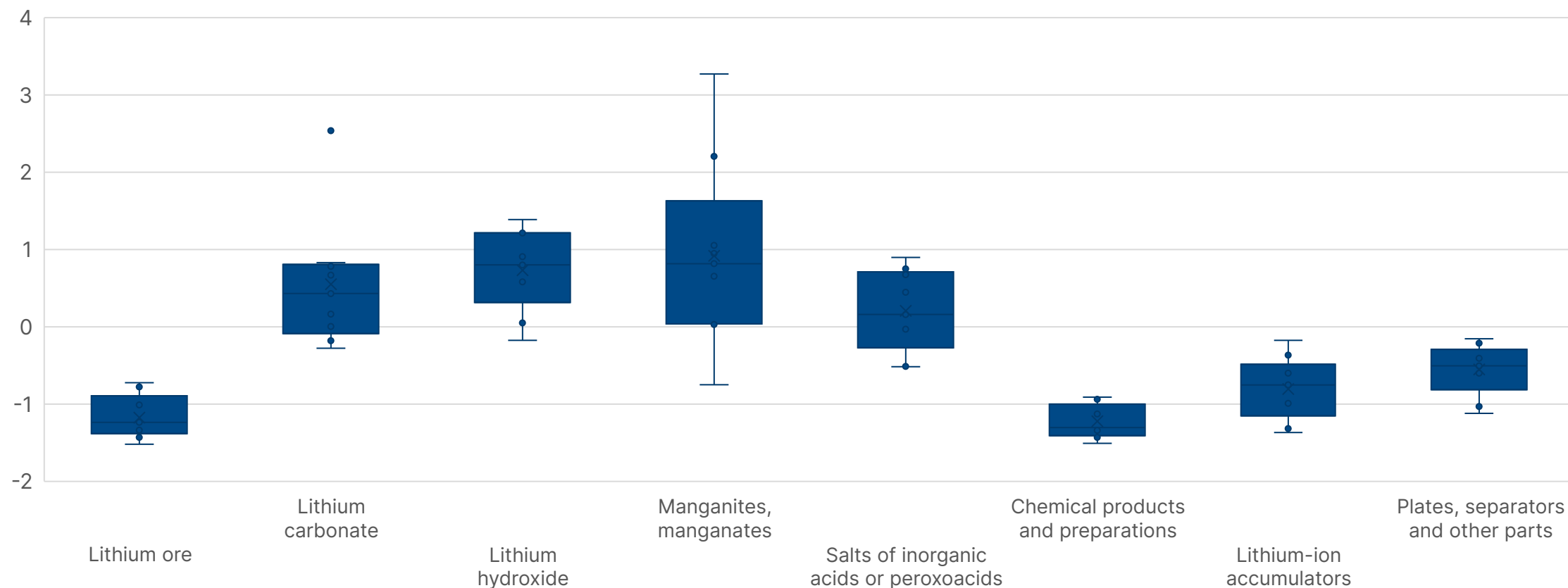


Source : UNCTAD secretariat calculations, based on monthly data from the Comtrade database.

Note : In this graph, the price volatility is measured by the coefficient of variation for monthly prices of lithium carbonate and lithium-ion batteries, calculated between January 2019 and December 2022. The calculation is based on HS codes 283691 for lithium carbonate and 850760 for lithium-ion batteries.

➤ Greater economic complexity

Product complexity of lithium ore and lithium-based products, 2022



Source: UNCTAD secretariat calculations, based on data from the Comtrade database.

Note: A product complexity value of 0 indicates the average product complexity globally and a value of 1 indicates the standard deviation; calculated using the following Harmonized System codes: 253090, lithium ore; 283691, lithium carbonate; 282520, lithium hydroxide; 284169, manganites, manganates and permanganate; 284290, salts of inorganic acids or peroxyacids; 382499, chemical products and preparations; 850760, lithium-ion accumulators; and 850790, plates, separators and other parts of electronic accumulators.

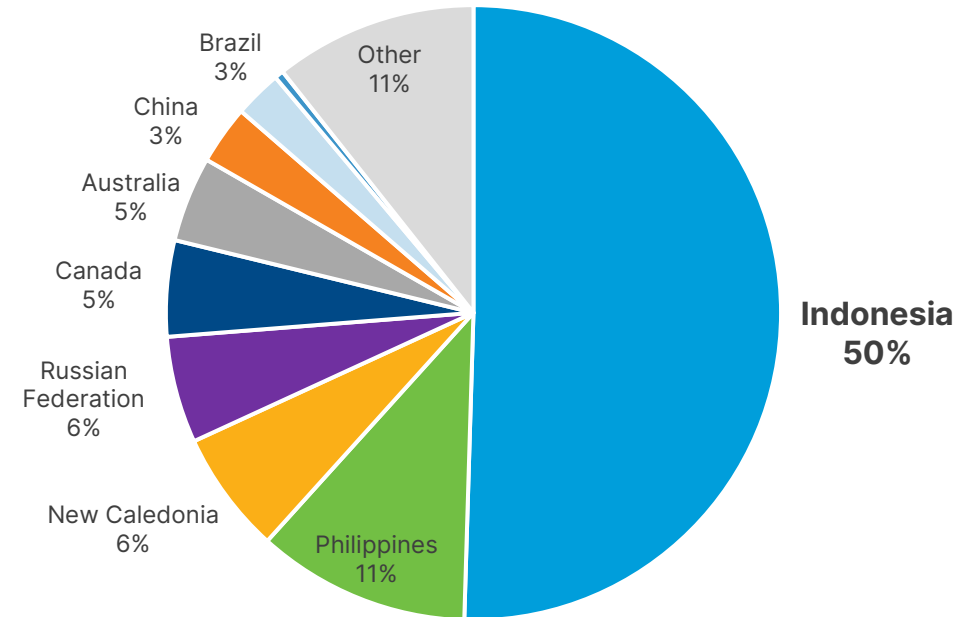


In-country value addition: **➤ Nickel in Indonesia**

➤ Indonesia's role in nickel production

- ▶ Large nickel producer, about **50%** of production in 2023.
- ▶ Indonesia has a focus on increasing **downstream manufacturing**

Nickel mine production 2023, by country



Source: UNCTAD secretariat calculations, based on data from US Geological Survey 2024

➤ Adding value downstream



Trade measures

Export ban and investment requirements by foreign buyers



Broader **policy framework** in favour of value addition

Fiscal incentives, investment promotion and streamlining of administrative procedures



Capacity-building and human capital development

New tertiary education programmes and exchange programmes

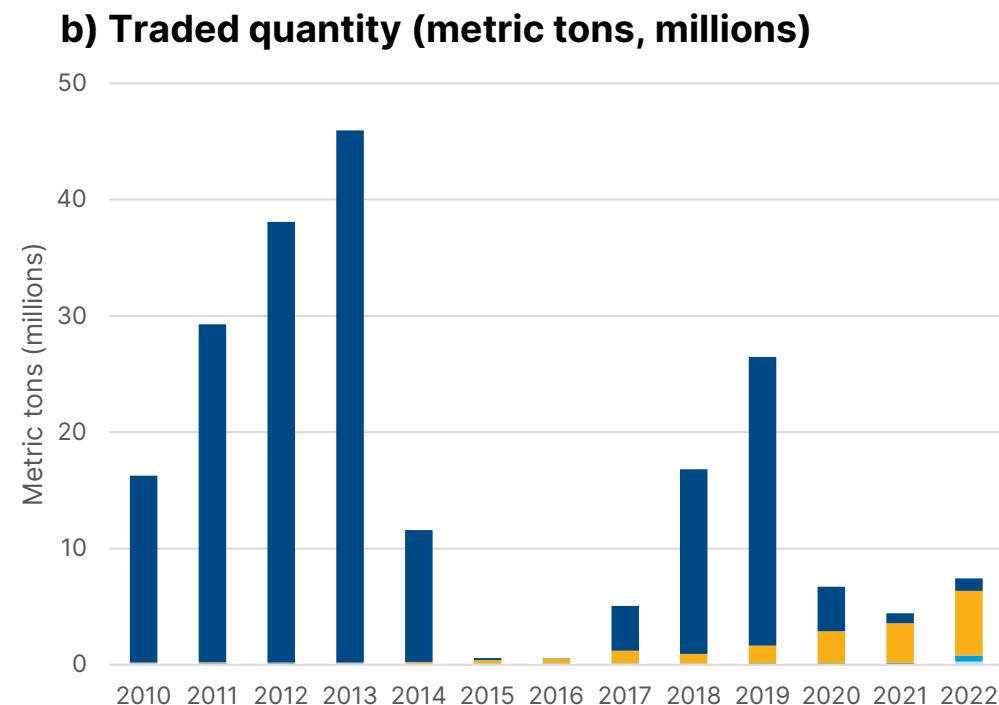
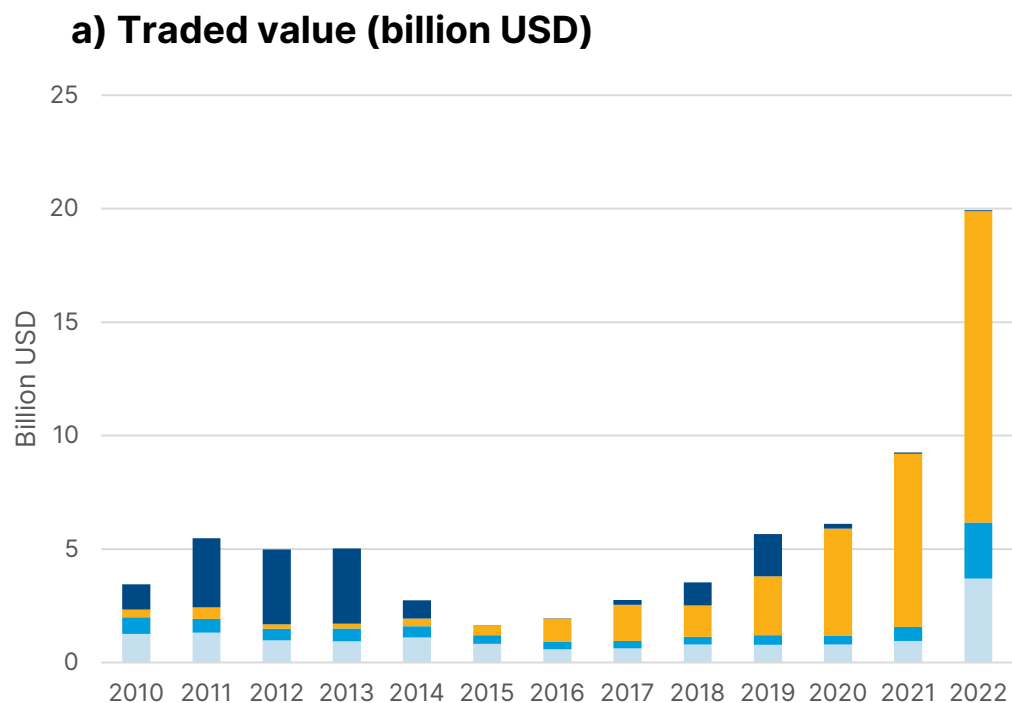


Infrastructure development

Establishment of Morowali Industrial Park for processing and logistics

➤ Adding value downstream

Indonesian nickel product exports, by traded value and quantity, 2010-2022



- Nickel ore
- Ferronickel
- Nickel oxide sinters and other intermediates
- Nickel mates

> Lessons learned



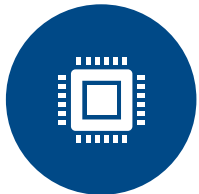
Policy coherence and comprehensive national plans



Investment promotion measures, attracting key players and innovators along value chain



Building **human and physical capital**



Technology transfer enabling a more effective use of resources



WTO considerations, balancing trade policy with international rules

➤ Domestic policy considerations

Regulatory frameworks aligned with national development plans

Human capital and capacity building, through curriculum updates, partnerships and training

Investing in **infrastructure**, including industry-specific facilities for processing

Industrial parks and special economic zones

Public-private **partnerships**

Incentive packages for attracting investments

Financial instruments to **facilitate access to credit and capital**

Regional value chains and **cooperation**

Environmental and social safeguards

At the international level



Regional trade agreements



Technology transfer and knowledge sharing



Regional cooperation in human capital development



International investments in infrastructure



International standards

Thank you

