

Tony Addison

Extractive Industries

Eduardo Mondlane University, Maputo - 2019



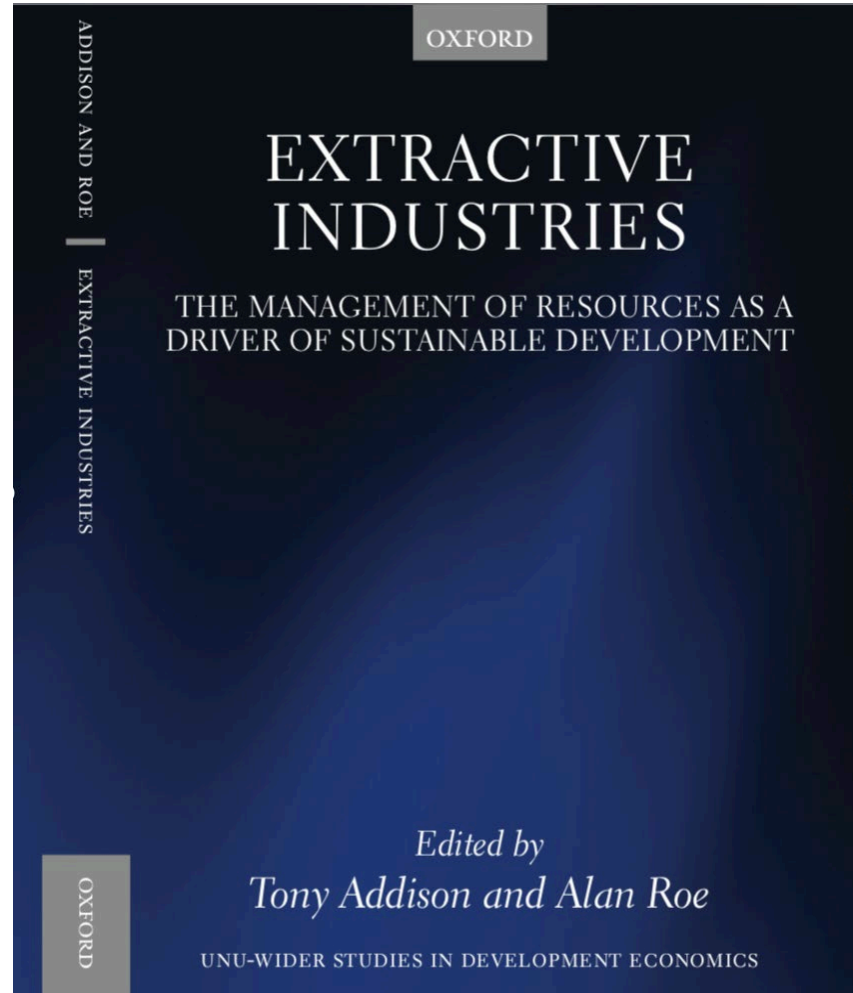
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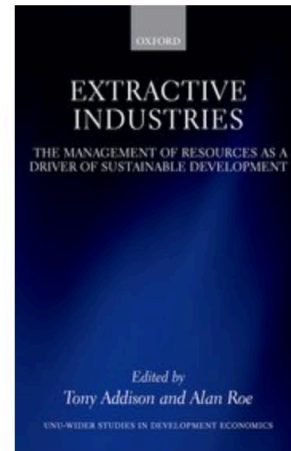
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Overview

Description

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Author Information



Extractive Industries

The Management of Resources as a Driver of Sustainable Development

Edited by **Tony Addison** and **Alan Roe**

[WIDER Studies in Development Economics](#)

- Brings together contributions from experts in the field from a wide variety of backgrounds to provide an authoritative view on each topic
- Covers the economic dimensions of extractives and development, as well as their social and environmental impacts
- Offers realistic recommendations to improve the extractives sector role in development
- Delivers an objective and balanced steer on a variety of often contentious issues
- An open access title available under the terms of a CC BY-NC-SA 3.0 IGO licence

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Overview

- Extractives: Oil & Gas + Mining (coal, metals, gems) + Quarrying (sand etc).
- Non-Renewable Resources (but importance of the ‘Circular Economy’: Recycling etc.).
- Renewable Resources (soils, forests, fisheries etc.) – avoid damage from extractives industries

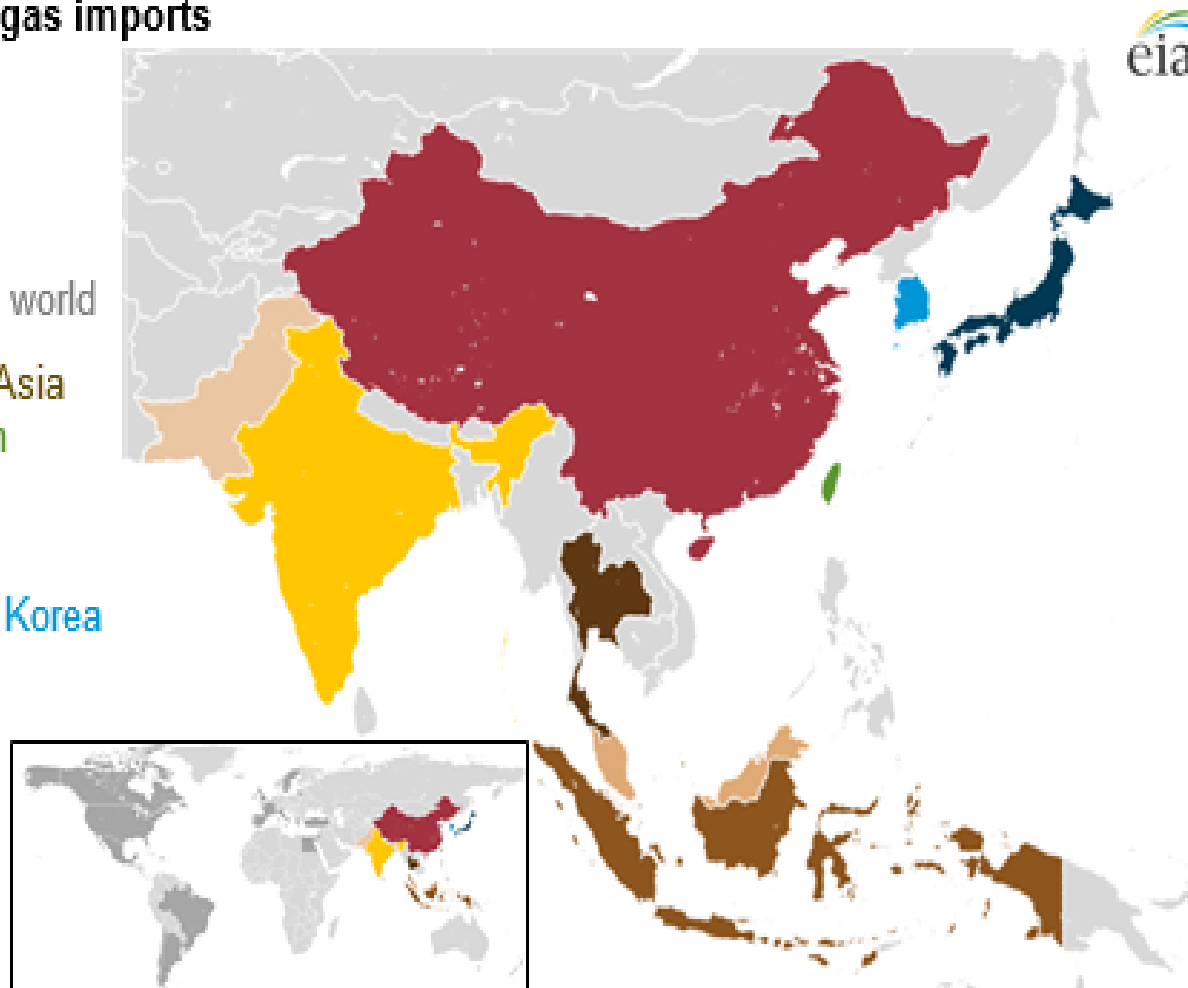
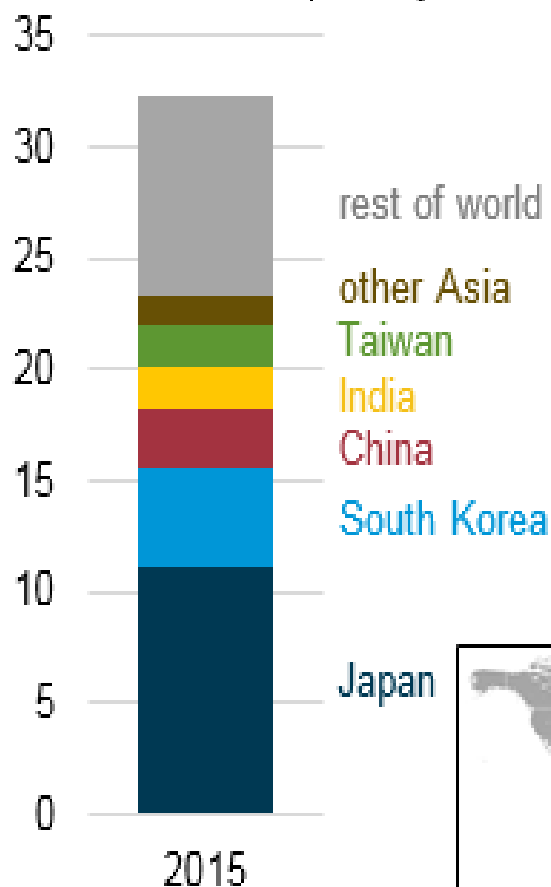
Fossil Fuel Age to Renewables Age (Gas as an 'energy bridge')



Asia – LNG Market

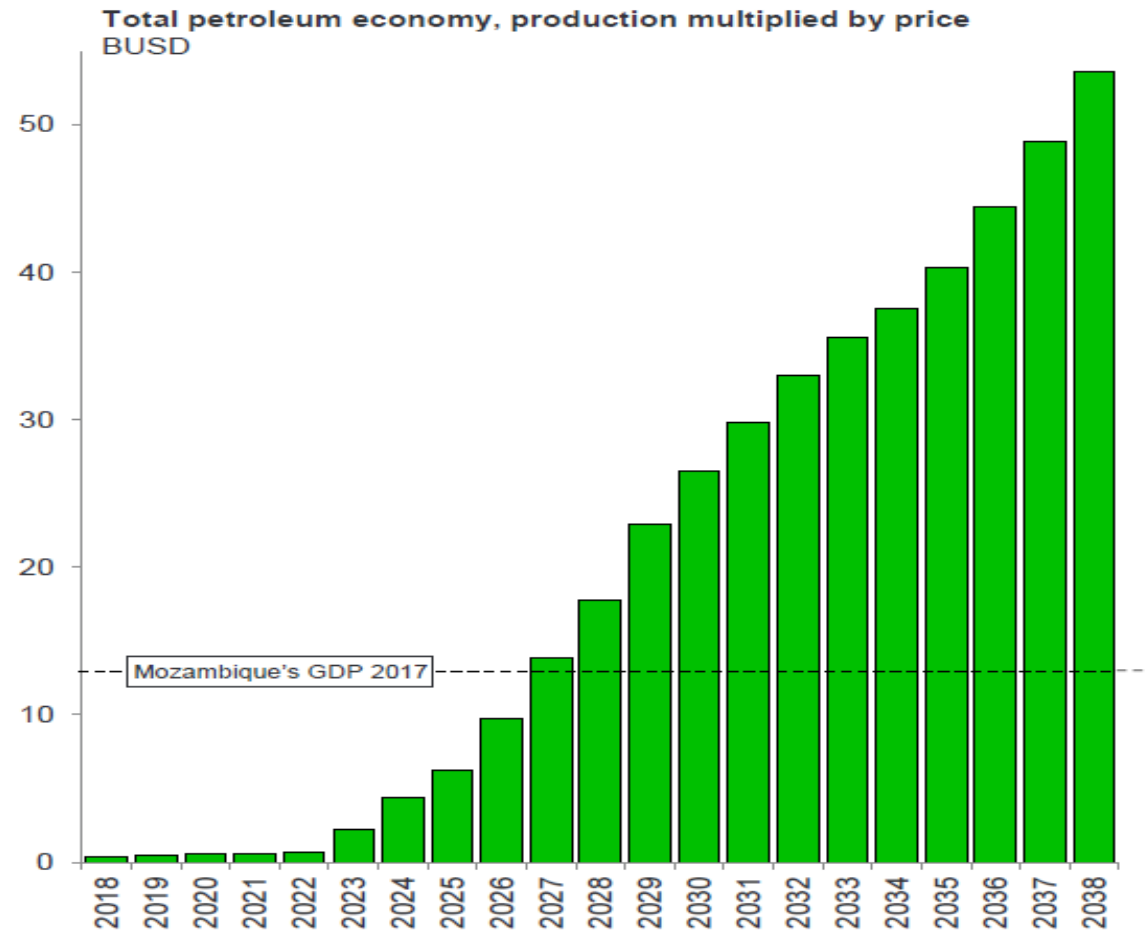
Global liquefied natural gas imports

billion cubic feet per day



Mozambique: huge impact

Mozambique: the petroleum economy is forecast to be **FOUR** times the size of its 2017 GDP in 20 years time.



Source: Rystad Energy UCube, IMF

Low Carbon future will raise demand for metals & minerals

**The Growing Role of Minerals
and Metals for a Low Carbon Future**



June 2017

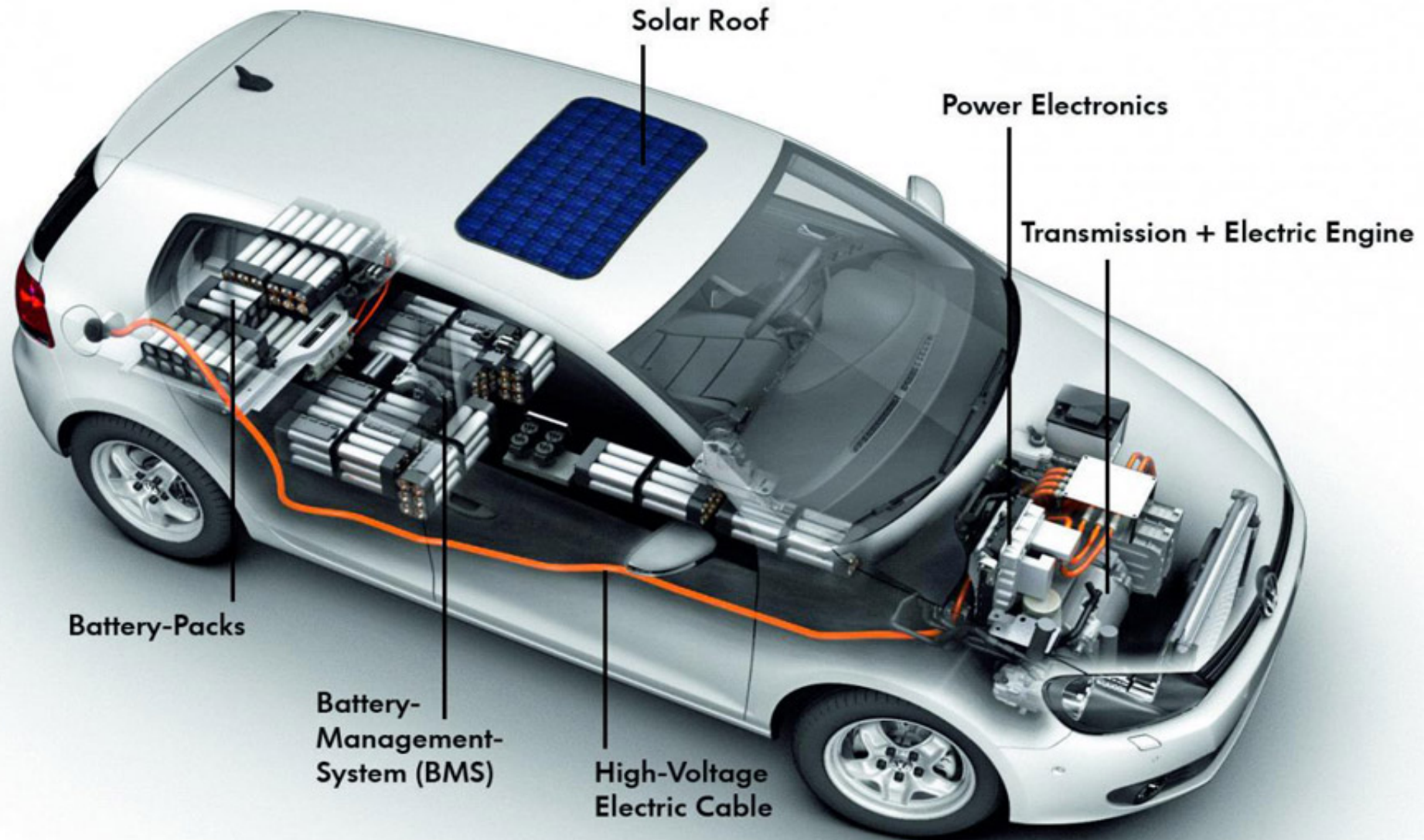


- Electric vehicles, batteries, grid storage, public transport
- Lithium, Cobalt, Nickel, Copper, graphite
- Recycling in richer countries, but limited stocks to recycle in developing countries
- Mining requires power ('Green Mining')

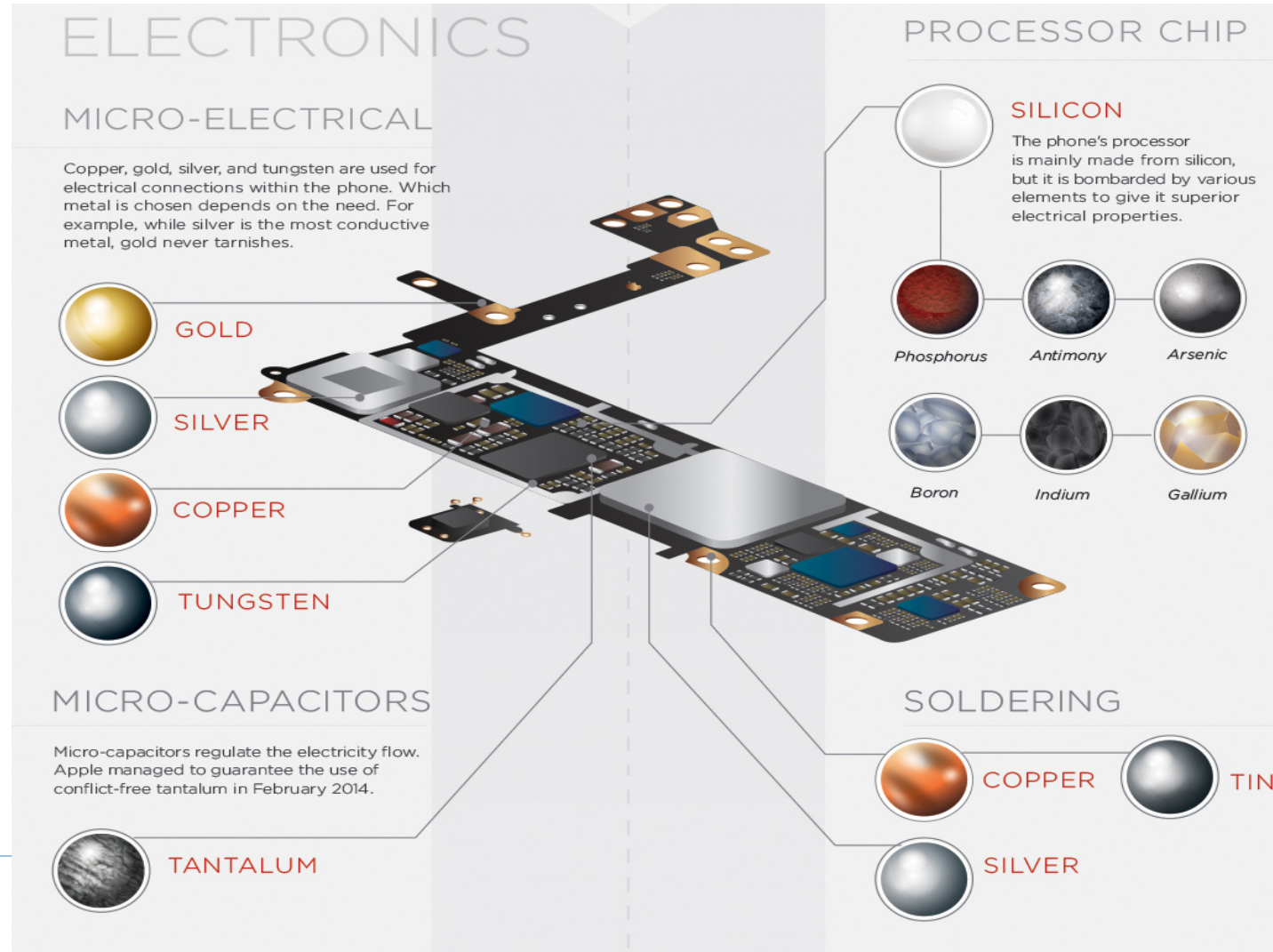


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Internal Combustion Engine to Electric Vehicles



Information Age

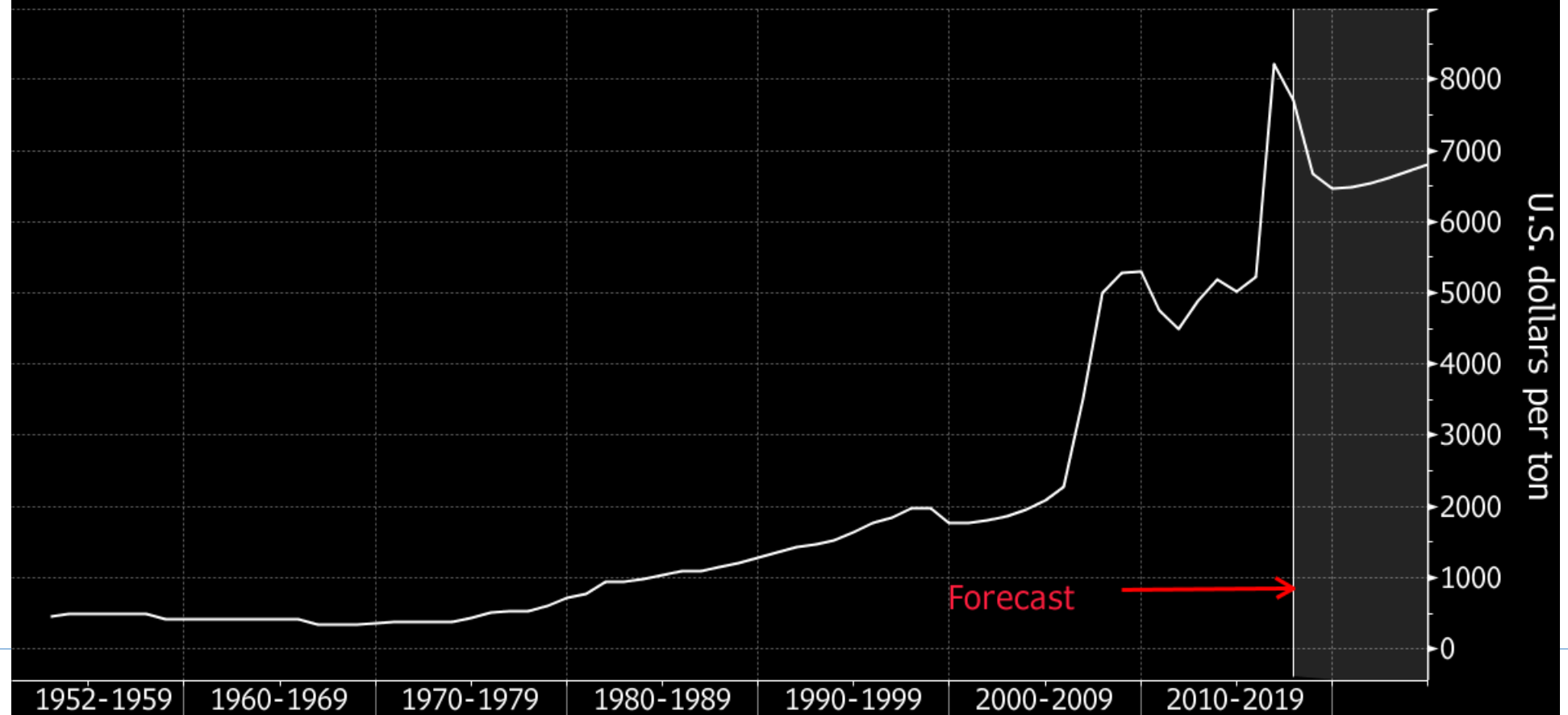


Lithium Price

Prices Soar

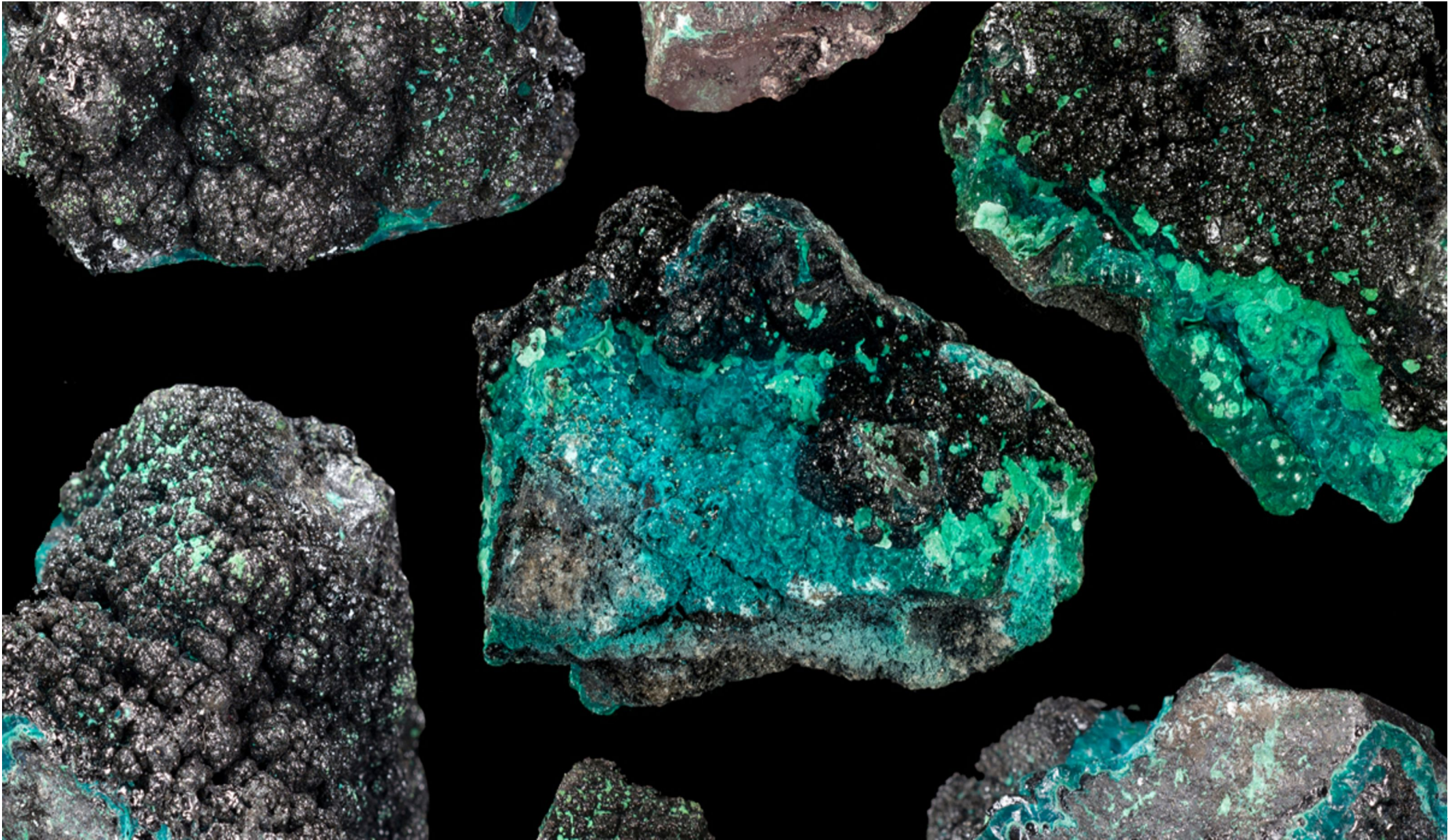
Lithium rises on electric car demand

■ Lithium Price



Source: CRU Group

Bloomberg



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Cobalt requirements

Amount of cobalt in different devices



SMARTPHONE

5 to 10 grams

(as heavy as 2 to 4 pennies)



LAPTOP

1 ounce

(a slice of bread)

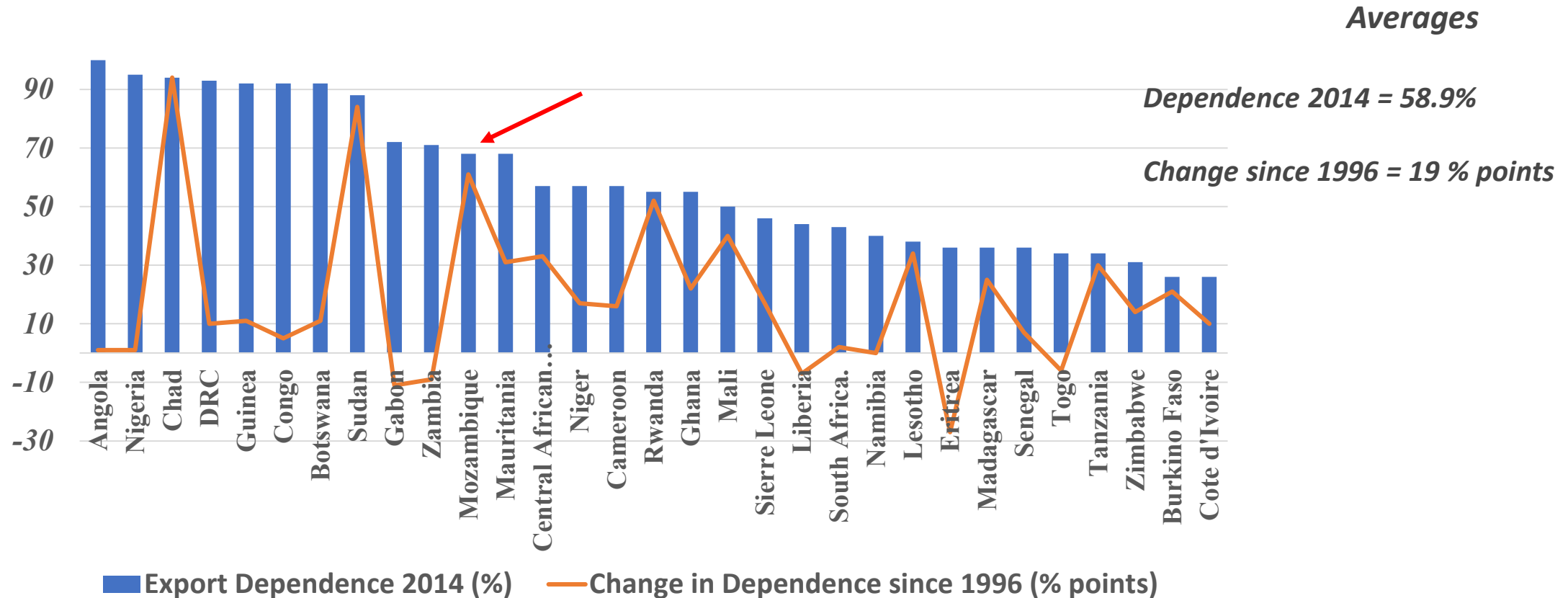


TYPICAL ELECTRIC CAR

10 to 20 pounds

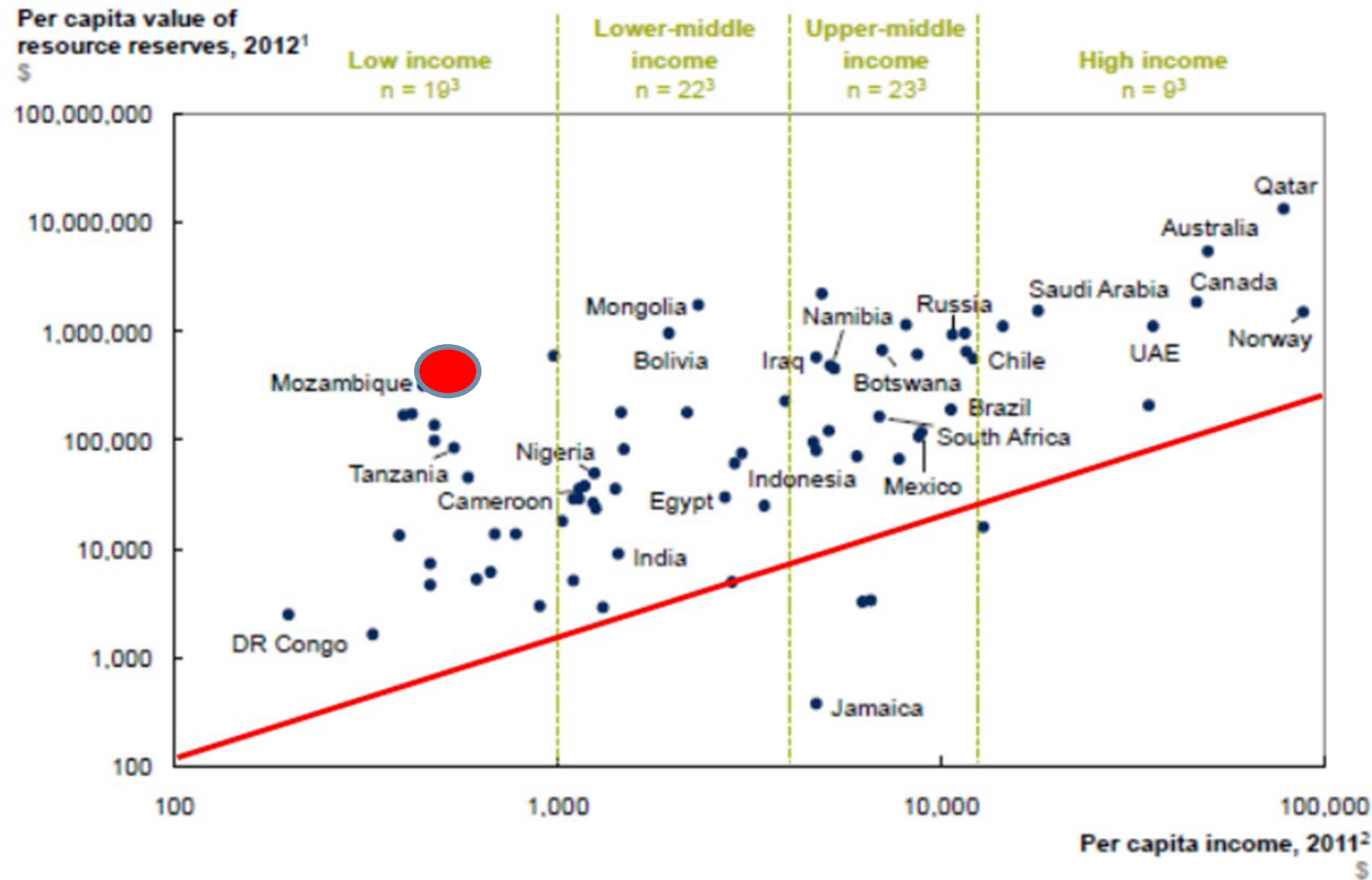
(2 to 3 gallons of milk)

Extractives export dependence in Africa 1996-2014



Source: Alan Roe and Samantha Dodd, Chapter 2 in our book

Many African countries have huge unexploited resources



Example Guinea:

Guinea's exceptionally high levels of reserves are nowhere near to being matched by its levels of bauxite production. For example, the world's largest bauxite producer namely Australia has six times the Guinean level of annual production but reserves equal to only 65% of those located in Guinea.

Foreign Direct Investment (Stock) - \$ million

	2000	2010	2017		2000	2010	2017
Ghana	1 554 ^b	10 080	33 137	Ethiopia	941 ^b	4 206 ^b	18 512 ^b
Guinea	263 ^b	486 ^b	4 314 ^b	Kenya	932 ^b	5 449 ^b	11 904 ^b
Guinea-Bissau	38	63	191	Madagascar	141	4 383	6 528 ^b
Liberia	3 247 ^b	10 206	8 581 ^b	Mauritius	683	4 658	5 122 ^b
Mali	132	1 964	3 989	Seychelles	515	1 701	2 900
Mauritania	146 ^b	2 372 ^b	7 079 ^b	Somalia	4 ^b	566 ^b	2 316 ^b
Niger	45	2 251	6 372	Uganda	807	5 575	11 893
Nigeria	23 786	60 327	97 687	United Republic of Tanzania	2 781	9 712	20 351 ^b
Cameroon	917 ^b	3 099 ^b	6 474 ^b	Angola	7 977	16 063	12 075
Central African Republic	104	511	651 ^b	Botswana	1 827	3 351	5 577
Chad	576 ^b	3 594 ^b	5 439 ^b	Lesotho	330	929	535
Congo	1 893 ^b	9 262 ^b	27 040 ^b	Malawi	358	2 091	1 368
Congo, Democratic Republic of the	617	9 368	22 527	Mozambique	1 249	4 331	38 019
Equatorial Guinea	1 060 ^b	9 413 ^b	13 715 ^b	Namibia	1 276	3 595	5 122
Gabon	.. ^{b,e}	3 287 ^b	9 489 ^b	South Africa	43 451 ^d	179 565 ^d	149 962 ^d
Rwanda	55	422	1 798	Swaziland	536	927	769 ^b
				Zambia	3 966 ^b	7 433	16 973 ^d
				Zimbabwe	1 238	1 814	4 628

National Policy Challenges: A Few

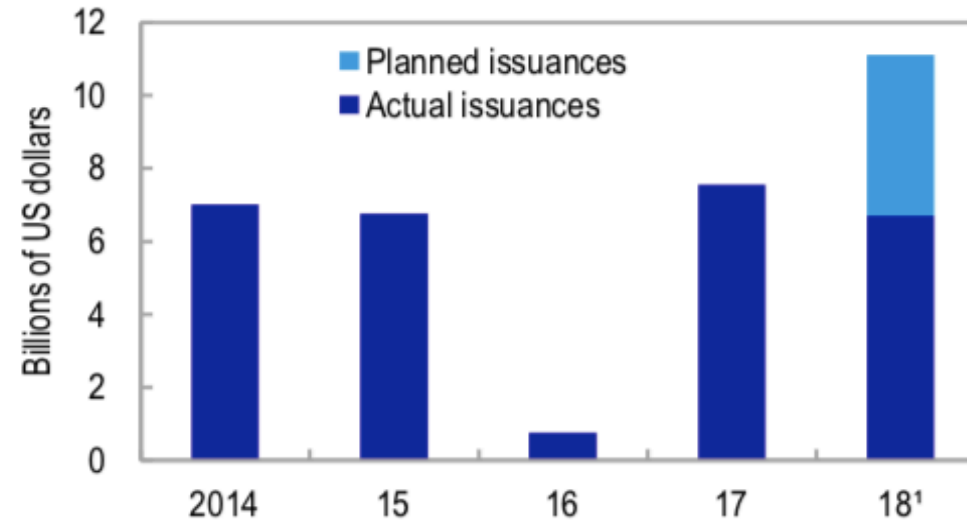
- **Revenues:** Consume? Invest? Save?
- **Consume:** public workers' wages v social protection (cash transfers)
- **Invest (Real):** But in What?
Infrastructure? Agriculture? Manufacturing?
- **Save (Financial Investment):**
 - 'Fiscal buffers' (liquid funds to smooth public spending as revenues fluctuate)
 - Sovereign Wealth Fund (transfer wealth to future – but why in a poor country?)
- **Stranding** (unburnable carbon) : Climate Change Action => downturn in revenues – but how soon?

National Policy Challenges: A Few More

- **Employment & Livelihood Generation.**
Extractives-based growth can be narrowly distributed
(=> political problem e.g regional conflict)
- **Avoid destroying the non-Extractives Economy:** ‘the resource curse’
via macro-economic distress (e.g currency overvaluation)
& environmental damage
- **Fiscal Management Critical:** deploy fiscal rules,
but the politics can be hard (unrealistic expectations)
- **Debt:** Avoid excessive borrowing.
Be transparent (sovereign, corporate & NOC)
- **Manage Risk!** inc. ‘Tail Risks’ (big unexpected shocks).
- **Build local capacity** for: macro-analysis, project evaluation + data collection

Rise in Sovereign Debt

Figure 1.2. Sub-Saharan African Frontier Market Economies: International Sovereign Bond Issuances, 2014–18



Source: Haver Analytics.

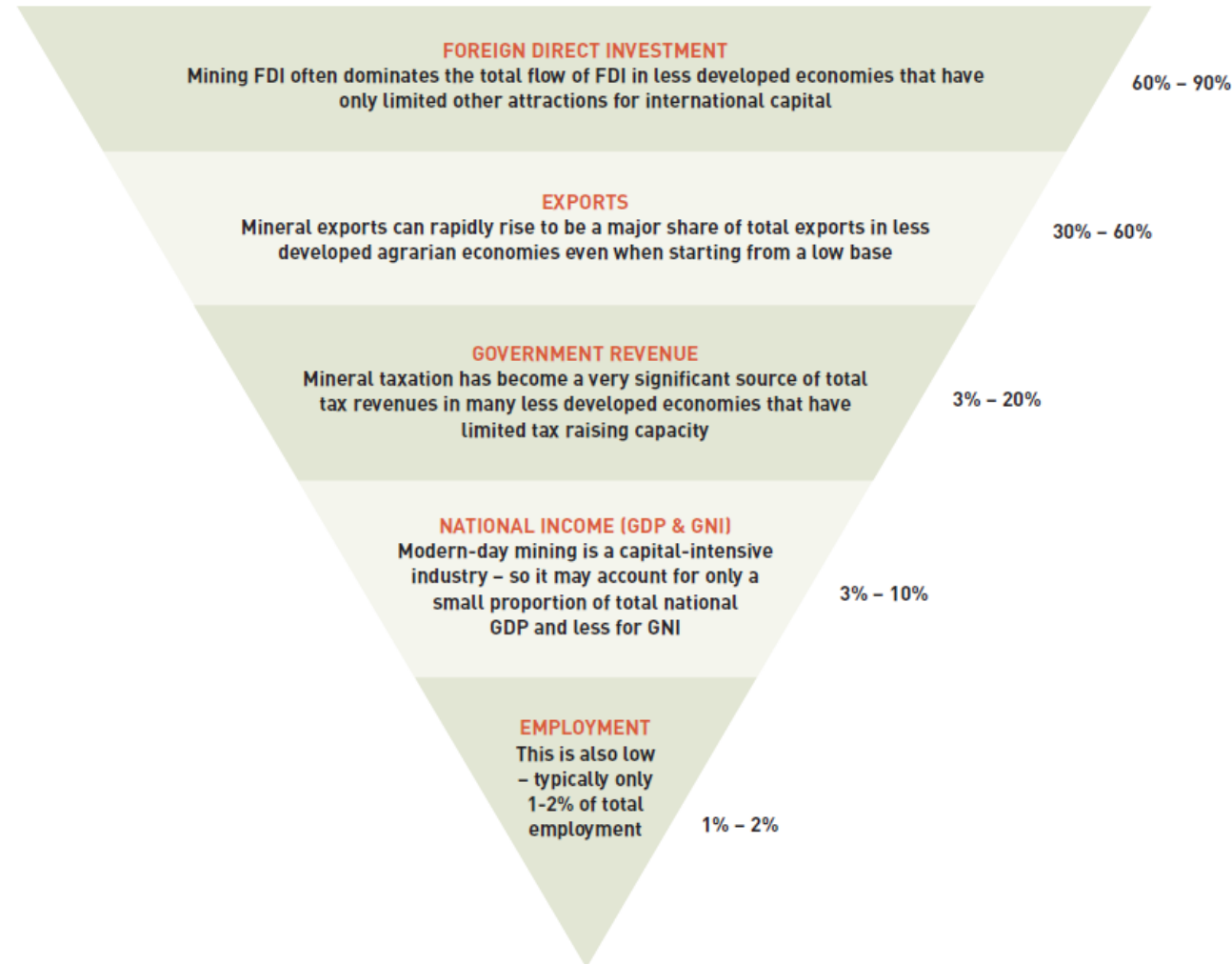
Note: Sub-Saharan African frontier market economies include Angola, Cameroon, Republic of Congo, Côte d'Ivoire, Ethiopia, Gabon, Ghana, Kenya, Mozambique, Namibia, Nigeria, Senegal, Tanzania, and Zambia.

¹ Data are as of March 2018.

Low Income Countries: Share of Non-Concessional Finance



Concentrated contributions of mining argues dilutes the benefit for many



Vale 'Tailings' Disaster in Brazil



Artisinal Mining

AFTER 72 HOURS UNDERGROUND, ZIMBABWE GOLD MINERS ARE PULLED TO SAFETY



PHILIPON BULAWAYO

One of eight miners trapped underground in a flooded gold mine in Zimbabwe is pulled out alive yesterday three days after they were trapped in the illegal shafts in Battlefields, about 100 miles west of Harare. At least 22 bodies were retrieved and as many as 40 miners were feared to be still missing.



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Corruption

Gertler's stakes in two Congo mines, for instance, folded in \$556 million in debt—including \$120 million in interest—that Mr. Gertler owed Glencore, the company said at the time. The cash payment in the deal was about \$534 million.

The documents, though, detail a series of specific transactions in which Glencore helped to finance Mr. Gertler's business interests in Congo. Glencore's chief financial officer frequently signed off on documents associated with the loans.

The overall value of the loans and many of their details haven't previously been reported.

A spokesman for Glencore declined to comment on the specifics of the loan agreements. In response to a 2014 report by London-based corruption watchdog Global Wit-

the loans were improper is wrong, the spokesman said. "Fluoretti has operated transparently and in line with all applicable laws during its interactions with Glencore," he said, adding that all loans were used for legitimate purposes and were repaid.

Documents reviewed by the Journal show that in 2011 a company controlled by Mr. Gertler owed \$300 million to a Bermuda affiliate of Glencore, Limajo International Inc., a previously undisclosed debt.

By the end of 2014, Mr. Gertler's company owed Limajo \$510 million, the documents show.

Glencore's ties to Mr. Gertler date to the mid-2000s, when both invested in Nikanor PLC, a London-listed Congolese copper operator. In 2007, Glencore lent about \$250 million to a company controlled

by Mr. Gertler, and that company used the funds to purchase a stake in Nikanor, according to the documents.

Mr. Gertler later used about \$61 million in Glencore funds to amass shares in another Congo mine operator, Katanga Mining Ltd., after it merged with Nikanor, the documents show. Glencore invested in Katanga alongside Mr. Gertler and eventually came to control it.

In total, Glencore provided nearly \$900 million in loans and advances to Mr. Gertler's companies, according to the documents. Some of that amount likely included accrued interest on some of the loans, the documents show.

Glencore's Katanga Mining, in addition, made about \$80 million in advances to a company controlled by Mr. Gertler from royalties he was entitled

to receive, according to Katanga's public filings. Glencore purchased Mr. Gertler's stake in Katanga in 2017.

Last month, Canada's main stock-market regulator said Katanga Mining hid from investors the risks associated with its reliance on Mr. Gertler. The Ontario Securities Commission said Katanga, which trades in Toronto, paid associates of Mr. Gertler "to maintain relations" with the Congolese government.

The Fluoretti spokesman said last month the company "has always acted appropriately and with integrity in the DRC. Nothing has ever been proven against the company or its executives in a court of law."

BAD DEAL

The “Blood Diamond” magnate who is at the center of Och-Ziff’s bribery scandal in Africa

By Lily Kuo • September 30, 2016



Riches in Congo.

AP PHOTO/MARK COHEN

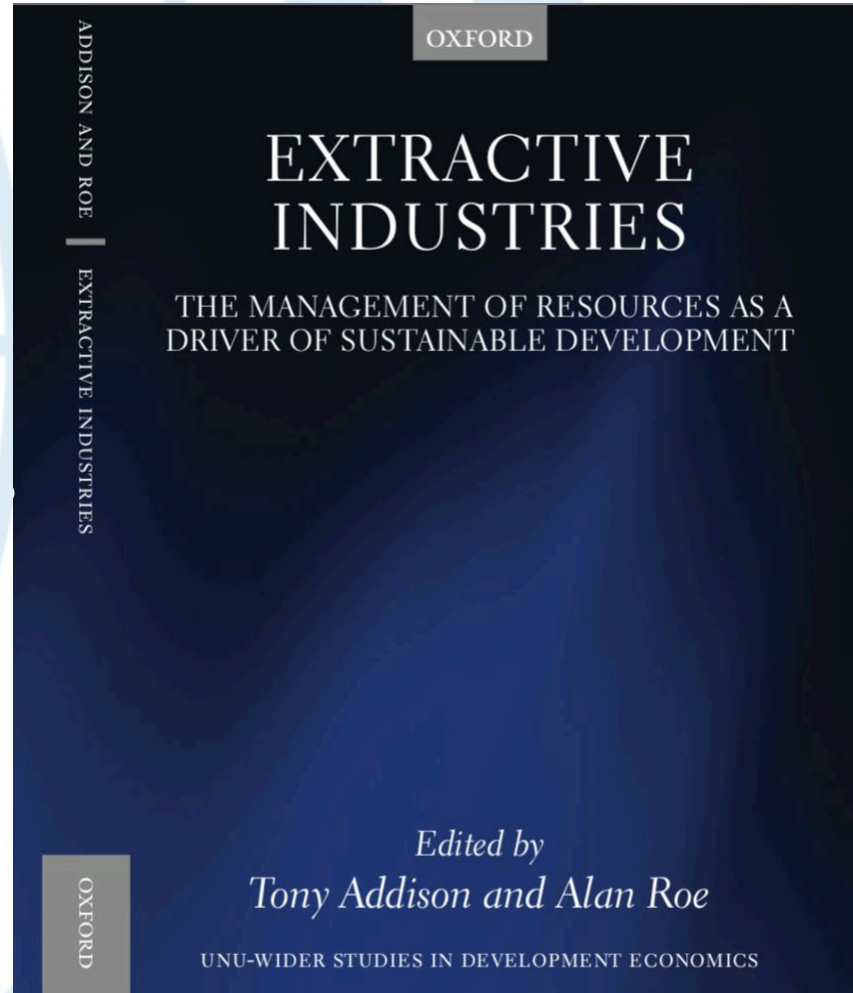


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The Resource Curse



Want to Know More?



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