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Item 4 of the provisional agenda\*  
**High-level round-table discussions**

## **Round table 1: leveraging technology for economic growth and transformation**

### **Concept note**

#### **I. Background**

1. Between 2000 and 2024, African real gross domestic product growth averaged 3.5 per cent,<sup>1</sup> a modest but steady expansion over more than two decades. Growth is projected to strengthen further, reaching 4.2 per cent in 2025 and averaging 4.3 per cent over the period 2026–2027, an encouraging trajectory given tight global financial conditions and persistent macroeconomic pressures.

2. However, the quality and structure of that growth remain weak. Growth accounting has been used to demonstrate that nearly all expansion between 2000 and 2024 has been driven by factor accumulation – capital deepening and labour-force growth – rather than efficiency gains. On average, total factor productivity – capturing technological progress, institutional quality and efficiency in the use of inputs – has made no significant contribution. The lack of growth in total factor productivity reflects the slow reallocation of labour and capital from low productivity sectors to higher productivity manufacturing and modern services. Unlike in East Asia, where industrialization and productivity growth have been mutually reinforcing, most African countries have experienced persistently low productivity growth and limited industrial upgrading. Nevertheless, low productivity levels are evidence of substantial untapped potential: even moderate productivity-led growth could significantly enhance economic expansion and transformation.

3. Against this backdrop, frontier technologies, in particular those involving harnessing the power of data, have become central to African prospects for economic growth and transformation, since they offer the continent a latecomer advantage. Even though many earlier generation technologies remain underused in Africa, data-intensive

\* E/ECA/CM/58/1.

<sup>1</sup> All evidence cited in the present concept note is drawn from Economic Commission for Africa, *Economic Report on Africa, 2026 – Growth through Innovation: Harnessing Data and Frontier Technologies for the Economic Transformation of Africa* (forthcoming).



frontier technologies could make it possible to bypass incremental adoption paths and address long-standing structural bottlenecks more directly, in particular under constrained fiscal and financing conditions. Examples of frontier technologies include artificial intelligence, the Internet of things, drones, renewable energy technologies, big data and blockchain.

4. When effectively deployed, frontier technologies, in particular those involving data, could support economic transformation in numerous critical sectors – such as agriculture, manufacturing, finance, energy, transport and public services – by increasing productivity, enabling the upgrading of value chains and facilitating a shift towards higher productivity and higher value added activities. An important point is that such technologies allow African States to pursue structural economic transformation while leapfrogging the capital-intensive development models of the past, with the aim of attaining more diversified, resilient and inclusive growth.

5. The scale of the opportunity has been confirmed through research conducted by the Economic Commission for Africa (ECA): a one-unit<sup>2</sup> increase in frontier technology adoption could generate an additional \$8.1 billion in aggregate total factor productivity after five years, translating to an estimated \$27.5 billion in additional gross domestic product. These gains arise, not only from efficiency improvements, but also from the better mobilization and combination of labour and capital, through the improved use of skills, increased labour-force participation and the more effective use of physical infrastructure. In both the manufacturing and the services sectors, statistically significant productivity gains result from frontier technology adoption.

6. In Africa, artificial intelligence and machine-learning models are already being applied to integrated administrative data sets to transform State revenue mobilization. During the 2022/23 fiscal year, the application of such tools in South Africa to increase tax compliance resulted in the collection of an additional 293.7 billion rand, including 101 billion rand from risk-based audits, and the prevention of fraudulent refunds totalling 45 billion rand. In Kenya, anomaly detection systems powered by artificial intelligence, launched in 2013, were used to help with the recovery of 62 billion shillings in previously undeclared revenue during the 2021/22 fiscal year.

7. Beyond public finance, interoperable digital public data infrastructure and frontier analytics are generating economy-wide gains. Digital identity documents linked with tax and social protection systems – including the systems via which tax and social protection payments are made – and with business registries enable real-time data integration, better targeting of social protection payments to the intended recipients and increased coverage of such systems, thus optimizing government spending and strengthening fiscal capacity. For instance, Zanzibar, United Republic of Tanzania, is transforming its healthcare system by moving from free services to a social health insurance model based on the *Kadi ya Matibabu* digital health card, which now covers 92 per cent of the population (about 1.6 million people), links citizens to all health facilities nationwide, enables real-time tracking of service use and costs, and has already led to higher service use, faster patient processing and measurable improvements in quality of care.

8. Frontier technologies are reshaping production and value addition. In agriculture and agroprocessing, satellite imagery, machine learning and digital traceability have been

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<sup>2</sup> The units in question are scores on the frontier technology readiness index of the United Nations Conference on Trade and Development. In the index, scores are provided for five interconnected variables that can be used to measure technology adoption and innovation: deployment of information and communications technology; investment in research and development; skills level of the population; access to finance; and industrial activity. For further information, see United Nations Conference on Trade and Development, “Frontier technology readiness index, annual (analytical)”. Available at <https://unctadstat.unctad.org/datacentre/reportInfo/US.FTRI>.

used to optimize production systems, manage climate risk and support investment decisions, with the result that post-harvest losses have been reduced by between 10 and 30 per cent. In manufacturing and resource-based industries, the use of digital sensors, advanced analytics and predictive maintenance has occasioned productivity gains of between 15 and 25 per cent, enabling the companies in question to start producing more complex products.

9. In the light of the aforementioned examples, the question is how these gains can be sustained and scaled up across the economy. In many countries, adoption of frontier technologies remains uneven, constrained by energy access gaps, shortages of advanced skills, weak institutional capacity, limited resources and investment, and fragmented markets. To prevent frontier technologies from remaining confined to isolated pilot schemes, which would limit spillovers and economy-wide transformation, it is essential to address those constraints, through targeted investments in enabling infrastructure, human capital, regulatory coherence and regional integration. With the right foundations in place, data-driven frontier technologies represent a credible means of unlocking the continent's latecomer advantage and accelerating structural transformation, building resilience and fostering inclusive growth.

## II. Objectives

10. The round-table discussion will provide a high-level platform for participants to discuss ways in which frontier technologies and the strategic harnessing of data as an economic asset can be used to boost productivity, deepen value addition and accelerate structural transformation under tight fiscal and financial constraints. The discussion will be focused on the following core questions:

(a) How can African States expedite the development and adoption of frontier technologies and the collection and use of data to raise productivity in critical sectors, deepen value addition and effect structural transformation, while impeded by resource constraints, capacity gaps, poor policy sequencing and regulatory fragmentation?

(b) What measures can African States take to ensure that pivotal growth enablers – including energy and infrastructure, skills and human capital, and institutions and governance – are fit for frontier technologies and data systems, in order for leapfrogging to deliver economy-wide gains rather than isolated successes?

(c) How should African States design data governance and ownership frameworks and ensure their effective implementation, in order to ensure that data serve as a strategic public good and an economic asset, support innovation and investment, and strengthen employment, fiscal capacity and resilience to economic and climate shocks?

## III. Target audience

11. The target audience includes the following:

(a) Ministers and senior officials representing ministries responsible for finance, planning or economic development;

(b) Ministers and senior officials representing ministries of foreign affairs;

(c) Ministers and senior officials representing ministries responsible for trade;

(d) Ministers and senior officials representing ministries responsible for health;

(e) Partners of ECA.

#### **IV. Speakers and moderator**

12. Details concerning the speakers and moderator of the round table will be published in due course.

#### **V. Focal points**

13. The focal points for the round-table discussion are the Officer-in-Charge of the Macroeconomic Analysis Section of the Macroeconomic Policy, Finance and Governance Division of ECA, Hopestone Kayiska Chavula ([chavula@un.org](mailto:chavula@un.org)), and an Economic Affairs Officer in the same Section of the same Division of ECA, Nadia Ouedraogo ([Nadia.ouedraogo@un.org](mailto:Nadia.ouedraogo@un.org)).

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