THE BROOKINGS INSTITUTION

THE FUTURE OF WORK IN AFRICA: OPPORTUNITIES AND CHALLENGES OF DIGITAL TECHNOLOGIES

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Panel Discussion:

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P R O C E E D I N G S

MR. COULIBALY: Good afternoon everyone; and good afternoon again for those who were here a few minutes ago in our other event.

I'm Brahima Coulibaly, a senior fellow in Global Economy and Development, and the director of the Africa program. We know it's a busy time in Washington, and there's certainly no shortage of events, so we appreciate you joining us in this late afternoon to discuss "The Future of Work in Africa."

I think once the event went out it was basically booked very quickly, within like two days, and for a moment there I thought maybe I was very popular, but it looks more likely it's because of the importance of the topic, and it speaks volume to how critical and central this issue is for Africa.

So let me mention that this is being organized jointly between Brookings and The World Bank, represented here by Jean-Claude Tchatchouang, who is the executive director for over 20 countries at the Bank, so he has his work cut out for him. And by Albert Zeufack the Chief Economist for the Africa Region,

And the conversation is motivated around a recent report that they released entitled: *The Future of Work in Africa: Harnessing the Potential of Digital Technologies for All*, and this was offered by Zainab Usman, Mark Dutz, and Jieun Choi, the authors, they're all here, you'll hear from them shortly.

So to put today's event in context, the advent of the Fourth Industrial Revolution, which has been characterized by rapid digitization, growing utilization of new technologies, has really ushered in a new era of economic disruption, and ignited a global debate, right, on the implication for labor markets, or the future of work.

For those who are more concerned about the implication for labor market they argue that the current rate of adoption of labor saving technologies will cause massive job loss, some estimates put it at about, half of the global jobs currently out there.

So what that means is, if this side of the room is half the other is half, those on this side might lose their jobs, or maybe you prefer to be the other side. But one side will lose all of their jobs. So that's quite worrisome.

And in addition to job losses I think there's been concerns about the kind of income inequality that these technologies can generate, in a number of ways if one is sometimes, the technologies come to further help those who have high skills, and who tend to be those who are already being paid well, so it tends to increase the income disparity, or that you could create a winner-take-all kind of market for new products and services, that sort of widens up further the gap.

But I think it's not -- it's far from a foregone conclusion, and some have argued that the new technologies, this view of the new technologies and labor market is incomplete at best. And that is incorrect. On the merits, for the same reasons that it was incorrect during past technological revolutions.

They argue that the disruptions have been a feature of economic transformation since the First Industrial Revolution, and similar dire prediction of large-scaled job disruptions that were made in previous episodes, have failed to materialize, and there's no reason to expect the Fourth Industrial Revolution to be any different.

And here at Brookings we have been working on this issue to better understand the implications that are unique to Africa, and to inform the global debate with an African's lens, because what we've noticed is that part of the entire discussion was really merely focused on the advanced economies, which cannot raises the question as to what are really the relevance for Africa.

And in this regard, the World Bank's Report is very timely and very informative, and I encourage you to read it. Not steal the founder of the of the authors who will present on this soon, one main takeaway is that the global future of work is likely to play out differently in Africa than in the rest of the world due to different underlying conditions, low level of human capital, and a particularly large informal sector.

In other words, given the unique feature of Africa labor markets it's going to play out there differently than it will in advanced economies, and you don't hear much about this unique perspective.

So, we are fortunate to have a diverse and excellent panel moderated by Albert, to delve deeper into the issues and recommendation in the report, and share their perspective on the subject.

By way of disclosure and one of the panelists is associated with MasterCard Foundation, Tricia Williams. And Brookings' independence requires that I disclose that there are (inaudible) the funders of our work on youth unemployment on the Continent. But it's a Foundation that has a bold ambition to create 30 million jobs for young people on the Continent by 2030. You'll get to hear from her as well.

But so before I move on to the presentation and panel discussion, please join me to welcome to the podium, the Executive Director for his brief remarks. (Applause)

MR. TCHATCHOUANG: Thank you very much. And I just want to say hello to everybody. My name is Jean-Claude Tchatchouang, I represent 23 countries, mostly Francophone Africa at the Board of The World Bank. And I would like to really thank Albert, and all the organizers of this launch of the *Future of work in Africa*.

I think this is a very timely document that will really help -- really in the Continent how to -- we will move in the, you know, in the policy and also in practice, on how we try to really increase, you know, jobs in Africa.

Most of the countries I represent are low-income country, so I would like to really take that perspective here, that angle here and really see -- tell you how we see things, really from that point of view.

Before, maybe tell you about how we approach this issue here, I would like to really say that, you know, I concur with the main message of the of the publication, and I think for us we don't think that digital technology will have a negative consequence, you know, globally and in Africa. On the contrary -- and many study also have shown that that, you know, in Africa, you know, digital technology would, you know, increase, increase jobs in Africa.

But let me -- let me take two or three minutes to explain to you how we see things in, you know, from the low-income country perspective. The first thing we are saying is that, you know, the problem of job also in Africa and in low-income country is not only a problem of growth because many of the countries that I represent are having, you know, decent level of growth. If you take West Africa the level of growth, average level of growth there is seven percent for the last 5 five years.

In Central Africa, you know, they have two decades of decent growth, but in 2014 as you know, with the decrease in oil price, you know, there was a recession, but now with some reform they are -- they are coming out of the recession and we are beginning to see some level of growth there also.

So, in general, where you look in Africa, if we go beyond even Francophone Africa, and look in Africa in general excluding Nigeria, South Africa, and Angola, who are the three biggest economies of the regions, and usually represent, like more than 50 percent, you know growth in other region, you know, its average, the last decade 6 to 7 percent, so decent growth.

But the problem is that this grown really is not inclusive, it's not creating the level of jobs we want, it's not creating the level of the job we want, and that's why, you know, the impact also on poverty reduction is not enough.

So, really the, you know, the impact, the elasticity of that that growth on poverty, it's very low. And that's where we really have a concern, and for us we think the problem lies in the fact that that growth is coming, you know, from a particular sector, mostly extractive sector, and that extractive sector is not really creating the level of growth that that we want. And that's where the problem is.

And also you can tell me, you know, the country needs to use the resource of the extractive sector to really develop the other sector, but there we have a problem of governing, and a lot of problems. But what we is really also that Africa, in general, in many low-income countries, their structures of economy have not changed for the last 50, almost the same, based on extractive and, you know, primary sector.

So for us you also jobs -- we link jobs and economic transformation together, for us it's almost the same issue, so to create job we need also to embrace the agenda of economic transformation, for us, really we see that together.

And that's also why we are pushing in the Bank to, you know, this is a theme that is very dear to us at the Bank, The World Bank and that's where really we are -- we are coming from. And that agenda of job and economic transformation, we have a couple of elements on this.

The (inaudible) on low-income countries that, you know, you have very -- you know, they are doing a lot of things in terms of, you know, doing business reform, et cetera, but one of the main issues, lack of infrastructure, a huge gap of infrastructure. So, for us one of the first elements off of that agenda is how we can really close that gap of infrastructure.

In particular in some sector like energy, also digital, we need digital infrastructure there. So this is one of the first elements we see there. You know, the access to electricity is very, very low in many African countries. In some country like Chad have less than 10 percent access to electricity, Niger 12 percent, Burkina Faso maybe 20 percent, so very low.

So for us this is one agenda that we need to take forward to really see how we create jobs. So this is one element that is very, very important to us.

Another element is human capital. Really, you know, a study in the Bank had showed that, you know, human capital is really one of the main factor of the wealth of a nation, in developing country -- in developed countries, it's like maybe it's two-thirds -- you know, like 75 to -- 65 to 70 percent, but in low-income country like mine it's, you know, less, less than 10 percent.

So really, we need to really focus also on human capital, the quality of the education is very low, we need to work really on that, but also, you know, vocational, training, and building skills, entrepreneurship also, this is something that we need. So this is also something, you know, on the agenda that is very important for us. And also, you know, including, digital entrepreneurship and skills that we need to build, so the digital will really help us, you know, on this agenda also.

Another element, the third element that we see here also it's really on the manufacturing, and here there is a controversy, people think maybe today with the technology, you know, some of the industry where, you know, we need low-skilled labor or, you know, will not -- Africa, we see in China that China in some of the, you know, the sector like textile, you know, when salary of people increase, you know, it's been transferred to other region. That may not happen with, you know, with technology in Africa.

So there is a big debate here, but for us we still think that, you know, manufacturing should be part of the menu, maybe not in all the countries that we cover, there are small countries, but in some countries like Ethiopia, you know, some of DRC, we think that manufacturing should be still part of the menu.

And this is where also, you know, agro-industry can play a part, in playing part, and we think also that, you know, the way we see jobs will still be very important in the agricultural sector, because many of our countries, you know, 80 percent, 60 percent of people work in the agricultural sector. There is a problem there because we need to increase, you know, productivity, but here also technology can really help in increasing productivity in the agricultural sector, so this is also part of the menu for us.

And then we have the digital economy itself, this is very, very important I think. And I will tell, you know, give you a couple of -- you know, example why we think this is this is a very -- the digital economy is very important in Africa.

The first, of course, and as I mention is that, you know, there are a lot of studies showing that digital will increase -- you know, will create job in Africa, so this is no doubt about this, we can't -- you know, we completely agree with that.

But the second thing is really that the digital can increase productivity in other sector. For me, even before, you know, the one of the characteristics of many of the countries that I represented, the informal sector is very, very important, very, very important. And for me with digital I see a hope to transform and increase the productivity in the informal sector.

And I can take a couple of example. One example, you know, everybody here knows, is Uber. You know, before when I go to a country, I go to Paris, I will see people approaching me when I get out, you know, do you need a car, or do you need a taxi, you know, these are people in the informal sector, but today with the Uber, you know, they're increasing the productivity, you know, at a level that is very, very important there is also an example in the agricultural sector.

Like in Kenya, there is a platform where people can sell -- you know, somebody is selling bananas, but you register on the platform, and then in the platform you will get clients. So what you just need to do is to go and deliver the banana, you know, and different, different clients. So it can increase really tremendously the productivity.

For me, digital economy is a hope for the informal sector. I don't worry for the informal sector anymore, with the digital technology, but what we'll have to create is to create platform. We need to create digital payment, this is also very important. So for the agenda of digital economies infrastructure, of course need infrastructure, digital infrastructure, we need digital payment, we need digital platform, this is very important, we need also digitally skilled, and create digital entrepreneurship.

I think I don't want to be too long. I have too many things to say, but just to say, really, I'm pleased to be here. This is a very, very important, you know, document for us. And again, thank you very much, Albert, for producing this document. Thank you. (Applause)

MR. DUTZ: A warm good afternoon to all. Thank you for those kind introductions. So, this report is really a team effort, as you can see co-lead authors, Jieun Choi, and Zainab Usman, who are both here with us, Jieun having authored the chapter on digital technologies, and Zainab on social protection. And in addition, work has benefited from the authorship of Moussa Blimpo and Solomon Owusu on human capital; and (inaudible) and Professor Pierre, and (inaudible), on informality.

And you'll see in my presentation that a lot of themes that Jean-Claude mentioned really come together. And in fact, let me just, to introduce the topic get you to focus on what Jean-Claude mentioned as the jobs in economic transformation agenda. So, I thought I would explain briefly what we mean by the concept. It's a sort of recently-coined concept that The World Bank -- it means productivity-driven growth for us.

It means growth when sort of -- when people shift from lower to higher productivity activities, whether they're shifting to other activities or where they are and then they do things better.

So, you know, you think of the term economic transformation as an economist, and you've heard something like it which is structural transformation, and it's importantly linked to that. That's about how the structure of economies change as people and other resources move across sectors from agricultural to manufacturing services, and within sectors, ideally from less to more efficient businesses.

But structural transformation isn't always welfare improving. People can move from, say, low productivity agriculture, to even lower productivity services in urban areas. So, the term "economic transformation" is about the productivity-enhancing parts of structural transformation.

But importantly, it also includes the other main part of productivity growth, which arises within firms and farms, as they innovate, so as they do things better within the firms, and the innovation isn't just about doing completely-new-to-the-world things, importantly across the world, it's mainly about adopting better technologies.

So that's what we are focusing on in this report. How economic transformation and productivity growth can be driven by technology adoption, and in particularly digital technologies, as well by the adoption of complementary technologies, by individuals and by businesses.

And we're particularly interested, as Jean-Claude mentioned, on inclusive productivity growth, namely, that kind of growth that creates more and better jobs for low-income people, as jobs are the best sustainable way to exit poverty.

So, I'd just like to start by asking why this, what we had in the title: making the right decisions to secure the future of work including through digital technologies should be urgent for African policymakers?

So, you see that we emphasize the high number of poor people, the growing youth population, those make it imperative to take actions to make sure that Africa's digital future is actually inclusive, to invest in the kinds of technologies that will create better jobs for less-skilled workers as well.

Digital technology adoption doesn't necessarily have to be inclusive, and it's sort of a conditional statement, it may be inclusive as long as policymakers put in place the right environment.

So, you know, as Jean-Claude mentioned, in many developed countries we see the benefits, you know, from adopting skill-biased technologies, like the Internet being skewed towards people who are higher skilled, so policymakers must ensure from the beginning that the adoption of digital technologies reduce rather than worsen the digital divide, it's not automatic.

And we also mentioned global risks emanating from climate shocks, from fragility, from economic integration, from population transitions, they're also transforming the work landscape and lend an urgency to more inclusive technology adoption.

And finally the recent interest by African policymakers in digital technologies provides an entry point. It's sort of a window of opportunity to broaden the policy debate to facilitate all types of technology adoption that are complementary to digital as part of what we term an "inclusive productivity growth agenda."

We like to say that Africa can't really benefit from the Internet of Things without actually having the complementary things as well. So, you know, African farmers clearly need better tractors, they need better irrigation systems, they actually need not just the tangible things like tractors and irrigation systems, but they need the intangible things, like better management capabilities.

And so focusing on digital technologies also importantly serves as an entry point to a broader policy discussion on all complementary types of technology adoption to digital.

In this report we claim that Africa has an opportunity to develop a more inclusive future of work agenda, with opportunities for lower-skilled workers.

Why do we make this claim? So it's a conditional claim, it depends on policymakers creating the right environment but there are a number of structural characteristics that really are about low-income and fragile countries, and many of which happen to be in Sub-Saharan Africa, that we list here. Sort of the low level of technology adoption, only 8 percent of employment on average in manufacturing, low levels of consumption, especially of higher quality food products and other services, low levels of education and skills, almost 90 percent of total employment in informal sector, most of it in agriculture.

So, what are three important possible reasons why the future of work may play out differently in Africa? So this is sort of the crux of my part of the presentation.

A first reason comes from the supply side of product markets, so there's a lower chance of losing jobs from automation because there's actually being little automation to date, manufacturing is very small, most workers are in the informal sector, the adoption of sort of worker replacing digital technologies, like robots, is not likely to displace many people over the next few years. So, there is a window of opportunity there. So that's the first claim.

A second possible reason has to do from the demand side of product markets. So, where do jobs come from, generating jobs? It comes from firms producing more; that comes from consumers buying more so demand, arguably, could be much more elastic, more responsive to the price reductions that are expected to come from adoption of digital technologies and other technologies.

So, in contrast to developed countries where there's already close to satiation in certain specific types of products, in Africa there's a lot of pent-up demand for higher quality food stuffs, for higher quality services. so, the price reductions are expected to make these products affordable for mass consumption, and therefore that should allow for sufficiently large increases in production to create more jobs, provided those products are actually competitively produced in Africa.

And then the third opportunity, and I actually think this is the most interesting, comes from what we could call worker enhancing rather than worker replacing, low-skill-biased digital technologies rather than skill-biased.

So what are those kinds of things? If you think of what digital allows one to do, allows firms to do, allows people to do, it provides video, it provides voice, it makes very quick, easy mathematical calculations. So it's precisely -- it should be helpful for people with low literacy and low numeracy skills.

So you could think of voice, and video-based, e-extension services for farms and for firms. You could think of different kinds of mobile payment systems for the unbanked that are really easy to access, much easier than otherwise. You could think of, like was mentioned, Uber-like platforms that don't require -- like so, when you have a Uber-like platform the person providing the service doesn't have to make the calculation of how much change to give back.

So these should, in principal, provide economic opportunities for the lower-income, lower-educated, lower-skilled workers, provided the business environment is there to provide the incentives for entrepreneurs to actually produce those kinds of apps, and in an affordable way for low-skilled people to actually want to adopt them.

So, I wanted to just provide one piece of evidence about what we know so far about these types of more-inclusive benefits. So this is a study that was published in the American Economic Review this spring, and it was able to identify causal impacts rather than just correlations. It takes advantage of faster Internet. When new areas became connected to ten different undersea cables, at current times in the late 2000s to 2010s, and that greatly increased the speed and capacity of terrestrial networks.

So, the likelihood that a worker is employed increased by over 3 percent in South Africa, over 7 percent in these eight countries that are part of the survey reported, and then there were similar results found in an Afro Barometer survey across nine other countries.

So these findings were then broken down by occupation, and so you see in the top one skilled versus unskilled, you see that in fact, predictably since Internet is a skill-biased digital technology, it combines better sort of with more skilled people, the probability of holding a skilled job increased relative to the unskilled.

And then in the second little clump you see that it's the moderately skilled occupations that contributed the most to the increase in jobs, but what I want to bring your attention to is the last clump, and especially where we circled in red, where they examined the impact on workers by educational attainment, and it turns out they found that increases in employment rates were of similar magnitude for primary educated people at same levels as secondary and tertiary.

So this is quite an important finding. It raises questions regarding what is driving this, it could, for instance, be that what secondary and tertiary schooling teaches relative to primary is not that useful for some businesses, and they prefer training these workers right after completing primary school.

Clearly more work is needed to understand the channels through which this is occurring, but it highlights, you know, that skilled workers will still benefit more from skill-biased technologies. And then there's this whole agenda that this doesn't look at, is what would be the impact of the low-skill-biased digital technologies, like the voice-based and the video-based e-extension services. So, lots to do still in this area to better understand.

And finally, before handing off to Zainab, I just wanted to set the stage for, you know: What are the right questions for Africa? Sort of -- in our report we focus on four areas which are very linked again to the areas that Jean-Claude mentioned, that is the digital technologies and the required digital infrastructure linked of course with the electricity infrastructure, human capital, informality and social protection.

And so I just want to emphasize what some of the most novel features in each of these four areas are before Zainab goes in more detail.

So, in the first area we argue that improving the availability of affordable internet is a prerequisite, you know, without which the adoption of any other technologies that sort of ride on the

Internet can't be provided. We emphasize the potential benefits from regional harmonization, so supported by sort of increased regulatory capacity through regional hubs.

So rather than having each of the 48 Sub-Saharan African countries, each having quite difficult regulatory expertise, quite complicated why not have, for instance, Kenya, Uganda, Rwanda as a starting point come together, and then think jointly about, sort of, would it make sense to have things like regional spectrum auctions, holding auctions at the same time across three countries, and then allowing ex-post trading, again across the region, or asset-sharing across the region.

And then think of different experiments happening to see how to do this better since it's so important. In the second area on human capital, we argue that the challenge involves both a large stock of low-skilled workers, and the flow of youth, and it'll be important to provide an appropriate business environment for entrepreneurs to develop these solutions for lower-skilled workers to learn as they work.

In the third area, on informality, we argue that there has to be a shift from traditional formalization policies to policies that actually help boost the productivity of informal farms and firms and their workers, and so as the successful firms grow, they'll naturally want to seek formal services and become formalized.

And finally, in the last area we argue for a rebalancing of government and development partner expenditures in line with the structure of labor markets.

So, I'll now switch and let Zainab finish by going in more detail in these areas. Thank you. (Applause)

MS. UZMAN: Good afternoon everyone. Thank you for joining us. And thanks to Mark for providing that good introduction.

As he mentioned there are four key areas we cover in the report, which we identify as key pillars that will support, or that can support the digital transformation across African countries.

So the first pillar is digital technologies, and here we emphasize inclusive digital technologies, which as Mark explained are technologies that are working-enhancing but they also -- they can be used by lower skilled workers.

So, we actually argue that there are two key reasons why low-skilled workers across

African countries will benefit from these digital technologies. The first, and these two key reasons are illustrated by this diagram on the slide, which looks very complicated, but I promise you there's a very simple logic to it.

So, the first reason is that, you know, across many African countries the key sectors that are susceptible to automation such as manufacturing and other industries actually constitute a small share of national employment, and this was, in a sense, alluded to by Mark, across many African countries you find that the manufacturing sector, for example, contributes less than 10 percent of national employment.

And if you look at the figure on the slide there's an orange dotted line, the space covered by that area represents the employment that will be displaced by automation in these African countries, and it's a very small area. Compared to the area covered by the blue line, which represents, you know, lost employment to automation in these sectors, in high-income countries, in OECD countries, so basically we're not going to see that massive displacement of labor in such sectors as manufacturing.

The second reason why low-skilled workers across African countries are likely to benefit from digital technologies, is that these digital innovations allow for the creation of new products and a whole new category of subsectors, across African countries with associated jobs. So, you find that in many African countries entrepreneurs can and will create digital solutions in sectors such as retail, such as agriculture, such as education, and a whole range of other services.

And importantly, with these digital solutions you find that a lot of people can use them, but they can also learn in the process, as Mark explained.

The second key pillar for us is human capital and a key question that we address in this report is: What area or what areas of human capital should be prioritized to enable and to support the digital transformation in African countries?

So, we summarized evidence in the reports such as that represented by, you know, the figure on the slide, which shows that across many African countries, in big countries such as Nigeria, in Guinea, in Mali, et cetera, many adults actually up to 40 percent, or even for more than 40 percent of adults are basically illiterate. They cannot read, they have little or no numeracy and literacy skills.

So we argue that in many of such countries the human capital challenges involve two things. So there's a large stock of low-skilled workers, and there's also of continuous flow of people into the labor market.

And what do we mean by this? So, in terms of the large stock of low-skilled workers about 60 percent of the labor force in many, many countries are adults who are ill-equipped for jobs and, you know, added to this stock is the fact that every year you have young people, you have people joining the labor market who are similarly ill-equipped, you know, according to some figures up to 11 million people join the labor market each year, in African countries.

So, when we think of solutions to these human capital challenges, we need to think about also focusing on the stock and flows, and how to increase their numeracy and literacy skills, and certainly digital solutions can help in that regard.

So, the third key pillar is that we also need to -- generally there needs to be a focus on increasing informal sector productivity. So, before we launch into that discussion a key -- I would like to highlight some key features of the informal sector in African countries.

So, first of all it is very large and, you know, about 90 percent of -- it constitutes about 90 percent of total employment in many countries. I mean of course this varies across different countries on the Continent.

The second key feature is that it is mostly in agriculture, and the third key feature is that it comprises, and this is very surprising even for us, you know, when we were working on this, that comprises of not just small firms, as you would think, it's not just the petty trader, you know, it's also large firms, fairly large firms that operate in informality and in the informal sector.

So, one of our key arguments really is that policies that have traditionally focused on formalization have not been that effective, they've not been that impactful across many African countries, and therefore we need a different approach.

And what is that approach? The new approach is that we need to focus on improving the productivity of the informal sector. So, what it also means is that the traditional formalization policies we should continue with them, but we need to be more focused in what we do with them. That is, we need to target those large, informal firms that aggressively compete and sometimes undermine formal firms in the economy.

So, in an effort to increase this informal sector productivity digital solutions can also help. So they can help with increasing access to information, and to credit markets, they can help increase financial inclusion, to build skills, et cetera. And you find that when firms become more productive, when they grow then formalization becomes a more organic and natural process.

So, the fourth key pillar and the last one that we focus on in the report, is the need to extend social protection coverage, we all know how important social protection is in terms of mitigating risks for individuals, but enabling them to also take on more risk and become entrepreneurs, as well as the poverty reduction dimension.

Unfortunately, across many African countries, social protection coverage is very, very low compared to many other regions across the world, as this figure on the chart illustrates. So, you find that 8 in 10 people in African countries are not covered by a safety net, they're not under any pension scheme, and they're not just covered by any social protection and labor policy.

So, this reality then motivates one of our key recommendations in the report, that social protection and labor policies should seek to align with the current structure of labor markets in African countries.

So, that this means that, you know, social protection spending by governments and by -- also, importantly, by development partners should be rebalanced to cover people, especially informal workers and those in transition. And, you know, the word "transition" is very, very important because in a situation where you have an economy that is changing rapidly, as with quite a number of African countries, people move across jobs from rural to urban areas, from small urban centers to larger urban center, across industries, across sectors but, importantly, across borders.

And were all aware of, you know, the Africa Continental Free Trade Area, as illustrative of attempts to increase regional and economic integration. So, you know, social protection is needed to provide -- to mitigate risks for such individuals.

So, this rebalancing that we propose, and that we advocate, for we believe can be achieved by three key things, or in three key ways. So, first of all by improving revenue collection more broadly secondly, by improving the efficiencies of current allocations of social spending, using instruments such as public expenditure reviews to find out where the inefficiencies are and to do the rebalancing.

And finally, there's also a need to effectively coordinate development assistance. In many African countries social protection is provided by development partners.

Finally, and this is the concluding slide. What should be done? What should governments do? But I think this also refers to other stakeholders in addition to government, so development partners, and just key stakeholders, you know, who are invested in this.

And really we conclude as, you know, Mark has already alluded to, on a very positive note, that the future of work in Africa is positive, is going to be positive, but this is really conditional on the right decisions being made by governments, but by also other key stakeholders.

And what are these right decisions? We summarized them as three Cs, and also three Cs are a bit catchy, we couldn't resist it. So, these three C's are capital, capacity, and competition.

And I'll quickly walk you through them. In terms of capital, our key message is that, you know, businesses and enterprises sure they need financial resources, but they really need more than that to be able to expand in existing markets and enter new ones.

They need better human capital for entrepreneurs but also for workers, but they also need physical capital and infrastructure as our Executive Director, you know, so eloquently and passionately explained.

They need, you know, reliable electricity and transport networks. Not much really can be done without electricity. And I come from Nigeria, I know all the challenges and all the bad jokes about power outages. So, businesses need that, as well as digital infrastructure, so Internet, broadband and, you know, things like that.

Secondly, there's a need to increase the capacity of governments to make the needed investments in social protection, and this specifically is meant to allow for greater risk-taking by entrepreneurs. So, currently, you know, people might want to move across borders, they may want to establish, you know, an outlet somewhere, but it's very difficult because of all the risks that people face, weak insurance markets, and things like that, also to support workers to transition across and between jobs.

Finally, is the need to promote competition, and this entails perhaps two key things, upstream competition in the provision of the very infrastructure that we mentioned, electricity, transportation, and digital infrastructure, but also to allow businesses adopt new technologies and expand production.

So, really to conclude, we do believe that the future of work in Africa is bright. Personally, I'm very optimistic about Africa. So, many young entrepreneurs, so many women, some of the friends that I went to high school with, you know, people doing amazing things, but we as, you know, development partners, as governments, we also need to support these people to make the future of work in Africa bright. Thank you very much. (Applause)

MR. ZEUFACK: Good afternoon everyone. Good afternoon.

AUDIENCE: Good afternoon.

MR. ZEUFACK: I thought after such an energizing presentation you will all be fired up. Aren't you?

QUESTIONER: Oh, sure.

MR. ZEUFACK: Oh, yeah. Great my name is Albert Zeufack. I'm the Chief Economist for Africa at The World Bank, and it's a great pleasure and honor for me to moderate this panel.

To get into more in-depth discussion in the findings of this excellent report, and absolutely excellent; and I'm not saying that just because it's been produced by my colleagues in my office. But really it's a pleasure. Also I'm really inviting you to read it, because it's clearly coming up with quite, you know, innovative findings.

The first is that contrary to the gloom and doom picture that we've been seeing on, you know, digital technologies displacing workers across the world, what this is finding is that the future of work can actually be brighter in Africa, and will be brighter for a good number of reasons. And one of the first reasons is, basically, that to lose something you first have to have it. And we don't have that many jobs to start with, right.

So, the displacement effect is going to be minimal, manufacturing is just 8 percent of the workforce in Africa. But more importantly this report is pointing to, you know, the fact that, you know, most of the workforce is informal and technologies, digital technologies can actually, you know, help boost productivity of these informal workers, and therefore create a brighter picture than we have seen elsewhere.

So, Africa does have the potential for, and I would even say an opportunity for creating a future of work that is really inclusive. So, we need to really ponder on that and this is coming in contradiction to many reports that have been published not long ago.

But what I even like more about the report and the presentation is that it's not just telling us what may happen, it's telling us, you know, how countries can actually achieve that more inclusive future of work.

And I like the focus on the three Cs, right. So, capital, not just physical capital, digital capital as well, but more importantly the need to emphasize the analog complements to digital, we will not do the digital without electricity for example.

So, the second C is about capacity, the skills, and I love the distinction between the stock and the flow, because a number of African, you know, do not necessarily have the skills to be, you know, creating all those softwares, or making money if, you know, on digital platforms. But they can actually exploit the low-skilled digital technologies to create their own employment, or to boost productivity of wherever they are. And I really like that.

You know, the other very important finding from the report that I really, you know, got from the report is this shift in mindset when we're discussing informality, it's shifting away from formalization, you know, getting a net to trap them and put them into the formal sector like they were cows that we are herding, but the focus on raising the productivity, because at the end of the day when they become large enough they cannot escape the net.

So, I think this is a change in mindset and we really need to discuss a little bit, this further. So, to get this -- I have a wonderful panel here as you can see, and I'm absolutely happy that male is the minority on the panel. So, I'm happy to really have the panel where, you know, the gender balance is in favor of, you know, the ladies.

So, it's great and I'm doing this because we are really pushing for women empowerment in Africa in another report that we have written.

Now, for this panel I have next to me, Mary Hallward-Driemeier, and Mary is a Senior Economic Adviser in the Finance, and Competitiveness, and Innovation, Global Practice at The World Bank. Welcome, Mary.

So, next to Mary is Tricia Williams, and Tricia is from the MasterCard Foundation and, you know, she'll certainly tell us a little bit more about Youth Employment, and digital employment in the youth.

Next to her is Professor Lemma Senbet, who is not only a renowned academic at the University of Maryland, and the Mayer Chair Professor of Finance, but also associated to Brookings.

And last but not least is Jieun Choi, who is a co-author of this report.

So, welcome to all of you. May I ask you, starting with you Mary, to very quickly in two, three minutes, having your reaction to these findings? How they align with what you have seen? And you particularly has been involved in a number of analytical work on the future of work, or in manufacturing, you authored this walk on *Trouble in the Making*? How do you find this report aligning with the existing literature? You know, can you share your perspectives here?

MS. HALLWARD-DRIEMEIER: Well, thank you very much for inviting me to be part of this panel. I mean I really enjoyed this report and I think, you know, so it was called a companion to a WDR which took a global perspective. And I think taking it to the region really does highlight a number of differences in how the messages, and how the agenda may play out.

And I think that's actually the team to be commended for really doing that and adding considerable value in that.

So, I have written a global report called *Trouble in the Making*? With a question mark. And in part because it was -- it was inspired by this sense of, you know, real sort of, oh not quite panic, but just sort of a sense that technology was going to be wrecking havoc.

And so wanting to look at the evidence, and there are some areas that are more concerning than others. So, the only twist, unfortunately, I would put on your first lesson of, there may be fewer jobs to be disrupted and lost, I would say the bigger concern is the jobs that may never come, right.

And there is this sort of flying geese model, and sort of as raised, you know, China's wages are rising in this idea that some of the low-skilled labor-intensive manufacturing may shift out of China into other countries, and wouldn't Africa like to be able to have more of it done there.

But that may not be happening. The country that is both, producing the most robots, importing the most robots, and installing the most robots is China, right. And so, that they are very much sort of aware of this, and actively engaged in not having too much of their production moving offshore.

You know, as wages continue to rise that may shift, but automation may mean a source of potential job creation isn't going to be there in quite the same way. At the same time I do think there's also a window of opportunity. So, one of the things we did try and do is disaggregate across different kinds of technology and different -- within manufacturing different sectors.

So, the sectors that Africa is more active in are in fact those that are least susceptible to automation. And so it does give some window of opportunity within manufacturing, and with other things, to be able to gather some of the skills, to get involved in some of this, and be able to potentially keep upgrading. So, the need to really shift, there may be a little bit more time.

But what one of the other things that I think is really interesting is in fact that third point, right, which is really looking at how within the informal sector this agenda matters.

So, I'm very much involved in this jobs and economic transformation agenda within The World Bank, and I and I think it really is important sort of for two things. So, often we've talked about inclusive growth, somewhat I get quite asked: How is that different from inclusive growth? And, so, to me this economic transformation is sort of one step down from growth.

So, really where do we see changes? So, it's not just that you have this high growth, if it is coming from natural resources, that's not really transformational, it gives you some income, which is good, but to really get the dynamics that are going to change things sort of at scale you need these deeper changes.

So, I really like that emphasis on economic transformation, and I also really like the fact that it's jobs, because simplifying two easy ways out of poverty, is one is transfers, so you can take some of this income, you can distribute it, that can be a good thing too, but again it doesn't have that dynamics.

The most sustainable way out of poverty is by increasing job -- increasing job opportunities, increasing labor income, right, that is by far the -- labor is sort of the most important asset for the poor, being able to use that more productively is critical.

So, to me this shifting the sort of inclusive growth to economic transformation and jobs, is focusing that much more closely on what we need to do.

And I think this report, in looking at the informal sector where the vast majority of the people are is appropriate and comes up with a lot of ways which is different from what we usually hear about how these kinds of technologies really can be productivity enhancing.

So, I think this report is putting on the table a sort of a whole set of agenda, and they've got some evidence, it's an agenda where we need to keep building that evidence, but that to me is a huge contribution, is not just assuming that this is all skill-biased, that there's some really important, simple ways that this can be making a difference on the ground.

So, very much, congratulations to the team.

MR. ZEUFACK: Thank you very much, Mary. And I think the team really deserves those congratulations, you know.

QUESTIONER: Crosstalk)

MR. ZEUFACK: Thank you. Trish? So, Tricia, you've been working on Africa with the MasterCard Foundation. One of the areas this report is highlighting is the need to build those skills, and skills certainly digital skills, and when we generally think digital skills people think of coding, of tertiary-level skills.

But what this report is also saying is, you know, technology may actually be coming with some potential for lowly-educated people, low-skill people but that could be transformative as well. There are examples of farmers receiving extension messages on their phones, not smartphones just simple phones, text messaging as a way to actually promote agricultural extension, voice, you know, for alphabetization programs.

You know, all those that could actually help boosting productivity. Can you share a little bit your perspective from the MasterCard Foundation's, you know, view. What kind of digital skills do you see being really implemented and making a difference in Africa?

MS. WILLIAMS: Well, thank you so much for the invitation and the opportunity to be here. As Coul (phonetic) said, the MasterCard Foundation is focused on Africa. We are separate and independent from the MasterCard Corporation, endowed by a generous one-time gift from the Corporation.

And we're working currently across several countries in Africa, working specifically on youth employment. So, we think about work all the time, Africa, and this is this is what we're primarily focused on.

So, a couple maybe comments first before I get to the point about digital skills. So, I think this is really an -- as Mary said, an important contribution in localizing and regionalizing the discussion on future of work.

So, I think it's an important step forward, but I would hope it's just the first step of many, because I think what we've observed is the need for more of this dialogue to happen in different countries, by different actors that there needs to be more attention to the future of work, and to really maybe provide different frameworks, different narratives, rather than interpreting the traditional narratives around automation, the gig economy, et cetera.

And one of the things I guess -- I think I put forward is that maybe we've overemphasized technology a bit, given how many people are living in an analogue world although technology will play a big role in the present and the future, I think some of these things are maybe underemphasized in how much they're going to shape work opportunities in Africa and elsewhere.

And notably, you know, I think they've been pointed out here in this report as risks, but I think they might even be considered drivers. So, climate change will cause big displacements of people from different areas that will that will really shape work opportunities. The same way the value chains, the jobs that might never come, social inclusion as well.

And then the other thing I think I'd say maybe before addressing the digital skills part, is I think we have to go a little bit farther in surfacing the critical decisions that are most important right now.

So, in a world in which, you know, governments are saying to us all the time, this is great you want to focus on youth employment with us because we have a big youth employment problem of today. So not -- like making the tradeoffs between what are the problems of today, and what are the problems of 10, 20 years out.

So, where are the things where we actually really have critical windows of opportunity to make differences right now? Because that's a really ambitious policy list that was put up in this report, and I think it would be -- it would be good to have more discussion about where are the things that we actually have a window of opportunity to make changes right now, and that will really determine some of the future pathways.

In terms of digital skills I mean we're working closely with, as I said in a number of countries, and we have a report coming out very soon with Caribou Digital around transformational upskilling, which is a really exciting thing that we're seeing with different platforms who are investing in worker skills.

So, you're starting to see businesses seeing the potential of investing in their worker skills. So for instance, Jumia people know Jumia, you know, in Africa they're selling their things online, but they're actually teaching people how to take better photos of their products to put them online, or LinkedIn Kenya, linking informal workers. They're saying, you know, we are going to set up a carpentry shop, so that our carpenters are better skilled and can provide better services to the customers on the platform,

So, this is taking different forms, so you're starting to see some real investment not only in the analog skills but the digital skills as well. So, I think, you know, we would say that it's really going to be hand-in-hand, the analog and the digital skills together.

MR. ZEUFACK: Excellent. Thank you so much. So, Professor Lemma Senbet, so I'm coming to you --

MR. SENBET: By the way, I like this report, okay. Now I enjoyed reading this report, and I think what I liked was that it has an opportunity to shift the conversation. I like the idea that these old thesis, let's call this old, which is kind of grappling with job losses associated with manufacturing, and then maybe creating these new sectors, by the way, they have never explained about what this new sectors are, we don't know, but that's what they say.

I think the point of this paper is that there is no "old" and there's no "new", there is just a sector. And this is pretty analogous to this debate that has gone on for a long time about this premature, deindustrialization of Africa --

MR. ZEUFACK: deindustrialization, right.

MR. SENBET: -- which I think is the wrong debate because, the thinking is, you know, you have to move from agriculture, and manufacturer, but you have to transform everywhere, you have to create value, the value chain, the conversation has to be value, so it is pretty analogous for that.

So then the second point is that, you know, Africa has staggering problems, I think what Albert did not mention is that, I decided to go on a five-year mission to Africa. I was actually heading up African Economic Research Consortium, the University was very generous to give me a long leave of absence, and I got to see virtually the whole Continent.

Whenever I ran into a Governor of Central Bank of a specific country, I say I know more about Africa than you do. But what I noticed was that one day I just woke up, so the problems are So, staggering. You can't do this, you can't deal with that business as usual, you have to go outside the box, you have to innovate.

You know, the whole emphasis on innovation, entrepreneurship has to be part of a robust conversation, part of support coming from the other entities. So, by the way, innovation, I'm actually defining it more broadly. I've not even touched on technology. By the way innovation has been going on since time immemorial, right?

MR. ZEUFACK: Yes.

MR. SENBET: Before all of you were born, the Roman Empire. Yeah. In fact, one thing that they -- one thing that people do not know is, of when they talk about them M-Pesa in Kenya, is that there was another entity called Equity Bank, this Equity Bank was a low technology, but was able to identify neglected areas, and which are shunned by post-Colonial bank like, you know, Barclays, and this guy decided to go into this arid desert area.

By the way, he did that to make money. And he created, you know, this simple, this micro finance entity, now this has become sometimes the largest, sometimes the second-largest, and got listed in the Nairobi Stock Exchange.

So, this is like transforming informal finance into the stock market. So, innovation could occur without technology. I think that's one of the points that you were seen. So, really the one thing that I would like to have heard is, what does it mean to innovate in various sectors, especially agriculture, that's a dominant, a dominant economy in Africa.

We need to innovate in agriculture, innovate both entrepreneurially both in terms of value chain and, really the report is not that explicit, right. So, we need to go into the nitty-gritty of what is -- what does it mean to innovate, and how do we create an enabling environment, agriculture really being the point.

And secondly, I agree with your policies, competition policies, you know. Basically, not a stifling entry, and even bearing fruit, that's definitely a very good suggestion. But I think one thing that we keep on ignoring, and that's something that came very close to my thinking.

As a matter of fact, it was the political economy, the political -- you know, we can always -- very well designed instruments, features and policies, who is going to implement it, and when would that be implemented?

And now we have come up with the largest trading bloc in the entire globe, by the way in terms of population. Yes, some are optimistic. Now, I think assuming that that also works talking about how integrating, you know, this thin, the small markets and integrated innovation across national boundaries is something that I think we should actually look into, in this paper as well.

And then finally, one thing I liked about Kenya, by the way, my headquarters was Kenya, but I was going around the whole Continent, it was a Pan-African -- I was spending more time in the sky than on the ground.

But one thing about Kenya, it's very entrepreneurial, innovative group, especially the young guys. And then every time people ask me, like anytime (inaudible) in the other countries? I said, no, walk across border and see what's going on.

But, one of the big issues, and I don't want to single out Kenya necessarily, I think when we draw up policies, you should also think about corruption, or the anti-corruption policies, because there are certain countries who seem to have all kinds of ingredients, including by the skills, in Kenya.

They can only go so far, right, and there are some binding constraints. So really, the political economy, the anti-corruption policies, by the way policy is not alone, even anti-corruption policies do not get implemented.

And I'm going to finish with this. One day I woke up in the morning and they have a -- by the way, the media in Nairobi is very robust, and there is thing called *Nation*. So, I kind of look forward to reading *The Nation*, it's almost like *The Washington Post*. So, Sunday, I just woke up, the fourth point is a shame list, this is a list of Who is Who implicated in corruption.

Then I thought that this is going to make a big difference, and then in a month the news disappeared. Okay. And I think part of the reason was that people started asking, yeah, you have a shame list, how about two or three individuals who are off the list. And they singled out, you know, someone who was very closely aligned with the decision makers. So, even when you have these anti-corruption policies you would have difficulty implementing them. So that was --

MR. ZEUFACK: Thank you very much, Lemma. Thank you. Now, Jieun, you are third quarter, and you are on this panel not to defend yourself.

MS. CHOI: Yeah. (Laughter)

MR. ZEUFACK: But, you know, I would like you to react to some of the points, you know. What I'm hearing is a broad agreement that, you know, the report is timely, it's helpful, it's raising very, very pertinent questions complementing the WDR 2019, but there are also some questions, you know.

What about the jobs that may never come? Are we overplaying the technology card? You know, how about youth entrepreneurship, you know, then the political economy as we hear from Lemma, you know, corruption all these things, you know. How do you react to all this first barrage?

MS. CHOI: First of all I want to thank all the three panelists for your very insightful comments. Some of them actually are addressed in our report, and then are those we have not addressed extensively, maybe we can consider addressing further in our upcoming Digital Economy Flagship.

So, specifically I agree with Mary that growth is a necessary but not sufficient condition for job creation. And I also agree with Tricia that we need more than digital technology, that we need a complementary analog effect. And also with Lemma that we should -- there is no old and new sector, any sector can innovate.

And also the point about digital technology is important, that it's not we are only emphasizing digital technology, we use a digital technology as a cross-cutting theme which can be used in agricultural sector, which we can be used in service sector, we are not saying we should develop effective sector in Africa, we should use digital technology to transform different sectors.

So, that's I think our key point. In terms of Mary's point, about that the jobs may never come to Africa. You're right that China may not offshore their production, and also as we may -- as we all know that Adidas closed down their factory in Bangladesh and opened it up in Germany because they're producing shoes with a 3-D printing for cheaper in Germany.

So, maybe such reshoring raise a concern for African countries that maybe they cannot follow the traditional industrialization-led growth. However, our report reviewed such evidence, and we saw that such a reassuring is very limited globally as of today, and then what's more limited in Africa?

So, we just argue that. We are not saying we have a (inaudible) opportunity, we are just arguing that there is urgency for African countries to act because they may have a (inaudible) account to take advantage over low wages and globalization.

But I also admit that they should also explore a new growth path which technology can open up. So, the last -- Lemma's point about the political economy, yes, it is true. So, it's related.

Also Trish, has a point that upskilling and digital technology, such as of Jumia or M-Pesa, it is true that our private-sector-driven and sort of digital upskilling were increasing e-commerce, but I think government has an important role making digital technology more inclusive.

The one example is Alibaba, as (inaudible), a village in China. So, (inaudible) village is essentially built around government transfer to the rural area, and making such e-commerce more inclusive. So, yes there is a political economy for such industrial policy, or government intervention can bring a good outcome also can bring a disaster, like corruption, and (inaudible). So, how do we do it is important.

But like just to conclude, I think we have a great opportunity today to inform policy discussion and then support such a government, because big data is complementing traditional sorts of data and also expanding our knowledge.

For example, using LinkedIn data our report shows that this FQ has been growing in 27 African countries, such information we didn't know before. And also there has been emerging micro-level evidence, including field experiment about this digital technologies effect on inclusion.

I think we should take advantage over such rich data source and microeconomics tool to really understand, and really investigate the best possible policy intervention the government should do, and then develop partner, while scholars should work together with the government.

And some more questions we could answer -- we could investigate this, what are the efficient market structure to make the technology of affordable for all, whether there are specific technology we should emphasize making -- supporting more low-skilled or low-educated workers, although the question can be addressed today, and I think -- at the fact that this week Nobel Prize, awarded by two developing economies --

MR. ZEUFACK: Three, three

MS. CHOI: -- three, three, which is encouraging us to supporting evidence-based policymaking.

MR. ZEUFACK: Excellent. Thank you so much. You know, these are great answers. I think one word that kept coming up -- before I open the floor -- one word that, you know, one expression that kept coming up is window of opportunity, right. Window of opportunity, how large it is, how small it is, that's certainly a question for investigation.

But when you visit a city like Awassa in Ethiopia and realize that over the past five years they have actually attracted more than 20,000 manufacturing jobs, and growing, then you realize that, you know, robots and 3D printing are not going to invade Africa tomorrow morning, right.

We probably still have some time before it happens. The question is how fast, you know, those technologies are going to be preventing those jobs from coming to Africa, and more importantly, I think the point that came out here also is this idea of leapfrogging, this idea of a different development path, and this idea of leveraging technology for all sectors, including manufacturing because manufacturing is changing itself.

Right so, digital can actually help, you know, improving the way we function in manufacturing. And agreeing with Lemma, the debate on premature deindustrialization may not be the most relevant one. And by the way we don't have a paper which is actually, you know, contesting that finding.

Anyway, so the floor is open. Raise your hand, please introduce yourself. Keep your questions short so that we can take as many as possible. Yes, sir?

QUESTIONER: I'm Dave Rabinowitz. About a century ago John Maynard Keynes predicted that by now people would be working 15 hours a week, and they'd be working 15 hours a week because they would not be comfortable working less than that.

It turns out since that time productivity increase has been even greater than he'd predicted, and I can tell you as a retired engineer, that there are no jobs that are not susceptible to automation. We can talk to detail later.

Now, if you look at the informal agricultural sector average around the year people are working less than 20 hours a week. Should Africa really accept the Western standard of a 40-hour work week? Or should Africa just take advantage of the fact that you're actually getting into this late, and start with a 20- or 15-hour work week, as the standard expectation?

MR. ZEUFACK: Thank you very much. Next, please introduce yourself, and just behind you. And please mention if you're directing your question to one member specifically, or --

QUESTIONER: Well, and because of the way forward is a collaborative effort, it's anybody who wants to answer,

MR. ZEUFACK: Okay.

MR. ZEUFACK: And what I like in your report is that you're stressing the importance of innovation, because what I -- I recall IBM was told by the Federal Government, you have to share your code. It was part of the agreement with the government, share your code. And then IBM became the platform for a lot of innovation.

The problem you have is the problem that China is now facing with American industry today. The big corporations want to keep their code like Coca-Cola keeps their code, in a vault. You can't do it. You will never get innovation that way, it's got to be shared. The university isn't enough, you've got to go train these unskilled workers in Africa, and you've got to rely on industry to supply those educators to train them.

Now that's how it's done. And you people who are in venture capital, it's important, I can't emphasize how wonderful that there's a group of bankers here, because that's where the problem lies. Until you say to our venture -- to an innovator you share your -- anything you’ve got you're willing to share. If it's commercial you share it, and even if it means that eventually you'll be out of business, and venture capital deals over that every day.

But the problem lies with the banker. If we can get bankers to understand the nature of innovation, it requires a platform.

MR. ZEUFACK: Okay. Thank you so much. I have a question here in front, please, and then you sir.

QUESTIONER: (Inaudible), and I'm a Fellow here at the Brookings Institution, Africa Growth Initiative. Congregations on an excellent report, as usual. I have a question especially as I have a forthcoming book on *Africa's Role in the Fourth Industrial Revolution*, riding the world biggest disruptive innovation.

So, can you be more specific about the opportunities that leader planning for the next 10 years, 20 years, and developing specific program in order to offer the opportunities to the youth. What should they be doing? We know that by 2035 about 450 jobs will be needed out of which 100 million -- 450 million of jobs will be needed in the (inaudible). An amount which about 100 million could be anticipated of quality jobs. So, what will you advise the leader to do to address the 300 million remaining one? Thank you.

MR. ZEUFACK: Thank you very much. Next, the gentleman behind you.

QUESTIONER: Hi. Thanks. I enjoyed the panel. My name is Lauf Kareo. I'm interested because you are talking about investing in human capital. How you guys are accounting for brain drain if people wanted to leave immediately after? You know, you could make much more money in Silicon Valley, or something like that. And then also how do you take into account the concentration of wealth? I think you guys had mentioned Uber, as an example. How can you make sure that it's African companies and technologies that are benefiting from this innovation?

MR. ZEUFACK: Excellent. Should we take two more and then get a round of answers? Yes, here, please?

Ms. EISENHOWER: Hi. I wanted to ask you about --

MR. ZEUFACK: Can you introduce yourself, please?

MS. EISENHOWER: Hi. My name is Emily Eisenhower. I wanted to ask about. So, in the United States the tech field has a reputation of being male-dominated and thinking about windows of opportunity, I wanted to ask about, you know, what are you seeing in terms of gender disparities in the field in Africa, and what can be done to address that?

MR. ZEUFACK: Excellent. One last question, just behind there, yes, thank you.

QUESTIONER: Hi. I'm Sheleshto, I'm also Fellow here at Brookings Institution. So I have a question about the role of competition policy in the telecom sector because, you know, many of the digital economies are value-adding on top of technology services such as SMS, and data, and other voice and similar, the services and so, companies, the way telecom companies are structured, how competitive the telecom sector is can define the outlook of the future of work the way that digital economies happen in practice.

So, if you could -- in the case of Kenya, for example, telecom -- Safaricom is known for pioneering M-Pesa, which is the famous mobile banking service, and Safaricom is often accused of being a monopoly firm and having close ties with the government. So, do you think that the telecom sector should be more competitive, or should it be more, should it work closely with the government to ensure that there is a more level playing field?

MR. ZEUFACK: Great. So, I've got a number of questions here for our excellent panel. So, should Africans work less? That's a big one. Twenty hours per week. Well, should I ask Mary to handle this one?

MS. HALLWARD-DRIEMEIER: Right so, I obviously those 20 hours a week vary enormously from times of the year when it's 100, and times when it's very close to zero. So, I'm sure the preference of smoothing it out would be there if that was even an option. I mean some of it comes to a standard of living right. So, I'm guessing our standard of living may still be higher than what Keynes thought it might have been when he said this a long time ago.

I think it gets very -- so, I think some of it is an individual choice on how much people want to work that necessarily putting some kind of regulation as to what it might be. Different countries are debating this in different ways, somewhat that's a political question, but I think a lot of it also is the standard of living that people are going to want to be able to have.

But I mean, one of the things that's also of interest right you think about the gig economy, is it actually gives an individual a fair amount of control over what kind of hours, when, and flexibility. You know, there's also some concerns to make sure people aren't getting abused in how -- what those would be.

So, there's as always trade-offs. So, there is this possibility in a number of the digitally-enabled work to give more flexibility to the worker, and recognition that there may be also new risks that they're being exposed to. So, I think there's going to need to be sort of continuous sort of looking at what some of those tradeoffs would be too.

MR. ZEUFACK: And I guess, if I may add something, you know, it's all about productivity, if we could raise productivity for agriculture in Africa which has been stagnant for the past two decades, if we could raise productivity in agriculture by introducing more technology, more mechanization, more education, for example, yeah, the number of hours worked by our farmers would clearly decline.

So it's certainly about, you know, raising productivity across the board for sure. Now, the next question --

MS. WILLIAMS: Hi --

MR. ZEUFACK: Yes.

MS. WILLIAMS: I was just going to jump in there and say, I mean, I'd love to know where those 20 hours a week comes from. I mean we did some studies a couple years ago where we looked at young people over a whole period of a whole year, in rural Ghana and rural Uganda, and we had them count the number of hours they spent on different activities. And what we found was they did a lot of different things, and women especially, did way more.

MR. ZEUFACK: Oh, yeah.

MS. WILLIAMS: You know, way more on the non -- or what we would call like the reproductive activities, the family, the care giving, I think it counts as work.

MR. ZEUFACK: Yes.

MS. WILLIAMS: Having a young toddler, oh, I can tell you it's work. (Laughter)

MR. ZEUFACK: Trish, can you build on that and address the gender divide question. Do you see that in the field, in your work with MasterCard?

MS. WILLIAMS: Absolutely. I mean, as Coul said in the introduction, we set a target of enabling 30 million young Africans to have dignified and fulfilling work by 2030 and, you know, 30 million is an awful lot of people, but it isn't nearly -- it's like 10 percent of the estimated challenge by then. So, we're just a drop in the bucket.

And we said to ourselves that we wanted 70 percent of those to be young women, and then we take a deep gulp and we look out there, we talked to different partners, and we say how are we going to actually reach women? And not just in the tech sector but, you know, across all sectors, and all different opportunities, and unsurprisingly this is really difficult, you know.

And one of the things we are committed to is building the evidence for what's working, for whom, and under what conditions? So, can we build more understanding of what the actual interventions are that are going to actually, you know, privileged women's opportunities. And it's incredibly difficult. I mean I don't think we find many things that naturally or that people are just thinking of it on their own, it often requires an intentional focus on gender inclusion to bring that to the surface.

MR. ZEUFACK: Great. Professor Lemma?

MR. SENBET: Yes.

MR. ZEUFACK: There's a question here on, you know, financing, venture capital, bankers, can bankers actually be expected to finance innovation, I'm not sure it's working, where. Venture capital, you know, how will Africa finance this digital revolution, Professor Senbet?

MR. SENBET: Okay. Let me begin by saying that there's already homegrown innovation taking place in Africa and it's actually showing mostly in the form of FinTechs. And I was actually preparing once a report for The World Bank, and I was the kind of mapping what the heck is going on.

And a matter of two years we have hundreds of FinTechs and they have actually began attracting money, not just from the donors. I started seeing that they're actually getting money from Silicon Valley. So, the issue is not that these guys are not innovating, the issue is really having -- enabling enhanced environment for them to innovate, and to scale more.

So, this is happening in Nigeria, and Kenya, and also South Africa. Again in terms of innovation, innovation doesn't depend on the institutional design of a financial institution or a bank, innovation could occur anywhere.

Very similar to the argument that we make talk about sectors, right. So, now as a big issue that we're facing in Africa is the scale, very thin markets, and disparate, fragmented, and I'm hoping that this big show that took place in Rwanda, you know, with AfCFTA, will actually help change that.

So, the answer for your question is that, yeah, as long as there are opportunities, and incentives, innovation, financial innovation can occur in a number of ways and it's actually happening but it's not moving as fast. I think in that context somebody asked a question about Safaricom.

MR. ZEUFACK: Yes.

MR. SENBET: And competition policies?

MR. ZEUFACK: Yes, can you handle that as well.

MR. SENBET: This is also one thing that we have to be careful about, because there is now growing digital financial services. So, one issue that we are facing is, how do you regulate digital financial services. And typically there are under multiple jurisdictions, so it takes like mobile bank. So, you have a telephone company, and then there's also banking service, right.

So, the question is, should it be regulated by a banker or banking regulator, or a telecom regulator? So, I was sitting on this Global Financial Inclusion Task Force in Washington, with debate on this, and we thought -- we decided that was the wrong question. It turns out that you have to do that by functions. Okay.

If somebody is providing a banking service I don't care where they are, they should be replaced as the providers of banking. So, now this -- Kenya is one of those countries which is actually getting ahead in this environment. I'm not I'm not sure that Safaricom is captured by the government. I just don't believe.

MR. ZEUFACK: Okay. Excellent. Jieun, you've heard all this interesting discussion, and questions, you know. As a co-author of the report what do you have to say on behalf of the team, as closing, what are the key messages you believe people should go home with?

MS. CHOI: Yes. Okay, yeah, I think --

MR. ZEUFACK: And that's going to be, you know, the closing of our panel. Go ahead, please.

MS. CHOI: I think our report can be summarized in one sentence. The future of work in Africa could be bright, if however move quickly. That's it from me. (Laughter)

MR. ZEUFACK: Thanks extremely brief and sharp. Thank you so much. And I would like you to, you know, acknowledge this wonderful panel for me, please. (Applause)

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