



The missing link between economic growth and development: The case of copper-dependent Zambia

*Background document to the
Commodities and Development
Report 2017*



ACKNOWLEDGMENTS

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UNCTAD/SUC/2017/7

I. INTRODUCTION

Despite experiencing substantial economic growth and macroeconomic stability during the 2003–2011 commodity boom, copper-rich Zambia did not succeed in reducing poverty and achieving sustainable development. On the contrary, the share of its population living on less than \$1.90 a day increased significantly, income inequality escalated and undernourishment reached record levels. These obstacles to sustainable development are inextricably linked to the country's acute dependence on copper exports.¹ While some commodity dependent developing countries seized the opportunity of high commodity prices to support programmes targeted at the most vulnerable, Zambia was hampered in this process by institutional and policy gaps. As a result, the benefits of economic growth did not trickle down to the majority of the population.

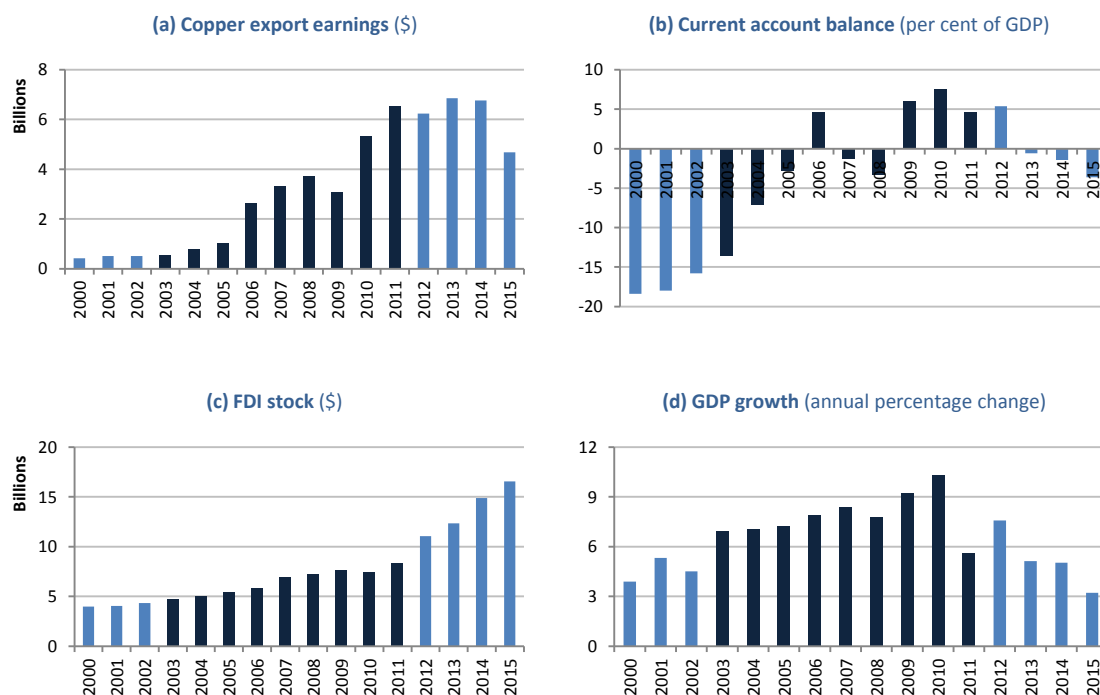
This case study investigates the effects of commodity surges on development by reviewing Zambia's performance during the 2003–2011 boom vis-à-vis the track record in other copper export-dependent developing countries. It identifies gaps in Zambia's development strategy that contributed to the deterioration of poverty indicators in spite of soaring commodity export revenues and high rates of economic growth. Inclusive economic growth that prioritizes employment generation for poor women and men, strong cross-sector linkages, effective government services, and sound governance emerge as fundamental factors for ensuring equitable benefits for all.

¹ Zambia is the world's single most copper-export-dependent country. Copper accounted for 52.9 per cent of Zambian merchandise export earnings in 2003 and 72.5 per cent in 2011. The other developing countries where copper accounted for more than 20 per cent of merchandise exports in 2011 were Chile (37.2 per cent in 2003 and 54.6 per cent in 2011), Mongolia (30.7 per cent in 2003 and 51.6 per cent in 2011), the Democratic Republic of the Congo (0.6 per cent in 2003 and 48.9 per cent in 2011), the Lao People's Democratic Republic (nil in 2003 and 39.1 per cent in 2011) and Peru (14.8 per cent in 2003 and 24.0 per cent in 2011). In addition, the transition economy of Armenia derived 4.1 per cent of merchandise export earnings from copper in 2003 and 24.6 per cent in 2011.

II. ROBUST MACROECONOMIC PERFORMANCE

The commodity boom was instrumental in improving Zambia's macroeconomic performance between 2003 and 2011. The country obtained large windfall gains when the price of refined copper (Grade A electrolytic cathode, London Metal Exchange) surged from an average of \$1,779 per ton in 2003 to \$8,822 per ton in 2011. Soaring prices increased copper export earnings more than tenfold, from \$518 million in 2003 to \$6.5 billion in 2011 (figure 1(a)).² As a result, the current account balance reversed from a deficit of 13.5 per cent of the gross domestic product (GDP) in 2003 to a surplus of 4.7 per cent in 2011 (figure 1(b)). Higher commodities prices also attracted investment, particularly in extractive industries: Zambia's total stock of foreign direct investment (FDI) rose from \$4.7 billion to \$8.4 billion in the same period (figure 1(c)). Boosted by higher export revenues and investment inflows, the Zambian economy enjoyed an average annual economic growth rate of 7.8 per cent between 2003 and 2011 (figure 1(d)), the seventh highest in Africa.

Figure 1. Selected economic indicators, Zambia, 2000–2015



Sources: UNCTADstat and World Bank, *World Development Indicators*.

Note: Commodity boom years (2003–2011) are indicated in dark blue.

² Combined export value of two groups of the Standard International Trade Classification (SITC), third revision: “copper ores and concentrates; copper mattes; and cement copper” (group 283) and “unrefined and refined copper; copper alloys; copper bars, rods and profiles; copper wire; copper plates, sheets and strips; copper foil; and copper powder and flakes” (group 682).

Zambia also benefited from high foreign exchange reserves, low inflation, political stability and a \$4 billion debt-relief package that cleared most of the country's foreign debt. The apparent macroeconomic success story culminated in Zambia's reclassification by the World Bank as a middle-income country in 2011.³ Concurrently, Zambia was assigned a B+ sovereign credit rating by both Fitch and Standard & Poor's, which paved the way to the 2012 issuance of sovereign bonds, making the country one of only eleven sub-Saharan African international sovereign bond issuers.⁴

The commodity boom exposed the highly inequitable distribution of copper mining rents in Zambia and facilitated efforts to increase taxation of the sector. Given the high upfront capital investment and long payback periods required to revive the mining sector following the privatisation process of the late 1990s, the development agreements signed between the Government and mining companies were very unfavourable for public revenues. For example, the mineral royalty rate of 0.6 per cent was among the lowest in the world. Additionally, the corporate income tax rate of 25 per cent was frequently not collected due to loss carry forward and investment offsets against taxable income. As a result, the mining industry paid no corporate income taxes from 2000 to 2007. While the sector accounted for about 6.2 per cent of GDP in 2000–2007, its contribution to budget revenues corresponded to less than 0.1 per cent of GDP (IMF, 2015).

The unbalanced sharing of mining rents fuelled protests and strikes, especially as copper prices boomed, inducing the Zambian authorities to amend the fiscal regime. In 2007, the Government increased the corporate income tax rate to 30 per cent and the royalty rate to 3 per cent. In 2008, it introduced a graduated windfall tax and reduced the depreciation rate for capital expenditures for non-exploratory activities. In 2009, after threats of legal action and disinvestment by the mining industry, the windfall tax was replaced by a new regime with an effective tax rate of 47 per cent. These regulatory changes, along with increased copper prices and output, raised the mining sector's direct contribution to public revenue to nearly 3 per cent of GDP in 2010 (IMF, 2015). More remarkably, the share of Government revenue in rents from the copper industry increased from 0.8 per cent in 2004 to 30.5 per cent in 2011 (see table 1), a level that was significantly closer to the norm observed in the copper sectors in Peru (33.7 per cent) and Chile (38.3 per cent among the ten largest private firms), or the gold sectors in Peru (28.1 per cent), Mali (28.3 per cent) and Ghana (31.1 per cent). Nevertheless, the size of the Government's share of copper rents in Zambia remained lower than the corresponding shares observed in some oil-producing developing countries, including Angola, Ecuador and the Bolivarian Republic of Venezuela (UNCTAD, 2014).

³ The upward adjustment reflected Zambia's improved level of gross national income (GNI) per capita. For the 2011/12 fiscal year, low-income economies were defined as those with a GNI per capita (calculated according to the World Bank Atlas method) of \$1,005 or less in 2010; lower middle-income economies were those with a GNI per capita between \$1,006 and \$3,975; upper middle-income economies were those with a GNI per capita between \$3,976 and \$12,275; high-income economies were those with a GNI per capita of \$12,276 or more.

⁴ In giving Zambia its first sovereign credit rating from an international rating agency, Fitch cited improved macroeconomic stability, rising investment in mining and comfortable public and external debt ratios. Fitch's rating for Zambia was on par with the company's ratings for Angola, Ghana and Kenya. At the time, only five sub-Saharan African countries received better ratings from Fitch: South Africa (BBB), Namibia (BBB-) and Gabon, Lesotho and Nigeria (BB-).

Table 1. Share of government revenues in rents from the extractive industries, selected commodities and countries, 2004–2012 (per cent)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	Cumulative share
Copper										
Chile	50.9	53.5	51.0	54.0	60.1	44.7	51.3	50.1	55.5	51.9
10 major private firms	20.7	27.7	28.8	35.7	36.8	24.0	29.8	38.3	40.4	32.0
CODELCO	99.7	84.3	88.9	90.7	101.1	79.3	91.3	66.3	89.5	86.9
Peru	23.5	37.5	30.9	24.5	31.0	34.0	32.2	33.7	47.0	32.7
Zambia	0.8	2.0	3.4	8.9	21.6	167.4	19.2	30.5	..	17.5
Gold										
Ghana	20.1	61.9	27.6	29.8	23.9	18.6	21.0	31.1	32.8	27.7
Mali	21.4	18.0	29.6	43.3	38.5	39.6	35.8	28.3	..	33.6
Peru	23.7	24.6	26.4	25.7	28.1	28.3	29.2	28.1	29.9	27.7
United Republic of Tanzania	17.3	37.5	12.8	12.6	17.4	13.2	12.2	13.9	28.5	17.9
Oil										
Angola	63.2	56.8	75.9	81.4	79.6	81.4	88.1	91.9	95.1	83.3
Colombia	32.7	28.7	34.1	44.3	39.0	52.4	34.0	37.0	55.1	41.1
Ecuador	71.8	67.4	69.5	68.8	65.8	66.6	72.9	93.1	93.5	76.3
Venezuela (Bolivarian Republic of)	58.4	54.9	70.1	72.1	52.0	56.4	63.5	70.3	70.9	64.1

Source: Adapted from UNCTAD (2014).

Zambia's macroeconomic performance deteriorated significantly after 2011. Annual GDP growth, which had peaked at 10.3 per cent in 2010, declined to 3.2 per cent in 2015. The current account surplus of 7.5 per cent in 2010 reverted to a deficit of 3.6 per cent in 2015. Copper export earnings remained stable in 2012–2014, as production increases mitigated weakening prices, but fell by almost one-third in 2015 due to the scaling down of mining operations. Despite the slowdown, long-term investment remained attractive: Zambia's FDI stock nearly doubled from \$8.4 billion in 2011 to \$16.5 billion in 2015. Nonetheless, fiscal accounts deteriorated sharply as a result of lower than budgeted revenues and higher expenditures on subsidies and wages. Faced with a sharp currency depreciation, high inflation and reduced investor confidence, the Government was left with limited fiscal space to compensate for slower growth. Sustained macroeconomic deterioration culminated in Zambia's request for support from the International Monetary Fund (IMF) in 2017.

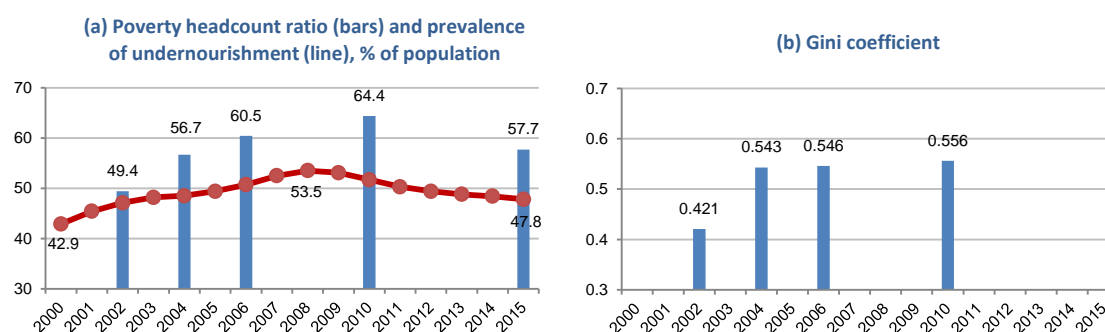
III. DISAPPOINTING DEVELOPMENT RESULTS

Notwithstanding Zambia's positive macroeconomic outlook, there remained significant barriers to development in 2003–2011. Most notably, the country failed to reduce poverty, malnutrition and inequality. Although GNI per capita increased from \$400 in 2003 to \$1,390 in 2011, the poverty headcount ratio at \$1.90 a day (2011 purchasing power parity) soared from 49.4 per cent of the population in 2002 to 64.4 per cent in 2010 (figure 2(a)). Given significant population growth during this period, the total number of Zambians below the poverty line climbed from 5.7 million in 2002 to 9 million in 2010.

As adequate nutrition is the cornerstone for survival, health and development, Zambia's poor record on hunger eradication is cause for serious concern. The prevalence of undernourishment rose from 48.2 per cent of the population in 2003 to 53.5 per cent in 2008 and 50.3 per cent in 2011 (figure 2(a)), the highest rate among countries for which data are available.⁵ According to the World Bank's *World Development Indicators*, the absolute number of Zambians suffering from hunger soared from 5.5 million in 2003 to 7.2 million in 2011, and the food deficit depth increased from 368 to 442 kilocalories per person per day in the same period. Although the prevalence of undernourishment declined after the copper boom, Zambia's rate in 2015 (47.8 per cent) was second only to Haiti's (53.4 per cent).

Zambia's macroeconomic progress in 2003–2011 also masked important inequalities in the distribution of welfare gains across the population. Along with skewed GDP growth, there was a substantial deterioration of the Gini coefficient, from 0.421 in 2002 to 0.556 in 2010 (figure 2(b)). According to the *World Development Indicators*, the share of consumption held by the poorest 10 per cent fell from 6.1 per cent in 2002 to 3.8 per cent in 2010, while the comparable share held by the richest 10 per cent rose from 33.7 per cent to 45.2 per cent. Thus, the sustained economic expansion derived from the copper boom benefited mainly a minority of Zambians.

Figure 2. Poverty, food security and inequality indicators, Zambia, 2000–2015



Sources: World Bank, PovcalNet and World Development Indicators, and World Bank (2017).

Notes: Poverty headcount ratios and Gini coefficients in 2000–2015 were available only for the years indicated in the figures.

⁵ Notable exceptions are the Democratic Republic of the Congo, Eritrea, Somalia, South Sudan, Sudan and the Syrian Arab Republic.

Among the six developing countries that derived at least 20 per cent of total merchandise export earnings from copper in 2011, Zambia recorded the second highest average annual economic growth rate in 2003–2011, but had the worst performance in terms of poverty alleviation, hunger eradication and inequality reduction (table 2). With the exception of Zambia, all copper export-dependent developing countries succeeded in reducing their poverty headcount ratios during the commodity surge. While the share of the population living on less than \$1.90 a day declined by at least ten percentage points in the Democratic Republic of the Congo, the Lao People's Democratic Republic and Mongolia, it increased by more than 15 percentage points in Zambia. A similar trend was observed for the prevalence of undernourishment.⁶ The inequality record of copper export-dependent developing countries was more heterogeneous: inequality fell in Latin America (Chile and Peru), remained virtually unchanged in the Democratic Republic of the Congo, rose in Asia (Lao People's Democratic Republic and Mongolia), and soared in Zambia. As a result, Zambia exhibited the highest income inequality among copper-export-dependent developing countries in 2011.

Table 2. Selected socioeconomic indicators in copper-export-dependent developing countries, 2003–2011

	Average annual GDP growth rate (%)	Poverty headcount ratio (%)		Prevalence of undernourishment (%)		Gini coefficient	
	2003–2011	2003*	2011**	2003	2011	2003*	2011**
Democratic Republic of the Congo	5.9	94.1	77.1	0.422	0.421
Zambia	7.8	49.4	64.4	48.2	50.3	0.421	0.556
Lao People's Democratic Republic	5.8	26.1	16.7	34.8	21.4	0.347	0.379
Peru	6.3	12.2	4.3	20.9	10.7	0.537	0.455
Chile	4.3	2.8	1.3	<5.0	<5.0	0.546	0.508
Mongolia	8.3	10.6	0.6	34.7	24.5	0.329	0.339

Sources: World Bank, PovcalNet and World Development Indicators.

Notes: Countries are listed in descending order by poverty headcount ratio in 2011.

* 2002 for the Lao People's Democratic Republic, Mongolia and Zambia; 2004 for the Democratic Republic of the Congo.

** 2010 for Zambia; 2012 for the Democratic Republic of the Congo and the Lao People's Democratic Republic.

Nevertheless, not all social indicators deteriorated during the 2003–2011 commodity boom. Life expectancy at birth progressed from 49.5 years in 2005 to 57.5 years in 2011. The under-five mortality rate fell from 126.8 to 95.9 per 1,000 live births in the same period. The mean years of schooling for adults above the age of 25 years increased from 6.3 to 6.6, and the expected years of schooling for school-age children went from 11.7 to 13.2. Moreover, women's participation in household decision-making increased from 18 per cent of currently married women aged 15–49 years in 2002 to 39 per cent in 2007 and 54 per cent in 2014. According to the 2013 Millennium Development Goals (MDGs) Progress Report, Zambia made significant progress towards meeting the eight MDGs in 2006–2010, particularly in primary school enrolment, child malnutrition and the fight against malaria. However, the country needs to make further effort to reduce poverty and maternal mortality, prevent new HIV infections, ensure that children complete secondary school, increase access to clean water and sanitation, and safeguard environmental sustainability (UNDP, 2013).

⁶ Undernourishment data for the Democratic Republic of the Congo were not available.

IV. MISSING LINKS: POLICY AND INSTITUTIONAL GAPS

Economic growth is a necessary but insufficient condition for poverty reduction (Deininger and Squire, 1997; Dollar and Kraay, 2002; Bourguignon, 2004; Ravallion, 2007). The characteristics of a growth model – such as its capacity to integrate labour reserves into the productive system and distribute the gains from increased productivity fairly – are essential for delivering inclusive and sustained development. Zambia's poor record on poverty alleviation, food security and inequality reduction, despite robust macroeconomic performance, is due to a number of policy and institutional deficiencies, including weak cross-sector linkages, a poor business climate, unsatisfactory governance, inadequate distribution of welfare gains, and the absence of a solid social safety net to protect the most vulnerable.

Employment creation provides an essential link between economic growth and poverty reduction. A development strategy that focuses on fostering inclusive growth must generate jobs for underprivileged population groups and raise their productive capacity through investment in skills and infrastructure development. However, the structural composition of the Zambian economy has contributed to persistent inequalities. Although the extractive industry was responsible for 22 per cent of GDP in 2011, it accounted for a modest and declining share of total employment: 2 per cent in 2008, 1.6 per cent in 2012 and 1.4 per cent in 2014 – a steep drop from the 15 per cent recorded in 1990 (Kalinda and Floro, 1992; CSO, 2011; CSO, 2013; CSO, 2016). Given the growing capital intensity of the copper sector, the large FDI influx during the 2003–2011 boom provided employment for a small, well-paid, skilled workforce, but created little opportunities for the majority of the population (over 60 per cent in 2011), who live in rural areas and depend mostly on subsistence agriculture for their livelihoods.

The structural vulnerability of Zambia's economy is exacerbated by the absence of significant upstream and downstream linkages to copper mining. As a result, the country does not benefit sufficiently from the potential spillovers that the copper sector could create. Direct State ownership, preferential sourcing and import substitution industrialisation resulted in the development of a diversified local supply cluster in the 1970s, but mismanagement of the consolidated copper mining company in the 1980s and its subsequent privatisation in the 1990s diminished local manufacturing capabilities and substantially reduced the depth of the mining supply chain (Fessehaie, 2012). Private mining companies currently rely largely on direct imports and sourcing from a network of agents and subsidiaries (Fessehaie et al., 2016). Although large mines source between 60 per cent and 86 per cent of goods and services required for their operations domestically, the vast majority of local suppliers are, in reality, merely importing intermediaries (AfDB et al., 2013). Therefore, Zambia's supply cluster is small in terms of value-added content, accounting for around 4 per cent of total local sourcing, which was worth \$2.5–\$4 billion in 2012 (ICMM, 2014; World Bank, 2014). While the 2013 Mineral Resources Development Policy introduced a framework for linkage development that relies on local content requirements for granting and holding mining rights, strong vested interests of intermediaries and importers have limited the scope and effectiveness of reforms (Ramdoo, 2016). Skills scarcity and a weak manufacturing base present further hurdles to the expansion of local content.

Zambia's failure to develop cross-sector linkages to copper mining contrasts with Chile's successful experience in fostering local content and employment. The world's largest producer and exporter of

copper, Chile has managed to use its mineral wealth to diversify the local economy and develop innovative industries, such as engineering and supply. Without explicitly mandating local content requirements, Chile succeeded in developing downstream linkages by creating a strong enabling environment and culture of public-private collaboration. Moreover, the State-owned giant Corporación Nacional del Cobre de Chile (Codelco) – the world’s largest copper mining company – has contributed to the development of Chile’s human capital and support industries through its internal policy of promoting the participation of local stakeholders. As a result, the proportion of engineering services provided by Chilean firms increased from around 10 per cent in the 1970s to 90 per cent in the 1990s (Havro and Santiso, 2008). More recently, private copper mining companies have also partnered with Codelco to support local suppliers and strengthen their global competitiveness. As Chilean copper industry suppliers have become increasingly competitive, they have started to penetrate international markets: 345 local suppliers exported goods and services worth \$654 million in 2012 (Fundación Chile, 2016).

Zambia also suffers from a poor business climate and unsatisfactory overall governance. The country has made little progress beyond the introduction of trade and investment liberalization measures, in contrast with Chile’s tremendous efforts to strengthen institutions and create a business-friendly environment. High finance and border costs, poor infrastructure, low human capital levels and lack of R&D capabilities are among the constraints that increase the vulnerability of the Zambian private sector to copper price fluctuations and hamper prospects for structural transformation. Data from the World Bank’s Doing Business project suggest that the business climate has deteriorated since the 2003–2011 commodity boom: Zambia’s global ranking dropped from 80th in 2011 to 111th in 2015.

The divergent poverty trajectories of Zambia and Chile reflect to some extent their varying development strategies. While Zambia privatized the copper sector and gave a prominent role to laissez-faire economic and social policies, Chile preserved State ownership of the country’s main mining company, expanded income-support schemes for low-income families and increased public spending in social services. Socioeconomic inequality in Zambia was exacerbated by decreased public spending on health (from 4.2 per cent of GDP in 2003 to 2.1 per cent in 2011) and education (from 2.5 per cent of GDP in 2004 to 1.1 per cent in 2008). Meanwhile, Chile’s public expenditures as a share of GDP increased both in the health sector (from 2.7 per cent in 2003 to 3.3 per cent in 2011) and education sector (from 3.8 per cent in 2003 to 4.1 per cent in 2011). Contrary to Chile, which sought a balance between economic efficiency and public intervention targeted at human development, Zambia failed to promote social inclusion and improve the population’s access to economic opportunities.

The rise in undernourishment and poverty in Zambia is also inextricably associated with the elevation of food prices. According to the Food Price Monitoring and Analysis Tool of the Food and Agriculture Organization of the United Nations (FAO), the national average retail price of white maize, which is the country’s main food staple and covers around half of its total cultivated land, more than doubled between January 2004 (0.75 kwacha per kilogram) and March 2009 (1.79 kwacha per kilogram). As the relative price surge (140 per cent) was higher than the accumulated consumer price inflation in the same period (125 per cent), the associated increase in food insecurity had a disproportionate effect on the most vulnerable. The average retail price of white maize in Zambia continued to increase faster than inflation even after the 2003–2011 commodity boom, reaching the record level of 2.74 kwacha per kilogram in March 2016. Safety nets, which should play an essential

role in the sharing of welfare gains from economic growth, cover no more than 1 or 2 per cent of the extreme poor in Zambia (World Bank, 2013). Therefore, the majority of the Zambian population has been left unprotected against food price shocks.

Finally, Zambia's vulnerability to the effects of climate change has further reduced the fragile economic gains made during the commodity boom. Severe drought, magnified by global warming, cut water levels in rivers and dams to record lows in 2016, gravely disrupting agriculture, electricity generation and mining. Resource-poor farmers, who rely on rain and lack irrigation facilities, were hit particularly hard. Since hydropower accounts for 95 per cent of electricity in Zambia, low water levels compelled the authorities to implement blackouts, which increased production costs and reduced employment in the energy-intensive copper sector.

V. CONCLUSION

Ensuring that growth is inclusive is at the heart of Zambia's socioeconomic challenges. The country's robust macroeconomic performance during the 2003–2011 commodity boom failed to benefit the majority of its population, resulting in increased poverty, undernourishment and income inequality. Transforming natural resource abundance into a blessing in Zambia requires political engagement, institutional reform and structural economic transformation.

Chile's experience could provide indications as to where Zambia should focus its reform effort to get the most from its copper wealth. While Chile's high human capital levels, sound governance and political stability may not be readily replicated in Zambia, its experience demonstrates that the promotion of local factors of production, social inclusion and social safety nets can enhance the gains from extractive resources and redistribute them in a more equitable and sustainable way.

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