

The African Development Bank Group Chief Economist Complex



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Base Metal Production in Africa and the Global Market Situation

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1. Introduction

Africa is well endowed with abundant mineral resources. It hosts about 30 percent of global mineral reserves and produces more than 60 metal and mineral products and is a major producer of several of the world's most important minerals and metals including gold, platinum group minerals (PGMs), copper, nickel, diamonds, aluminium, uranium, manganese, chromium, bauxite and cobalt.

Mineral resources, as other natural resources, are critical to the economic and social development of African countries. They play a fundamental role in underpinning the growth of many African countries and in contributing to African people's welfare. Broadly, mineral resources can contribute to economic development in many ways: attracting foreign direct investment (FDI), creating employment and income generating opportunities, generating government revenues and foreign exchange earnings, cluster development, as energy sources and as locomotives for local socio-economic development, technology transfer and innovation and development of related sectors and competent institutions. However, mineral-dependence sometimes brings economic and

political problems. It can result in the "trap of specialization", environmental degradation, misguided investment policies as well as being a source of corruption, "Dutch disease", threat to the livelihood of indigenous communities, and conflict financing.

This brief examines the case of base metals such as aluminium, copper, lead, nickel, tin, and zinc. It focuses on the production and export of these minerals as well as their price movements and outlook.

2. Production and Export of Base Metals in Africa

Africa's share of global production and export of base metals remains at meagre levels (Tables 1, 2 & 3). African production of major metals has ranged from about 5% of global production for aluminium and copper to just over 2% for lead and zinc. Similarly, exports from African producers as a percentage of global exports remained on average below 3%, with tin recording the lowest share of less than 1% (Table 2).

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Table 1: Base Metal Production (Thousands of Metric Tons) and share in Global Production (%)

Base Metal	Production	2004	2005	2006	2007	2008
Aluminum	Value	1,717	1,749	1,843	1,823	1,718
	Share	5.7	5.5	5.4	4.8	4.4
Copper	Value	608	662	736	810	n.a.
	Share	4.1	4.4	4.9	5.3	n.a.
Lead	Value	88.6	111.0	113.1	98.6	98.4
	Share	2.8	3.2	3.1	2.7	2.6
Nickel	Value	85	90	89	83	70
	Share	6.2	6.2	5.7	5.0	4.4
Tin	Value	11,026	12,006	10,648	10,752	n.a.
	Share	3.6	3.9	3.6	3.3	n.a.
Zinc	Value	209.9	203.1	183.7	175.4	n.a.
	Share	3.1	3.0	2.8	2.5	n.a.

Source: AfDB Statistics Department and US Geological Survey.

<http://minerals.usgs.gov/minerals/>

Table 2: Africa's Exports of Base Metals: Value (Million US\$) and Share of Global Export (%)

Base Metal	Exports	2005	2006	2007	2008
Aluminum	Value	3302	4662	5001	4018
	Share	3.2	3.4	3.2	2.5
Copper	Value	2087	3146	4366	3960
	Share	2.7	2.3	2.9	2.6
Lead	Value	87	99	216	176
	Share	2.7	2.4	3.0	2.6
Nickel	Value	87	99	216	176
	Share	2.6	2.6	2.4	2.0
Tin	Value	10	9	10	5
	Share	0.3	0.2	0.2	0.1
Zinc	Value	220	619	617	306
	Share	2.5	3.2	2.8	2.4

Source: AfDB Statistics Department and UN COMTRADE Database

Table 3: Export Value of Some Metals as a % of GDP, Total Exports and Government Revenue for Metal-Dependent Countries (2008)

Base Metal	Country	%GDP	%Total Exports	% Government Revenue
Aluminum	Mozambique	11.62	45.64	34.33
Copper	Zambia	14.01	39.20	62.78
Lead	Zimbabwe	7.0	12.1	na
Zinc	Namibia	2.4	6.4	8.4

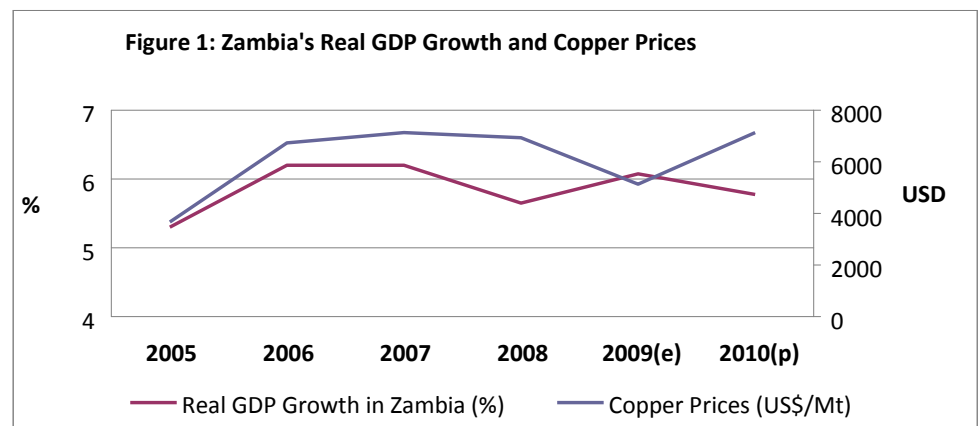
Source: AfDB Statistics Department using UN COMTRADE Database.

“Zambia’s real GDP growth exhibited a positive correlation with world copper prices, indicating that higher copper prices tend to be associated with higher economic growth in Zambia and vice versa.”

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In addition, base metal exports contribute very little to the continent’s GDP (e.g. 0.59% in 2008), total exports (1.5%), and government revenues (1.64%). On a country basis, however, as shown in Table 3, base metal exports constitute a large portion of the exports and government revenues of Mozambique and Zambia. At least up to the emergence of the financial crisis, Zambia’s real GDP growth exhibited a

positive correlation with world copper prices, indicating that higher copper prices tend to be associated with higher economic growth in Zambia and vice versa – just as in other African countries that are heavily dependent on single commodities for foreign exchange earnings (Figure 1). It is therefore imperative for monocultural economies to urgently diversify their revenue bases to reduce dependence on single commodities.



3. Base Metal Price Trends

From 2003 to early 2008, the world witnessed the most marked commodity price boom of the past century (see Table 4, Figures 2 & 3). The price of metals (including base metals) and other commodities rose sharply, and over a sustained period. Like earlier commodity booms, this one was associated with strong global growth, but was exceptional in its duration and in the range of commodities affected. For example, by mid 2008, metals and minerals prices were about 300% higher in dollar terms than in January 2003.

However, the long boom finally came to an end, with prices falling in response to the global financial crisis and the ensuing slower growth in the midst of increased supplies, and revised expectations. For example, in 2008, nickel price fell by 41%, while that of lead fell 18.4%. By 2009, the prices of base metals and minerals declined precipitously from their record high levels of previous years.

For example, at the end of that year the percentage falls ranged from 34.9% for aluminium to 16.8% for lead. Only zinc recorded a very marginal increase of 0.92%. During 2010, however, there has been a dramatic recovery in the price levels (Table 5). The average price gains up to mid-June 2010 have ranged from 45% for nickel to 22.6% for lead. The price of zinc ironically fell by 0.7% during this period. These aggregate price movements, however, mask the volatility in price movements (Tables 5, 6). On a quarterly basis, for example, the second quarter compared with the first quarter of 2010 had witnessed a fall of 10% in lead prices and 2% each in the prices of copper and aluminium. Nickel gained 14% during the period while tin gained only 3%. The price of zinc was almost flat during the second quarter of 2010.

On a monthly basis, apart from zinc whose price remained almost flat, all the other base metals recorded price falls during the first two weeks of June 2010 compared to the month of May 2010.

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Table 4: Base Metals: Average Price Movements, \$/MT

Base Metal	Annual Price Movements			
	2007	2008	2009	2010 ^a
Aluminum	2,643	2,564	1,670	2,145
Copper	7,139	6,959	5,178	7,184
Lead	2,567	2,095	1,742	2,136
Nickel	36,071	21,220	14,781	21,431
Tin	14505	18408	13421	17540
Zinc	39,264	39,631	39,997	40,261

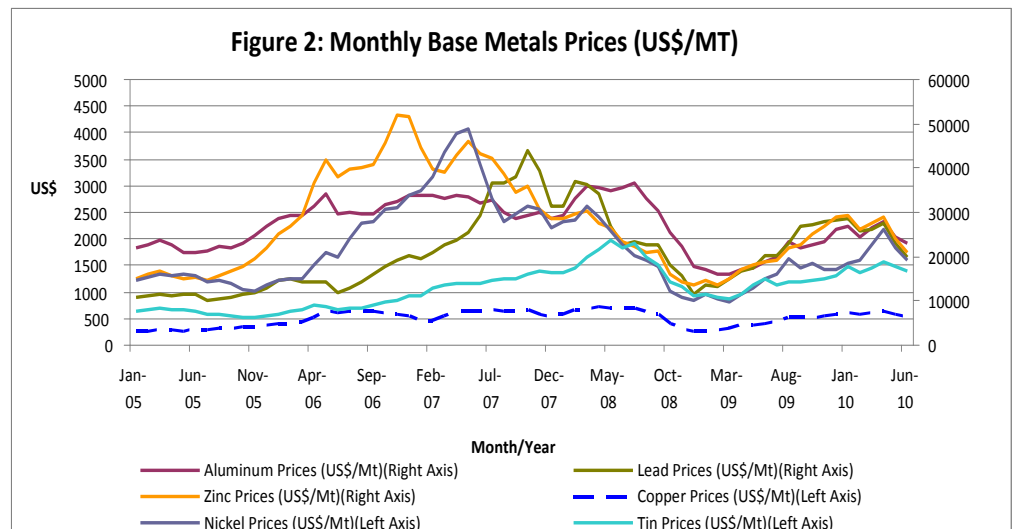
Base Metal	Quarterly Price Movements					
	2009				2010	
	Q1	Q2	Q3	Q4	Q1	Q2 ^a
Aluminum	1,359	1,488	1,806	2,000	2,165	2,121
Copper	3,460	4,694	5,848	6,650	7,245	7,107
Lead	1,173	1,520	1,942	2,313	2,235	2,011
Nickel	10,625	13,147	17,576	17,593	20,163	23,029
Tin	10938	13430	14189	15075	17,276	17,874
Zinc	39,859	39,950	40,040	40,132	40,225	40,308

Base Metal	Monthly Price Movements					
	2010					
	January	February	March	April	May	June
Aluminum	2,235	2,049	2,205	2,316	2,040	1,923
Copper	7,367	6,868	7,467	7,730	6,843	6,431
Lead	2,377	2,146	2,190	2,299	1,907	1,670
Nickel	18,478	19,136	22,521	26,086	22,001	19,248
Tin	17,777	16,416	17,587	18,707	17,632	16,778
Zinc	40,195	40,223	40,253	40,285	40,314	40,337

Note: a: Up to Mid-June 2010

Source: AfDB Statistics Department and Bloomberg (LME)

<http://www.bloomberg.com/markets/commodities/futures/>



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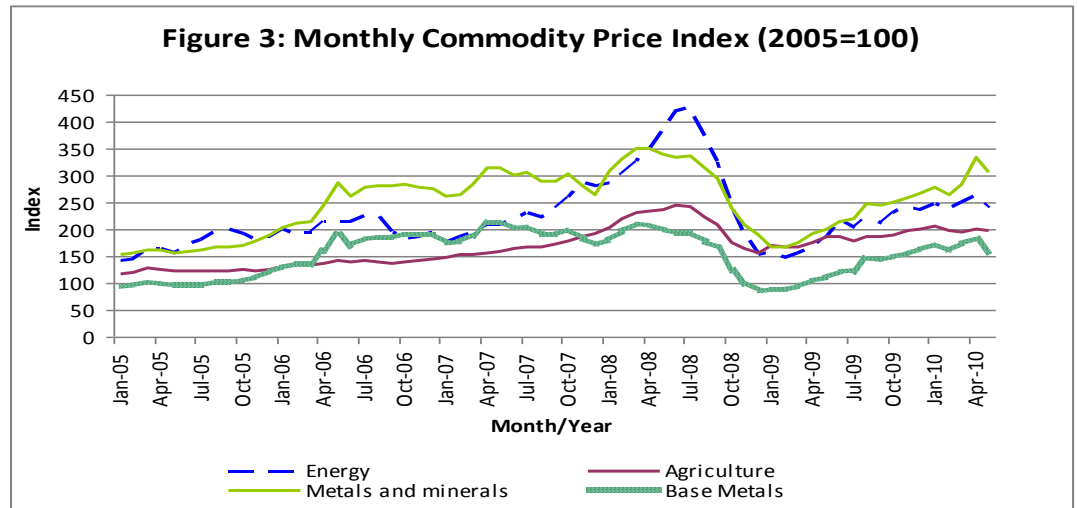


Table 5: Price Performance Snapshot of Base Metals at LME as at 15 June 2010 (US\$/MT)

Base Metal	Value	Daily % change	Weekly % change	Monthly % change	Quarter % change
Aluminum	1967.25	0.13 ▲	2.96 ▲	-2.15 ▼	-11.10 ▼
Copper	6653.5	0.28 ▲	8.46 ▲	-3.49 ▼	-8.50 ▼
Lead	1759	2.57 ▲	9.53 ▲	-9.33 ▼	-20.19 ▼
Nickel	20225	-0.37 ▼	9.50 ▲	-6.17 ▼	-5.93 ▼
Tin	17500	3.24 ▲	9.72 ▲	-0.28 ▼	0.29 ▲
Zinc	1840	2.39 ▲	6.11 ▲	-10.46 ▼	-19.30 ▼

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Table 6: Base Metal Prices at 15 June 2010 (US\$/MT)

Base Metal	Spot (Cash Settle)	LME Three Months Forward
Aluminum	1965	2013
Copper	6625	6680
Lead	1685	1759
Nickel	20105	20250
Tin	17080	17505
Zinc	1772.5	1840

Source: FICC Research Commodities: Daily, 16 June 2010
<http://www.rmb.co.za/africaFocusFICC.asp>

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4. Price Drivers and Outlook

A number of critical factors are behind the volatility observed in the prices of base metals. These include sentiment regarding the recovery in the underlying global economy (particularly the U.S. and China, which are major base metal consumers in addition to Brazil and India), market sentiment generally - expressed in equity markets, expectations of a tighter or loose physical market going forward as well as the value of the dollar against major currencies.

Dollar-denominated commodities like base metals tend to move inversely to the value of the U.S. currency. For example, the recent rise of the dollar against a six-currency basket, especially the euro and yen partly accounted for the downward trend in the prices of the base metals. The recent decline in the price of copper, especially after significant declines in U.S. housing starts in more than a year, signals that demand for industrial metals is easing. Copper is seen by some investors as a gauge of economic activity as it is used in construction and transport.

Another factor relates to the concern that Europe's debt crisis, which began in Greece, will derail the global economic recovery. The recently announced belt-tightening measures in Britain, Spain, and Italy give added momentum to such fears. Zinc's fundamentals are not so good since the summer slowdown will add to downward pressure on prices. More importantly, stockpiles in zinc exchange-monitored warehouses are near the highest level since April 2007, when the contract started.

The same rising inventory situation applies to lead. Lead stocks registered with the LME ended mid-June 2010 at 191,700 tons, up 45,925 tons or 31.3 percent on the start of the year, and about the second highest level recorded since late 2002. Also, nickel pig iron makers in China, the world's largest consumer of nickel, have started to idle capacity as prices and demand weaken in the midst of the country's curbs on real estate development.

However, this build up in surplus base metal appears to be ending given the surge in cancelled tonnage, indicating falling demand (Table 7). The same applies to other base metals. For example, inventories of copper tracked by the LME slipped to 459,150 tons by mid-June 2010, the lowest level since 10 December 2009. At the same time, cancellations for copper jumped to 28,825 tons during the same period, one of the highest since 28 April 2010.

As at mid-June 2010, cancellation warrants for lead rose by 10% and 7% for aluminium and tin, respectively. All these point to the expectation that base metals will generally trade sideways in the month ahead. However, as Europe and indeed the global economy recover, we shall begin to witness a sustained bullish base metal market with expected strong industrial demand particularly from the emerging economies that are building their infrastructure. In the medium-term, we expect expanded assembly of motor vehicles worldwide to help boost demand, reduce stockpiles, tighten supply and raise the price for lead (used to make auto-ignition batteries), nickel (used to make stainless steel for exhaust systems and fuel tanks), and zinc (used to galvanize sheet steel).

We also expect prices to continue to rise in 2011 due to a lack of investment in new mines. Fifteen-month futures per MT stand at US\$2,050 for aluminium, US\$6,590 for copper, US\$1,738 for lead, US\$19,375 for nickel, US\$17,535 for tin, and US\$1,835 for zinc. It has been estimated by the Virtual Metals Group, for example, that the average prices of these base metals in 2011 would be as follows, per MT: aluminium (US\$2,652), copper (US\$7,908), lead (US\$2,463), nickel (US\$24,792), tin (US\$19,521), and zinc (US\$2,825).

Table 7: Base Metal Stock Movements (MT) as at 15 June 2010

Base Metal	Value	Daily % change	Weekly % change	Monthly % change	Quarter % change
Aluminum	1967.25	0.13 ▲	2.96 ▲	-2.15 ▼	-11.10 ▼
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5. Conclusion

In Africa’s base metal-dependent economies, the current price volatility of these commodities can result in growth instability. Growth volatility, in turn, can result in these countries’ inability to achieve higher levels of living standards. Base metals’ endowment is a source of wealth and can be expected, if well managed, to support growth and development.

This involves converting the wealth into physical and human capital to increase and sustain economic growth, and alleviate poverty. The successful pathway to fully harnessing the benefits of having these resources in Africa is nested in good institutions and governance, and sound economic policies. These are indispensable conditions not only for efficient management of revenue but also for these countries to diversify away from base metals dependence.

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