



Economic and Social Council

Distr.: General
4 February 2019

Original: English

Economic Commission for Africa
Committee of Experts of the Conference of African
Ministers of Finance, Planning and Economic Development
Thirty-eighth meeting
Marrakech, Morocco, 20–22 March 2019
Item 5 of the provisional agenda*
Presentation on the theme of the fifty-second session of the
Commission

Issues paper

Fiscal policy, trade and the private sector in the digital era

I. Introduction

1. African countries have a little over a decade to achieve the 2030 Agenda for Sustainable Development, which aims to lift millions of Africans out of extreme poverty, reduce inequality and enhance sustainable development. However, despite fiscal reforms that raised revenue to gross domestic product (GDP) ratios to an average of above 15 per cent between 2000 and 2017, there remains a significant financing gap to bridge in order to meet the Sustainable Development Goals.¹ Experiences across the globe demonstrate that fiscal policy effectiveness and efficiency can significantly benefit from digitization processes. African countries have the potential to increase tax revenues by between 3 per cent and 4 per cent, by bringing into the tax bracket the “hard to tax” sectors such as agriculture and the digital economy, and the informal sectors. The use of digital technology alone has the potential to raise fiscal revenue by a similar percentage.

2. The use of digital technology in revenue mobilization and management could potentially strengthen the capacity of African Governments to implement and monitor more effective tax and expenditure policies. Digital technology, especially in big data analytics, has the potential to increase revenue and improve tax administration through lowering the cost of compliance, lowering the cost of tax collection, and increasing compliance. Through big data analytics, revenue authorities can identify new sources of revenue, in addition to being able to deepen engagement with current and potential taxpayers, in a cost-effective way. In tax policy, the availability of detailed data could strengthen the policy and decision-making processes. Similarly, digital technology can enhance fiscal discipline in public expenditure through better monitoring, ensuring that expenditures are in line with budgets and are aligned with medium-term frameworks at the national level.

3. Indeed, digitization has the potential to widen the tax base by boosting growth and by facilitating private sector development and trade, including

*E/ECA/COE/38/1/Rev.1.

¹ A 15 per cent revenue to GDP threshold is the minimum level required for a State to perform its functions.

intra-African trade in particular. In 2011, digitization impacted the GDP of Africa by US\$ 8.3 billion, in addition to creating over 600,000 jobs in Africa. Digitization provides important benefits and opportunities for Africa's development. In particular, small and medium-sized enterprises, which are the backbone of Africa's private sector and which employ over 70 per cent of the workforce, stand to gain from lower entry barriers to markets and value chains, as well as support services for trade, finance and logistics (World Bank, 2018).

4. Digital applications are already being leveraged to promote innovation and entrepreneurship, including the empowerment of traders who are women and young people, and mobile and digital solutions are contributing to filling credit gaps, and offer possibilities for productive job creation for young people. Though important progress is being made, there is a need to increase public and private investment in the development of information and communications technology and related capabilities, to help overcome various challenges faced by trade and the private sector. There is also a need to adapt and harmonize legislation on technology, including intellectual property and data privacy, to rapid technological and social changes so as to maximize the benefits of digitization.

5. The digital economy, however, also presents several challenges that make it difficult for governments to collect revenue. It has certain distinct features, including the use of data, which in most cases is difficult to assign a value to; and the ability to conduct business without having a physical presence. Current tax policies in most African countries are aimed at a more traditional economy, and do not take into account the distinctive nature of the digital economy, resulting in loss of revenue for governments. Governments will thus need to rethink the current taxation frameworks, to accommodate the digital economy.

6. The aim of the present report is to articulate and frame key policy issues and imperatives for African Governments to address challenges and maximize the efficiency and effectiveness of fiscal policy in a digital economy, with special emphasis on the link between trade, the private sector and fiscal performance in a digital era. In particular, the present report analyses how fiscal policy can leverage digitization to increase revenue collection and management, the benefits of digitization to the economy and fiscal policy through private sector and trade, and the challenges of administering the current revenue frameworks in the digital era.

II. Fiscal policy and the financing of Africa's development agenda

7. It is essential that the financing gap required to achieve the 2030 Agenda for Sustainable Development be reviewed. Various sources are being analysed, including estimates on the requirements for the continent to achieve the 2030 Agenda in time. To place the financing gap in context, it is imperative to review fiscal policy over the last two decades, and to understand the fiscal pressures African countries face. The discussion that follows provides a brief analysis of fiscal policy in Africa between 2000 and 2017, including an overview of the types of fiscal policy adopted and the resultant impact on fiscal policy indicators and macroeconomic performance.

A. Africa faces a huge and rising financing gap

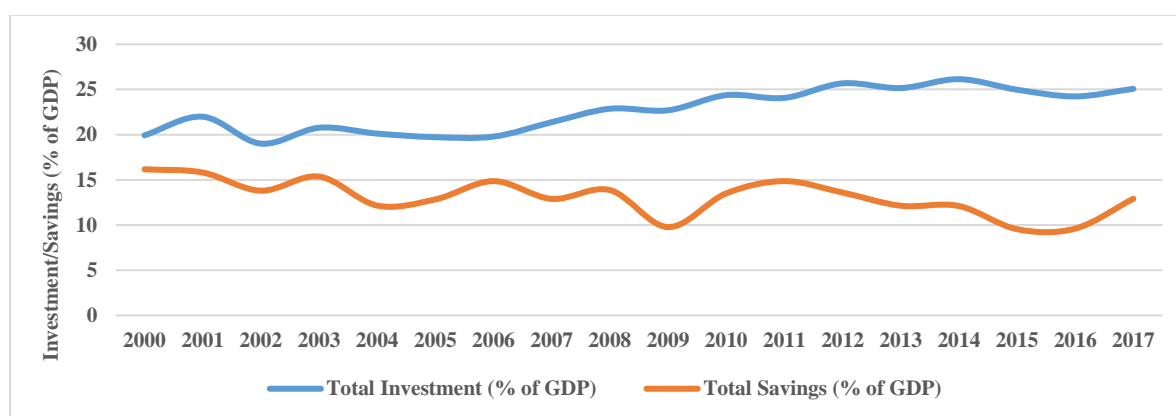
8. Various assessments by the Economic Commission for Africa (ECA) and development partners have shown the enormous task of financing Africa's development, which requires a marshalling of unprecedented technical, human and financial resources. On the infrastructure gap alone, which is a major constraint to improving productive capacity, Africa's financial deficit has been estimated to be between \$130 billion and 170 billion annually (African

Development Bank, 2018), of which the continent raises approximately half of the resources needed. At a more comprehensive level, in order for Africa to achieve the 2030 Agenda, the United Nations Conference on Trade and Development (UNCTAD) estimates the incremental financing needs to range between \$614 billion and \$638 billion per year. The study estimates that incremental spending needs for achieving the 2030 Agenda in low-income countries and lower middle-income countries may amount to \$1.2 trillion per year. This translates into an estimated 11 per cent of GDP between 2015 and 2030.

9. At an average of 13.3 per cent of GDP between 2000 and 2017, Africa's gross savings rate remains the lowest among developing regions, hence the savings–investment gap continues to widen (figure I). Africa's investment rate also remained low, at 22.6 per cent of GDP over the same period, signifying the need for concerted efforts by African countries to increase both domestic saving and investment rates. African countries need to mobilize domestic financial resources in order to bridge the financing gap, promote macroeconomic stability and limit costly external borrowing.

Figure I

Investments and savings rate in Africa



Source: Based on data from the World Bank – World Development Indicators, 2016.

10. With effective policies and actions, African countries have a huge untapped potential to mobilize additional domestic public resources towards financing the investment needed to achieve their development aspirations. In that regard, public policies and the mobilization and effective use of domestic resources are central to achieving the 2030 Agenda for Sustainable Development and Agenda 2063 of the African Union. Fiscal policy has the potential to be a key driver for Africa's development and growth. Adoption of a suitable fiscal policy framework can boost investments, productivity, growth and enhance equity in Africa (see the forthcoming ECA publication, Economic Report on Africa, 2019).

B. Fiscal developments in Africa

11. This section reviews fiscal performance of African countries between 2000 and 2016. Fiscal reforms broadly increased tax-to-GDP ratios, with variation in performance between countries. Countries could increase revenues significantly by tapping into sources such as non-tax revenues.

12. African countries embarked on significant fiscal reforms resulting in an increase in the number of countries with tax-to-GDP ratios above 20 per cent (from eight countries in 2000 to 11 countries in 2011). Similarly, the number of countries with tax-to-GDP ratios of less than 15 per cent fell from 32 in 2000 to 14 in 2016. The top performers in tax revenue-to-GDP ratios were mostly

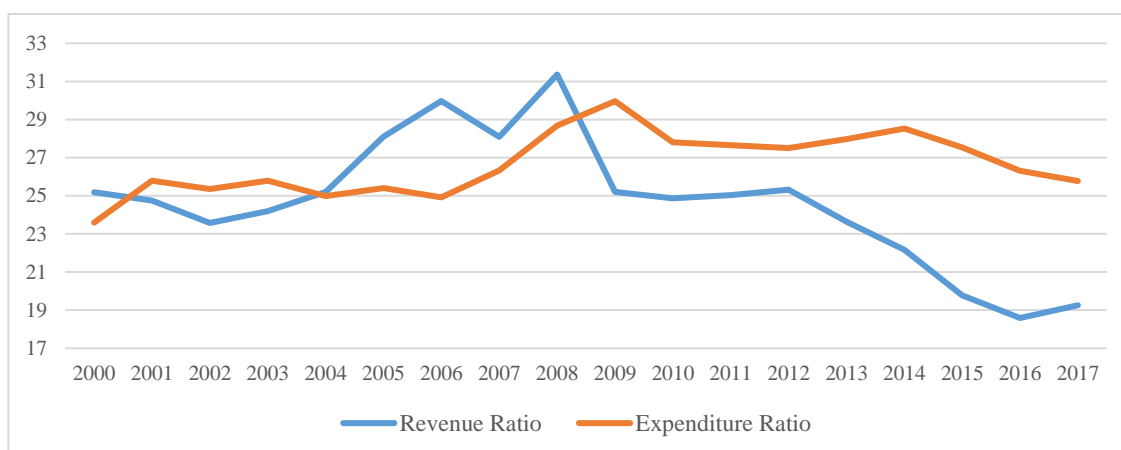
smaller countries (including Eswatini, Lesotho, Namibia and Seychelles) raising more than 25 per cent of GDP on average, compared to big oil exporters, which did not raise more than 15 per cent in tax-to-GDP revenues between 2000 and 2016.

13. Over 60 per cent of government revenues came from indirect taxes, however, tax structures differed across countries. Given the large informal sector, and the “hard to tax” sectors, such as agriculture and the digital economy, indirect taxes provide a wider base for taxation in African countries. Nonetheless, the continent still has the lowest government revenue-to-GDP ratio compared to the emerging market economies and the middle-income countries in Asia and Latin America, and to the advanced economies. Africa’s total revenue as a per cent of GDP stood at 19.1 per cent in 2017. The tax-to-GDP ratio was 17 per cent in 2017, up from 12 per cent in 2000, in part due to tax reforms implemented by many countries (figure II).

14. Tax ratios, however, varied significantly across countries, ranging from 6 per cent in Chad to 42 per cent in Lesotho. Several structural factors hindered tax revenue mobilization in Africa, including low per capita income, large informal sector, large subsistence agriculture and very small manufacturing and modern services sector, implying very narrow effective tax bases despite the growth momentum.

Figure II

Weighted average, revenue and expenditure ratios in Africa



Source: ECA, 2018.

15. Non-Tax Revenues were under-tapped in the majority of African countries, with significant cross-country variation.² Many African countries made notable efforts to increase their non-tax revenues, which increased from an average of 6.3 per cent of GDP in 2000 to 10.6 per cent in 2008. However, non-tax revenues faced several challenges with the financial crisis of 2008 and the oil price shocks of 2014. Strong growth performance led to an increase in non-tax revenues in Algeria, Ethiopia, Morocco, Mozambique, Rwanda and Senegal between 2000 and 2016. Nonetheless, exogenous shocks and poor fiscal discipline saw low non-tax revenue collections in Cameroon, Gabon, Ghana and the Sudan (2014 commodity price shocks). Benin reinforced its non-tax revenues collection via royalty payments from the telecommunications sector. Mozambique set a good example in collecting data, reporting and monitoring tax and non-tax revenues.

16. The evolution of fiscal revenues has not been uniform in the region. Countries such as Rwanda undertook successful fiscal reforms in 2003, for

² Natural resource rents are the main sources of non-tax revenues for resource-rich countries. Other sources of non-tax revenues include grants, property income, fines, penalties and forfeits, sales of goods and services, and other revenues often categorized as miscellaneous.

example, with the introduction of an e-tax information system, customs reforms, extension of working hours at borders, tax administration reforms and introduction of a new income tax policy, which led to a rise in fiscal revenue of 18.8 per cent. Similarly, Burkina Faso successfully implemented a series of fiscal reforms (2006, 2008 and 2010) that focused on value added tax (VAT), reimbursement procedures, improving customs' administration and adopting a new investment code. As a result, fiscal revenue rose from 17 per cent to 20 per cent in 2007.

III. The changing structure of the economy in a digital era

17. The digital economy encompasses myriad economic activities using digital technology, connecting governments, businesses and citizens beyond national confines. The digital economy is the result of the transformation effects of new General Purpose Technologies in the fields of information and communication. It has implications much beyond the information and communication technology sector and now affects many aspects of the world economy.

18. This section discusses the trends, foresight and growth factors of the digital economy and its status and impact in Africa. It also reviews challenges and opportunities of trade and private sector development in the digital era. The final subsection analyses digitization and fiscal policy, in particular, the potential benefits of digital ID and electronic filing on fiscal policy in addressing revenue collection.

A. Trends, foresight and growth factors of the digital economy

19. The digital economy offers tremendous opportunities for humanity and has introduced transformations at breakneck speed. It can boost development and transform economies with unprecedented speed and scale and has an impact on every sector of the economy and social activities, including banking, retail, health care, energy, industry, agriculture, transportation, education, administration, manufacturing, publishing and media. It is a thriving and dynamic global industry, worth over \$11.5 trillion, set to rise to more than \$23 trillion by 2025 (Huawei and Oxford Economics, 2017). The digital economy is estimated by the World Bank to represent 15.5 per cent of global GDP and is expected to reach 25 per cent of global GDP in less than a decade.

20. Digitization has enabled more than half of the world population to be interconnected online, generating a \$3 trillion ecosystem based on technological infrastructure, intuitive devices and interfaces and wide social networks, with an unlimited supply of content. The emergence of the digital economy is increasingly playing a key role in economic, social and political life, with digital technologies expanding into research, manufacturing, services, transportation and agriculture (UNCTAD, 2017). Such technologies include advanced robotics and factory automation, mobile and Internet connectivity, big data analytics and artificial intelligence.

21. The shift towards digital technologies has been made possible by the increase in computing power, bandwidth and digital information. Internet penetration, for example, tripled in a decade, rising from 1 billion Internet users in 2005 to more than 3 billion in 2016, benefiting from easier communication and information, free digital products, and new forms of leisure. The adoption of digital technologies has also contributed to changes in the composition and trend of trade in goods and services, raising the value of e-commerce transactions to \$27.7 trillion in 2016 (World Trade Organization, 2018), as well as a decline in the trade of certain goods (such as CDs, books and newspapers).

22. A wide range of factors influence digitization, including the size and growth of the economy, economic complexity, digital protection, business and regulatory environment, access and use, together with affordability of information and communications technology, digital training, and usage of digital tools (Siemens, 2017).

23. Many developed economies are rapidly advancing in digitization, displaying deep resources for innovation and digital penetration. The full benefits of the digital economy, however, can only be realized if and when these technologies develop and mature evenly, and become better integrated and broadly used across the developed and developing world.

B. Status of digital economy in Africa

24. In Africa, the digital economy is promising and opening up enormous potentials to ignite social and economic development. In several African countries, the digital economy is becoming one of the main drivers of growth, accounting for more than 5 per cent of GDP. Senegal has set a target of generating 10 per cent of its GDP from the digital economy by 2025 (“Senegal Plan Emergent”). Rwanda has rolled out 4G and fibre connectivity to deliver online e-government and other services across the country. Kenya has been a pioneer in mobile money and is exporting its model. According to data from the Central Bank of Kenya, in 2018 alone, Kenyans on average moved more than \$100 million daily in mobile transactions, translating to \$40 billion in the year, nearly half the country’s GDP. Similarly, digital trade in Africa is rapidly growing at an estimated annual rate of 40 per cent, and is expected to grow to over \$300 billion by 2025.

25. In its latest report on the digital economy, UNCTAD highlights the growing impact of digital technology on African economies by a number of factors, including the development of information and communications technology. Investments in mobile broadband coverage (3G or 4G networks) on the continent are growing (see the table in the annex). There are several international undersea cables, for example, mainly from Asia, connecting with various European countries on the Mediterranean coast via the Red Sea and at locations along the north coast of Africa. Projects including DARE (on the east coast of Africa, that was scheduled for 2018), Africa-1 (also on the east coast of Africa, and scheduled for 2018), Liquid Sea (on the east coast, scheduled for 2018), and SACS (on the west coast of Africa, scheduled for 2018) are also in the construction stages.³ Through these projects, Africa has been connecting with international undersea networks at a rapid pace since 2007 and will continue to deepen its connectivity by high-capacity communication networks in the future. But more importantly, in some African countries, Governments are laying fibre-optic cables that connect major urban centres and towns in one national fibre-optic backbone. This will allow the populations that live away from major cities to eventually have access to the digital economy.

26. While potentially inaccurate due to double counting, the growth in the number of SIM cards to more than 1 billion has progressed at about 7 per cent per year between 2012 and 2017. In comparative terms, the monthly mobile data traffic in Africa will multiply nine times by 2024, against five times at the global level (Ericsson Mobility Report, 2018).

27. Rapid urban growth, a rising middle class, and the high proportion of young people in the population of Africa is driving the rapid growth of the Internet on the continent (Weigert, 2018). These developments, along with improved access to modern telephony devices, are expanding the scope and reach of the digital economy through rising Internet penetration on the continent. Smartphone penetration has risen from 37 per cent in 2017 to 44 per cent in 2018 and is projected to increase to 51 per cent by 2019. This will allow

³ https://www.ituaj.jp/wp-content/uploads/2018/01/nb30-1_web-05-SpecialAfrica.pdf.

markets to open up for the private sector in local production in manufacturing, retail applications and service development. This is encouraging innovations in the Internet and mobile-based applications and technologies.

28. African cities account for a substantial share of Internet traffic (McKinsey Global Institute, 2013). They are also fast becoming centres of digital innovation pointing to the opportunities that lie ahead. Silicon Savannah (Nairobi) could be worth more than \$1 billion⁴). Others such as Yabacon Valley or Silicon Lagoon (Yaba, suburban Lagos, Nigeria) and Kumasi Hive (Kumasi, Ghana) are fostering innovation, growth and investment.⁵

29. While mobile penetration was estimated at 44 per cent in 2017, however, there exists between and within country variations in mobile phone penetration. In Chad, Eritrea and the Niger, for example, penetration rates are as low as 1.4 per cent, 4.3 per cent and 5 per cent and range up to as high as 85 per cent, 70 per cent and 67 per cent in Kenya, Seychelles and Tunisia, respectively (Internet World Stats, 2018).

30. Similarly, Internet access varies considerably within countries, characterized by large differentials between lower- and upper-income groups, age groups, rural and urban geographies, and men and women (World Bank, 2016). At the subregional level, Southern Africa leads (51 per cent Internet penetration), followed by North Africa (49 per cent), West Africa (39 per cent) and lastly, Eastern and Central Africa (27 per cent and 12 per cent, respectively).⁶ Only 7 per cent of African households subscribed to high-speed Internet services at the end of 2017.

31. Gender gaps are widest in the field of information and communications technology, according to the International Telecommunication Union.⁷ The proportion of women using the Internet is 12 per cent lower than the proportion of men using the Internet worldwide. While the gender gap has narrowed in most regions since 2013, it has widened in Africa. In Africa, the proportion of women using the Internet is 25 per cent lower than the proportion of men using the Internet.

32. While digitization is on the rise in Africa, Internet and Internet-related penetration remains limited. Its impact on the development of digital economic and social sectors (such as e-commerce, e-health and e-government) is constrained by high transaction costs, spatial distribution of population-limited information exchanges, and lack of access to international markets.

C. Trade and private sector development in the digital era

33. The private sector dominates Africa's economy, accounting for over 80 per cent of total production, two-thirds of total investment, and three-fourths of total credit to the economy. It also provides jobs to about 90 per cent of the employed working-age population. However, most of the private sector labour is informal and very often characterized by low productivity. The informal sector accounts for 40 per cent of Africa's economy and more than 60 per cent of employment. Permanent wage jobs in the private sector account on average for only 10 per cent of total employment.

34. The advent of digitization has caused disruption in traditional business models by facilitating the emergence of various subsectors of online products and services such as in fields involving creative artists and designers in the arts field, capital goods, clothing, taxi services, hotels and travel. In addition to lowering barriers to entry and expanding market reach for enterprises, it is also changing how businesses design and build brands and products, communicate,

⁴ <https://www.wired.com/story/kenya-silicon-savannah-photo-gallery/>.

⁵ https://set.odi.org/wp-content/uploads/2018/03/SET_Digitalisation-and-future-of-African-manufacturing_Final.pdf.

⁶ <https://wearesocial.com/blog/2018/01/global-digital-report-2018>.

⁷ <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf>.

and provide services to their customers. Social media has become critical to building the brands of companies. Moreover, consumers are increasingly deciding on what to buy on the Internet even when they purchase items offline.

35. Digitization is also providing new options for companies to manage their productive assets. On the one hand, for example, companies are increasingly moving labour-intensive tasks to developing economies where labour costs are lower. On the other hand, on-shoring of previously outsourced tasks back to developed countries is taking place as companies substitute some of the tasks with mechanization and robotization. In other words, significant changes are being brought about by digitization, including the way companies organize and operate to generate competitive advantage – notably the creation of more global entities and the redefinition of the concept of office space; and as shown by companies becoming more efficient by outsourcing or completely automating a number of their back-end functions (World Economic Forum, 2013).

36. Other innovations that come with digitization, such as cloud computing (that is, leasing of computing and data storage services) and big data analytics, also contribute to the efficiency and competitiveness of the private sector while enhancing consumer benefits. Internet-based companies, such as Uber (transport sector) or Transfer Wise (financial sector), are increasingly disrupting the traditional markets for taxi or banks, which in many developing countries are overregulated with restricted entry barriers and high prices (World Bank, 2016).

37. Digitization is also an important lever for the development of commerce. McKinsey Global Institute (2013) had estimated that the e-commerce market in Africa could reach \$75 billion by 2025, should supportive policies and regulations be involved to shape digital economies. It is clear that an expansion of digital trade will be of particular benefit to micro-, small and medium-sized enterprises, which constitute more than 80 per cent of African enterprises. Yet digital trade represents only a small proportion of the benefits that a digital economy can yield for Africa's overall development. Further opportunities exist in the digital economy for improving access to better governance, public service delivery, education and health, among other desirable development outcomes.

38. Digital trade – defined here as the use of digital technologies to facilitate businesses – is growing rapidly in Africa, implying significant changes for the way African countries trade and industrialize. According to the United Nations, e-commerce opportunities are opening up multisector access to new markets, consumers and products in Africa, with e-commerce sales on the continent expected to reach between \$50 billion and \$75 billion per year within the next five to ten years.

39. In Africa, online sales companies such as Jumia (or the African Amazon) are emerging and competing with brick-and-mortar shops. Jumia, an online shopping website for electronics and fashion that was created in 2012, became the continent's first unicorn being valued at over \$1 billion. In 2015, Jumia generated about \$234 million in revenue, which means a 265 per cent growth from 2014. As of 2017, it employs 3,000 workers in more than 126 platforms in activity across 23 African countries. In Uganda, eKeebo enables amateur chefs to provide home-cooked meals without the cost and inconvenience of acquiring restaurant licences.

40. The African Union, which also promotes digital trade as a means to help trade flourish, had last year launched the “dotAfrica” (“.africa”) Internet domain, a digital trading platform designed to create a unique online identity to bring products, services and information under one umbrella throughout the continent.

41. Digitization offers new opportunities for trade and industrial leapfrogging. The digital economy can lower barriers to entry and help connect micro-, small and medium-sized enterprises with global markets and value chains, through providing the supportive services necessary to facilitate their

exports, including simplified payments and logistics. Digital applications are already being leveraged to promote innovation and entrepreneurship, including the empowerment of women as traders, and mobile and digital solutions are contributing to filling credit gaps. The digital economy also offers new possibilities for productive job creation for young people, who are typically quicker at adapting to new technologies and developing new digital solutions. Finally, digital trade can serve as a tool for boosting intra-African trade, which is more diversified and industrialized than Africa's trade with the rest of the world.

42. To maximize the gains of digitization, African countries will need to understand at a deeper level the changing nature of businesses due to digitization and how to exploit the areas in which Africa has a comparative advantage. It will also require African countries to be more agile and flexible, with policy frameworks that can respond fast enough to the dynamic business environment.

IV. Opportunities and challenges for fiscal policy in a digital era

A. Opportunities

43. Governments are starting to use digital solutions for tax and expenditure policy, public financial management, and public service delivery, in other words, government fiscal policies are digitalizing. If used carefully, digitization can help governments to improve fiscal policies and move faster toward the inclusive growth target. Studies have shown that setting up tax collection with electronic services can create systems that enable governments to understand the size of their tax bases, improve tax compliance, promote financial inclusion and cost savings, and support more efficient business trading systems. Indeed, African countries have the potential to increase tax revenues by between 3 per cent and 4 per cent by bringing into the tax bracket the "hard to tax" sectors, such as agriculture and the digital economy, and the informal sectors (International Monetary Fund, 2018). The use of digital technology alone promises to help raise fiscal revenue by a similar percentage, directly through increased revenue collect and lower collection costs (Coulibaly and Gandhi, 2018).

44. In addition, large-scale dissemination of digital transactions can raise annual GDP of all emerging economies by \$3.7 trillion in 2025 (McKinsey Global Institute, 2013). Reductions in government leakages in public spending and tax collection amounting to \$110 billion is achievable on an annual basis. The resulting increased aggregate demand can give rise to about 95 million jobs across all sectors. About 1.6 billion individuals can have access to financial services.

45. The following section emphasizes ways in which fiscal policy can benefit from digitization. It analyses the role of digitization in the formalization of the informal sector, digital identities, automation and filing, and public finance management.

1. Formalization of the informal sector

46. The informal sector, defined as economic activities that are not registered, covered by formal arrangements and captured by the tax net, accounts for 40 per cent of Africa's economy and more than 60 per cent of employment. It is argued that, in many African cities, the informal sector or informal enterprises are motivated by tax evasion, regulations bottlenecks, or complex fiscal processes. Given the size and economic importance of the informal sector, many African Governments have been promoting the inclusion of informal enterprises under formal regulations through the design and implementation of more comprehensive fiscal policies and by enabling them to

adapt to the evolving technological economies. To date, however, Governments do not have any idea on the exact size of their informal sectors, which remains the major hindrance to domestic revenue mobilization due to the absence of an appropriate registration process and an effective mechanism of revenue collection from the informal sector. More fundamentally, the formalization of informal sector activities has received great attention in the international development agendas, in particular, the Addis Ababa Action Agenda and the 2030 Agenda. Its associated target 8.3 of the Sustainable Development Goals stresses the need to encourage the formalization and growth of micro-, small and medium-sized enterprises in order to promote sustainable and inclusive economic growth.

47. In that regard, digitization offers ample opportunities for Governments to continue to modernize and formalize the informal sector. Digitization can create reliable systems that enable governments to identify and register tax payers and to determine exact taxes that have to be paid by each informal business, instead of the current method of evaluation in use by several tax administrations. Digitization can also provide opportunities to governments to better understand the size of their tax bases, detect and prevent tax fraud and tax evasion, promote financial inclusion and cost savings and support more efficient business trading systems. It also enhances their capacities to mobilize additional resources through better tax assessments and administration. There are, nevertheless, significant constraints faced by the informal sector, including limited access to or lack of access to markets, and access to finance. Digitization creates leapfrog opportunities for the informal sector to increase its activities and improve market access. It also provides adequate financial and nonfinancial data to reduce the informal sector information gap through the digitization of their business transaction, which will in turn open up the informal sector to credit facilities from credit companies and microfinance entities.

2. Digital identification

48. The use of digital identification (digital ID) creates the opportunity to broaden the tax base by improving taxpayer identification and tracking, and helps taxpayers meet their tax obligations through such means as mobile technology. It also enhances government capacities to mobilize additional resources through better tax assessments and administration. Indeed, with the extensive use of mobile devices, digital ID has the potential to bring a transformative solution for capturing personal digital ID, and new and more efficient ways for governments to collect taxes. Modernizing identification systems opens the way to huge efficiency gains in business that come from digital transactions. Digital identification systems yield gains in efficiency and convenience that could result in global taxpayer savings of up to \$50 billion per year by 2020. Digital identity is thus becoming a priority in many African countries as a primary source of identification and as an opportunity to foster digital, financial and social inclusion. Between 2000 and 2016, at least 23 national identification programmes or programmes of similar type had been introduced, compared with only 15 in the four decades prior to 2000. Many countries are modernizing their systems. This often includes adopting digital biometrics (such as fingerprints, face and, increasingly, iris) and issuing “smart” identification cards that enable more accurate user authentication and access to financial transactions as well as other applications. Digital identification can also be an important catalyst for various development initiatives in the continent, impacting on trade, governance, social protection, financial inclusion, domestic resource mobilization, and security and human rights.

49. In that regard, ECA, together with the African Union Commission, launched the Digital ID and Digital Economy Initiative for Africa. That initiative seeks to advocate for the harmonization and implementation of digital ID platforms in Africa to facilitate trade in the context of the African Continental Free Trade Area and enhance inclusion in a sustainable and efficient manner. To drive this Initiative, an African Centre of Excellence has

been established at ECA to provide the required technical inputs and substantive analysis; to provide capacity development in order to support the African Union and member States to design and implement a harmonized continental framework for digital identification; to support member States to fully harness the potential; and to exploit the benefits of digitization for the continent's development.

50. In parallel, Ten Framework Principles for Good Digital ID and the Digital Economy have been developed, with a view to support harmonization and interoperability efforts of African member States. In that regard, the African Continental Free Trade Area is seen as an opportunity to advance such principles at a continental level, to support e-commerce through digital financial payment platforms that may be leveraged through the private sector, in a wider continental market than the African Continental Free Trade Area.

3. Automation and filing

51. The automation of tax administration systems has provided several advantages for governments, including increased compliance, lower cost of compliance, savings in tax collection costs and time, and the advantage of increased data and information that have enabled tax administrations to carry out assessments in an efficient manner.

52. The following African countries introduced electronic filing and payment systems: Angola, Botswana, Cameroon, Eswatini, Ghana, Kenya, Mauritius, Nigeria, Rwanda, Senegal, Seychelles, South Africa, Togo, Uganda, United Republic of Tanzania, Zambia and Zimbabwe. Three countries have made it compulsory for all taxpayers to pay their taxes electronically: Kenya, Uganda and Zimbabwe. This is a requirement, however, in other countries for large taxpayers and for the payment of core taxes such as income tax, VAT and pay as you earn (PAYE).

53. The United Republic of Tanzania undertook reforms in 2012 that included automation of documentation, registration, tax collection and e-filing systems. Consequently, not only did revenue increase by 21 per cent between 2007 and 2011, but also VAT filing returns increased from less than 500 in 2009 to over 4,000 in 2014. In South Africa, reforms that introduced e-taxation led to a reduction in compliance costs and time spent on complying with VAT by over 20 per cent in both cases (see the forthcoming Economic Report on Africa, 2019). E-taxation can increase tax revenues by up to 6 per cent, as in the case of Rwanda.

54. In Benin in 2017, the large corporate taxpayers' division saw their portfolio grow from 303 to 490 companies, thanks to a data exchange platform with Customs and public procurement. In March 2018, the Benin Tax Administration launched the Integrated Tax and Related Management System, allowing for the online filing of tax returns. That system will ultimately contribute to automatically managing more than 90 per cent of taxpayers and a large database of operations base, recovery, control and litigation of various taxes.

55. Digitization, automation and reforms undertaken by the Kenya Revenue Authority have resulted in positive outcomes. The money-transfer system, M-Pesa, has transformed how tax policy and administration is conducted. The system includes an online application for tax administration (the iTax System) and allows taxpayers to file and pay taxes electronically. The Kenya Revenue Authority has also automated and digitized several of its functions with the aim of improving efficiency of service delivery, promoting paperless operations, enforcing compliance, reconciling tax collections, promoting transparency and enhancing accountability.

56. Digitization of Kenya Revenue Authority operations led to a significant increase in the VAT revenues and helped in identifying data inconsistency and inaccuracy. The Kenya Revenue Authority introduced withholding VAT Agency System in October 2003. It was aimed at capturing credit, zero credit,

and non-filers and reducing uncollected debts. In July 2005, the Electronic Tax Register System was introduced to enforce record keeping for business transactions. The Simba system (System of Information Management and Banking) was also introduced in 2005, enabling automation of about 90 per cent of the customs operations by introducing online lodging of manifests and entries, electronic processing, automated reports and reconciliations, electronic presentation of customs entries, automated calculation of duties and taxes, and internal accounting. It also enabled an interface with the Vehicle Management System, which allowed the seamless flow of motor vehicle details into the system to facilitate clearance, registration, and duty payments.

4. Public Finance Management

57. Digitization can enhance fiscal discipline through use of information technology systems that record, monitor and track budget numbers based on individual country Medium-term Expenditure Frameworks that are underpinned by national development plans. Such an information technology system would also have the advantage of keeping track of the country's development financing gap, which strengthens the planning process and ensures that priority areas receive the required attention.

58. In order to strengthen public financial management, governments, including those of post-conflict countries such as Liberia, adopted the Single Treasury Account, which replaced several individual spending units (ministries). Several countries, including Afghanistan, Kenya, Kosovo, Liberia, Rwanda, Sierra Leone and South Africa, took advantage of the information technology based Integrated Financial Management System, which tracks expenditure at all levels of government, thus enhancing economic governance.

59. A key area of public financial management that has received a lot of attention for economic governance issues is Public Investment Management. Digitization and the use of information technology systems can ascertain maximum allocation efficiency of public funds through a more transparent and clear selection of the process that will ensure maximum returns. Similarly, such systems can enhance operational efficiency through cost reduction in project selection, as well as minimize information asymmetry, since the government can reach a wider pool of bidders who will then be required to upload all their information in a streamlined and transparent system. Such a system would also have minimal time costs and therefore much more efficient turnaround. Countries such as Kenya and Uganda have often reported project disbursement rates of below 20 per cent due to procurement and other processes, which affect project execution and budget out-turns, compared to Rwanda with a budget execution rate of above 60 per cent (World Bank, 2018).

60. Finally, use of information technology systems can enhance reporting, and therefore accountability in respect of public finance. Transparency strengthens public financial management systems, reducing incidences of weak and corrupt administrative systems, political influence and, in turn, raising compliance. Addressing these challenges could raise tax-GDP ratios of between 13 per cent and 18 per cent by 3.5 per cent of GDP in additional tax revenue. Public financial management reforms usually require countries to produce regular reports that capture revenue and expenditure. Through the use of the Integrated Financial Management Information System in Kenya, the National Treasury is able to produce Quarterly Budget Economic Reports that capture the fiscal position, including debt. While reporting alone does not guarantee effective debt management, it strengthens accountability and economic governance.

B. Challenges

61. In today's world, the digital economy also presents a challenge in tax policy. Owing to the development of the digital economy, it has become easy for businesses to shift profits using digital assets, such as intellectual property,

from where the income is generated to low-tax jurisdictions, thus resulting in erosion of the tax base.

62. African countries have not been exempt and this has a direct impact on the revenue available for financing development. Companies, which have their headquarters abroad, are active in Africa but do not have a physical presence. In addition, a number of these companies, such as Facebook, Google, Amazon and Alibaba, collect data from their customers where no taxation payment mechanisms by tax administrations are in place. These changes necessitate a review of existing tax laws, as well as intellectual property laws to ensure they are up to date with the current business environment and aligned with the development finance needs of Africa.

63. In South Africa, a review by the Davis Committee of taxation by the digital economy concluded that tax law in South Africa provided an opportunity for foreign e-commerce suppliers to avoid taxation and, in so doing, deny South Africa tax revenue and create unfair competition to resident suppliers who had to pay taxes (Davis Tax Committee, 2014). In response to the recommendations made by the Davis Committee, South Africa amended its VAT legislation in 2014 to capture the implications of the digital economy and foreign and local suppliers in the digital economy and the local suppliers. The amendments require foreign suppliers of e-commerce services such as music, electronic books, Internet games, electronic betting, software, among others, to register as VAT vendors and account for output tax provided their turnover in South Africa meets the threshold of 50,000 South African rand.

64. In developing new frameworks, African countries must take care not to create market distortions and disincentivize innovation, and exacerbate digital exclusion. The introduction of excise tax on mobile money transactions in 2013, for example, saw the volume of mobile money transactions in Kenya decline, a setback for financial inclusion since it is mostly those who did not have access to the financial system that used mobile money.

V. Issues for discussion

65. Digitization offers plenty of opportunities for African countries to enhance fiscal policy performance and development finance through increased domestic revenue generation and reduction in the cost of revenue generation and allocation. It also offers opportunities for increased revenue mobilization through facilitation of trade and private sector investment and development that foster growth. This will ultimately contribute to increased job creation. Expansion of the digital economy is particularly likely to create jobs in sectors where it enhances market access significantly.

66. Digitization however, has caused disruption in traditional models of doing business, and in consequence, has changed economic structures. The dynamics in the business models have created challenges for governments whose fiscal policy frameworks are best suited to traditional business models. As a result, there is a leakage in government revenue through base erosion and profit shifting. Governments must, therefore, come up with innovative ways, using digitization, to ensure that they are able to collect revenue efficiently in the digital era.

Suggested questions for discussion:

- (1) What are the opportunities and challenges for improving the performance of fiscal policy in Africa to finance the 2030 Agenda and Agenda 2063?
- (2) How can digitization enhance fiscal policy performance in terms of both revenue generation as well as public expenditure allocation and management?

- (3) What should policymakers do to overcome the challenges of integrating digital technologies to improve fiscal performance?
- (4) How would growth in the digital economy affect fiscal policy and domestic revenue mobilization from both tax and no-tax sources?
- (5) How can Government leverage digitization in trade and the private sector to enhance the effectiveness of fiscal policy?
- (6) What are the challenges of digitization for domestic and cross-border trade and the private sector?
- (7) How would digitization improve cross-border trade and collaboration? What is the impact of this on fiscal performance?

Annex

Table
Internet users in Africa, 2018

	<i>Penetration Population (percentage)</i>	<i>Internet Growth 2000–2017 (percentage)</i>
Algeria	44.20	37 060
Angola	19.30	19 738
Benin	33.10	25 245
Botswana	39.60	6 057
Burkina Faso	18.80	36 942
Burundi	5.50	20 470
Cabo Verde	48.10	3 225
Cameroon	24.80	30 542
Central African Republic	5.40	16 995
Chad	5.00	76 727
Comoros	15.70	8 605
Congo	12.00	129 900
Dem. Rep. Congo	6.10	1 027 354
Côte d'Ivoire	26.30	16 246
Djibouti	18.50	12 757
Egypt	49.50	10 840
Equatorial Guinea	23.80	62 441
Eritrea	1.40	1 320
Eswatini	32.10	4 360
Ethiopia	15.30	164 278
Gabon	47.70	6 470
Gambia	18.10	9 707
Ghana	34.30	33 600
Guinea	12.30	19 931
Guinea-Bissau	6.30	7 900
Kenya	85.00	21 564
Lesotho	27.70	15 596
Liberia	8.10	78 912
Libya	58.70	37 900
Madagascar	7.20	6 233
Malawi	9.50	12 090
Mali	65.30	66 283
Mauritania	17.80	16 100
Mauritius	63.40	824
Morocco	62.40	22 467
Mozambique	17.30	17 497
Namibia	30.80	2 557
Niger	4.30	18 931
Nigeria	50.20	49 096
Rwanda	29.80	74 393
Sao Tome and Principe	27.70	790
Senegal	59.80	24 274
Seychelles	70.50	1 018
Sierra Leone	11.70	17 949
Somalia	7.90	599 900
South Africa	53.70	1 184
South Sudan	17.30	n/a
Sudan	28.50	39 288
Togo	11.30	800
Tunisia	67.70	7 798
Uganda	42.90	47 400
United Republic of Tanzania	38.90	19 900
Zambia	41.20	36 144
Zimbabwe	40.20	13 492
TOTAL	35.20	9 942
Rest of world	58.40	89.10

Source: Data were based on Internet World Stats, 2018.

References

- African Development Bank (2018). Financing Africa's Infrastructure. *African Economic Outlook 2018*. Abidjan: African Development Bank.
- Coulibaly, B.S. and D. Gandhi (2018). Mobilization of tax revenues in Africa State of play and policy options. Washington, D.C.: Brookings Institute.
- Davis Tax Committee (2014). First interim report on macro analysis-Full report for the Minister of Finance. Available at <http://www.taxcom.org.za/docs/20150605%20DTC%20First%20Macro%20Analysis%20Report%20-%20Full%20Report.pdf>.
- Economic Commission for Africa (2019). *Economic Report on Africa 2019 – Fiscal policy and development financing in Africa* (forthcoming), Addis Ababa.
- Ericsson (2018). Ericsson Mobility Report. November 2018. Available at <https://www.ericsson.com/assets/local/mobility-report/documents/2018/ericsson-mobility-report-november-2018.pdf>.
- Huawei and Oxford Economics (2017). Digital spill over: Measuring the true impact of the digital economy. Available at https://www.huawei.com/minisite/gci/en/digital-spillover/files/gci_digital_spillover.pdf.
- Internet World Stats (2018). Internet Users Statistics for Africa, accessed 20 December 2018, available at <https://www.internetworldstats.com/stats1.htm>.
- McKinsey Global Institute (2013). Lions go digital: The Internet's transformative potential in Africa.
- Mohr, S. and O. Khan (2015). 3D printing and its disruptive impacts on supply chains of the future. *Technology Innovation Management Review*, 5(11), 20.
- Siemens (2017). African Digitalisation Maturity Report 2017. Stockholm.
- United Nations Conference on Trade and Development (2017). "The New Digital Economy and Development". UNCTAD Technical Notes on ICT for Development No. 8. October 2017. Available at <http://www.unctad.org>.
- Weigert, M. (2018). How the Private Sector is Shaping African E-Commerce? *Bridges Africa*, 7 (2). International Centre for Trade and Sustainable Development. Available at <http://www.ictsd.org>.
- World Bank (2016). *World Development Report 2016: Digital Dividends*. Washington, D.C.: World Bank Group, 2016.
- World Economic Forum (2013). Global Competitiveness Report 2013-2014. Geneva: World Economic Forum. Available at http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf.
- World Trade Organization (2018). "World Trade Report 2018: The future of world trade: How digital technologies are transforming global commerce". Available at https://www.wto.org/english/res_e/publications_e/world_trade_report18_e.pdf.
- Yilmaz, F. and J. Coolidge (2013). *Can e-filing reduce tax compliance costs in developing countries?* Washington, D.C.: World Bank.