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MADE IN AFRICA:
TOWARD AN INDUSTRIALIZATION STRATEGY FOR THE CONTINENT

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P R O C E E D I N G S

MR. SY: Good morning everybody. My name is Amadou Sy and I serve as the director, Africa Growth Initiative here at Brookings AGI. We're happy to have you're here with this very nice decent British weather. So to know more about our working on Africa I encourage you to have a look at our website. We are happy today to host an excellent panel to discuss Africa's agenda for industrialization even as timely as African delegations are arriving in town for the IMF, World Bank spring meetings so again thank you for coming we know there are a lot events going on so we appreciate that you come to this one. These meetings are happening against the background of slow economic growth and a difficult external environment. In particular commodity prices have fallen significantly and most experts now agree that the new normal is a low for longed scenario for commodity prices. This is of course important for Africa because if you take the oil exporters and Angola, Cameroon, Chad, Republic of Congo, Guinea, Gabon, Nigeria and South Sudan who have about half of the regions GDP. So African policy makers are working on how to manage these external shocks and if you read recent budget speeches such as the one given by President Buhari of Nigeria or Minister Gordon of South Africa who by the way will be here Thursday at 8 a.m. so if you have some time we'd be happy to have you again. You will see that diversification of the economy is really a common theme. So this is important to build more resilient economies. Our own economic work shows that about half of the growth that we see these days in Africa is driven by external factors but it is also important to create jobs, it is also important to absorb the youth bulge and reduce poverty. So John Page today and our esteemed panelists will discuss how industrialization can be an important part of Africa's structural transformation. The debate will be informed by the findings of a multi-year joint project of the Africa Growth Initiative with the United Nations University World

Institute for Development Economics Research also known as UNU-WIDER and that project is called the Learning to Compete project. So findings to the L2C project are condensing a new book entitled Made in Africa: Learning to Compete in Industry which is available outside the room and more details if you are in to research are available in a series of working papers that are available on the UNU-WIDER website and will also be made available on our website. So let me now introduce John and it is an honor to do so. John is the former chief economist for Africa and director, Poverty Reduction at the World Bank. He is a research associate of the center of the study of African economies at Oxford University and the Oxford Center for the Study of Resource Rich Economies. I know that John also works on the Japanese economy so I always feel jealous when he takes a plane to go to Japan but hopefully we have him today. John, thank you.

MR. PAGE: Good morning everybody and thank you for coming out on a miserable morning in Washington at a relatively early hour. You might have noticed something already which is that one of our panelists had a bit of travel trouble this morning so we've done something which some of my colleagues say is rather a challenge for us which is we've gone into the 21st century and behind me looking over my shoulder is Margaret McMillan who will join us thanks to the magic of our IT people. Maggie can you hear me? I guess not but we'll see. We have a very, very distinguished group of people here today to talk about the industrialization in Africa and when Finn Tarp and I together with the African Development Bank began asking ourselves the question of why there was so little industry in Africa which was actually around 2010 it seemed that very few other people were really concerned about it and that certainly has changed. Industry is now on the agenda of African policy makers, of African research institutions, of African governments and if I just recollect in the last 12 months we've had initiatives by the African Union, by the Economic Commission for Africa, by UNIDO and by national governments to bring industry to the center stage where frankly it hasn't been for about 40 years. So one of the things that we wanted to accomplish on the work on Learning to Compete was to try to understand why industry had failed to plant itself on the African continent and what could be done about it. So we began Learning to Compete with a commitment to involve national researchers and national think tanks and for that I would like to recognize the close participation and collaboration of the 11 country based teams of researchers who are really at the heart of this research. We also wanted to do things a little bit differently from let's call them standard economic research projects. We not only wanted to the normal econometric work and to some extent some qualitative work but we also wanted country studies. We wanted to understand what the history of industrialization had been and in the ports of that history of industrialization what the effective policies good and bad might have been in Africa's industrialization story. We also wanted some comparative understandings. So in addition to looking at nine countries south of the Sahara we also undertook to look two countries in East Asia, Vietnam and Cambodia which are emerging “tigrettes” I guess one could call them and Tunisia in the north of Africa which has been arguably one of the two industrial success stories on the continent. The book that we're here to launch today and my friend Sir Paul Collier always reminds me that you never have a public event without making a shameless book plug, this book is called “Made in Africa” and we've somewhat humorously referred to it basically in his honor as our airport book. The reason why is not because we thought it would ever be something that was so popular people would actually buy it in an airport but we hoped that it would be the sort of book that a busy permanent secretary might read on an airplane while he was flying to a meeting somewhere and get a sense of what we had thought we learned from this project and get a sense of the kinds of changes in public policy we hoped governments would be making if they wished to industrialize. And I have a success case to report. I just returned from Dar es Salaam over the weekend and while I was there I had a chance to have a chat with Professor Adolph McKenda who is the Permanent Secretary for Trade and Investment in the Ministry of Industry Trade and Investment of Tanzania. And he mentioned to me that low and behold he had bought the book on Amazon and read it on an airplane between one set of meetings and another. So I've at least accomplished on success for the airport book. So while we will talk a bit about the book and I'm certainly going to task Finn Tarp one of our co-authors to tell you what he thinks of the main message of the book, we want to have a broader conversation and that's why we've brought the panel together that we have here today. Let me just try to briefly introduce each of them. On my immediate left we have Governor Benno Ndulu with the Bank of Tanzania. One think you will notice about Governor Ndulu is that his biography in the ones we've distributed to you is the shortest of any of the participants. This is I think a reflection of his modesty and certainly not on the accomplishments he has had in the long distinguished career of public service in Africa. To mention just a few of the highlights of his career after getting his Ph.D. at Northwestern and surviving the Chicago winters he returned to Tanzania to become a member of the faculty at the University of Dar es Salaam where he was a professor for many years. He then moved on to the Africa Economic Research Consortium where he was the executive director of the AERC which many of us regard as one of the most successful cases of institution and capacity booming in Africa. From there he moved to a period of time at the World Bank where he and I actually had the privilege of working together in the Africa Vice Presidency of the World Bank. He is an advisor to the vice president and he is the chief economist and then from there back to Tanzania to become first deputy governor and then governor of the Bank of Tanzania. He has been very much engaged in making economic policy and certainly in the conduct of economic and monetary policy not just in Tanzania alone but also in the East African community. So a long and very distinguished career in public service and of academic excellence. Next to him is Professor Finn Tarp who is director of UNI-WIDER and professor and coordinator of the Development Economics Research Group at the University of Copenhagen. Finn is really a leading international expert on aide, aide effectiveness, development strategy but he has also worked extensively on poverty, on income distribution, on growth and as you've seen laterally on industry and on the relationship between those and I hope in the course of our discussion he can talk a bit about how we see the relationship between industrial development and poverty which on the face of it many of you might think maybe not so intimately connected. He also was knighted by the Queen of Denmark in November of last year. My only regret is unlike in England the Danes are sufficiently modest so that we can't use that in the publicity for the book and call him Sir Finn Tarp but clearly a recognition of his service both to the Danish State and to economics more broadly. I'll introduce Kapil Kapoor. Kapil is the acting vice president for Sector Operations and Director of Strategy and Operational Policy at the African Development Bank Group in Abidjan. He's led the preparation of the new African Development Bank strategy for transformation to Africa over the next decade so deeply engaged in thinking about how the AFDB relates to the challenges of transformation and diversification in Africa's economies. He also led the preparation of the bank's private sector development strategy so he has a lot of insight into what the bank is trying to do on the private sector as well. As I said the AFDB was a very valuable partner in this undertaking responsible for conducting a number of the country studies and the other econometric studies so I hope that he has the capacity and the mandate to tell us a little bit about how this work might affect the way in which the bank thinks in terms of its longer term strategy for private sector development. Before he joined the African Development Bank Group he was a senior official at the World Bank. Finally our absent partner Margaret McMillan, Maggie is professor of economics at Tufts University. She is a senior research fellow at the International Food Policy Research Institute and a research associate at the NBER's program on international trade and investment. Her research which is quite extensive and very widely and well published is generally in the areas of international trade investment enterprise and development. At the moment she is engaged in two quite large projects designed to track the impact of Chinese and other foreign direct investments on the manufacturing sector in Africa. So I hope either in the discussion or during the questions and answers some of us might be able to ask her a bit about what is the role of China in industrializing Africa. She holds a Ph.D. from Columbia University, an N.P.A. from Princeton and a B.A. in math and economics from Boston University. So those are our panelists. As you can see they're quite varied and also a knowledgeable group and what I'll ask each of them to do beginning on my left with Professor Ndulu is to give us about five minutes of remarks on key things that they want to bring to the table today. Then we'll take about a half an hour of having a discussion which I'll attempt to moderate and then ideally we should still have about 30 minutes time left for questions and answers from the floor before we have to close. So I'll turn it over to Professor Ndulu.

MR. NDULU: Thank you very much. I guess we'll start with applause to the book. For sure I'm going to get a few copies myself. I know I'll only read one. About two years ago we had this very big meeting. The title was “Africa Rising” and you know optimism was extremely high and I think there was very good reason for it. Oddly, two years later I think people are rushing to quickly to find the pessimism that had disappeared for a while and everybody talks about how the end of the commodity boom will set Africa back to its former history. I think there are quite a few things that have happened in between in the last two decades that people need to take into account. I won't have very much time for that so that I can come back to the main topic of the day here but, one, commodity was not the whole story about Africa rising and in fact more than two thirds of the countries in the region that had posted very rapid growth were not driven by commodities. Secondly, even for those countries where commodities were important including for example Nigeria commodity is very big in exports but in Nigeria commodity is not as big in GDP. And people tend to forget that and growth is not about exports only. Thirdly, I think what people have also tended to forget is that services is a very big part of GDP in that region. For a whole range of countries more than half of the GDP actually comes from services. The fastest growing sectors have been in services, not just public administration it is communication services, it is banking and financial services. These are the most rapid growing sectors in most of the countries. So it is very important that we focus on transformation for sustainability. I thought I would use part of my five minutes just to put that sound bite so that people don't rush too quickly to throw hands up in the air and said there the region goes again. Now it is very important that Africa pursues a transformation strategy, diversification ultimately will underlying sustainability of Africa's growth. Now there are three main features I would like to mention by way of sound bites of a transformation strategy. First one, exploit Africa's comparative advantage in natural resources to transport transformation. Definitely the region has a strong comparative advantage in natural resources and the way to make use of that is partly to pursue natural resource based industrialization and this includes exploiting industrial minerals and gas to energy and energy to support industry. Agro processing given that agriculture is one of the largest resources the region has an outgrowing industrialization. All of these are part of the natural resource based industrialization feature. But also under natural resources exploit revenue from natural resource to finance transformation rather than to finance consumption. And this has to be part of the larger transformation strategy. Now, second, we need a job creating transformation. It is not just any transformation and for that Africa should be able to exploit its comparative advantage in youthful and potentially local labor. The youthfulness, the demography, of Africa is not necessarily a curse it can be harnessed really to drive growth and to support particularly labor intensive industrialization. (Inaudible) talks about 85 million jobs ready to move from China to the rest of the world as China's labor becomes more costly. Africa has got to position itself to get a fair share or a large share of that kind of jobs but must be ready to compete and here I think the importance of this book is very, very clear. So labor is not enough you need skills and employability even where you have skills you need to match skills to the demand for those skills. Very often we are in situations where firms are looking for skills and there are skills that are looking for jobs and the two don't match and therefore it is very important that we go beyond simply training and also to reduce transaction costs. Lastly, exploit Africa's potential as an enlarged market to support manufacturing for domestic consumption, including producing those products that are peculiar to the consumption part of the region and there are lots of those. Yams are not the most popular in other parts of the world but we do know you can produce a whole range of products that would be popular in that region. Now I'm saying this partly because the region in the last two decades has really enlarged in terms of its market size. Today Africa's PPP, GDP is 5.5 trillion dollars. If we integrated it would be the fifth largest economy in the world and this is a fact. Also the region most of the fastest growing middle class and right now about 60 percent of Africa's population lives in middle income countries believe it or not a lot has happened in between. And finally also now the region has the most rapid rate of urbanization which while has its own challenges creates a demand to support industrialization and in the course of that also learn how to compete. Thank you.

MR. PAGE: Thank you Governor. Now I've tasked Finn Tarp with the incredibly difficult task of trying to summarize four years of research in five minutes. He is up to the job -- he is a knight.

MR. TARP: Thank you very much. It is a great pleasure to be here today and I really am pleased to be sitting here next to Governor Ndulu as for more than 30 years been one of my inspirations in the work that I'm doing and I appreciate this very much. Let me also express my gratitude to our moderator John Page, to the Brookings Institute and the Africa Growth Initiative and to the African Development Bank for productive collaboration over the past five years on what has become known as the L2C, the Learning to Compete, which was an acronym that John of course came up with. It really has been quite an ambitious undertaking and I should say that it has produced quite a large amount of material. It ranges from the book we're launching today “Made in Africa,” two volumes that are forthcoming with Oxford University Press and two articles also in top academic journals and further on to a whole series of policy briefs. Why you may only get a few sort of glimpses today there is actually material to consult later on. For some of us it is actually good to have this material at hand. I once made the remark that one of the advantages of being an academic is you travel around with your knowledge in your head so it is much easier then with big suitcases but some of us have this sort of necessity to consult the written stuff as well. Now we've also had quite a number of high profile conferences both in Helsinki and elsewhere including for example Hanoi and Maputo and we've have policy seminars in all regions of the world and they've been quite numerous. So there is a lot of material available which can be consulted. In total eleven detailed compare to country case studies of industrialization and the evolution of public policies and nine cases are from Africa; Ethiopia, Guyana, Kenya, Mozambique, Nigeria, Senegal, Tanzania, Tunisia and Uganda and two cases as John already mentioned Vietnam and Cambodia. My own sort of insight into this in particular comes from Mozambique and Vietnam, two countries where I've spend about something like 14 years together so that at least provides a little bit of my background to this and what we've done in the process is we've tried to take stock of but we've also tried to develop the existing econometric knowledge emerging from firm level service. We have tried to do our best effort to try to actually bring together a rather diverse set of pieces of data and information and tried to tease out what we believe we can sell. But we have also added a whole series of quantitative surveys of FDI firms and linked domestic enterprises. So we've sort of been trying on the one hand to be tough data crunchers but at the same time also try to ask the quantitative questions and it is sort of the volume as John has already pointed out that's been launched today tries to synthesize this “Made in Africa.” I'd like to add my appreciation along with the ones that John already did to the research team. It is actually a group of modern more than 100 colleagues from all around the world and it is quite an impressive group ranging from teams for each country but also going beyond so this is not just a project that has been implemented with people from that outside. It actually has had country teams based in the countries in trying to contribute their insights. There's one the sort of authors, co-authors of the Made in Africa I wish to express my gratitude for all of his work. And John Page and I we over the years met quite frequently at the semiannual research workshops at the African research consortium that Benno led for many years and about six years ago we started intensive dialogue which gradually tuned in on the following questions. Why is there so little industry in Africa? Does it matter? Is it realistic for Africa to attempt to break in to global markets and manufacturing? And what are the policy options available to African governments? This sort of type of approach fitted quite well with the work program at the time that UNU-WIDER was grappling with because we deliberately decided that we were going to try to ask some of the bigger questions in development. I mean, development economics has tended to become quite micro focused which is fine but there are also some big questions out there that policy makers need to address and we were sort of thinking that these would be one of the areas that one should dig into. Now John and I have both worked on and in Africa for almost four decades from different starting points and platforms and sort of gradually the idea of Learning to Compete project matured. So what did we find? Well first and foremost that Africa began its post in economic development with a strong commitment to industry. There was a very strong commitment but in fact Africa has deindustrialized. The reason the region didn't industrialize is partly due to bad luck. For me this is most clearly illustrated by the case of Mozambique which was physically destroyed in the 1980's due to a devastating war. I once interviewed the former Minister of Foreign Affairs of South Africa and he sort of said well yeah there was one thing he did regret and that was that they destroyed Mozambique when there really was no need for that and that was the 1980's. That was pretty unlucky for Mozambique. And just to make the point even clearer I was analyzing a whole series of plans for updating for renovating the Mozambique cashew industry which was sabotaged the same day when we signed the big international contract for the renovation. There was a lot of bad luck involved. In the terms of trade shocks and economic crisis of the 1980's brought two decades of micro economic stabilization, trade liberalization and privatization. So when Africa reemerged around the turn of the 21st century African industry was no longer competing with the high wage industrial north it was competing with Asia. Now you could argue from the point of view industrial development the timing of the region's economic decline and recovery was certainly unlucky to say the least. I think it is also fair to say that the inability to industrialize has also been due to bad policy. I mean the "Made in

Africa" volume highlights a remarkable similarity in the policies for industrial development followed by countries in sub-Saharan Africa. We've state lived import substitution. We've seen very orthodox structured adjustment and we've seen somewhat narrow minded reform of the investment climate being pushed. None of these policy regimes have really succeeded in sparking dynamic industrial growth. Now what we were aiming to do with the Made in Africa was to try to help provide a diagnosis of the present situation and we do argue that Africa can indeed break into global markets. Governor Ndulu has already highlighted some of the key points. But it does require new thinking both in Africa and among its development partners. One of the unifying themes in the eight African case studies is the predominant role of donor driven investment climate reforms. The Made in Africa volume points out that not much more is needed then regulatory reform. There is this sort of strange parallel to the discussions in the 1980's about getting prices right. I mean it is a good thing to get prices right but that is only one of the things you need to do. Getting regulatory reforms right is fine, you should do it. But you have to have a much broader approach and understanding of the many complexities involved in actually getting gold. So what are some of the strong recommendations that we point to? There is a need for an export push type approach such as the ones undertaken by for example Cambodia, Tunisia and Vietnam. But policies designed to promote information in industrial clusters can be very helpful, noting the special policies are complimentary to both the export push and a strong need for capability building initiatives across the board. But also there is a need for high level government commitment to the promotion of foreign direct investment and the building of better investment promotion institutions. One shouldn't be naïve about it but it is important to recognize that if you get it right then both the finance and the technology and knowledge that can be developed through these linkages can be very important in getting gold. I think maybe the most important message is it really is not enough just to do these things individually. You have to somehow try to avoid doing it piece meal. Otherwise African economies will not get above that important threshold which we have seen for example Vietnam getting above where things start then to moving strongly forward in a self-reinforcing manner. So I think it is correct to say that the core message is that Africa can and will have to learn to compete once donors and policy makers accept the need for a very comprehensive strategy for industrial development and actually follows it up with very specific measures in practice to make this happen but I can be done and I think it is important for all of us to accept that when grappling with some of these bigger issues you can't always get things very precisely right but it is probably a good idea to grapple with these big questions and getting it approximately right rather than precisely wrong. Thank you Chair.

MR. PAGE: Thank you Finn. Were she sitting here Margaret McMillan would now be the next speaker. I see she has now beamed in over my left shoulder again. Let's see if it works. I'm going to turn to Maggie and ask her for five minutes or so of remarks.

MS. MCMILLAN: So just to make this a bit lively I'm going to disagree with Finn about this idea that Africa is deindustrializing and my main message this morning is that by main measures African manufacturing is on an upswing. And as I see it manufacturing is set to continue to advance. Why do I say this? Well let me give you some highlights. So manufacturing exports in the continent are growing between 2005 and 2014 the value of manufactured exports from African countries to the rest of the world doubled in value increasing from around 30 billion US dollars to 60 billion dollars. Of these manufacturing exports intra African exports are becoming increasingly important. In other words production for domestic markets is picking up. I find this really, really exciting and I've been supported very much in my work by the International Food

Policy Research Institute and by the IGC under the offices of John. I was Dar es Salaam in January and I wanted to see for myself what was going on in terms of manufacturing. So I went to the grocery store and I took about 50 photos of things said to be manufactured in Tanzania from White Dent toothpaste to toothbrushes to fruit juices to plastic bags and containers and so many items. So that was interesting and surprising to me because I had lived in Tanzania from 1989 to 1992 and I had never seen anything like it before. And then separately John and I were asked by the African Center for Economic Transformation we were asked by Yaw Ansu to help prepare a background note on manufacturing for a conference he just hosted in Rwanda studying a design to get policy makers together to talk about manufacturing, the importance of it and where it is going and how to help it to grow. And in that policy memo we were provided a lot of data from the Overseas Development Institute and what was most fascinating about the data is that it showed this trend in manufacturing exports but it also showed the increasing importance of domestic markets. So the value of manufactured exports from African countries to other African countries went from around 9 billion dollars in 2005 to a little over 30 billion dollars in 2014. So in other words these exports increased by more than 200 percent. I think this is interesting and important for two reasons. First domestic demand is bound to continue to grow given the low capita income levels in most African countries and this means that the product for these markets will expand for several years to come. Second most of this manufacturing appears to be driven by domestically owned firms and maybe Benno can speak this. But a great example of this in Tanzania is this company called Chemicotex which was founded in 1970 but only in 2009 did it start exporting to the Democratic Republic of Congo, Kenya, Uganda, Rwanda, South Africa and Zambia. This company started by building its transportation networks in Tanzania. It has 12 branches and distribution centers and it distributes to almost 10,000 customers every week. And their exports to countries in Africa outside Tanzania are growing quite a bit. And the level of exports to the rest of the world off the continent has increased but not by nearly as much. Now Ethiopia is an interesting contrast where manufacturing exports are primarily dominated by exports to markets outside the continent and part of the reason for this growth in exports from Ethiopia although the growth has not been phenomenal by any stretch of the imagination has partly been led by the investment from China, Turkey and Europe notably not much investment at all from the United States. The extent to which this type of export platform FDI will continue to grow is a big question mark. There is a woman named Helen Hyde who is Unita's Goodwill Ambassador to Africa. She is Chinese. She set up a shoe manufacturing company in Ethiopia. She set up her own garment manufacturing company in Rwanda and she believed that this type of foreign direct investment is likely to continue to grow from China to Africa for two reasons. One is the high wages and the increased wages in China. So manufacturing is slowing down in China but she also, let me say I also believe that there are strong geo political reasons for this sort of foreign direct investment to continue to increase. China and India are in head to head competition and anything China can do in Africa to outpace India's growth in manufacturing I think it will do. So I think there is some room for optimism on that front but I think there is less certainty about that type of investment. Now the last thing I want to make is that it has to do with employment in manufacturing and this too has grown rapidly so in 2005 again the numbers we have show that there were 10 million people in African countries engaged in manufacturing. By 2014 there were a little over 19 million employees in the manufacturing sector. If that was all of the formal manufacturing sector then we would have seen even greater growth in manufacturing for exports. But the truth is that only six percent of the employment in manufacturing in Ethiopia for example is in the formal sector. In Tanzania 22 percent of the employment in manufacturing is in the formal sector. So the bottom line is that much of this employment growth in manufacturing is actually taking place in the informal sector. That does not have to be a bad thing. Some of the much more in depth work that I'm doing in Tanzania shows that using firm level data for the informal manufacturing sector in Tanzania we've shown there's an enormous amount of productivity among these firms and I think it is going to be extremely important going forward to integrate some of the best of these firms into the formal manufacturing process integrate them with the larger manufacturing firms. Because if this doesn't happen then we're not building a strong indigenous private sector in Tanzania and this issue about the informal sector is not just true for Tanzania it is true for other countries in Africa that I've worked on. Thank you.

MR. PAGE: Finally but certainly not least Kapil Kapoor.

MR. KAPOOR: Thanks very much John. You know when John introduced me in the very beginning he talked about the fact that I had led the preparation of a long term 10 year strategy for the African Development Bank. But about six-seven months ago when our new president was elected to office one of the first questions he asked was the strategy is all fine but what are the four or five key areas that we really want to prioritize and some of you have heard him since then this agenda has become known popularly as the high five agenda of which industrialized Africa is one of them so I will come to that in a minute. But you just heard maybe what might appear to be two conflicting points of view over here but actually they're very consistent. It is not as if things are not happening on the continent, a lot is happening on the continent and a lot of growth is taking place in manufacturing. But the fact of the matter is that manufacturing in Africa just accounts for less than two percent of global manufacturing and has been at that rate for well over a decade and surely there is something wrong with that. So that is why when we talk about the need to industrialize Africa we're looking at that in a much broader context of, as you mentioned, the need to create jobs. Just to give you an example Africa needs to create about 11 million well paid productive jobs per year and it is only doing about 3 million a year right now so the gap is about 8 million. Now that doesn't mean that people aren't getting some sort of employment. They are employed in the informal sector as was mentioned, they're employed in agriculture but if you're talking about well-paid consistent jobs the employment gap is about 8 million over a decade and that's about 80 million jobs that the continent needs to create and are they going to be the jobs that will leave China and come to Africa? There are many countries in the world competing for those jobs so Africa needs to compete for those jobs. And so it is taking all of these into account that we've just come up with a bank with a new strategy for industrializing Africa which actually relies heavily on the recommendations of this book which will be discussed at our annual meetings in Lusaka in May and Paul Collier, John and others will be there to help discuss both this book and our industrial strategy. What is it that our strategy aims to do to try and operationalize some of these things that we talk about? Firstly there is a realization that there are a lot of structural challenges that Africa faces and it has been to industrialize. We talked about the policy regulatory environment but there are also significant infrastructure constraints which any survey that you talk to and any private sector company that you talk to will pinpoint infrastructure right up there. And even within infrastructure the key constraints to industrialization is the lack of energy. You have countries on the continent where the access to energy is less than five percent. But how do you talk about industrializing the continent if on average 30 percent of your population continent wide or less than 40 percent has access to energy and that is one of the priorities that we are pushing is light up and power Africa which means we need about 60 to 90 billion dollars a year just to meet that one constraint which is a constraint on the infrastructure side one sub constraint and there are many other constraints that Africa faces but that is just the energy constraint to try and help industrialize Africa. A second -- we talked about comparative advantage certainly extractive but we are focusing a lot of attention on the agriculture sector. A second priority is feed Africa. To me this whole area of agriculture, agro industrialization as a stepping stone to industrialization is something that has really come right now. The reason I say that is we all know that about 70 percent of the population of the continent relies on agriculture but the fact of the matter is that the vast majority of these jobs are subsistence jobs. People are just treating agriculture not as a business but as a way of life. It is something to fall back on and that's the mental mindset that we are trying to change through our feed Africa strategy which is actually very closely linked to the work we're doing on industrialization. Because I think one of the biggest areas and most promising areas that lends itself for industrialization in Africa is the agricultural sector. So yes the policy environment, yes the access to infrastructure, access to markets. We tend to talk about Africa as one giant entity but the fact of the matter is you are actually dealing with 54 countries which are very, very different. On the one hand you have success stories for industrialization like Tunisia which was mentioned. You also have countries like Kenya where manufacturing GDP went up by 180 percent in less than five years -- so it can be done. But then you've got other countries on the continent which are really lacking behind with per capita manufacturing GDP is $100. The average for the continent per capita manufacturing GDP is about $700; compare that to about $3,500 for Asia or $2,500 for Latin America. There are countries in Africa with per capita manufacturing GDP is $100. So there is a long, long way to go. So, yes, policies, infrastructure, access to markets and the next one is access to finance. The vast majority of the population which works in the private sector on the continent is unbanked. These are largely informal establishment. Africa has roughly 50 million small and medium enterprises most of which don't have access to finance. So these are the kinds of structural constraints that we are trying to battle with when we talk about industrializing Africa. Yes there are many positive factors. People talked about organization. Forty percent of the continent is urbanized to that is something that is optimistic but also can be a time bomb. The young population of the continent a huge source of optimism but yet again a huge challenge as well. So I think there is a lot of very positive things happening on the continent and a lot of very positive specific examples that you can pick to say hey this is great but when you step back and look at it continent wide a lot of very daunting challenges as well. And what we've tried to do is pull these things together into a document on industrializing Africa which we hope to launch in May. What frightens me personally when we have these conversations is the scale of what we're talking about. So earlier in my conversation I talked about infrastructure challenges and we talked about energy. You're going to require as I said in that one area 60 to 90 billion dollars, far more than the capacity of all the multilaterals, all the bilaterals combined. Much of these resources are not going to come from FDI much of these resources are not going to come from the donors they're going to come from within Africa, from within the governments, from within the private sector on the continent. That's where we've got to focus on. The same thing applies with agriculture. Thirty to forty billion dollars a year that is needed so the financial ask is huge, the need for coordination among the multiple players that are involved whether it is the World Bank, the African Development Bank, the bilaterals, the private sector, they are huge. Everyone is doing a little bit of very interesting work but the question is how does it all come together and how do we pull it together? I mean I think everyone agrees on the objective. No one denies that there is a need to industrialize Africa. No one denies that there is a need to feed Africa. No one denies that there is a need to light up and power Africa. But despite all that good will in the world the key challenge is how do we come together and collectively channel our energies into providing the resources both human, technical, financial into helping Africa achieve what it really wants to do. Thank you.

MR. PAGE: Thank you Kapil. I'm very conscious of the fact that you've invested on this rather rainy day to come and I want to get you into the conversation but I also want amortize my investment on some questions for the panel. So what I'm going to do is ask each one of the panelists one question and see if I can get them to give me a relatively brief answer and then we'll take the remainder of the time to actually invite questions and answers from the floor. So let me start with Governor Ndulu. Governor Ndulu warned us not to prematurely expect the demise of the African growth miracle as the result of the changing circumstances in the world economy. But clearly all of us including those of us who look at our 401k accounts and other things are a little bit worried about the state of the global economy and I wonder Benno if you would share some thoughts perhaps on while it is premature to declare doom quite clearly you, your colleagues in central banks and your colleagues in government must be thinking about do we need to be making some strategic shifts now? Do we need to respond to this in some way beyond what business as usual has been and I suspect everyone in the room would love to hear if you've got some insights into that where you think governments and central banks may be going over the next few years if we are in fact confronted with a slowdown in the global economy.

MR. NDULU: I think one of the key challenges that is keeping a lot of us sleepless and that is partly to this big drive of investment in infrastructure and everybody for good reason pushes that particular line. But I'm willing to bet that in the next five to six years the region will be faced with two major challenges in relation to that. One is currency mismatch and the other one is maturity mismatch. We know infrastructure is largely nontradeable while financing that with a lot of short to medium term credit whether it is Eurobond issuance or any of the other medium term credit, the revenue stream from this is all in local currency, whether its power, its telecoms. But you have to service your debt in foreign currency. Very soon the real constraint won't just be whether you are solvent enough to pay your debts but whether you're liquid enough in terms of foreign currency to meet your obligations. That is why I think the theme in the book on the export push is exactly the right thing that needs to be pursued. We tend to forget this. On the maturity side we know infrastructure pays off in a lot longer period and most likely for a number of countries their obligations to service that debt arrive before the impact arrives. Somehow that tends to be a little bigger problem but it may lead to solvency issues. So I think we have got focus our minds exactly in getting the export part of the push very, very, very clear because ultimately it can prove to be there and the very point of undoing all the good things that are being done. So we know it is very important to get that infrastructure right and the investment there but it has to be done in a manner with the financial packages which make sense and sometimes we tend to forget that. So I think I would have spoken even on behalf of my colleagues in the same job I have. We all spend sleepless nights thinking about it.

MR. PAGE: Thank you Governor. One of the happy tasks of being the Moderator is to be able to actually jump around and I want to come back to Kapil Kapoor because he mentioned to you the extraordinary size of the infrastructure and the African Bank's commitment to try to close that and I just wanted to ask Kapil two things. First of all how is the bank trying to deal with the gap between aspirations, what people want to have in terms of infrastructure, and resources? And secondly are there any new ideas in terms of financial engineering or teaming with the private sector that are coming out that could help solve some of the issues that the governor has raised. Because some of us over the years have written for example about the fact that much of the paid up capital of the regional development banks could be used in one way or another perhaps to ease the nightmares that the Central Bank Governors are having with respect to term of borrowing for infrastructure development.

MR. KAPOOR: Absolutely and I think there is a growing realization among all the banks, World Bank, Regional Bank that it is not so much about our own financing but in terms of what we can do to leverage financing and there is a lot of discussion right now that is taking place about the kind of instruments that we can put on the table which will attack capital from outside. But having said that I think this issue of currency mismatch and maturity mismatch is an extremely important one and one that we are focusing on quite a bit. I think central to this whole discussion is how our governments utilizing their own resources. As you know on average Africa has made a lot of progress in terms of domestic resource mobilization but there is a long way to go. Large segments of the economy remained untaxed because of underdeveloped markets and so forth and there is a huge push being made to look at things like simplifying tax codes, strengthening tax administration, how do you fix the illicit financial flows that are taking place because if you start controlling that the amount of domestic capital that becomes available to finance infrastructure needs I think grows up pretty significantly. Also if you look at within the continent sovereign wealth funds and pension funds we are increasingly beginning to have conversations with African based pension funds who are saying that there maturity profiles are looking for investments in African infrastructure. And so the conversation really is about saying how do we take these trillions of dollars actually which are available which are not yet concentrating and focusing on the infrastructure sector and make the environment conducive by derisking some of these investments. So that is another area that we're focusing on. Yet another one is the development of the domestic capital markets themselves but how do you mobilize domestic savings within the continent and provide them with avenues for investment in infrastructure because I completely agree that you cannot finance African infrastructure on the base of short term foreign borrowing. It is a recipe for disaster and the kind of scale that we are talking about does not lend itself to that sort of thing.

MR. PAGE: Thanks Kapil. I'm going to leave the last word to Maggie because she is sort of looming over my left shoulder and come back to Finn Tarp. Finn began his professional life with a passion for agriculture and he spent an enormous amount of time thinking about agriculture so it is a little bit ironic that he finds himself in a panel on industrialization. The question I wanted to ask Finn is in a world in limited resources and limited policy attention now that industry is back on the radar screen must it be an either or proposition in terms of agricultural development and improving agriculture productivity versus industrialization or can we think of a middle path let's call it in which agriculture receives the attention that it has failed to receive and certainly has merited but we don't completely lose sight again of the need to diversify and industrialize.

MR. TARP: Thank John. I hope it is okay that I start by saying that I don't actually think that Maggie and I we disagree that much. I mean the description Maggie was giving is pretty much correct. But it is not a description of what has happened since 1975 which is where I started. I think that just needs to be kept in mind when you think about the long run historical developments and then what is happening more recently. I am myself among those who actually am incredibly encouraged about what is going on. I very much agree with Governor Ndulu that we should not underestimate that from somewhere around 1995 we can argue a lot about the exact date and so on but somewhere around 1995 things have been on a very different track. So John how do I sort of make the two sides of my life hang together? I should maybe say that we are actually launching from the WIDER side another book next week in Stockholm which is exactly on agriculture and poverty so there are sort of two legs involved here. If you look very carefully at the Ethiopian experience and why Ethiopia has been doing well over the last number of 15 to 20 years this is going back to discussions that we've had in developed economics about agriculture and development industrialization. We've had senior colleagues who have been trying to formulate approaches referred to as ADLI Agricultural Development Led Industrialization. And there is still a lot of truth in that. It is still a fact that when the majority of the population is in agriculture having a significant impact on poverty you cannot just ignore agriculture. One of the core issues in the poverty story about Africa is that agriculture productivity has not been moving. Now it is no wonder to some extent because what was the focus of the millennium development goal at the NDGM agenda. That was not about agriculture productivity. That was about social services. That was about education and health. I am not saying that education and health are not a good thing. After all I am a university professor but what I am saying is that those types of investments they are long maturing and it is not enough just to be healthy and have some education. You also need to have a productive agriculture and that has not been attended to by the donors and by African governments. We are still very far from the attention declared as a goal in Maputo of all places. But attention to agriculture is not in contradiction with attention to manufacturing. Manufacturing needs inputs. Those inputs come from agriculture. Markets for industrial products are in agriculture. So instead of having two worlds that are not hanging together, no you want to have one integrated economy. Sure over the longer run it is very clear that the relative importance of agriculture should be declining and so but we are very far from that situation here. I really don't see this as either/or. I see this actually as both/and, and when you actually dig into some of the success cases you will see that those cases that have done well also in terms of industrialization and manufacturing and so on are actually the cases that have paid attention to agriculture. So the two things go together. That's how I would tend to respond. I don't think that sort of when you're thinking about a coherent economy that that can be an either or. That is a comprehensive and flows hang together.

MR. PAGE: Thanks Finn. Well now to Maggie for the last question. You and Governor Ndulu in fact were agreeing certainly on one point which is that the recent dynamism in industry that you identified very much serves a market which is a national and regional market in Africa producing products that are in some sense appropriate to an emerging African middle class and rising per capita incomes across the board. These are the small and medium producers. Made in Africa is if you like somewhat large scale export oriented bias and I'm grateful to Governor Ndulu for pointing out why one wants export oriented manufacturing. But it seems to me that there's some scope here for an integrated industrial development strategy that would actually span if you like using some new and creative thinking the range of small, medium and large scale enterprise. So I wonder Maggie you could give us some thoughts about if you were given carte blanche to design an industrialization strategy that would incorporate both your concerns for what you call the in between sector and our concerns for large scale export oriented manufacturing what would be some of the key elements of such a program?

MS. MCMILLAN: Okay before I answer that question since you have two very high level policy makers here I just want to make two another points related to this. I'm not going to talk about infrastructure we all know it is important and the World Bank did a report on Ethiopia that shows Ethiopia is sort of an innovative strategy for financing infrastructure including financial repression which the World Bank did not totally denigrate. Production for domestic markets can say foreign exchange and I would really love to see some estimates that we can lead about how large the scope in this type of manufacturing could be in Africa whether it is for domestic markets for export to regional markets and I have in my head a model like the United States where some countries maybe like Tanzania or Ethiopia specialize in manufacturing, some other places maybe like Rwanda and Kenya specialize in more high tech services. In any case I think that so when you talk about an infrastructure you can actually link that to the kind of manufacturing that you do and the ability to finance industry. The other point which is going to get what I would do if I could. So I think this is a really important thing for us all to think about and I'm not name dropping I promise but I had a conversation about this with Paul Pudman this week because I happen to go and give a talk at the graduate seminar in the city and University of New York and as we were talking about manufacturing versus services and what are good jobs and not good jobs and I think he raised this issue and I think it is true that a lot of the reason manufacturing jobs in the United States are what we call good jobs has to do with institutional factors. So it is the unions, it is the health benefits; it is all the things that go with the jobs it is not special to manufacturing per se. So if you take that and you think about Africa right now what I would like to see is let me just pick one thing and the issue of financing I think it is really important so guess what Barclays is pulling out of Africa. Here is a huge opportunity for Africans to take charge of the banking system and get financed in the hands of the small African businesses and the large African businesses. So that's one thing that would be part of the strategy and the other thing is recognizing the fact that we call it the informal sector which has a negative connotation but 50 percent of the people operating in these businesses report that they wouldn't take a full time salary job if they were offered that job. So I mean I think coming up with a different way to recognize that you don't just make jobs out of nothing. People are making the jobs for themselves and we have to support the guys who have the jobs that they say they like but they could use more help in terms of maybe insurance or access to finance. I'm rambling but James Dimon who is the CEO of JPMorgan Chase there was a very interesting interview with him on Bloomberg the Africa Opportunity and whenever you think of James Dimon he said if we believe the Africa Rising Narrative we have to get finance in the hands of consumers and small African businesses. I would rather see the African Development Bank and the Tanzanian Government Bank work with the private sector and figure out who is it that can take these Barclays branches and turn them into banks that will serve not just the large firms but also the small firms with huge potential for productivity gain.

MR. PAGE: Thank you. As usual I never succeed as a moderator in actually meeting these tick tock forms that they give us but we did start 10 minutes. Okay let's take about 20 minutes to take questions from the floor. We'll take several questions, please identify yourself and your affiliation as you ask the question and then I will turn it over to the panel. Let's start over here.

MS. HARRINGTON: Hi I'm Briggette Harrington and I own a business in Ghana called Golf World Limited and it is a comment that I'm going to make and then I'm going to ask for other comments. I listened to you all talk about the informal businesses and the fact that some kind of way taxes get avoided. What my experience is, is I find that when foreign direct investment goes into the country and you establish a business and you follow all the guidelines then the tax man keeps showing up on your door weekly. Even if you in America we're accustomed to paying our taxes on time because we know that we don't want to get in trouble with the IRS. So one of our practices has always been to pay all of these taxes before they're due but yet and still they continue to show up and they harass us on a regular basis and this has been going on for 10 years. And so finally you get to a point where you say enough already so I think that in considering and with the thought leaders here in considering what happens in terms of foreign direct investment that perhaps that can be a subject that is discussed and I'd like to hear your comments about that.

MR. NEWFARMER: Richard Newfarmer with International Growth Center. The structure of international trade actually has changed rather considerably in the last 20 to 30 years and with the whole movement towards global value chains, trade and tasks and the like. Of course this rewards speed in terms of ports, in terms of crossing borders, power finance, we've talked about those things and actually I think Africa has done very well. I mean times in Mombasa have gone way down for example or transit times through Kenya have gone way down. So those sets of policy domains I think position in the region really well particularly on services and that too is important. My question has to do more with tariffs and non-tariffs barriers. So maybe this is a question to Maggie when she talked about a growth strategy for the region didn't mention tariffs but if anything we see in East Africa at least movements towards increasing tariffs. Movements toward classifying intermediate inputs as consumer goods or the sensitive product list is increasing, the ban on second hand clothing for example. Is this a concern or is this being used strategically as a good element of industrial policy to promote growth?

MR. QUA: Good morning my name is Tula Qua I'm with Smith, Buckland and Associates. I am also a former graduate of the University of Ghana so this is a topic that we discussed heavily in school. I wanted to talk to Mr. Kapoor because he mentioned energy. So in Ghana we have had the effects of climate change. Our major river the Volta River has dropped significantly so that only two of the six turbines of the 1000 megawatt hydroelectricity plant is operational and there has been little shifts to other cleaner, more green energy sources. That is one issue. The other issue is the government maintains a complete monopoly on energy so even though there are private energy companies in the country they're not allowed to sell directly to consumers they are only allowed to sell it to the government which then sells it overseas. So how do we fix this policy issue?

MR. FREEMAN: Thank you I'm Lawrence Freeman I've been analyzing economic policies for Africa for about 25 years. I write for ER Magazine. I think the narrative of the Africa Rising was always flawed because services no matter how large a part of the GDP they are are not equal to manufacturing agriculture infrastructure because they don't add physical value to the economy and that's why you have such a shortage of manufacturing. It is actually a crime to have 2 to 3 percent for the African continent. The model that we do have and you've pointed out with Ethiopia which could be a template for Africa is also if you look at Ethiopia and you look at China and the Silk Road which is an infrastructure driven approach it is not an add on it is the water, energy, roads, rail drive the economy and employ people and add the physical value. And I think that the finding of this with this Silk Road fund with the AIIB, with the Bricks New Development Bank in state credit is absolutely necessary for financing and the private sector will never, ever finance the needs of infrastructure. My studies show that Africa needs about 1600 gigawatts of electricity to live like we do in this room and that will never, ever be financed by the private sector. So I think we do have a model and I think we have totally neglect manufacturing industry. We haven't produced one agro industrial sovereign state yet in Africa and that should be our goal.

MR. PAGE: All right four very different questions but let me return to the panel and I think I'll start with Kapil.

MR. KAPOOR: Let me talk about energy and infrastructure. I think what I'd urge you to do actually is to take a look at the strategy for lighting up and power Africa that we are coming up with and will relaunch again next month. There is a huge push toward alternative forms of cleaner, greener energy continent wide. I mean when we talk about powering and lighting up Africa we say hydro, coal everything has got to go into the energy mix. But the question is where is a lot of the new investment going to come from and Africa has a lot of potential in solar and wind and you do see a lot of investment going in there. But just to come back to the last speaker and this rather sort of firm opinion will not finance we actually see a lot of private sector interest and investment in infrastructure in Africa today. Not just African private sector but global private sector. Just last week we were on our tour of countries in Japan, Korea and China with phenomenal private sector interest for financing but a key requirement being can you come up to us with "bankable" projects. If there are projects that are available which you have vetted for rates of return and done the preparatory work and some organizations like the African Development Bank and have skin in the game because there is of course risk aversion and there is concern for going in cold into some countries where they don't know too well. The private sector seems to be telling us very clearly that the new model of financing will not be to just public sector one, not just to private sector one but will be one where in situations like the World Bank, the African Development Bank might come in and provide some sort of investment, provide some sort of debt, might take an equity stake, might do some kind of a guarantee facility and then the government and the private sector will come in. There seems to be a lot of interest so I wouldn't quite dismiss private sector out of hand I do admit however state, capital, domestic resources are going to be extremely important going forward.

MR. TARP: There is actually a link between the first and last two questions and let me try to be sort of maybe slightly provocative just in the interest of at least making a point. There is a lot of attention certainly in the donor community and the

IMF and World Bank on insisting that African governments need to build up their taxation capacity. It is hard to get taxes collected from a lot of the African businesses and in many cases in my view you shouldn't even try. You should be focusing your attention on where it is that the bigger resources are sitting and that is really where you should be focusing your attention and in many cases allow a much more gradual process of building up the taxation capacity. I'm all for helping and strengthening the system and build it up slowly. Setting very demanding targets for exactly how much taxation you should collect domestically and so on can in some cases be counterproductive and it leads to the kinds of situations that are mentioned for Ghana. Don't get me wrong. In the long run you will have to collect your taxation but we are also talking about large scale investments in relatively capital intensive activities of natural resources where there is a lot of money and we should not at all overlook the fact that when there is discussions about profit shifting and so on this is not just some sort of hypothetical thing. At WIDER we've just completed a study of 325,000 observations of enterprise transactions. And what comes out very, very strongly is the losers in the game are the poorer countries. So yes we are having other sources of financing then just trying to get the money out of the small, medium or even sometimes the slightly bigger enterprises. So I would say that there is something there that we should think very carefully about. You must understand that I spent some time in a Nordic environment and a Nordic environment right now foreign aid for example in the case of Denmark and Finland is being cut by 50 percent. Now I'm spending part of my time to remind people that while there is a lot of potential in the private sector there are lots of things that the private sector will not do unless the private sector manages to set frameworks and in many cases go first. So I would strongly argue that that is important that that is not forgotten. On the second observation one of the reasons for optimism regarding African countries and process on industrialization is exactly what you're referring to in terms of the global value chains. There are opportunities here and those are exactly among the ones that we were having in mind when we were talking about push exports and so on. I'd leave this sort of tariff non-tariff discussion to Maggie but I could kick in there. Lastly being Danish I mean we of course have had trouble for a while with a country fellow man who has been refusing that climate change takes place at all. Obviously I don't agree with him but I would like still to add that it is also important that we don't use climate change as an excuse to often because often times the actual underlying cause for something not working is action not yet climate change. I hope you get the point. Climate change is a long run structural change and process where things are happening over a really long time so we need to focus on what is actually wrong and the energy crisis in Ghana is not just about climate change I can assure you.

MS. MCMILLAN: Richard I think your question is a great question about the role of tariffs and non-tariffs. I have two points. One is I believe the Ethiopian government have used tariffs and bans on the raw skin exports and the leather industry. I think they used industry very wisely and we might not like it but if their goal is to their goal was to build up the industry, it seems to be working. I don't know as much about the tariff structure for example in Tanzania and I think a really important question and I'm going to try to understand better what is going on but for example why is the Chemicotex so successful. The one question that everybody asks me is how is it that they're competing with Colgate how can they do that? I don't know the answer but I want to find out. And then the woman who made the issue about taxation I'm very sympathetic to the resistance to taxation of small businesses. I think the government has to earn the right to tax its citizens and if the government is providing the right services then we should be paying the taxes. When it comes to foreign direct investment I want to emphasize something. This is in Ethiopia where we've been looking at the benefits of foreign direct investment to domestic trends and the Ethiopian government stated policy is that it wants FDI to help upgrade technologically the industries it enters into. We do have evidence of this kind of technology upgrading and workers moving from foreign terms to domestic terms and these benefits playing out and I think these results are really important. They're new and I think there is some resistance. There is a lot of resistance to foreign direct investments I feel in many countries on the continent and I think if we can document some of the benefits other than taxes that come from these direct investments I think it could play an important role.

MR. NDULU: Yes I'll just focus on the question on services. I think we can underestimate the importance of services in our economy including whenever we talk about 70 percent of African population in rural areas there is always a presumption that everybody in rural areas is engaged in agriculture. Look at all the household budget surveys that have been done over time. Increasingly there are lots of services that are actually being also offered even in that context. In our own case even in the context of, talk about, Tanzania in the context of adding foreign exchange, our number one foreign exchange (inaudible). That's the services sector. It is bigger than all the commodities put together. All of our 6 major agriculture commodities earn us about 800 million but tourism earns us 2.3 billion. Transit trade, services is about another 1.1 billion, bigger than all the commodities put together. And not only that, look at some of the recent research. In fact the poverty reducing impact of services still needs to be much higher than even agricultural growth. There is work that has been done recently. So ultimately the economies are much, much bigger in services then simply the physical part of it. I heard reference being made that these are all non-physical. I don't if nonphysical means not important but certainly I just demonstrated for you some of the importance in some of those contexts. All trade has to be facilitated. All communications, big growth in Africa now is tele communications, mobile money, services, it is just a whole range of these services and technology now at the forefront is IT that is what makes things happen. So just a plug in this catch for services so that one doesn't leave the room feeling like services means something not valuable.

MR. PAGE: Thank you. Thank you to our panelists several of whom who have given up a great deal of time in a very busy week to come and share with us our thoughts. Finn Tarp having flown in and having to fly out again this afternoon and Maggie for stimulating us to get into the 21st century and find a way of beaming her in. Mentioning that I do want to sincerely thank my colleagues here at Brookings both the AGI team and our IT people for developing this marvelous technology on about 30 minutes notice so she could join us. To Amadou and AGI for allowing us to develop this event and to all of you for coming out and listening and finally of course do if you are at all inspired and want to hear the new story and read it on an airplane avail yourself a copy of the book as you go out. Thank you for coming.

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