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FINANCE FORWARD:

Forces shaping the future of inclusive financial services

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Cenfri is an independent, non-profit think tank whose mission is to promote financial inclusion in Africa. It does this by supporting the development of financial systems that allow consumers, particularly low-income consumers, to access and use appropriate financial services. Cenfri works at the policy and regulatory level as well as the market development level. Its work complements the efforts of government and the private sector, with the aim of facilitating better regulation to enable the market provision of financial services. The centre does this by conducting research, providing advice, developing capacity-building programmes for regulators, market players and other parties operating in the low-income market, and supporting market innovation.

Introduction

There are two articles in this issue of **Finance Forward** that quite eloquently touch on the aim of the publication: helping our readers develop new "habits of mind."

It is one thing to state that the pace of change is accelerating in almost every aspect of the human experience—from economic and political shifts, to technological and demographic change. It is another thing to fully accept that accelerating pace of change as reality and allow it to shape the way we digest information and make decisions regarding an uncertain future.

In the first article [2016-020: The four global forces breaking all the trends], the authors state, "If we look at the world through a rearview mirror and make decisions on the basis of intuition built on our experience, we could well be wrong." To say the world is not the same as it was several years ago seems obvious. To accept that it is changing faster and more unpredictably than ever requires a new mindset.

When we are lost, it's only natural to return to the last place we felt on course. We seek certainty; we fall back on our standard operating procedures. Zafer Achi and Jennifer Garvey Berger call this "managing the probable" [2016-024: Delighting in the possible]. When faced with great amounts of uncertainty, our typical tools for analysis can can leave us flustered on the one hand or relegating decision-making to leaders who seem to know the way forward, who can offer us "some assurance of predictability" on the other.

In seeking the best interpretation of the facts, we miss the opportunity to see how the many different and messy pieces of reality may interact. We miss the chance to shape the future and foster better outcomes. Achi and Garvey Berger suggest that we can work to rewire our default thinking around complexity and change what they deem our "habits of mind." Changing our habits of mind can allow us to move beyond reacting to trends and simply "managing the probable." We can, instead, begin to "lead the possible."

The authors suggest asking different questions, taking multiple perspectives, and seeing systems rather than trying to disaggregate problems and solve them right away. They say, "In a complex world, we're often better served by leaders with humility, a keen sense of their own limitations, an insatiable curiosity, and an orientation to learning and development."

The **Finance Forward** series has been designed not to provide direct answers, opinions, or solutions about global trends and issues. Rather, the publication is intended to help leaders take a step back so that they can scan the larger, interlocking environments from which trends and themes emerge.

At Cenfri, we believe that by widening our gaze, even if just for a defined period, we can begin to recognize areas of strategic importance, to coordinate research efforts with one another, and to identify developments in our field and in the fields that influence it as they take shape.

The intention of **Finance Forward**, then, is to collect and present information that helps the reader to synthesise an understanding of recent trends, driving forces, and relevant issues. This allows each of us to interpret the contents based on the context of our own institutions, projects and aims, ultimately enabling us to create appropriate institutional strategy.

While it is impossible to thoroughly scan every publication, **Finance Forward** is the product of a balanced and robust stream of information coming from journals, newspapers, blogs, magazines, quarterlies, special reports, and other periodicals. A list of the sources consulted is included at the end of this issue.

The main section of the publication consists of articles which have been reduced in length—with the most relevant information retained. In most cases, the articles have been shortened to less than 50 percent of their original length.

Rather than summarising the articles, they have been directly quoted and referenced in the hope that the reader will access the full articles in which they are interested. The only interpretation of the content in this issue is provided in the form of an editorial, which follows this introduction.

In the editorial, Cenfri briefly speaks to some themes that emerge from the articles selected. Each theme has been coded with a colour, which indicates the content related to that theme throughout the remainder of the document.

I sincerely hope that this publication can play a role in helping you cultivate new "habits of mind" and learn to "delight in the possible."

We are always happy to hear from you. Please feel free to contact us at www.cenfri.org with your thoughts, questions, and comments.

Joel Carlman
Editor

The four global forces breaking all the trends by Richard dobbs, James Manyika, and Jonathan Woetzel. McKinsey Global Institute. April 2015.
www. mckinsey.com

Delighting in the possible by Zafer Achi and Jennifer Garvey Berger. McKinsey Quarterly. March 2015.
www.mckinsey.com

Editorial

Theme 1: The Impacts of Cheap Oil and Low Commodity Prices

During the first decade of the 2000s, the African economy at large benefitted from growth driven by China and other emerging nations. The demand for oil and minerals bolstered commodity prices and pumped cash into resource-rich African countries. During that first decade, exports to Europe doubled and those to emerging economies quadrupled. To China alone, exports expanded by a factor of 12. Investments in infrastructure like ports, roads, electricity grids, as well as in support services like banking, insurance, and transportation were largely geared toward capitalising on Africa's natural resource abundance. As a result, average annual growth in several resource-rich countries like Angola, Equatorial Guinea, and Nigeria rose to over 8% between 2001 and 2014.

The recent glut of oil—from Saudi Arabia forcing OPEC to keep the tap wide open in hopes of forcing out newer entrants, Iran's recent 500,000 barrel-per-day addition after the lifting of long-standing sanctions, the rise of shale-oil producers in America, and a slowdown in Chinese economic growth—has plunged the price of oil to near it's lowest level in over a decade. It doesn't seem that supply is drying up as fast as was originally thought, either. Even at USD 30 per barrel, 94% of global production can cover operating costs. Investment in exploration has certainly haulted, but it makes sense to keep running wells that are already built. This leads to the expectation that oil prices will stay low for at least the medium term.

Oil has infused global markets with volatility as investors have taken the oil price as a proxy for economic demand. Generally speaking, low oil prices are good for oil consuming nations and global economic activity as lower oil prices ease inflation, increase real incomes and strengthen export markets. At the moment, however, overarching pessimism in markets seems to be prevailing.

So far African economies have been relatively resilient to the sharp fall of international commodity prices, but since minerals and ores account for two-thirds of Africa's merchandise exports, this shift is expected to have a significant impact on African trade, investment and economic growth. A year ago, global commodity prices reached a five-year low. Africa's growth rate fell from 5 percent in 2014, to 3.75 percent in 2015, the lowest rate in 17 years.

Some African countries have put in place successful sovereign commodity risk management programs. Ghana, Malawi, and Morocco are examples of those that have understood the need to buy insurance to insulate their economies against commodity price volatility.

The story is different in Angola as the country struggles to cope with shrinking revenues. Add in the impacts of the ongoing drought, and the situation seems particularly dire. In the southern province of Cunene, 800,000 people—more than 70 percent of the population—are threatened with food shortages due to last year's poor harvest. There have also been warnings in neighboring provinces, where the rural poor do not have enough stockpiled to tide them over to the next harvest. Angola introduced spending cuts of around 50 percent last year as revenues fell, undermining its ability to cope with the current crisis. Nationwide, a total of more than 1.25 million Angolans are struggling with crop losses and livestock deaths. A key question is where citizens' dissatisfaction will lead, now that the state lacks the resources to aggressively fuel the vision of "petro-prosperity."

In the latest round of the IMF's forecast revisions, countries where oil exploration and production play a significant role in the economy had the biggest hits to forecasted economic growth. One notable country is Nigeria, where the oil industry accounts for 70% of tax revenue. Weaker demand there owes much to strains on public finances. When the oil price plunged in 2008-09, Nigeria was able to draw on savings it had stashed away in an oil-stabilisation fund. But this time around, the treasury is virtually empty.

If commodity prices remain low or decline further, it may force the hand of resource-dependent countries and start them down the long road of diversifying their economies. Producers are having to tighten domestic monetary policy to tackle inflation, in part caused by big falls in their currencies. In Angola, the fall in the oil price is stimulating the government to move ahead on a number of reforms that were already planned but it had been slow to implement.

For oil-importing countries, where oil subsidies are still in place, the question could be, "At what price level do subsidies become unsustainable for the yearly government budget?" In both exporting and importing countries, the cries for the application of sound risk analysis and risk management principles are growing louder.

Editorial (cont.)

The oil-price drop is also compounding the effect of financial fragility worldwide. The oil and gas industry has seen a large increase in corporate debt, and lower oil revenues make it harder to service this burden.

Theme 2: Keeping Watch for the African Middle Class

The rise of the African middle class has become one of the most ubiquitous buzz-phrases of recent years. It's true that statistics suggest Africa already has a larger middle class than India, with "middle class" being defined as earning the equivalent of more than USD 20,000 per year. But, this still raises the question: "How *should* you define the middle class in Africa?".

An oft-quoted African Development Bank study tallied 313 million Africans as middle class (using the generous definition of those making more than USD 2 per day). Using more stringent qualification criteria, other research studies indicate the figure is nearer eighteen million. Focusing on assets rather than income, economists Anthony Shorrocks, Jim Davies, and Rodrigo Lluberals conclude that while 14 percent of the world's population is middle class, only 3.3 percent of Africa's 572 million adults (18.8 million) meets that threshold. That is versus 38.8 percent of the North American population, 33.1 percent of Europe's, and 10.7 percent of China's. Of the African middle class as defined by assets, one quarter, or 4.3 million, live in South Africa. In Nigeria, only 922,000 of its 83.3 million adults are middle class.

So if the African middle class has not yet arrived, is the question "if?" or "when?". There are other interesting developments in African demography that suggest a burgeoning middle class—or consumer class—is on its way. Urbanisation continues at rapid pace: by 2030, more than half of Africa's population will live in urban areas (versus one-third today). Relative to the recent past, Sub-Saharan Africa has enjoyed increasing levels of political stability and a reduction in wide-spread violence.

The so-called demographic dividend—the rising proportion of working-age people in the total population—is expected to greatly increase economic output. According to the UN, within a few decades, the proportion of Africans in the workforce will exceed that of Europeans and Asians in their respective regions. One study estimates that Africa's demographic dividend could contribute 10-15 percent of gross GDP volume growth by 2030.

Falling fertility rates are being watched closely. Many parts of Africa have a long tradition of women participating in the labor force; once the demands of childbearing are reduced, women are freed up to participate more actively in the workforce. The demographic dividend could be realized even more sharply than in other parts of the world. How quickly fertility rates fall has implications for the whole world. Those rates will determine how fast the global population grows in the coming decades (Africa will be the fastest-growing continent by far) and how soon it might stabilise. That, in turn, has repercussions for efforts to eliminate poverty, curb global warming and manage international migration.

Africa will continue to represent a greater and greater share of the world's young people in the decades ahead. This produces an opportunity for growth, as mentioned above, but also increases pressure on labour markets. The African workforce is expected to increase by 910 million people between 2010 and 2050, of which 830 million will be in Sub-Saharan Africa. The upcoming growth in Africa's workforce represents two-thirds of the growth in the workforce worldwide.

Technology may prove to be the key in connecting Africans with career opportunities as mobile phone and Internet use grow exponentially. Online retail is expected to grow significantly in the next five years and will account for nearly seven percent of total retail sales in Africa in 2025. Nigeria, South Africa, Egypt, and Kenya are the top markets in this regard.

Wealth distribution is a major concern and will continue to be into the future. Currently, the 3.2 percent of the population that is middle class (using the wealth-based definition of Credit Suisse) accounts for 32.1 percent of Africa's wealth. The richest 0.2 percent of African adults accounts for 30.6 percent of wealth, leaving the rest (37 percent of total wealth) for 96.6 percent of the continent's population.

In the end, different methods of counting will result in different tallies for the overall size of the middle class. As a whole, however, the combined consuming power of Africans is expected to rise substantially over the next decade and a half. In 2008, Africa's combined consumer spending was USD 680 billion. It is projected to be USD 2.2 trillion by 2030.

Editorial (cont.)

Theme 3: Focus on Disruptive Technology

The world is awash in technological change and innovation that is happening with a speed, scope, scale and impact that we struggle to take in. In human history, innovation has rarely stalled for long. The difference today is the sheer ubiquity of technology in our lives and the speed with which we are forced to adapt. It is more and more difficult for us to fully anticipate innovation, and our tendency is to fall back on our old tried-and-true methods that will not serve us as well going forward.

Any of the technologies discussed below—or the business models and innovations that are springing from them—could be a stand-alone theme in this issue. However, rather than focusing our gaze on one particular technology, this theme's purpose is to expand our view to contemplate how these disruptive technologies' impacts can and will intersect to create complex systems that reshape industry, government, and society.

Blockchain technology

Blockchain technology (the most famous example of which is the cryptocurrency, Bitcoin) allows for the creation of a distributed database that maintains a continuously-growing list of encrypted data records secure from tampering and revision. This technology could create fundamentally new ways of financial interaction and transaction exchange.

Oliver Bussmann, CIO of UBS, estimates that blockchain technology could pare transaction processing time from days to minutes. Organizations ranging in size from small start-ups to major corporations and governments agencies are now investing the technology.

Blockchain technology will prove to be disruptive beyond the financial services sector. In Honduras, one company is working with the government to build a secure land-title registry. It could also be used to create "smart contracts" that facilitate, verify, execute, and enforce the terms of a commercial agreement.

Mobile Internet, smartphones, and an app for every purpose

Twenty years ago, less than 3 percent of people on earth had a mobile phone. Two-thirds of the world's population now have one, and one-third of all people are able to communicate on the Internet.

Last year, less than a third of all connections in developing regions were smartphones, but in the next five years, four in every five smartphone connections globally are predicted to come from developing regions. This proliferation of mobile phones and access to the Internet is creating exciting opportunities for e-learning, crowdsourcing, and disintermediated financial services. It's also enabling the rapid rise of the "sharing economy."

E-learning includes the development of personalised learning paths for students, and the leverging of large amounts of data from online assessments and interactive exercises to adjust teaching strategies for each individual learner.

Crowdsourcing leverages the Internet to bring together like-minded people of disparate geographies and demographics to pool their resources—finances, ideas, creations, etc.—in ways that they could not do alone.

Along these lines, the rapid uptake of smartphones is enabling an opportunity for transformation through disintermediated digital finance. Companies like SoFi and Lending Club are allowing consumers to skip the bank and obtain credit faculties facilitated by a tech company's algorithm.

The efficiencies of information exchange also facilitate the sharing of assets between people as evidenced through "the sharing economy" or "collaborative consumption" business models employed by Uber and Airbnb. Membership in car clubs such as Zipcar, is growing by over 30 percent each year and should hit 26 million members worldwide by 2020.

As providers continue to garner richer user data through smartphone apps, the leaders in this mobile ecosystem will need to have better solutions and clearer answers to consumer concerns about the safety and privacy of their data. Smartphone data may become harder to protect in this more fragmented ecosystem.

The Internet of Things

The combination of low-cost sensors, cloud computing, advanced data and analytics and mobililty is driving rapid growth in the area of Internet-connected devices—including everything from refrigerators to tractors. Market analysts Gartner forecasts that the global

Editorial (cont.)

Internet of Things (IoT) market will total more than 26 billion devices by 2020. Connected devices will greatly increase the potential for automation and produce vast quantities of data that can be mined for actionable insights. In a world where everything is connected to the Internet, concerns about hacking and data security need to be taken seriously.

Unmanned Vehicles

Civilian Aerial Drones. The scale and scope of the revolution in the use of small, civilian drones has caught many by surprise. Some analysts think the number of drones made and sold around the world this year will exceed 1 million. A drone that could fly for a significantly longer period than they currently do—an hour, perhaps—would change the marketplace, as would one that was fitted with "sense-and-avoid" technology that would stop it running into obstacles by mistake. Researchers are busy in both these areas.

Civilian drones are used in areas as diverse as agriculture (farmers use drones to monitor crop growth, insect infestations, and areas in need of watering at a fraction of the cost of manned aerial surveys); land-surveying; film-making; security; and delivery services.

Driverless Cars. Google remains the leader in autonomous driving. Its technology helps to guide a driverless car down the road avoiding pedestrians, obstacles and other vehicles.

More than any other force, this technology is merging the worlds of automakers and big technology firms in an attempt to make the smartest car. Ford is teaming up with Amazon to connect its cars to sensor-laden smart homes. Toyota will adopt Ford's in-car technology, which is a competitor to Apple's CarPlay and Google's Android Auto, to access smartphone apps and other features.

Autonomous vehicles have been available in differing degrees in mining and farming for several years, but fully autonomous vehicles in those industries—as well as in the transportation industry—could reduce labor costs, increase efficiency, and provide safer conditions for workers.

There is, of course, an intersection between driverless car technology and car-sharing. Most carmakers are working on making their vehicles either fully or partly self-driving, and a number are running their own car-sharing experiments. Once drivers are no longer necessary, the taxi, car-club and car-sharing businesses will, in effect, merge into one big, convenient and affordable alternative to owning a car.

Regulatory and insurance hurdles are next, but the speed with which the tech is being developed, iterated on, and deployed (Google's self-piloting cars have already logged 1.3 million road miles) has caught many off-guard.

Additive manufacturing (3D printing)

The key benefits of additive manufacturing, according to executives, is its ability to both increase geometric complexity in parts and reduce time to market. They also like that it reduces tooling and assembly costs and produces very little waste when compared to typical manufacturing where perhaps 80 percent of material is cut away.

3D printing doesn't mean printing inside a box anymore. Liberated from the confines of a cube, more sophisticated devices are constructing larger structures. A Dutch company, MX3D, plans to print a 15-metre footbridge across a canal, using robots fitted with steel-printing equipment.

Setting up traditional machines for a production run of one prototype (as in the automotive industry) is laborious and costly, since much of the work is done by hand. Researchers in Tennessee have an automated system known as Big Area Additive Manufacturing (BAAM). In one experiment, it took the team just six weeks to design, print and assemble a fully-functional car.

Round-Up: What to watch for in 2016

In a first for **Finance Forward,** we have rounded up recently published predictions, forecasts, and insights regarding the year ahead. We start with South Africa, move on to the rest of the continent, and finally take a look at global theme areas to keep an eye on.

South Africa

Jon Tadman predicts the beginning of some major technological shifts for South African business. He says that we should expect to see South African businesses "bringing together user-friendly social, mobile, analytics, and cloud computing technologies to create a digital workplace that senses and responds to the information needs of individual employees—anytime, anywhere, and on any device."

Tadman further expects South African businesses to begin "embracing a blended workforce that comprises humans, data and intelligent software working together." Finally, Tadman predicts that in 2016, the Internet of Things (IoT) will become a key focus area for businesses as the cost effectiveness of the cloud and the power of analytics tools make it more practical to translate data from disparate devices and system into actionable insights.

On the political front, John Campbell and Allen Grane wonder: "will [Jacob] Zuma survive politically?" They suggest it is possible that in 2016 the ANC could remove Zuma as their party leader and subsequently as president, just as they did with Thabo Mbeki in 2008.

Africa

Beyond the elections that have already occurred, many observers are keeping a close watch during a crucial year for democratic progress that will see Ghana, Morocco and Zambia elect new leaders. Elections will also be held in Chad, the Democratic Republic of the Congo, and Niger. Recently, violence broke out in Burundi over Pierre Nkurunziza's bid to hold on for a third presidential term. Several other presidents have been laying the groundwork to do the same: Sassou Nguesso in Congo-Brazzaville and Paul Kagame in Rwanda. In the DRC, many in the opposition believe that President Joseph Kabila will make a move that would allow him to retain power after his current term ends this year.

On the infrastructure front, Kieron Monks for CNN, calls out a few "megaprojects" to keep an eye on—from the Addis Ababa-Djibouti Railway to Uganda's Jinja bridge to South Africa's attempt at the world's largest radio telescope. The COP21 conference saw the launch of the African Renewable Energy Initiative, with a pledge to add 300 gigawatts of renewable energy by 2030. Solar is the cornerstone of this plan, with vast new developments in South Africa, Morocco, and Rwanda building capacity, and new companies such as Kenya's M-Kopa bringing the power to homes at the lowest possible rates. With rapidly improving technology and expertise, African countries can be global leaders in solar.

2016 will be marked by continued instability in the Sahel. Libya is increasingly becoming a base of operations for the Islamic State. With the attack on a hotel in Bamako, Mali, and continued jihadist operations in the country's north, it is clear that jihadist activity in the Sahel is not over. Boko Haram has become the world's deadliest terrorist organization and the group continues to be active in Niger, Chad, and Cameroon, as well as in Nigeria.

Migration is a major focus area for Europe and the Middle East, but it is also a reality for millions of Africans in 2016. There are at least 2.5 million displaced persons in the Lake Chad region alone, and there is the potential for a large wave of Africans to migrate out of Africa, or to destinations elsewhere on the continent. From 2006 to 2012, South Africa received the highest number of asylum seekers of any country in the world. It is possible that as conflicts continue and, especially if, economies contract due to low commodity prices, there will be a wave of migration to richer African countries where they could face the risk of rising xenophobia.

Climate is a major concern for Africa in 2016 and beyond. Across Africa, the effects of climate change are already visible. The shrinking of Lake Chad contributes to the large number of displaced persons mentioned above. Since 1963, the lake has shrunk to nearly five percent its original size. Tanzania and Zambia have both suffered from power shortages from the impact of drought on hydroelectricity. The South African government has declared disaster zones in five of nine provinces due to drought. El Niño is also causing the massive floods that have left thousands of Somalians homeless.

Round-Up: What to watch for in 2016

Around the World

The theme for the global geopolitical landscape in 2016 is "fragmentation." The Eurasia Group in their Top Risks 2016 report speak of the "unwinding of the U.S.-led geopolitical order"—a development they refer to as the "G-Zero." The transatlantic partnership between the U.S. and European nations has been "the world's most durable and significant alliance, underpinning the global economic order and bolstering peace and stability (such as it is) for nearly seventy years. But it is now weaker, and less relevant, than at any point since the Marshall Plan." In 2016, this alliance will feel hollow as the U.S. turns inward, and major European countries strengthen ties with other partners.

Divisions in Europe pose a fundamental challenge to the principles on which the European Union was founded. An identity crisis continues to emerge between "open Europe" and "closed Europe." A combination of inequality, the influx of refugees, devastating terrorist attacks, and grassroots political pressures strain efforts toward unification and regional cooperation.

There are other sources of fragmentation as well: Russia is in decline, led by the combative Vladimir Putin; and China is becoming more powerful. China's foreign policy still reflects primarily economic national interests, but the country's global footprint will only continue to grow:

- "China has been responsible for approximately one-third of global growth for the past seven years.
- Chinese imports and exports account for more than 10% of global goods trade.
- 124 countries trade more with China than they do with the United States.
- Chinese financial institutions are a key component of Beijing's global economic strategy. This year, the Asian Infrastructure Investment Bank begins operations as the first international financial institution developed from scratch by Beijing."

Finally, the Middle East remains a quagmire, and nowhere is the geopolitical leadership vacuum felt more than in this region with six failed states and more refugees than ever recorded. ISIS continues to exert its influence across the region and 2016 will not be the year when the international community finds a solution for the terrorist group

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Business Environment

2016-001

African Private Equity: The bright continent by Carolyn Campbell. Investment & Pensions Europe (IPE). December 2015. http://www.ipe.com

Keywords: private equity, pension funds, middle class, business-friendly policies

'Private equity investment in Africa is on the rise. Traditionally, the continent's abundance of natural resources, including mining and exploration, has been the driving force behind investment interest. But growing demand for telecommunications, infrastructure, consumer goods and financial services, has widened the range of opportunities for potential investors even further.'

'On top of this, some African countries, including Kenya, Nigeria, Namibia and South Africa, have changed the asset allocation rules of their state pension funds. This means that a certain percentage of pension assets – in some countries up to 15% – may be invested in private companies.'

'As a result, African investors are increasingly choosing to put their money in African private equity. As pension fund regulators and managers become more familiar with the benefits of private equity, the level of capital available to the private sector should increase. This local support should also advance the confidence of international investors.'

'Last year, a record $4bn (€3.7bn) was ploughed into private equity fundraising in Africa. The growth of the African middle class, rapid urbanisation, along with increased GDP per head, is creating a sizeable consumer class across the continent.'

'Demographic statistics suggest that Africa already has a larger middle class – earning the equivalent of more than $20,000 per year – than India. By 2030, it is forecast that more than half of Africa's population will live in urban areas, up from one-third today. These trends, along with GDP growth rates in excess of 4-5%, all support forecasts of growth in the consumer goods and services sectors, which will open up investment opportunities.'

'Financial services, including banking and insurance, represent another key growth area. More than 300m of the world's unbanked population lives in Africa, with 80% of the adult population still without access to simple banking services.'

'Africa has the bulk of the world's uncultivated arable land and many natural competitive advantages, but it only generates 10% of global agricultural output and accounts for less than 5% of the world agribusiness GDP. Most farming in Africa is small-scale, in part because farmers do not have access to the infrastructure that supports their counterparts in Asia and Europe.'

'Although the industry has done much to encourage discussion about the benefits of private investment in Africa, it has not done enough to counter appropriately the perception that Africa has a weak exit environment.'

'A recent study by the African Private Equity and Venture Capital Association (AVCA) revealed that 249 private equity exits took place in Africa between 2007 and 2014. Last year set a record for exits on the continent, with 40 announced by private equity firms.'

'African governments, realising the increasing potential of private equity investment, continue to implement business-friendly policies and reforms, as the changes in pension fund regulations show. Moreover, regional trade linkages continue to provide opportunities for portfolio company expansion.'

[48%]

2016-002

Building financial capability in Rwanda by Douglas Randall. World Bank AfricaCan End Poverty Blog. July 2014. http://blogs.worldbank.org/africacan

Keywords: Rwanda, financial literacy, SACCOs, edutainment, World Bank

'Rwanda's level of financial inclusion is fast increasing, propelled forward by ambitious targets and innovative policy and regulatory approaches. The 2008 and 2012 FinScope surveys showed that financial inclusion had doubled from 21 to 42 percent and the 2015 iteration is expected to show continued progress. But with such a large and rapid movement of adults into the formal financial sector, ensuring that the 'newly banked' are able to effectively and responsibly select and use financial products is critical.'

'[...] SACCOs with their rural and 'newly banked' member base and community-oriented mission are also a promising channel for delivering financial education. To that end, The World Bank, under the Financial Inclusion Support Framework (FISF) program and in partnership with the Ministry of Economic Planning and Finance (MINECOFIN), the Rwanda Cooperative Agency (RCA), and Enclude, Ltd, is developing a financial education curriculum for SACCOs.'

'Over the past few weeks we have piloted the program in five SACCOs to evaluate the salience and relevance of the curriculum content, the effectiveness of the delivery channels, and the sustainability of the training structure. [...] The pilot financial education curriculum covers a range of themes including goal setting, budgeting, responsible borrowing, and consumer rights. It is designed to be delivered through interactive and entertainmentbased classroom training, reinforced with takehome tools and posters in the SACCOs.'

'[...][T]here are several features that have proved to be effective and which we have sought to incorporate including:

- **Edutainment?** Check. Each module is built around a radio drama and for SACCOs with access to a television, the audio is set to a video cartoon, designed by Inkstain, a Kigalibased animation studio.
- **Rules of thumb?** Got 'em. The curriculum and supporting materials heavily emphasize these easytoremember and actionable rules.
- **Teachable moments?** Yes! When Rwandans interact with their SACCO they are already in the mindset of making financial decisions, a great time to embed financial education.'

'We're also doing our best to build on successful local models. The audio component was recorded using actors from Rwanda's most popular radio drama, Urunana. These voices are instantly recognizable to most Rwandans. Better yet, Urunana itself has incorporated financial education themes into the storylines this year, and we have worked with their team to align the main messages so that Rwandans will hear similar messages from different channels, but with the same voices to facilitate the link.'

'We'll be particularly interested in whether the training increases the prevalence and rate of saving, use of loans for productive investment, loan repayment, account openings at SACCOs, and household financial security.'

[57%]

2015-003

Crowdfunding for businesses growing in Africa by Gillian Parker. How We Made it in Africa. July 2015. www.howwemadeitinafrica.com

Keywords: Crowdfunding, entrepreneurship, startups, Tomato Jos, Thundafund, LelapaFund

'Startups in Africa often complain about banks being unwilling to lend. But crowdfunding platforms are increasingly bridging the finance gap and offering startups in Africa a lifeline.'

'Mira Mehta is cofounder of Tomato Jos, an agricultural company that helps tomato farmers in Nigeria. Using Kickstarter, which claims to be the world's largest crowdfunding platform, Tomato Jos raised US$55,000. Angel investors pledged another $230,000 to Tomato Jos outside the platform.'

Following Kickstarter

'Crowdfunding has seen huge success in the United States and Europe. In 2014, Kickstarter raised $529m for more than 22,000 projects.'

'In emerging African markets, banks usually do not extend loans to startups because of low collateral and the high risk of default. In Nigeria, Africa's largest economy, only 14% of small to mediumsize enterprises, or SME's, have access to a bank loans or overdraft protection, according to the World Bank.'

'Crowdfunding is increasingly bridging the finance gap.'

'In South Africa, Patrick Schofield cofounded Thundafund to help drive innovation and entrepreneurship in Africa. Since launching in 2013, Thundafund has raised nearly $365,000 for 117 projects.'

'"It is not just the funding gap that is an issue, but it is also trying to figure out whether an idea is worth pushing forward or not," he said. "[...] Crowdfunding is actually a very effective way to test a new idea or new product, speaking directly to consumers as opposed to investors."'

Transformative possibilities

'Another platform, LelapaFund, is designed to tap into the African diaspora. For those interested in investing in emerging markets but wary of the risk and cost involved, crowdinvesting is a good compromise, according to co-founder Elizabeth Howard from Paris.'

'"We wanted to make it easier for Africans in the diaspora to invest in African SMEs back home, with the hypothesis that the best investors in Africa are Africans themselves," she said.'

'But projects have to jostle for funding with thousands of others. Also, money raised in some countries, like the United States, is costly and cumbersome to transfer to others in Africa.'

'Despite the risk, crowdfunding could be transformative for projects that have social and economic impacts in Africa.'

[52%]

2015-004

Cutting through the noise around financial technology by Miklos Dietz, Somesh Khanna, Tunde Olanrewaju, and Kausik Rajgopal. McKinsey & Company. February 2016. www.mckinsey.com

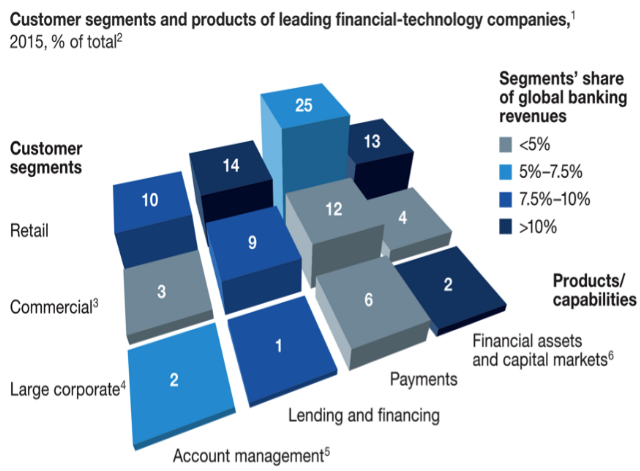
Keywords: Fintech, data-driven decision-making, millenials, banking industry, digital finance

'We estimate there are today more than 2,000 start-ups offering traditional and new financial services.'

'In the eight-year period between the Netscape IPO and the acquisition of PayPal by eBay, more than 450 attackers—new digital currencies, wallets, networks, and so on—attempted to challenge incumbents. Fewer than 5 of these challengers survive as stand-alone entities today.'

The fintech moment

'Our research into financial-technology (fintech) companies has found the number of start-ups is today greater than 2,000, compared with 800 in April 2015. Fintech companies are undoubtedly having a moment (Exhibit 1).'



'Globally, nearly $23 billion of venture capital and growth equity has been deployed to fintechs over the past five years, and this number is growing quickly: $12.2 billion was deployed in 2014 alone.'

'So we now ask the same question we asked during the height of the dot-com boom: is this time different? In many ways, the answer is no. But in some fundamental ways, the answer is yes. History is not repeating itself, but it is rhyming.'

'The moats historically surrounding banks are not different.'

'Some things have changed, however. First, the financial crisis had a negative impact on trust in the banking system. Second, the ubiquity of mobile devices has begun to undercut the advantages of physical distribution that banks previously enjoyed. Smartphones enable a new payment paradigm as well as fully personalized customer services. In addition, there has been a massive increase in the availability of widely accessible, globally transparent data, coupled with a significant decrease in the cost of computing power.'

'There has also been a significant demographic shift. Today, in the United States alone, 85 million millennials, all digital natives, are coming of age, and they are considerably more open than the 40 million Gen Xers who came

Business Environment (cont.)

of age during the dot-com boom were to considering a new financial-services provider that is not their parents' bank. But perhaps most significantly for banks, consumers are more open to relationships that are focused on origination and sales (for example, Airbnb, Booking.com, and Uber), are personalized, and emphasize seamless or on-demand access to an added layer of service separate from the underlying provision of the service or product. Fintech players have an opportunity for customer disintermediation that could be significant: McKinsey's 2015 Global Banking Annual Review estimates that banks earn an attractive 22 percent ROE from origination and sales, much higher than the bare-bones provision of credit, which generates only a 6 percent ROE.'

Fintech attackers: Six markers of success

'While the current situation differs from the dot-com boom, the failure rate for fintech businesses is still likely to be high. However, in a minority of cases, fintechs that focus on the retail market will break through and build sustainable businesses, and they are likely to profoundly reshape certain areas of financial services—ultimately becoming far more successful than the scattered and largely subscale fintech winners of the dot-com boom. Absent any mitigating actions by banks, in five major retail-banking businesses— consumer finance, mortgages, lending to small and medium-size enterprises, retail payments, and wealth management—from 10 to 40 percent of bank revenues (depending on the business) could be at risk by 2025. Attackers are likely to force prices lower and cause margin compression.'

'We believe the attackers best positioned to create this kind of impact will be distinguished by the following six markers:

Advantaged modes of customer acquisition Fintech start-ups must still build the most important asset of any business from scratch: customers. Banks already have them, and attackers will find it difficult to acquire them cost-effectively in most cases. Fintech attackers are subject to the same rules that apply to any e-commerce businesses. [...] In the payments point-of-sale (POS) space, several fintech attackers, such as Poynt and Revel, are seeking to capitalize on an industry disruption—the rollout of EMV (Europay, MasterCard, and Visa—the global standard for chip-based debit- and credit-card transactions) in the United States and the resulting acceleration of POS replacement cycles.

Step-function reduction in the cost to serve The erosion of the advantages of physical distribution makes this a distinctive marker for the most disruptive fintech attackers. For example, many fintech lenders have up to a 400-basis-point cost advantage over banks because they have no physical-distribution costs.

Innovative uses of data Perhaps the most exciting area of fintech innovation is the use of data. For example, several players are experimenting with new credit-scoring approaches—ranging from looking at college attended and majors for international students with thin or no credit files to trust scores based on social-network data. [...][B]ig data and advanced analytics offer transformative potential to predict "next best actions," understand customer needs, and deliver financial services via new mechanisms ranging from mobile phones to wearables. [...] In a world where more than 90 percent of data has been created in the last two years, fintech data experiments hold promise for new products and services, delivered in new ways.

Segment-specific propositions The most successful fintech attackers will not begin by revolutionizing all of banking or credit. They will cherry-pick, with discipline and focus, those customer segments most likely to be receptive to what they offer. [...] Across fintech, three segments—millennials, small businesses, and the underbanked—are particularly susceptible to this kind of cherry-picking. These segments, with their sensitivity to cost, openness to remote delivery and distribution, and large size, offer a major opportunity for fintech attackers to build and scale sustainable businesses that create value.

Leveraging existing infrastructure Successful fintech attackers will embrace "coopetition" and find ways to engage with the existing ecosystem of banks. In the same way that Apple did not seek to rebuild telco infrastructure from scratch but instead intelligently leveraged what already existed, successful fintech attackers will find ways to partner with banks—for example, by acquiring underbanked customers that banks cannot serve, or acquiring small-business customers with a software-as-a-service offering to run the business overall while a bank partner supplies the credit.

Managing risk and regulatory stakeholders Tolerance for lapses on issues such as anti-money-laundering, compliance, credit-related disparate impact, and know-your-customer will be low. Those fintech players that build these capabilities will be much better positioned

Business Environment (cont.)

to succeed than those that do not. More broadly, regulation is a key swing factor in how fintech disruption could play out. Although unlikely to change the general direction, regulation could affect the speed and extent of disruption, if there were material shocks that warranted stronger regulatory involvement, such as cybersecurity issues with leading fintechs.'

'As with disruptors in any market, the ultimate test of whether a fintech player succeeds or fails is whether these six markers combine to create a sustainable new business model.'

Banks: Six digital imperatives

'[...] [B]anks should be less preoccupied with individual fintech attackers and more focused on what these attackers represent—and build or buy the capabilities that matter for a digital future.'

Use data-driven insights and analytics holistically across the bank 'Building a comprehensive data ecosystem to access customer data from within and beyond the bank, creating a 360-degree view of customer activities, creating a robust analytics-and-data infrastructure, and leveraging these to drive scientific (versus case-law-based) decisions across a broad range of activities from customer acquisition to servicing to cross-selling to collections—all are critical to a bank's future success.'

Create a well-designed, segmented, and integrated customer experience, rather than use one-size-fits-all distribution 'The proliferation of mobile devices and shifting preferences among demographic groups mean that customers expect more real-time, cross-channel capabilities (such as status inquiries and problem resolution) than ever before. Physical distribution will still be relevant but far less important, and banks must learn to deliver services with a compelling design and a seamless unconventional customer experience.'

Build digital-marketing capabilities that equal e-commerce giants 'Big data and the advanced-analytics capabilities described above are merely the foundation of digital marketing. Mastering digital media, content marketing, digital customer-life-cycle management, and marketing operations will be critical to banks' success. Building these capabilities and recruiting and retaining digital- marketing talent will require considerable time and investment.'

Aggressively mitigate the potential cost advantage of attackers through radical simplification, process digitization, and streamlining 'After the last dot-com boom, banks successfully electronified core processes. Now they must digitize them. We estimate that the majority of the cost of processing a mortgage is embedded in highly manual loops of work and rework. Digitizing a mortgage application would involve creating and manipulating data fields, such as borrower income and liabilities, in a largely automated manner in the cloud. This would be a multiyear process for banks, as it would require the integration of multiple legacy systems and potential replatforming to enable truly digitized processes. New technologies will offer banks opportunities to test and scale to achieve efficiencies. For example, as the hype surrounding Bitcoin currency fades, it is clear that the "baby in the bathwater" may well be distributed ledger technologies that enable more cost-effective storage and rapid clearing and settlement of transactions in the banking back office.'

Rapidly leverage and deploy the next generation of technologies, from mobile to agile to cloud 'First and foremost, "mobile first" is not just a buzzword—it is the clearest directive banks could receive from consumers about how they want to interact with their service providers. Second, banks must fortify not only their technologies, but also their internal processes and cultures, to defend customers' data from breaches. Third, the pace of innovation in banking is accelerating rapidly, requiring banks to increase their speed to keep up, including software development through techniques such as agile and continuous delivery. Finally, significantly faster, nimbler, and dramatically lower-cost versions of processing and storage technologies are now commonplace.'

Rethink legacy organizational structures and decision rights to support a digital environment 'Banks must complement their existing P&Ls with approaches that enable faster adaptability to external changes, and foster cultures that support speedier decision making. Banks must think hard about how best to organize to support the five preceding imperatives, asking what organizational structure and decision rights will most effectively support a data- and insight-driven operating model, a distinctive customer experience, digitized processes for greater efficiency, and next-generation-technology deployment.'

[50%]

Business Environment (cont.)

2016-005

Finding "WinWin" in DigitallyDelivered Consumer Credit by Rafe Mazer, James Vancel, and Ariana Keyman. CGAP Blog. January 2016. www.cgap.org/blog

Keywords: Digital Financial Services, consumer protection, behavioral economics, Kenya

'[I]t is timely and important to ask "what may be different in consumer borrowing behavior and associated risks now that credit is literally in the palm of their hands via a few keystrokes?"'

'[...] CGAP partnered with Busara Center for Behavioral Economics and Jumo to design a series of experiments in Kenya to measure consumer response to different types of communications linked to a digital credit offer. The research sought to explore two important opportunities in digital credit:

1. Are there ways in which the communication channel (SMS) impacts borrower behavior that could benefit both borrower and lender?
2. Can insights from behavioral economics help to develop communications that drive borrower behavior in preferred directions, such as ontime repayment?'

'The team focused on two key opportunities:

1. Increasing consumers' likelihood to read—and understand—key product features, to test the hypothesis that. positive correlations may exist between time spent on product terms screens during the loan application process and repayment rates.
2. Crafting repayment reminder messages that were goalbased or aspirational, to help consumers not "freeze" when they get a collections notice and instead see the longterm value of timely repayment.'

'In the lab consumers participated in a series of tasks where they could earn money, but first had to borrow funds to play the game, allowing us to test how different disclosure messages impacted borrowing choices. In the field experiment participants received actual, zero-cost loans via mobile money, and were instructed to pay them back after one week to receive a larger loan amount. A series of messages were then sent to borrowers to measure how these different messages performed in ensuring consumers paid back their loans after one week.'

'Promising result 1: Making consumers actively choose to view or to skip summary Terms & Conditions (T&Cs) screens increases the likelihood they will actually read them. Further, doing so improves repayment performance.'

'The lab testing found that a choicebased approach to summary T&Cs screens led to an increase in the likelihood a consumer would review them from 9.5% to 23.8%, and that reviewing this summary then led to a 7% absolute drop in delinquency rates in the experiment.'

'Consumers can still skip the T&Cs if they want, but the simple act of having to choose to do so makes them more likely to stop and read them.'

'Promising result 2: Separating finance charges to make them more salient led to lower default rates'

'We found that separating finance costs helped reduce default rates in the game from 29.1% to 20% across the entire sample, regardless of whether consumers chose the higher or lower loan amounts. This seems to suggest that by making the finance charges stand out more, consumers could make a better choice on loan size preference.'

'Promising result 3: Segmenting reminder messages by user type, where possible, improved repayment performance'

'To measure how different messages impact probability of repayment [in the field], we tested several reminder messages and different framings of these messages to increase likelihood to repay.'

'One of the findings from the field experiment was that respondents who received evening reminders were 8% more likely to repay their loan than those who were sent reminders in the morning.'

'The field experiment also tested several different types of reminder messages which varied by how they framed the benefits of repayment.'

'These treatments had quite mixed effects by demographic segments, including positive effects on repayment across the board for male borrowers, but negative impact on repayment across the board for female

Business Environment (cont.)

borrowers. Where possible, digital lenders should use available demographic information to create customized reminder messages that speak to the personal traits and ambitions of the user.'

[51%]

2016-006

Randomised controlled trials: In praise of human guinea pigs. The Economist. December 2015. www.economist.com

Keywords: Randomized controlled trials, research methods, evaluation, policy-making

'Before the 20th century, the sick were wise to stay away from doctors. It was the discovery of micro-organisms, vaccines and antibiotics, that eventually equipped doctors with weapons that whacked diseases, not patients. But as many lives may have been saved by a more recent innovation, the randomised controlled trial (RCT).'

'What works in the fight against disease can also work in the fight against poverty. In the past decade aid organisations and governments in the developing world have rushed to make use of RCTs, encouraged by donors and philanthropists who like evidence that their cash will be spent well. This week two leading researchers released the results of RCTs for two schemes that gave destitute people assets (usually goats or a cow) and trained them to manage. The results were impressive: in India recipients were much better off five years after the programme ended. More important, the trials showed that it really was the aid programmes that made the difference, and not some other factor.'

'RCTs have their limitations. They are impossible when an intervention affects everyone (for example, a change in interest rates) and unethical when it is known to be harmful [...]. But the biggest problem with RCTs is that they are not used nearly often enough.'

'Even as policymakers in developing countries harness the power of randomisation, those in rich countries resist—especially for their most cherished schemes.'

'The electoral cycle is one reason politicians shun RCTs. Rigorous evaluation of a new policy often takes years; reformers want results before the next election. Most politicians are already convinced of the wisdom of their plans and see little point in spending time and money to be proved right. Sometimes they may not care whether a policy works, as long as they are seen to be doing something. Stiff prison sentences make a government look tough even if they do not cut crime; very high taxes on top earners may be popular even if they raise no extra cash.'

'[W]ithout evidence, those setting policy for schools and prisons are little better than a doctor relying on leeches and bloodletting. Citizens, as much as patients, deserve to know that the treatments they endure do actually work.'

[45%]

2016-007

Let's Gamify to Empower the Customer! By Antonique Koning. CGAP Blog. September 2015. www.cgap.org/blog

Keywords: Gamification, consumer education, digital financial services, application design

'In his TED talk gamification expert Yu Kai Chou optimistically suggests that gamification can make a better world by removing the divide between what people have to do and what they want to do. Gamification is already applied in a range of sectors, including financial services, to change behaviors and address complex problems. But what can gamification do for financial inclusion? Can we apply this concept to one of the biggest challenges we are up against: increasing uptake and usage of financial services by low income customers?'

'The goal of a game is to get people to play and keep them playing. The role of the game designer is to make that happen by perfecting the "player journey" from onboarding through a habit building phase to mastery. If financial service providers approached their customers in this way, putting them at the center of an application, they could improve the customer journey and start to empower customers to better choose and use financial services they value.'

'Gamification works because it builds on core drivers that motivate people to act in a certain way.'

Applications in financial services

Business Environment (cont.)

'There are numerous potential use cases of gamification for delivering financial services to lowincome people, especially when it comes to uptake and use of digital financial services. Examples include:

- stimulating savings
- facilitating cash flow management
- incentivizing use of digital channels to increase use of mobile wallet or enhance merchant payments
- accessing educational content
- empowering staff and agents with information, tools and incentives to serve the customers best and deliver a positive experience.'

'As we think of opportunities in the financial inclusion context, it is critical to consider gamification is more than adding points, trophies, badges and other competitive elements to an existing product or services. It's critical to approaching problems from the outset through a lens of game design, which can help products resonate more with customers:

Give choice and sense of progression. Gamified applications should allow people to take small steps at the time, give the right level of choices – not too few, not too many – and be well presented so that it entices people.

- **Create habits.** Gamified applications should help people "learn by doing", balance structure and exploration so that people can figure things out for themselves in a constructive and helpful environment.
- **Address engagement gap.** Gamified applications should entice people to overcome the intention-action gap that all of us face and nudge to engage more.
- **Leverage social dimension.** Gamified applications should use social networks people belong to. This can leverage trust and create incentives for people to engage.'

[51%]

2016-008

The Mobile Economy: Sub-Saharan Africa 2015 [Executive Summary]. GSMA. October 2015. www.gsmamobileeconomy.com

Keywords: Mobile economy, mobile subscribers, mobile broadband, smartphones, Sub-Saharan Africa

'The mobile industry in Sub-Saharan Africa continues to scale rapidly, reaching 367 million subscribers in mid-2015. Falling device prices are encouraging the rapid adoption of smartphones, with the region set to add more than 400 million new smartphone connections by 2020, by which time the smartphone installed base will total over half a billion.'

'However, subscriber growth rates are set to slow sharply over the coming years, with growth in the second half of this decade set to be around 6% compared to 13% in the first half. Just under half of the population will have subscribed to a mobile service by 2020, highlighting the challenges that remain in bringing connectivity to unconnected populations across the region.'

'Mobile operators' revenue growth is slowing across Sub-Saharan Africa, reflecting slowing subscriber growth but also the impact of external factors such as growing competitive pressures and regulatory action. The challenge for operators is to continue to monetise the ongoing growth in data traffic and encourage uptake of data-centric services by consumers, while expanding mobile coverage to underserved areas, at a time when traditional revenues are under pressure.'

'Tower sharing is now a major feature of the mobile industry in Sub-Saharan Africa, driven by network coverage obligations attached to licenses, and cost- reduction pressures as the decline in revenue growth increasingly affects margins. Capital investment in 2014 totaled $9 billion and is set to reach $13.6 billion (24% of total revenues) by 2020.'

'Technology innovations have gained momentum in Sub-Saharan Africa over the last five years. Nairobi in Kenya – referred to as 'Silicon Savannah' – has been the epicentre of this development and has been leading innovations in areas such as mobile money and crowdsourcing. A number of incubators and accelerators have sprung up across the region, and a flourishing app economy is emerging in the region.'

'Mobile technology plays a central role in addressing a range of socio-economic developmental challenges across the region, particularly digital and financial inclusion. Greater digital inclusion will drive economic and infrastructure development, increasing productivity and employment across the economy, and will improve access to vital services such as education and healthcare.'

'There is [...] a gender dimension to the connectivity gap, with African women currently 13% less likely than African men to own mobile phones.'

'At the end of 2014, more than one-fifth of mobile connections in the region were linked to a mobile money account, with more registered mobile money accounts than banks accounts in a number of countries.'

'Policy-makers and regulators in Sub-Saharan Africa have several major levers at their disposal to drive the development of their digital economies. Firstly, they could release more internationally-harmonised spectrum for mobile broadband services, thereby fuelling investments in both greater capacity and wider coverage. Secondly, they could introduce incentives to encourage mobile operators to deploy infrastructure in remote and economically challenging areas. Thirdly, they could revise their taxation policies to encourage adoption and usage of mobile services, together with greater investment in networks. Finally, they could hone their competition policies to improve the business case for rolling out new digital infrastructure and increasing connectivity.'

Mobile Economy Sub-Saharan Africa Facts and Figures:

- **Unique Subscribers and SIM connections:**
    - 2015: 386 million (41% penetration rate)
    - 2020: 518 million (49% penetration rate); 6.2 Compound Annual Growth Rate
    - 2015 SIM Connections (excluding M2M): 722 million (77% penetration rate)
    - 2020 SIM Connections (excluding M2M): 982 million (93% penetration rate); 6.3% CAGR
- **Mobile Broadband connections:**
    - 24% percent of total mobile users (2015) to 57% (2020)
    - Smartphones:
        - 2015 = 160m
        - 2020 = 540m
- **Contributing to Economic and Social development across the region**
    - Mobile internet penetration = 23% of population in 2015, 37% in 2020
    - 135 live digital financial services across region as of December 2014
    - Number of M2M (machine-to-machine) connections to reach 30m by 2020.
- **Mobile Industry contribution to GDP**
    - $102bn (5.7% of GDP) in 2014
    - $166bn (8% of GDP) in 2020
    - Employment:
        - 2m jobs directly supported by mobile ecosystem in 2014
        - 2.7m jobs directly supported by mobile ecosystem in 2020
        - Additional 3.4 million indirect jobs supported by 2020

[50%]

2016-009

Tackling Five Challenges to Accelerate Financial Inclusion by Gloria Grandolini. Center for Financial Inclusion Blog. November 2015. http://cfi-blog.org

Keywords: Financial literacy, identification, consumer protection, usefulness, women, rural poor

'Despite significant progress and the increased technical and financial resources devoted to financial inclusion, 2 billion people worldwide still lack access to regulated financial services.'

'These hurdles [to broader financial inclusion] can be distilled into five main challenges:

'Financial literacy and capability. Countries must develop financial capability programs to ensure people can make sound financial decisions, select financial products which best fit their needs, and know how to use related channels, such as ATMs or mobile banking. Behavioral insights are leading to more effective – and lower cost – financial literacy efforts, which can improve uptake of new accounts and increase savings, including through tailored SMS texts.'

'Valid identification documents. Without valid and accessible IDs, it's not possible to shift large payment flows like social benefit transfers and wages into transaction accounts. The process to obtain a valid proof of ID and to open an account needs to be streamlined. In countries where ID documents are not sufficiently robust and easy to authenticate as required by KnowOurCustomer requirements, financial inclusion efforts haven't made as many inroads.'

'Financial consumer protection and regulation. For mobile money and other emoney products to safely expand financial access, strengthened regulatory frameworks and oversight are needed. Secure and reliable platforms to protect data privacy and funds can promote confidence in using electronic payments. It's also important to treat new customers fairly, adequately disclose key product information, and establish safety and reliability standards to allow customers to make informed choices about products they select.'

'**Women and the rural poor.** Women in developing countries are 20 percent less likely than men to have an account and 17 percent less likely to have borrowed from a formal financial institution in the past year. Financial institutions need to adapt financial products to suit women's needs. This effort can range from providing women with valid proof of ID and enabling them to independently open an account, to enhancing their ability to make basic financial decisions.'

'**Usefulness.** Opening a transaction account is the first step, not the end goal. Transaction accounts must be useful and serve as a gateway to other financial products such as savings, credit, and insurance. Some 355 million adults in developing countries who report having an account still remit money in cash or overthecounter. Governments and the private sector can play a key role in accelerating usage by depositing wages into accounts versus paying cash.'

[43%]

2016-010

The Uberization of Money. On Point with Tom Ashbrook. National Public Radio (NPR). November 2015. http://onpoint.wbur.org

Keywords: Digital financial services, third-party tech services, mobile applications, sharing economy

"Once upon a time, banks had money in vaults and you went there when you needed yours. Now money is tracked in zipping digits and many people never set foot in banks at all. Next trend: bank branches go obsolete, millennials and more ditch their banks for third-party tech services, the ATM goes the way of the phone booth and money gets "Uberized." Need a loan? Want to lend? Want to invest in a hot start-up? Stash your cash? There's an app for that, and a lot more. A sharing economy ready to move money."

[Full audio recording available at: http://onpoint.wbur.org/2015/11/17/unbanked-uber-big-finance-debit-cards]

2016-011

Dueling with Lions: Playing the New Game of Business Success in Africa by Patrick Dupoux, Lisa Ivers, Adham Abouzied, Abdeljabbar Chraïti, Fatymatou Dia, Hamid Maher, and Stefano Niavas. BCG Perspectives. November 2015. www.bcgperspectives.com

Keywords: Multinational Corporations, Oil price, demographics, foreign direct investment, African companies

'Even now, as low oil prices threaten the continent's energy exports, Africa's long-term positives are too big to overlook. Population growth and higher household incomes have helped lift Africa's GDP by more than 5% a year on average for the past 15 years. In addition, the Africa of today is more politically stable, with over half the 54 countries on the continent now holding democratic elections, compared with fewer than ten in 1990. As a result, foreign companies and governments have dramatically boosted their investments in certain parts of the continent: foreign direct investment in sub-Saharan Africa increased by a factor of five from 2001 to 2012.'

'Demographics are also working in Africa's favor. The continent has a sizable working-age population; within a few decades the proportion of Africans in the workforce will exceed that of Europeans and Asians in their respective regions, according to the United Nations. People across Africa are also more educated and more connected to information sources than ever, with mobile phone and Internet use growing rapidly.'

'Together, those changes have put many African countries on a more solid economic footing, allowing them to withstand shocks that once might have been devastating. In 2014 and 2015, for instance, Africa as a whole maintained economic growth above the world average despite the oil price decline, the outbreak of Ebola, and high-profile attacks by militant groups such as Boko Haram and Al Shabaab. Low oil prices have pushed several African countries to the brink of recession and have significantly slowed the continent's growth. But Africa overall is holding up much better than it has in the past, and the hope is that the slowdown will be temporary.'

'As Africa's economy has risen in recent years, so have valuations, making it more expensive for MNCs to do business on the continent and to acquire companies based there. Still, the higher cost of entry hasn't diminished foreign interest. An analysis by The Boston Consulting Group found that almost nine in ten MNC CEOs visited the continent in 2013, compared with fewer than one in ten in 2000.'

'For most MNCs, early results in Africa have been mixed at best. It's true—European and North American companies in a variety of industries are earning a higher percentage of their global revenue on the continent than they ever have. But the numbers are still small. And by another, perhaps more telling, measure—African market share—many of those companies are going backward.'

'What MNCs are facing in Africa is similar to what they've faced in parts of Asia and Latin America: an increasingly capable set of local competitors. In a 2013 BCG survey of executives in developed markets, 73% said they considered local companies in emerging markets to be a threat. In contrast, 50% said this about emerging-market-based MNCs, and 40% said this about MNCs in their home markets. The entity looking to eat your lunch in Africa is one that your board of directors—and maybe you yourself—didn't know existed until recently.'

The Rise of the African Lions

'Some of the [African] Lions [the many Africa-based companies standing in the way of MNCs from Cape to Cairo] are pioneers that beat MNCs into African markets and have all the advantages of incumbents, including a huge market-share lead and broad name recognition.'

'Other African Lions have entered terrain already trod by MNCs and have either slowed the progress of those rivals or turned the momentum decisively in their own favor.'

'As debt and equity have become more available to African companies, the gap in capital access has narrowed. Likewise, a decade or two ago, businesses on the continent couldn't hope to compete with MNCs when it came to technology and know-how. Today, however, African companies have the option of buying expertise in the global engineering market and of partnering with Chinese and Indian service providers. Moreover, highly skilled Africans have been returning to their homelands. Students in countries such as Nigeria, Kenya, and Morocco still emigrate, but nowadays they're more likely to come back after they've gotten their educations.'

'In addition to benefiting from an improved economic and political environment, successful African companies have ways of doing business and an adaptive nature that can give them an edge in Africa's complex environment. Indeed, those are their biggest advantages.'

'[...][S]uccessful African companies have the advantages of *focus, field, facts,* and *flexibility*. These are the four Fs of the African Lions.'

'Focus. With the overwhelming majority of their revenue coming from Africa, local companies have nothing to fall back on. If the business fails at home, it fails altogether. As a result, African companies put everything they've got into growing their market shares on the continent.'

'Focus also means developing products specifically for African markets. The beverage company Chi has picked up significant share in Nigeria, at the expense of some major MNCs, through a product line that appeals to Nigerians' national identity ("Be Nigerian, Buy Nigerian," as one of the company's marketing campaigns puts it) and caters to their growing preference for healthful fruit drinks.'

'**Field.** In emerging markets, there is no substitute for on-the-ground experience. That is certainly true in Africa, which comprises dozens of countries, thousands of languages, and distribution channels that vary sharply by region. In many parts of the continent, success depends on strong personal relationships, and verbal agreements are often more important than written contracts. Someone who understands that—who has a feel for and a genuine interest in local practices and cultures—has an advantage.'

'[I]t isn't necessary to be African by nationality or lineage to have the advantages of on-the-ground experience. What matters is the accumulated time spent in a market and an executive's ability to understand its dynamics.'

'Now, local companies that had been operating strictly as suppliers or distributors are taking advantage of their powerful ecosystems to move into manufacturing. In doing so, they are chipping away at what was once a bulwark for MNCs—their superiority in manufacturing and their domination of the value chain's so-called transformation front.'

Business Environment (cont.)

'**Facts.** To executives in Western companies used to reliable data, Africa can come as a bit of a shock.'

'There are a few reasons why good data about Africa is so hard to come by. One is logistical: the infrastructure for data gathering, in many countries, isn't in place. In addition, the informal sector—in areas such as retail and construction materials—is huge. So are the volumes of parallel imports: the so-called grey-market products that make their way to customers through unauthorized or unofficial channels.'

'**Flexibility.** The systems that organizations put in place as they grow are a source of power. They can also become a limitation relative to more-flexible rivals.'
'In the business frontier that is Africa, systemization and rules—for how decisions get made, for the qualifications someone needs in order to become a customer, for complying with regulations—can work to an MNC's disadvantage.'

'African banks provide another example of flexibility. Whereas US and European banks would never offer an account or a loan to someone who couldn't put up conventional collateral, African banks often require nothing more than a national identity card and may accept personal belongings as collateral. On a continent where traditional bank accounts are still relatively rare (only about a third of adults in Africa have them), the upside of this flexibility is huge.'

'Flexibility also makes decision making more effective. If you have to wait for someone at headquarters 6,000 miles away to approve something—the purchase of an asset or the relaxation of a credit restriction for a promising customer, for example—you will inevitably miss some opportunities.'

'MNCs must be realistic about the extent to which they can replicate the practices of the African Lions. In many areas, they won't be able to. But they still must develop a response to each of the four Fs. They must also exploit advantages that the African Lions don't have: *persistence*, an ability to *partner*, robust *platforms*, and *predictability*—what we call the four Ps.'

'**Be persistent as well as focused.** An MNC won't ever be able to assign the same priority to Africa as the owner of an African business can. However, an MNC can allocate the financial and human resources to match its ambitions for Africa. An MNC may also be able to design products and business models specifically for African markets.'

'Moreover, MNCs have an important advantage over indigenous African companies: the ability to stay in Africa no matter what is going on there. An MNC with $10 billion or $20 billion in global sales—and hundreds of millions of dollars in profits—can keep doing what it's doing in Africa regardless of short-term shocks. It can be wherever it needs to be and invest whatever it needs to in order to win business.'

'**Forge partnerships to augment field experience.** The market development staff of an MNC's African business unit simply cannot replicate a local company's depth of experience or degree of integration in the local ecosystem. But MNCs can do a few things to narrow the gap. For instance, they can require expatriate CEOs in Africa to serve for longer than the usual three-year stint, as successful European companies have done. They can also insist that their leadership teams on the continent include a higher proportion of Africans.'

'**Use platforms to develop better facts.** MNCs can't have the kind of market intelligence that local companies have, which is a result of employing managers and staff who grew up in the area and know the customer base firsthand. But MNCs should still try to acquire and develop local talent. Indeed, this should be one of their top priorities. While they are working on that, however, they should look for other ways to get facts and figures.'

'One approach is to develop databases of contacts and information. Because of their resources and expertise in market research, many MNCs will be able to generate robust databases with first-rate country and consumer insights.'

'Big companies can also use their technology platforms to run their businesses more efficiently. The digital technology that big companies already have, or can develop relatively easily, helps limit [...] problems. For example, distributors can use mobile- or tablet-based applications to update manufacturers about retailers' inventory.'

'**Offer predictability on top of flexibility.** There's no question that local companies sometimes play by their own rules—rules not in keeping with multinationals' health, safety, and environmental standards. But large players can certainly become more flexible by, for instance, giving local teams more decision-making

Business Environment (cont.)

authority and outsourcing parts of the value chain.'

'The Lions' flexibility can lead to inefficiency, in the form of disorganized distribution networks. This presents an opportunity for MNCs to differentiate themselves.'

'To a Western executive looking for growth opportunities, Africa may seem like a riddle wrapped in an enigma. The continent's growth is evident in the global GDP statistics and the financial results that executives can see.'

'Yet for most Western companies, success in Africa has been elusive. MNCs' difficulty holding on to market share and profitability has led some executives to wonder if the African economic boom is actually a mirage. The oil prices that have not rebounded add to the concerns.'

'For all the outward signs that Africa is rising—the modern buildings, the technology, the services—the real economic story involves things that are not necessarily visible: an increase in political stability and in the ease of doing business, a much higher percentage of educated workers, and, above all, a growing number of people with disposable income and the desire to progress. In many African countries, the peace and demographic dividends are just beginning to be felt.'

Economic Environment

2016-012

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Keywords: GDP growth, financial flows, human development, governance, stability, climate change, demographics

Africa's macroeconomic prospects

'[...][T]he world economy is improving and if the AEO 2015 predictions are right, Africa will soon be closing in on the impressive growth levels seen before the 2008/09 global economic crisis.'

'Domestic demand has continued to boost growth in many countries while external demand has remained mostly subdued because of flagging export markets, notably in advanced countries and to a lesser extent in emerging economies. Export values of goods were also depressed by lower export prices. African exports are expected to [...] as the world economy improves.'

'On the supply side, many African countries have improved their investment climate and conditions for doing business, which enhance long-term growth prospects. Benin, Côte d'Ivoire, the Democratic Republic of the Congo (DRC), Senegal and Togo are even in the top ten countries worldwide with the most reforms making it easier to do business.'

'So far African economies have been relatively resilient to the sharp fall of international commodity prices. Production of commodities has often increased despite the lower prices, and overall growth has also been boosted by other sectors. But if commodity prices remain low or decline further, growth in resource-rich countries might slow down as governments need to cut spending. Governments will be keeping a close watch on conditions in key markets, especially China and Europe. There are some positive effects, however, as lower oil prices ease inflation, increase real incomes and strengthen export markets.'

External financial flows and tax revenues for Africa

'Official remittances have increased six-fold since 2000 and [were] projected to reach USD 64.6 billion in 2015 with Egypt and Nigeria receiving the bulk of flows. They remain the largest source of international financial flows to Africa, accounting for about 33% of the total since 2010. Conversely, ODA [declined] in 2015 to USD 54.9 billion and is projected to diminish further. More than two-thirds of states in sub-Saharan Africa, the majority of which are low-income countries, will receive less aid in 2017 than in 2014.'

Trade and regional integration in Africa

'Africa is not immune to the shocks and changes in the world economy that could help or hinder its efforts to speed up integration and bring down borders.'

'Price volatility could cause problems for Africa's commodity producers. At the start of 2015, global commodity prices reached a five-year low. This is expected to have a significant impact on African trade, investment and economic growth as minerals and ores account for two-thirds of Africa's merchandise exports.'

'Intra-Africa trade is growing mostly within subregions. From 2010 to 2013, intra-African exports grew by 50% and by another 11.5% in 2013 to USD 61.4 billion. However, the share of exports between African subregions increased only from 11.3% in 2012 to 12.8% in 2013. This could indicate a lack of development of regional value chains and low levels of trade in intermediates between African countries.'

Human development in Africa

'African countries have made significant strides in all dimensions of human development, comparable with other regions of the world.'

'However, development gains are uneven with significant inequality between and within countries. Countries in East and West Africa have experienced faster rates of improvement in human development indicators related to education, health and income compared to Central, North and Southern Africa. The last 15 years have been characterised by strong recovery from the "lost decades" in the 1980s and 1990s – a period marked by slower rates of improvement in human development and even reversals in some countries.'

'Since 2000, improvement rates for human development indicators have recovered in Central and Southern Africa and accelerated in East Africa.'

'The Inequality-adjusted Human Development Index (IHDI) for sub-Saharan Africa reveals a 33.6% loss in values once adjustments are made for inequality in distribution of income, health and education outcomes. In Africa, the underlying driver of inequality in IHDI values is significant disparities in access to health and education. This contrasts strongly with high human development countries, where inequality is related more closely to income.'

'Gender inequality remains a challenge. On average, the level of female human development is 13% lower than that for males. Women in Africa face high levels of discrimination that have an impact on their socio-economic rights[...]. This is most apparent in relation to restrictions on resources and assets, physical integrity and discriminatory practices within households and families. Violence against women continues to be a major concern.'

'Human development is highly vulnerable to economic, political, social and environmental risks. [...][R]ecently, negative socio-economic consequences have arisen from the impact of the Ebola virus in West Africa. Other sources of vulnerability include the fall in commodity prices, civil war and conflicts. Human development policies must commit to maintaining gains by addressing vulnerability to natural disasters, climate change and financial setbacks for those most at risk.'

Political and economic governance in Africa

'In 2015, a record 266 million people [will] be called to the polls (IFES, 2015). Elections are planned, or have been held, in countries that are among both the continent's largest economies and most populated, including Egypt, Ethiopia, Nigeria, Sudan and Tanzania. In Nigeria, the April 2015 elections were hailed as the first handover between civilians of different political parties since independence.'

'The business environment has improved markedly in countries that needed it the most. Sub-Saharan Africa remains the region with the most difficult business environment, but it is also the region making the most progress, accounting for one in every three regulatory reforms worldwide.'

'Africa's recent growth episode has been building on greater political stability, a favourable global economic landscape and sound economic policies.'

'Africa's medium-term trend of positive growth – 5% per year on average since the turn of the century – was upset in 2009 and 2011. This corresponds to two events: in 2009, demand fell from OECD countries hit by the global economic and financial crisis, and in 2011, the Arab Spring suddenly froze growth in Egypt, Libya and Tunisia. However, on both occasions, the continent's average growth rates recovered, mainly due to the good performance of East and West Africa.'

'When comparing the performance of individual countries between 1986-2000 and 2001-14, three main factors appear to have accelerated growth:

- **Greater political stability:** Many countries that recorded growth below 2% during the period 1986-99 suffered from civil wars, military coups or social unrest (Algeria, Angola, Burundi, the Central African Republic, DRC, Djibouti, Guinea-Bissau, Niger, Rwanda and Sierra Leone). By contrast, between 2001 and 2014 violent conflict has receded overall and political stability improved – although several economies suffered again, at least temporarily, from political unrest.

- **High commodity demand and soaring prices:** During the 2000s, Africa has been benefiting from a shift of global wealth. World output growth has accelerated, mainly driven by China and other emerging nations. This has boosted demand for oil and minerals and increased commodity prices, which has benefited Africa's resource-rich countries, whose reserves are among the least exploited globally. Over the first decade of the century, African exports to Europe doubled, exports to emerging economies quadrupled and exports to China alone increased by a factor of 12. By the middle of that decade, foreign investment, stimulated by a global savings glut, poured into mines and agriculture (e.g. biofuels), but also into the infrastructure necessary to exploit them, such as ports, roads, electricity and support services (e.g. banking, insurance, transportation).'

  Average annual growth in several resource-rich countries (Angola, Chad, Equatorial Guinea, Nigeria and Sierra Leone) rose to 8% and more between 2001 and 2014.

- **Improved economic policies:** Lower inflation and stronger budgets due to more prudent fiscal policies, helped by debt relief, have improved macro-economic stability and supported growth in many countries. Governments are improving the business environment and promoting structural transformation from traditional towards more productive activities. This has helped some countries without resources, such as Ethiopia and Rwanda, to attain high annual growth of 8% or above.'

Economic Environment (cont.)

To sustain growth and accelerate transformation, African economies will have to prepare for new global conditions

'The medium- to long-term prospects for the global economy are less favourable than during the last decade. According to Braconier, Nicoletti and Westmore (2014), growth in the OECD and emerging G20 countries is likely to decelerate from 3.4% in 1996-2010 to 2.7% in 2010-60. In addition, the growth-driving effect of emerging economies on Africa may also decrease: while the "shifting wealth" phenomenon seems set to continue, growth in those economies has been slowing down. A number of them now look unlikely to catch up with average OECD income levels by 2050, even if they maintained the average growth rates they enjoyed between 2000 and 2012 (OECD, 2014b). These include lower- middle-income countries (e.g. India, Indonesia and Viet Nam) as well as upper-middle- income ones (such as Brazil, Colombia, Hungary, Mexico and South Africa). While China remains among those countries likely to catch up, it is "shifting to a lower but still rapid and likely more sustainable growth path" (OECD, 2015).'

Africa is vulnerable to climate change

'Unlike countries that industrialised earlier, African economies face the challenge of structural transformation in a global context of climate change. The negative effects of climate change-related hazards on agricultural resources heavily affect the poorest who largely depend on them not only for food but also for jobs. Pressure on already limited water supply is expected to increase sharply due to changes in water cycles caused by erratic rainfall and to affect negatively the production of annual crops such as cereals and cotton, or perennial crops like coffee, cocoa and palm oil.'

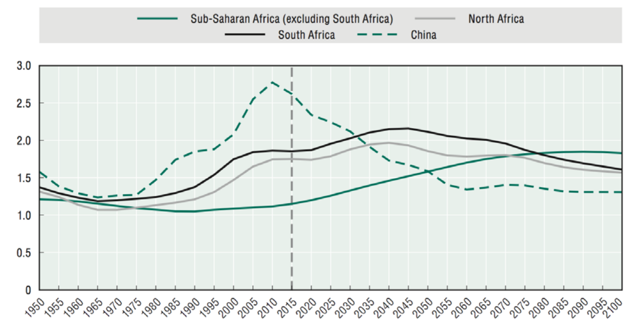
'Livestock may also suffer from shrinking water supply, as grazing land is divided and damaged, and new diseases arise. As the demographic pressure on land grows, gathering wood for fuel will cause deforestation, as will developing agriculture and felling for timber. The recent growth episode has compounded the deterioration of environmental resources. The related challenges must be taken into account in African development strategies, based on local contexts.'

Demographic growth will create both opportunities and challenges

'Africa's population of 1 billion in 2010 should double by 2050, although the magnitude of the increase will vary across the continent. South Africa and the region of North Africa will be less affected.'

'On the one hand, the ongoing demographic transition opens a window of opportunity, as the working-age population increases. The ratio between those inside and outside the workforce, the activity ratio, will increase over the next several decades and possibly create a demographic dividend for sub-Saharan Africa. The number of active people supporting inactive people will increase due to lower birth-rates; this will free up resources to improve living conditions (e.g. education, health care and housing) and boost savings and investment. And it will remove a long-lasting, heavy burden from Africa, although differences between countries will be significant. In the 1990s, there was practically one active person for each inactive one. The average activity ratio is expected to steadily rise and continue well beyond 2050. By that time it is forecast to reach 1.6 active people per inactive person in sub-Saharan Africa (still less than China's current level) (Figure 7). Ahmed et al. (2014) estimate that Africa's demographic dividend could contribute 10-15% of gross GDP volume growth by 2030.'

Figure 7. **Activity ratios in sub-Saharan Africa, North Africa, South Africa and China, 1950-2100**



Note: Aggregate ratios are population weighted. The activity ratio is the ratio between the working-age population (15-64) and the dependent-age population (under 15 and over 65). Projections are modelled using the medium fertility variant.
Source: Authors' calculations based on data from UNDESA (2012).

'On the other hand, the rapid growth of Africa's workforce will increase the pressure on labour markets. The workforce is expected to increase by 910 million people between 2010 and 2050, of which 830 million in sub-Saharan Africa and 80 million in North Africa. Creating more productive jobs, a major stake in Africa's structural transformation, becomes even more pressing. Over the next 15 years, the figures will be 370 million [for Sub-Saharan Africa] and 65 million [for North Africa] respectively, or a yearly average of 24.6 million and 4.3 million new entrants. The upcoming growth in Africa's workforce represents two-thirds of the growth in the workforce worldwide.'

Social demands are on the rise

'The African Economic Outlook's indicator of public protests monitors strikes and demonstrations with political, economic or social motives (Figure 10). Since the mid-1990s the intensity of the protests has experienced three successive movements: a reduction by half by 2004; a rebound in 2005-07 when high levels of inflation hit African households, notably through hikes in prices for food and fuel; and a sharp increase in the wake of the revolutions of the Arab Spring.'

'Remarkably, this rise in public protests contrasts with the "flatter" trend of violence by non-state actors. Also worth noticing is the fact that, while some governments have resorted to violence against demonstrators, most have shown a growing tolerance for freedom of expression. After peaking in 2013, at levels more than five times higher than ten years before, protests started to decrease slightly in 2014. This trend reflects an easing of tensions in most African countries, which contrasts with heightened tensions in a limited number of hot spots. The political normalisation of countries that had been in crisis, particularly since the Arab Spring, partly explains the overall decline in the intensity of protests.'

'Importantly, in 2014 as in the previous years, top drivers of public protests continue to be employment-related claims for wage increases and better working conditions, followed by demands for better public services (Figure 11). This confirms Afrobarometer's findings in 34 countries that Africans are increasingly dissatisfied with public provision of basic services and that "lived poverty at the grassroots remains little changed" despite the recent growth episode (Asunka, 2013; Dulani, Mattes and Logan, 2013). Similarly, according to the Ibrahim Index of African Governance (Mo Ibrahim Foundation, 2014), while "sustainable economic opportunity" had been a driver of positive governance trends over 2005-09, it contributed slightly negatively to the index over 2009-13. Lack of decent jobs and participation in the wealth accumulated over a decade of steady growth thus stand out as sources of frustration. However, there was also a rise in less traditional motives, such as political divides among citizens and, for the first time in the top ten list, protests over international or global matters'.

'That citizens should increasingly turn to mostly peaceful means of expressing social and political claims is good news, as the demand for better opportunities and more accountability is a prerequisite for improved governance. It does however increase the pressure on governments to provide viable answers to these claims, especially in the context of fast demographic growth.'

Africa needs innovative development strategies

'New development strategies must combine the merits of existing options so as to build on each economy's unique assets and chart original paths towards structural transformation. At the continental level, those assets represent an immense potential:

- a young and growing active population
- a fast growing domestic market of 1.1 billion people expected to grow by about 1.2 billion by 2050, with an emerging middle class of urban consumers (Africa's combined consumer spending was USD 680 billion in 2008 and is projected at USD 2.2 trillion in 2030; AfDB, 2011)
- a diversity of ecosystems: Africa hosts a quarter of the world's approximately 4 700 mammal species, a fifth of the world's 10 000 bird species and 40 000-60 000 plant species (UNEP, 2006)
- abundant and largely under-exploited natural resources, including an estimated 10% of the global reserves of oil, 40% of gold and 80-90% of chromium/platinum group metals (AfDB et al., 2013)
- large scale and vast land areas, with around 24%, – 600 million hectares – of the world's arable land. However, in a context of wide spatial disparities, those assets are not easily identified and exploited by private and public actors, who tend to focus on a limited range of large urban centres and natural resource enclaves.'

[<10%]

2016-013

Managing commodity price risk for African economies: Now or never by Mansour Sy. Brookings Institution Africa in Focus Blog. February 2016. www.brookings.edu

Keywords: commodity risk management, oil prices, financial risk analysis, price volatility

'[I]t is not only time to sound the alarm on commodity price volatility and its impact on African economies, but for African economies to take charge and protect their economies by fully embracing sound risk management principles.'

Economic Environment (cont.)

'According to the International Monetary Fund (IMF), Africa's growth rate fell from 5 percent in 2014 to 3.75 percent in 2015; its lowest in 17 years according to Brookings' latest Foresight Africa report. Clearly, many African economies have been hit hard by the volatility of commodity prices, which is a recurring problem. The question now is what can be done about it?'

'First, I recommend that every African country development plan include a detailed financial risk analysis for the medium and long term. Once identified, these risks now have to be quantified as much as possible. The quantification of risks should be followed by a deep analysis of risk tolerance. In the case of oilproducing countries, a risk tolerance analysis could mean finding out at what oil price level, by how much, and for how long does the economy hurt. It could also mean finding out at what oil price level the economy stops generating enough dollar revenues, which could then lead to external debt servicing problems. In the case of oilimporting countries, where oil subsidies are still in place, the question could be, "At what price level do subsidies become unsustainable for the yearly government budget?"'

'I strongly believe that African governments could benefit tremendously from integrating risk tolerance analyses into their macroeconomic studies. The shocks deemed unbearable should be the ones that lead to the formulation and implementation of a detailed risk management strategy.'

'Some may argue that for some economies, going through the steps above is now a bit too late. I disagree. In fact, for oilproducing countries, the above analyses should at least encourage getting a strategy in place now and implementing it as soon as oil prices recover to reasonable (in accordance with risk tolerance figures) levels. Moreover, for oilconsuming countries, it is absolutely crucial that they put these measures in place now and actually implement a hedging strategy that will lock in these low oil price levels for the medium term. There were many experts who expected $100 oil to be the norm; and now we are hearing that prices should stay around $30 for a prolonged period. But who knows?'

'Some [African countries] have in fact put in place successful sovereign commodity risk management programs. Ghana, Malawi, and Morocco are great examples of African nations that have understood the need to buy insurance to insulate their economies against commodity price volatility, but there needs to be more.'

'What is advisable is that African governments use a diverse set of tools to manage risks. For example, hedging and diversification away from oil for oilproducing countries (which unfortunately cannot happen overnight) are two sets of strategies that are readily available in the risk management toolkit. We have now seen the damage commodity price volatility inflicts to African economies. As a result, governments cannot sit idly by and not insulate their economies against commodity price risk.'

[48%]

2016-014

Peering into energy's crystal ball by Scott Nyquist. McKinsey Quarterly. July 2015. www.mckinsey.com

Keywords: energy production, renewable energy, climate change, energy efficiency, fossil fuels

'The 2007 [McKinsey forecasts based on the resource-productivity framework and greenhouse-gas cost curve] looked at a number of potentially disruptive technologies and assessed their prospects. Here's how we did:

'**Solar.** Photovoltaic (PV) installations have taken off much faster than we expected. Costs fell steeply, driving adoption. We expected costs to fall to $2.40 per watt by 2030 but weren't bullish enough; in fact, they are on course to hit $1.60 per watt by 2020.'

'**Batteries.** [I]innovation in consumer devices is changing the game for large-format batteries. In 2007, large-format lithium-ion storage cost about $900 per kilowatt-hour; today, the cost is about $380, and it's on track to drop below $200 in five years.'

'**Energy efficiency.** Innovation has come faster than we expected; the forces we thought would hold it back, such as high adoption costs and the slow pace of improvement, proved surmountable. Today we are at a tipping point in consumer behavior; cheap mobile communications, for example, are enabling the connected home. And hardware costs have fallen.'

'[W]e saw a bigger future for nuclear, but cost overruns, cheap natural gas, and the 2011 disaster at Fukushima derailed these expectations. Biofuels have also stalled.

Economic Environment (cont.)

A lack of innovation and low oil prices have hurt demand for biofuels.'

'As a whole, then, we were too optimistic about most fossil fuels and not optimistic enough about most renewables, natural gas, and efficiency. If all these energy trends continue—and, of course, they might not—what are the implications?'

'Just a decade ago, the idea that the United States is now the largest producer of petroleum and natural-gas hydrocarbons would have seemed ludicrous. Today, the country sends diesel fuel to Europe, gasoline to Latin America, and natural gas to a growing number of markets. Almost no crude oil now moves across the Atlantic to the United States; almost all of it moves to Asia. These shifts are changing the dynamics of regional markets around the world and shifting the center of trading and pricing to Asia.'

'Low prices and uncertainty, meanwhile, are making the pressure on oil and gas companies to improve their performance more urgent. Utilities are already struggling to deal with competition from on-site generation—energy from rooftop panels, gas turbines, or other sources that are produced for a specific place—and valuations have tumbled in many markets.'

'For consumers, the biggest change will probably be on the road. Electric vehicles accounted for under 1 percent of US sales in 2014 and for even less globally—but the pace is picking up. McKinsey's Energy Insights unit projects that in 2030, about 10 percent of all cars in the 34 member countries of the [OECD] will be at least partially electric. China has set an ambitious target of five million electric or plug-in hybrid vehicles on its roads by 2020. Autonomous (self-operating) trucks in mining and farming are delivering big savings on labor and carbon-dioxide emissions. Car-sharing services are taking off in Europe and the United States, while Lyft, Uber, and others have upended the taxi business and begun to change patterns of personal vehicle ownership and public-transport choices.'

More predictions

'Gas will be king. In China and the United States, the future is bright for gas because demand is expanding—for example, in the shift to gas for heavy road transport.'

'Solar will grow fast but remain small compared with conventional sources. Crashing prices in solar may be the key to bringing power to the more than 1.3 billion people who currently do without. A future of distributed generation would allow countries to leapfrog the cost and complexity of building reliable grids. PV is set to capture by far the largest slice of the renewables pie.'

'Coal will grow more slowly but will remain huge. The king of fossil fuels is still top of the heap in Asia and will probably remain the fuel of choice. While China is making ambitious moves toward cleaner energy, a true shift away from coal is not imminent. In the United States and Europe, coal is under pressure from regulators and low natural-gas prices. According to the US Energy Information Administration, coal still accounts for 39 percent of US electricity generation today, but that's down from almost 50 percent a decade ago.'

'Value will continue to migrate from generation to services. Distributed generation, dispatchable demand, and the digital grid are redefining the power system. Disruptors are cutting out traditional utilities as new technologies (and financing techniques) let customers opt out of traditional energy supplies.'

'Nuclear could be a surprise winner. Small modular reactors can provide 24-hour power, without the immense capital expenditure of traditional nuclear reactors. Yes, nuclear is controversial in many countries, but as an emission-free source of constant power, it may be difficult to avoid.'

[48%]

2016-015

The oil conundrum. The Economist. January 2016. www.economist.com

Keywords: oil, commodity prices, OPEC, climate change

'The prospect of Iran swiftly dispatching its [oil] supertankers to European and Asian refineries to undercut supplies from Saudi Arabia, Iraq and Russia helped push the world's main benchmarks, Brent and West Texas Intermediate (WTI), to their lowest levels since 2003.'

'The slide marks the latest act in a dramatic reversal of fortunes for the oil industry that is, in turn, roiling the global economy. Less than a decade ago the world scrambled for oil, largely to fuel China's commodity-hun-

Economic Environment (cont.)

gry growth spurt, pushing prices to over $140 a barrel in 2008. State-owned oil giants such as Saudi Aramco had access to the cheapest reserves, forcing private oil firms to search farther afield—in the Arctic, Brazil's pre-salt fields and deep waters off Angola —for resources deemed ever scarcer.'

'Now the fear for producers is of an excess of oil, rather than a shortage. The addition to global supply over the past five years of 4.2m barrels a day (b/d) from America's shale producers, although only 5% of global production, has had an outsized impact on the market by raising the prospects of recovering vast amounts of resources formerly considered too hard to extract.'

'Last year the world produced 96.3m b/d of oil, of which it consumed only 94.5m b/d. So each day about 1.8m barrels went into storage tanks—which are filling up fast.'

'When, in November 2014, Saudi Arabia forced OPEC to keep the taps open despite plummeting prices, it hoped quickly to drive higher- cost producers in America and elsewhere out of business. Analysts expected a snappy rebound in prices. Though oil firms have since collectively suspended investment in $380 billion of new projects, as yet there is no sign of a bottom. Projections for a meaningful recovery in the oil price have been pushed back until at least 2017.'

'So far in 2016 a 28% lurch downwards in oil prices has coincided with turmoil in global stockmarkets. It is as if the markets are challenging long-held assumptions about the economic benefits of low energy prices, or asserting that global economic growth is so anaemic that an oil glut will do little to help.'

'Iran is the most immediate cause of the bearishness. It promises an immediate boost to production of 500,000 b/d, just when other members of OPEC such as Saudi Arabia and Iraq are pumping at record levels.'

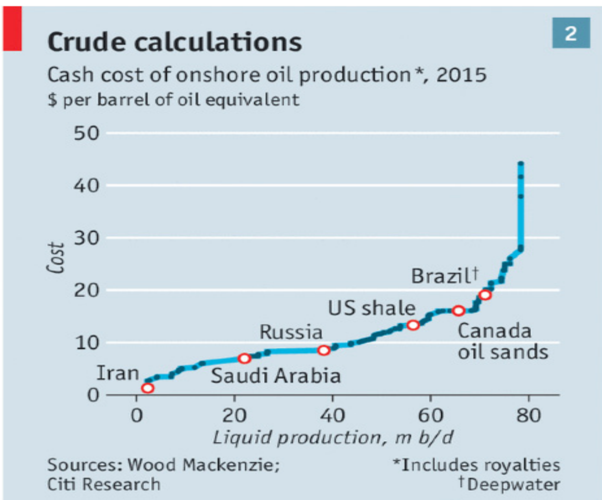
'Shale-oil producers, using technology that is both cheaper and quicker to deploy than conventional oil rigs, have made the industry more entrepreneurial. Big depreciations against the dollar have helped beleaguered economies such as Russia, Brazil and Venezuela to maintain output, by increasing local-currency revenues relative to costs. And growing fears about action on climate change, coupled with the emergence of alternative-energy technologies, suggests to some producers that it is best to pump as hard as they can, while they can.'

'One of the remarkable features of last year's oil market was the resilience of American shale producers in the face of falling prices. Since mid-2015 shale firms have cut more than 400,000 b/d from output in response to lower prices. Nevertheless, America still increased oil production more than any other country in the year as a whole, producing an additional 900,000 b/d, according to the IEA.'

'It is not just the shale industry that managed to keep its head above water longer than expected. Those extracting in more expensive places, such as Canada's oil sands and Brazilian pre-salt, have too.'

'Simon Flowers of Wood Mackenzie, an industry consultancy, says that even at $30 a barrel, only 6% of global production fails to cover its operating costs. It may be uneconomic to drill new deepwater wells at prices under $60 a barrel, he says, but once they are built it may still make economic sense to keep them running at prices well below that. Such resilience is used by some to justify why they expect prices to remain "lower for longer".'

'The economies that have enjoyed the strongest GDP growth in the past year have indeed been oil importers: India, Pakistan and countries in east Africa. It is hard to explain the consumer-led recovery in the euro area without assuming a positive impact from lower oil prices. In the IMF's latest forecast, published on January 19th, the handful of big economies that were spared downgrades to GDP growth—China, India, Germany, Britain, Spain and Italy—were all net oil importers.'



Economist.com

Economic Environment (cont.)

'Unsurprisingly some of the biggest splashes of red ink in the IMF's latest forecast revisions were reserved for countries where oil exploration and production has played a significant role in the economy: Brazil, Saudi Arabia, Russia (and some of its oil-producing neighbours) and Nigeria. Weaker demand in this group owes much to strains on their public finances.'

'Russia has said it will cut public spending by a further 10% in response to the latest drop in crude prices. The oil industry accounts for 70% of tax revenue in Nigeria. When the oil price plunged in 2008-09, it was able to draw on savings it had salted away in an oil-stabilisation fund. But in June the country's president, Muhammadu Buhari, said the treasury was "virtually empty". Saudi Arabia has deeper pockets but, with a budget deficit that reached 15% of GDP last year, even it has been forced to cut public spending.'

'The old calculus that such countries were able to smooth spending through the oil-price cycle has become less reliable. To a larger degree than in the past, oil producers have spent windfall revenues, and now have been forced to cut back. This compounds the effect on aggregate demand of falling investment in the oil industry.'

'Perhaps more worrying is the way the oil-price drop is compounding the effect of financial fragility worldwide. Low interest rates in America and Europe after 2009 drew rich-world investors into emerging markets, creating a lending boom. Corporate debt in emerging markets rose from 50% of GDP in 2008 to 75% in 2014. The lesson of recent history is that a rapid build-up in debt leads to trouble. Along with construction, the oil and gas industry saw a big increase in corporate debt, according to the IMF's latest Global Financial Stability Report. Lower oil revenues make it harder to service this burden.'

'When the oil price slumped in 2008-09 oil-producing countries were able to cut interest rates and borrow abroad to prop up demand. Now investors are charier of risk. The end of the Federal Reserve's programme of bond buying ("quantitative easing") in 2014 and the recent increase in interest rates has drawn money back to America, boosting the dollar and tightening global monetary conditions.'

'Oil producers, notably in Latin America, are having to tighten domestic monetary policy to tackle inflation, in part caused by big falls in their currencies. Brazil's central bank has kept interest rates high, even though its economy is deep in recession. Central banks in Colombia and Mexico raised rates in December. The same strains are evident in oil-rich Nigeria and Angola, the largest and third-largest economies in sub-Saharan Africa. The easier financial conditions in the years after 2009 gave policymakers in Africa a false sense of their own resilience, says Stuart Culverhouse of Exotix, a broker.'

'Since the start of the year, the supply shock from Iran has also been accompanied by fears of a demand one from China. The bungled handling of China's stockmarket and currency has raised fears about the economy, which has spilled over into the oil market. As global financial markets have descended into turmoil, there are mounting worries about the resilience of the global economy, too. That, in turn, raises anxiety about future oil demand.'

Green and black

'After the Paris summit on climate change in December some pundits reckon that the latest oil crisis reflects a structural change in oil consumption because of environmental concerns—what some call "peak demand".'

'More likely, the oil price will eventually find a bottom and, if this cycle is like previous ones, shoot sharply higher because of the level of underinvestment in reserves and natural depletion of existing wells. The shalemen, rather than the Saudis, could well become the world's swing producers, adding to volatility, perhaps, but within a relatively narrow range.'

'Big oil firms would then face some existential questions. In the future, should they carry on as before, splurging on expensive vanity projects in hard-to-reach places, at the risk of having "unburnable" reserves as environmental concerns mount? Should they reinvest their profits in shale or in greener technologies? Or should they return profits to shareholders, as some tobacco companies have done, marking the beginning of the end of the fossil-fuel era? Whatever they do, the era of oil shocks is far from over.'

[47%]

2016-016

No Oil Price Rebound Anytime soon – IEA. iAfrica. February 2016. www.iAfrica.com

Keywords: oil, OPEC, commodity prices

'Oil prices may have rebounded off 12year lows struck [in January], but any hope for a broader recovery in the market would be misplaced [...].'

'The International Energy Agency said in its monthly report that "it is very hard to see how oil prices can rise significantly in the short term ... with the market already awash in oil...". On the contrary, it said "...the short term risk to the downside has increased".'

'Crude prices collapsed from over $100 per barrel in July 2014 to under $30 on a slowdown in Chinese growth and as the OPEC oil cartel stepped up output in an attempt to force out highercost production.'

'While low oil prices are usually good for oil consuming nations and global economic activity, investors have uncharacteristically in recent months begun to take the oil price as a proxy for economic demand, roiling global markets in volatility.'

OPEC glut

'[The IEA] pointed out that Iraqi production struck a new record in January and that there are indications Saudi Arabia has stepped up shipments.'

'While nonOPEC production levels are roughly flat from one year ago, at 32.6 mbd in January, OPEC supplies were up by 1.7 million barrels per day from a year earlier.'

'[T]he IEA said it holds on to its "...view that global oil demand growth will ease back considerably in 2016" to 1.2 mbd from a fiveyear high of 1.6 mbd in 2015.
It trimmed by 0.1 mbd its forecast for world oil demand in 2016 to 95.6 mbd.'

Any change likely downward

'The International Monetary Fund last month cut its forecast for global growth this year by 0.2 percentage points to 3.4 percent.'

'While this would still be an improvement from 3.1 percent in 2015, the IEA noted the forecast is "heavily caveated with risks to growth in Brazil, Russia and of course slower growth in China," noted the IEA.'

'[One] factor driving oil prices higher is expected output cuts in nonOPEC production later this year.'

'The IEA, which forecasts a net drop of 0.6 mbd in 2016, noted that drops in production have so far been slower than the market has predicted.'

[48%]

2016-017

Oil crash exposes Angola's era of excess. IRIN Africa. January 2016. www.irinnews.org

Keywords: Food Security, governance, drought, Angola

'There's never a good time for a drought, but this is a particularly bad period for Angola as it struggles to cope with shrinking revenues as a result of the global oil price crash.'

'In the southern province of Cunene, 800,000 people – more than 70 percent of the population – are threatened with food shortages due to last year's poor harvest. The drought has also affected the neigbouring provinces of Cuando, Cubango and Huila, where the rural poor do not have enough in their granaries to tide them over to the next harvest in June.'

'"We gather that supplies of essential medicines are disrupted. We have observed stock outs of therapeutic foods, reduced outpatient services, and increased admissions to inpatient nutrition centres that are ill equipped to provide the required level of service," [the development agency, World Vision] warned.'

'Oildependent Angola introduced spending cuts of around 50 percent last year as revenues fell, undermining its ability to cope with the current crisis. In 2014, oil prices were around $100 per barrel. Currently, they are at a low of about $31 per barrel, the
local currency the kwanza has been devalued, and nationwide a total of more than 1.25 million Angolans are struggling with crop losses and livestock deaths.'

'It's a far cry from the freespending oil boom years when Angola Africa's second largest oil exporter tried to make up for more than a quarter century of civil war with a splurge in infrastructural projects and dizzying plans to become an economic and military powerhouse in southern Africa.'

'Writing in the journal *Foreign Affairs* last year, [Angola specialist Ricardo Soares de Oliveira] noted: "As those citizens awake from their dreams of petroprosperity to leaner times, the key question is where their dissatisfaction will lead, especially now that the state's resources to buy off rising constituencies are dwindling." '

Silver lining?

'Spending cuts are forcing reforms to Angola's system of subsidies – from fuel to water services – resulting in sharp rises in the cost of living, as well as a backlog in the refuse collection programme in the capital, Luanda. Civil servants are only receiving their pay intermittently.'

'"The fall in the oil price is stimulating the government to move ahead on a number of reforms that were already planned but it had been slow to implement," said [Allan Cain, director of the Luandabased NGO Development Workshop]. "There is an incentive to make urban services affordable and at a just price for everyone to pay." '

[61%]

2016-018

East Africa's Emerging Economic Drivers by Mwangi Mumero. African Review of Business and Technology. October 2015. www.africanreview.com

Keywords: East Africa, Kenya, construction, infrastructure, employment

'Building and construction, ICT and energy are some of the key sectors driving the Kenyan economy, with the World Bank projecting a seven per cent growth rate by 2017.'

'Experts say that huge construction projects such as the Mombasa-Nairobi Standard Gauge Rail (SGR), Lamu Port, regional roads and rising real estate have been vital in driving the economy forwards.'

'"Kenya is emerging as one of Africa's key growth centres with sound economic policies in place for future improvement. To sustain momentum, Kenya needs to continue investing in infrastructure and jobs, improve its business climate and boost its exports," said Diarietou Gaye, the World Bank's country director.'

'Overall, building and construction sectors grew by 13.1 per cent in 2014 compared to a revised growth of 5.8 per cent in 2013.'

Credit for capacity

'The total quantity of petroleum products imported increased by 12.5 per cent to 4.5mn t in 2014 from four million tonnes in 2013. This led to an expansion of the import bill by 5.6 per cent to US$3.3bn. Domestic petroleum demand also rose by 5.3 per cent to 3.9mn t in 2014.'

'In electricity, total installed capacity expanded by 4.7 per cent from 1,717.8MW in 2013 to 1,798.3MW in 2014, mainly due to increased geothermal capacity.'

'This had an effect of expanding total electricity generated by 8.2 per cent.'

'In the 2014, the [ICT] sector registered a 13.4 per cent growth rate compared to 12.3 per cent the previous year. Internet penetration stood 38. 3 per cent with the total domestic short messaging services (SMS) growing by 38.5 per cent to send 27.7bn SMS in 2014. But it is the booming mobile money subscription and cash transfer that have left analysts puzzled. In 2014, total mobile money subscription reached 26mn, representing 60.6 per cent of the total Kenyan population. Cash deposits made via mobile money agents reached US$12.7bn in 2014 compared to US$10.3bn in 2013 with total transfers growing by 24.7 per cent to US$23.7bn from US$19.02bn in 2013.'

Containers and commodities

'Goods hauled by rails expanded by 24.3 per cent from 1.2mn t in 2013 to 1.5mn t in 2014. The Port of Mombasa the main gateway to Kenya and beyond recorded an 11.3 per cent growth in cargo handled from 22.3mn t in 2013 to 24.9mn t in 2014.'

'Manufacturing, agriculture and tourism reported mixed fortunes in the 2013/14 period. While the economy has continued to make goods for the domestic and exports market, the contribution of manufacturing sector to the economy has stagnated at 10 per cent.'

'"Kenya needs to increase the competitiveness of the manufacturing sector so that it can grow, export, and create much-needed jobs," Maria Paulina Mogollon, a World Bank Group expert and a co-author of a recent WB report on Kenya's economic performance.'

'Overall, the Kenyan economy created 799,700 jobs in 2014 with the informal sector accounting for 82.7 per cent of total employment.'

'Even with the low performance in the [agricultural] sector, horticultural exports mainly to Europe, Middle East and Asia continued to blossom. Coffee and tea production declined over the same period. Recent lifting of travel bans by European nations such as Britain and France on Kenya has become the silver lining of the dark cloud that is Kenyan tourism.'

'Insecurity along the Kenyan border with Somalia as well as along the pristine coastal beaches has led to a massive slump of the tourism sector since 2011.'

[49%]

2016-019

Africa set for GDP growth of 4.5 trillion by 2025. BizCommunity. February 2016. www.bizcommunity.com

Keywords: GDP growth, online retail, urbanisation, demographics, energy, trade

'Urbanisation, mobility, infrastructure, natural resources, telecommunications investments and interregional trade are just a few of the untapped opportunities making Africa the last growth frontier. The continent is set to become the second fastest growing region by 2025, with a gross domestic product (GDP) of $4.5 trillion.'

'[...] Africa is the only continent that has the potential to achieve double digit economic growth within the next decade. It is expected that close to half of the continent's population will live in large cities [...]. If [the current demographic] trend continues for the next 20 years, Africa will have the highest labour population surpassing both China and India.'

Key trends revealed in the Mega Trends in Africa analysis:

> 'Online retail will grow significantly in the next five years and will account for nearly 7% of total retail sales in Africa in 2025. Nigeria, South Africa, Egypt, and Kenya are emerging as the top markets for online retailing in Africa.'

'Energy demand will grow to 930.4 MTOE in 2025, which is more than double the current demand. The mining and minerals industry will be the bulk consumers of energy by 2025. Africa will grow from its current nascent stage to an emerging renewable energy hub with a substantial compound annual growth rate (CAGR) of 8% by 2025'

'Africa's trade volume is likely to grow threefold by 2030. East Africa is projected to have the highest growth in trade volume, driven by improved transportation infrastructure. The Proposed Free Trade Area (TFTA) between South African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA) and East African Community (EAC) is expected to drive imports by an average of 60% by 2020.'

[Watch the video that accompanies this article at: https://www.youtube.com/watch?v=k56QIqkEmy8]

[66%]

Social Environment

2016-020

The four global forces breaking all the trends by Richard Dobbs, James Manyika, and Jonathan Woetzel. McKinsey Global Institute. April 2015. www.mckinsey.com

Keywords: mega-trends, urbanisation, technological change, aging, globalisation

1. Beyond Shanghai: The age of urbanization

'As recently as 2000, 95 percent of the Fortune Global 500—the world's largest international companies [...] —were headquartered in developed economies. By 2025, when China will be home to more large companies than either the United States or Europe, we expect nearly half of the world's large companies [...] to be headquartered in emerging markets.'

'Perhaps equally important, the locus of economic activity is shifting within these markets. The global urban population has been rising by an average of 65 million people annually during the past three decades, the equivalent of adding seven Chicagos a year, every year. Nearly half of global GDP growth between 2010 and 2025 will come from 440 cities in emerging markets—95 percent of them small- and medium-size cities that many Western executives may not even have heard of and couldn't point to on a map.'

2. The tip of the iceberg: Accelerating technological change

'The second disruptive force is the acceleration in the scope, scale, and economic impact of technology. Technology—from the printing press to the steam engine and the Internet —has always been a great force in overturning the status quo. The difference today is the sheer ubiquity of technology in our lives and the speed of change. As fast as innovation has multiplied and spread in recent years, it is poised to change and grow at an exponential speed beyond the power of human intuition to anticipate.'

'Processing power and connectivity are only part of the story. Their impact is multiplied by the concomitant data revolution, which places unprecedented amounts of information in the hands of consumers and businesses alike, and the proliferation of technology- enabled business models [...]. Twenty years ago, less than 3 percent of the world's population had a mobile phone; now two-thirds of the world's population has one, and one-third of all humans are able to communicate on the Internet. The furious pace of technological adoption and innovation is shortening the life cycle of companies and forcing executives to make decisions and commit resources much more quickly.'

3. Getting old isn't what it used to be: Responding to the challenges of an aging world

'The human population is getting older. Fertility is falling, and the world's population is graying dramatically. While aging has been evident in developed economies for some time—Japan and Russia have seen their populations decline over the past few years—the demographic deficit is now spreading to China and soon will reach Latin America. For the first time in human history, aging could mean that the planet's population will plateau in most of the world. Thirty years ago, only a small share of the global population lived in the few countries with fertility rates substantially below those needed to replace each generation—2.1 children per woman. But by 2013, about 60 percent of the world's population lived in countries with fertility rates below the replacement rate. This is a sea change. The European Commission expects that by 2060, Germany's population will shrink by one-fifth, and the number of people of working age will fall from 54 million in 2010 to 36 million in 2060, a level that is forecast to be less than France's. China's labor force peaked in 2012, due to income-driven demographic trends. A smaller workforce will place a greater onus on productivity for driving growth and may cause us to rethink the economy's potential. Caring for large numbers of elderly people will put severe pressure on government finances.'

4. Trade, people, finance, and data: Greater global connections

'The final disruptive force is the degree to which the world is much more connected through trade and through movements in capital, people, and information (data and communication)—what we call "flows." Trade and finance have long been part of the globalization story but, in recent decades, there's been a significant shift. Instead of a series of lines connecting major trading hubs in Europe and North America, the global trading system has expanded into a complex, intricate, sprawling web. Asia is becoming the world's largest trading region. "South–south" flows between emerging markets have doubled their share of global trade over the past decade. The volume of trade between China and Africa rose from $9 billion in 2000 to $211 billion in 2012. Global capital flows expanded 25 times between 1980 and 2007.

More than one billion people crossed borders in 2009, over five times the number in 1980. These three types of connections all paused during the global recession of 2008 and have recovered only slowly since. But the links forged by technology have marched on uninterrupted and with increasing speed, ushering in a dynamic new phase of globalization, creating unmatched opportunities, and fomenting unexpected volatility.'

Resetting intuition

'These four disruptions gathered pace, grew in scale, and started collectively to have a material impact on the world economy around the turn of the 21st century. The fact that all four are happening at the same time means that our world is changing radically from the one in which many of us grew up, prospered, and formed the intuitions that are so vital to our decision making.'

'Our intuition has been formed by a set of experiences and ideas about how things worked during a time when changes were incremental and somewhat predictable. If we look at the world through a rearview mirror and make decisions on the basis of the intuition built on our experience, we could well be wrong. In the new world, executives, policy makers, and individuals all need to scrutinize their intuitions from first principles and boldly reset them if necessary. This is especially true for organizations that have enjoyed great success.'

[49%]

2016-021

Africa's Middle Class by John Campbell. Council on Foreign Relations Africa in Transition blog. November 2015. www.blogs.cfr.org

Keywords: middle class, wealth distribution, inequality

'According to a recent Credit Suisse report, the African middle class is almost seventeen times smaller than had been previously thought. For at least a decade it has been conventional wisdom among investors that Africa's middle class is growing, that the "lions are on the move" (McKinsey's phrase), and that the continent is the next China for frontier market investors. In 2011, the African Development Bank's (AFDB) paper, "The Middle Pyramid: Dynamics of the Middle Class in Africa," had classified 313 million Africans as middle class, further supporting the optimistic narrative.'

'Now, however, the "rise of the African middle class" narrative is looking oversold. Rather than numbering 313 million, other research studies, notably those that inform the Credit Suisse Group's "Annual Global Wealth Databook," indicate the figure is nearer eighteen million. The food company Nestle's Africa regional chief executive sums up the new pessimism: "We thought this would be the next Asia, but we have realized the middle class here in the region is extremely small and it is not really growing."'

'Part of the issue is defining "middle class." The AFDB study measured income and consumption to determine middle class status, which it determined fell within a range of $2 to $20 per day. It then divided that range into three bands. It fully acknowledged that in the lower and largest band, middle class income and consumption was fragile, and that illness, job loss, or a variety of other factors could plunge a middle class individual or family back into the poor. They are particularly vulnerable to the current fall in commodity prices and contraction in China's imports from Africa.'

'Other economists, notably Anthony Shorrocks, Jim Davies, and Rodrigo Lluberals focus on assets rather than income to determine the size of the middle class. That approach, they argue "breaks new ground by defining the middle class in terms of a wealth band rather than an income range." They conclude that 14 percent of the world's population is middle class, but only 3.3 percent of Africa's 572 million adults – or 18.8 million. (This includes North Africa in their African statistics.) Of the African middle class as defined by assets, one quarter, or 4.3 million, live in South Africa. In Nigeria, only 922,000 of its 83.3 million adults are middle class, using this method of calculation. According to a "Mail and Guardian" table based on the "CreditSuisse Wealth Databook 2015," 38.8 percent of the North American population is middle class, 33.1 percent of Europe's, and 10.7 percent of China's.'

'Based on the "CreditSuisse Wealth Data Book 2015," [...] the 3.2 percent of the population that is middle class accounts for 32.1 percent of Africa's wealth. But the richest Africans, only 1.15 million adults or 0.2 percent of African adults, accounts for 30.6 percent of the continent's wealth. That leaves the remaining 37 percent of the continent's wealth for 96.6 percent of the continent's population.'

Social Environment (cont.)

[80%]

2016-022

Optimism about Africa's demographic dividend by Kaushik Basu. World Bank AfricaCan End Poverty Blog. October 2015. http://blogs.worldbank.org/africacan

Keywords: demographics, fertility rates, dependency ratios

'Based on new data and research, there is reason for optimism about Africa's demography and development.'

'The flagship publication, "Africa's Demographic Transition: Dividend or Disaster?" highlights the main signals of change relating to the known preconditions for fertility decline that have been demonstrated empirically to be important in other parts of the world. These include economic development, decline in infant and child mortality, sudden temporary rise in fertility, and the easier availability of modern contraception. All these factors seem to be making their presence felt in many parts of the continent in the last 15 years or so. Child mortality has shown remarkable declines in country after country (although there is admittedly some distance to go, especially in Middle and Western Africa).'

'Having begun later than in other parts of the world, fertility decline in Africa has the benefit of hindsight. But in the 1980s and 1990s this hindsight was not used because of a global retreat from family planning programs. Since the beginning of the 21st century there has been renewed international effort to provide more and better contraceptive services and implement more effective programs. Recent rises in contraceptive prevalence rates in many countries (especially in countries like Ethiopia and Rwanda) testify to the effectiveness of such strategizing.'

'These factors will hasten fertility declines in Africa and thus reduce dependency ratios. In addition, such policies will also be aided by the cultural fact that many parts of Africa (especially Eastern and subSaharan) have a long tradition of women participating in the labor force, unlike the situation in many parts of Asia and South America. This means that once reduced childbearing frees up women to participate more actively in the workforce, if their skills and work opportunities can be enriched, the demographic dividend could be realized even more sharply than happened in other parts of the world.'

[Watch the video that accompanies this article at: https://www.youtube.com/watch?v=AYE6dAovEqo]

[61%]

2016-023

How big really is Africa's middle class? by Sherelle Jacobs. African Business. September 2015. www.africanbusinessmagazine.com

Keywords: middle class, Standard Bank, African Development Bank, living standards, multi-national corporations

'Africa's 'bulging middle class' has become one of the most ubiquitous buzz phrases in the context of the continent's business prospects.'

'But the actual size of the continent's middle class is the subject of fierce debate. And there are already hints that some companies have paid dearly for overestimating the clout of Africa's middle-income earners.'

'In June, Nestlé, the world's leading food and drinks company, announced its intention to slash its Africa workforce by 15% across 21 countries. Despite investing $1bn on the continent over the last decade and building several new factories, the leading multinational has struggled to make a profit. It has consequently been forced to close country offices in East Africa and halve its production line.'

'Last year, drinks multinational Diageo attempted to "premiumise" its market in Nigeria, shifting its focus to promoting pricier spirits. However, the strategy proved problematic, and when the company's Nigeria sales dropped by 9% in 2014, Diageo promptly shifted back to its traditional strategy of driving Guinness sales. Revenue figures have since recovered.'

Defining the middle class

'In 2011, a team of experts at the African Development Bank Group (AfDB) produced a seminal paper on Africa's middle class. 'The Middle Pyramid: Dynamics of the Middle Class in Africa' found that the number of middle-class Africans had tripled over the space of three decades to 313m. This equated to 34% of the population or one in three people. Thus, one of the most bandied-about statistics of the last five years – that one third of Africans are middle class – was born.'

Some very different figures

'Last September, Standard Bank published a study that sent ripples of discomfort through the community of African economists. The report examined the middle class in 11 sub-Saharan African countries that account for over half the region's GDP. Using its own definitions, it estimated the size of the middle class in all of these countries combined to be just 15m.'

'This study put Nigeria's middle class at 4.1m or a mere 11% of the population. It estimated the middle-class population to account for just 21% of Angola's households, 14% of Sudan's, and around 10% of Zambia's. Furthermore, Standard Bank's research found that most African households remained in a low-income band – an overwhelming 94m individuals, or 86% of the sample population.'

'The report identified East Africa as particularly lagging behind, despite perceptions of a bulging middle class in countries such as Kenya. The proportion of low-income households in major East African nations was strikingly high: 99% in Ethiopia, 97% in Tanzania, and 92% in Kenya. The key to Standard Bank's much more modest estimates about the size of the middle class was its deployment of the Living Standards Measure. This takes into consideration factors like ownership of basic electronic household items such as refrigerators and televisions as well as ownership of other goods such as cars.'

' "In contrast, when you use the Living Standards Measure you are talking about households that spend around half of their income on non-essential items." '

While this definition comes up with a radically different assessment of the size of Africa's middle class, Steve Kayizzi-Mugerwa, one of the authors of the AfDB study, maintains that there are still positive signs about the growth of this group. "[...][A]ll evidence suggests that the middle class in Africa has expanded rapidly in the past decade. Look at the housing stock for example."

Falling for the hype?

'[...][T]he attitude of international corporations towards Africa remains largely cautious. Far from being seduced by tales of a bulging middle class, the majority of international consumer-focused companies, selling everything from cars to coffee machines, have remained impervious to them.'

'EY's Africa Attractiveness Survey 2014 found that businesses that have not already made inroads into Africa are significantly less enthusiastic about doing business on the continent than companies that have already made the leap. The former actually ranked Africa as the least-appealing investment destination on the planet. EY commented that "the gap could hardly be wider" and added that it was a view "often based on perceptions that are 20 to 30 years out of date".'

'[Standard Bank's Simon Freemantle says] "You find that companies targeting the lower end of the middle-class scale are doing very well in Africa. However, for companies with high-end products that will only be affordable to the upper middle class, the market often just is not there yet," he adds.'

[47%]

2016-024

Delighting in the possible by Zafer Achi and Jennifer Garvey Berger. McKinsey Quarterly. March 2015. www.mckinsey.com

Keywords: leadership, forecasting, systems thinking, management, complexity

'It's only natural to seek certainty, especially in the face of the unknown.'

'When most of us face a challenge, we typically fall back on our standard operating procedures. Call this "managing the probable." In much of our education, and in many of our formative experiences, we've learned that some simple problems have one right answer. For more complicated problems, accepted algorithms can help us work out the best answer from among available options. We respond to uncertainty with analysis or leave that analysis to the experienced hands of others. We look for leaders who know the way forward and offer some assurance of predictability.'

'This way of approaching situations involves a whole suite of routines grounded in a mind-set of clarity if not outright certainty. Our tendency to place one perspective above all others—the proverbial "fact-based view" or "maximizing key stakeholders' alignment"—can be dangerous. All too often, we operate with an excessively simple model in enormously messy circumstances. We fail to perceive how different pieces of reality interact

Social Environment (cont.)

and how to foster better outcomes.'

'Moving from "managing the probable" to "leading the possible" requires us to address challenges in a fundamentally different way. Rather than simply disaggregating complexities into pieces we find more tractable, we should also broaden our range of interventions by breaking out of familiar patterns and using a whole new approach that allows us to expand our options [...]. A few simple habits of mind presented here can prod us toward thinking and acting differently.'

Unexpected possibilities

'We relish stories of unexpected possibilities—little bets that created huge and unforeseen benefits. We can't foresee how uncertain conditions will unfold or how complex systems will evolve, but we can conduct thoughtful experiments to explore the possibilities.'

'[...][I]t's not just large innovations that make a difference. When people think in new ways, very small shifts can have unexpected and significant consequences.'

Habits of mind

'Uncertainty can't be solved with pat procedures; it takes new habits of mind to lead the possible. In our experience, three such habits stretch the capabilities of leaders and help them not only to lead the possible but also to delight in it.'

Ask different questions

'The questions we ask emerge from our typical patterns of thought. We focus on narrowing down a problem so that we can find a solution. But we often fail to notice that in doing so we constrain the solution and make it ordinary. Asking different questions helps slow down the process. We begin to take in the full range of data available to us and in consequence have a significantly wider set of possible options. Examples of such questions include the following:

- What do I expect not to find? How could I attune to the unexpected?
- What might I be discounting or explaining away a little too quickly?
- What would happen if I shifted one of my core assumptions on an issue, just as an experiment?

Take multiple perspectives

'No one can predict when or where the next vital idea will emerge, but we can support an expansive view of our present conditions. We can start by pushing back on our natural inclination to believe that the data we see are all the data we need and by distrusting our natural craving for alignment. Considering multiple perspectives opens up our field of vision. Diversity might create more disagreement and short-term conflict, but in an uncertain environment, a more expansive set of solutions is desirable.'

'We can try these approaches:

- Take the perspective of someone who frustrates or irritates us. What might that person have to teach us?
- Seek out the opinions of people beyond our comfort zone. The perspectives of, among others, younger people, more junior staff, and dissatisfied customers can be insightful and surprising.
- Listen to what other people have to say. We should not try to convince them to change their conclusions; we should listen to learn. If we can understand their perspectives well enough, we might even find that our own conclusions change.'

See systems

'This approach is about seeing patterns of behavior, and then developing and trying small "safe-to-fail" experiments to nudge the system in a more helpful direction. Leaders are best served when they get a wider, more systemic view of the present. Yet we've been trained to follow our natural inclination to examine the component parts. We assume a straightforward and linear connection between cause and effect. Finally, we look for root causes at the center of problems. In doing these things, we often fail to perceive the broader forces at work. The more we can hold on to the special features of systems, the more we can create experiments in unexpected places to open up new possibilities.'

'To best understand systems, it's helpful to resist the urge to disaggregate problems and to solve them right away. Here are some alternatives:

- We can hold opposing ideas without reconciling them. If it looks as though we're confronting an either/or choice, we can reconsider our narrow framing and wonder what we're missing.
- We shouldn't waste time arguing about the best solution; instead, we can pick several good but different solutions and experiment with them all in a small way.
- We can give up the hunt for the root cause and instead look to the edges of an issue for our experiments. The system's center is most resistant to

change, but tinkering at the periphery can deliver outsized returns.

Leadership implications

'Of course, such shifts of mind have implications, and opening ourselves up to the delights of the possible comes at a cost. One casualty may be our cherished image of the traditional leader. The default model of a clear-minded person, certain of his or her outlook and ideas, is not consistent with the qualities that allow possibilities to flourish. In a complex world, we're often better served by leaders with humility, a keen sense of their own limitations, an insatiable curiosity, and an orientation to learning and development.'

'Transformative change is certain to happen, often in unforeseen ways and not necessarily led from the front. Unintended repercussions often stymie our best-laid plans. The world is neither simple nor static. It is patterned but not predictable. In the face of new challenges, we all default to how we think we should act and to what seems to have worked before. Managing the probable is reassuring but leaves us more open to being blindsided. Some problems do not lend themselves to rote methods, simple models, or sophisticated algorithms. When we treat them as different, complex, and uncertain, we can unlock solutions of immense creativity and power.'

[50%]

2016-025

Infographic: What's the next big opportunity for the world's youngest continent? Ashoka Changemakers Blog. November 2015. www.ashoka.com/changemakers/blog

Keywords: agriculture, youth employment, Mkulima Young, Kenya

'The Problem: Young people are a largely untapped workforce in African agribusiness.'

'Agriculture is the largest contributor to Kenya's GDP
- 75% of working Kenyans make their living by farming
- 75% of the Kenyan population is under 30 years of age
- The average age of farmers in Kenya is 55-65 years old
- 70% of those without work in Kenya are young people ages 15-25'

'The Solution: Mkulima Young is an internet and media powered movement that rebrands farming as an exciting opportunity for young Africans.'

'Using the Mkulima Young platform and support network, young farmers can help other aspiring young farmers be the driving force in agribusiness while securing sustainable and meaningful livelihoods.'

How?

- 'Motivate: Demostrate that any young person can become an agricultural entrepreneur
- Enable: Stay relevant by tuning into the needs of a market and providing resources for young people to seize new market opportunities. Mkulima Young has a platform where farmers can buy and sell agricultural goods. The platform also enables peer-learning between young farmers.
- Use technology to be a bridge between the market and the young people who can meet its needs. Mkulima Young's website hosts the online marketplace or SOKO and a forum where young farmers share tips about agribusiness. In addition, Facebook, Youtube, a radio show and a cartoon strip in the local newspaper connect and inspire young farmers.'

[View the infographic here: https://www.changemakers.com/sites/default/files/mkulima-young-infographic_smaller.png]

2016-026

Five future developments in education by Nicci Botha. BizCommunity. January 2016. www.bizcommunity.com

Keywords: e-learning, education, gamification, 3D printing, m-learning, big data

'There is no doubt that there was an 'education spring' in South Africa with #feesmustfall dominating the headlines and social media in 2015, while—in response—the government and universities scrambled to open up access to tertiary education.'

'But this doesn't address the massive void in education at school level, and as one of the country's most progressive educators, Professor Jonathan Jansen, ViceChancellor: University of the Free State says, "Unfortunately six year olds can't picket Parliament." Could elearning hold the key? Here are five trends for digital learning in 2016.'

1. Personalised learning

'Elearning takes on a learnercentred approach in 2016 with online courses providing individual learning paths based on a learner's need, abilities and preferences.'

2. Big data

'[T]he assessment for learning approach, which takes advantage of the growing influence of big data to use assessment to inform teaching and learning, is closely tied to the personalised learning trend.'

'This is a process by which teachers use data collected through online assessment and interactive exercises to adjust their teaching strategies to support weaker learners and challenge stronger learners.'

3. m-learning

'A study by education publishers, Pearson, shows that 80% of learners have access to smartphones [...].'

'The potential that mobile devices offer for learning that happens throughout the day in formal and informal contexts, is available justintime, is personal, trackable and complementary of other learning formats, is increasingly evident.'

'But due to limited processing power and limited screen sizes, mobile phones will not be used to deliver core material but will serve to provide assessment and social support through both apps and messaging [...].'

4. Gamification

'As a trend, gamification has entered all aspects of our lives, from health care to banking. In elearning it is also gaining traction with badges, leader boards and rewards encouraging learners to commit to a task or programme and compete against their peers.'

5. 3D-Printing

'[A]lthough it may take some time to reach South African schools, 3Dprinting offers a whole new realm of teaching aids.'

'Take the recent discovery of the Naledi skull, which puts a completely new spin on the origins of mankind, for example. Forbes.com writer and anthropologist, Kristina Killgrove, explains in her blog how she was able print parts of skull within hours of the announcement of the discovery being made, thanks to the growing affordability and accessibility of 3Dprinting.'

[59%]

2016-027

Ultra Poor Graduation: The Strongest Case so Far for Why Financial Services Must Be a Part of the Solution to Extreme Poverty by Shameran Abed. Center for Financial Inclusion Blog. June 2015. http://cfi-blog.org

Keywords: graduation approach, ultra-poor, randomized-controlled trials, microfinance

'This month, the results from six randomized control trials (RCTs), published in *Science* magazine highlighted a model of development that is an adaptable and exportable solution able to raise households from the worst forms of destitution and put them onto a pathway of selfreliance. The graduation approach – financial services integrated within a broader set of wraparound services – is gaining steady recognition for its astonishing ability to transform the lives of the poorest.'

'These findings can be contrasted with the results of six RCTs published in January by the *American Economic Journal: Applied Economics*, which cited limited evidence of "microcredit" alone transforming the lives of the poor.'

'Classified as the "ultrapoor," [a] subsegment of the extreme poor, who live on less than US$ 0.80 per day, fail to meet their daily calorie requirements, are chronically ill, and live on the fringes of society. In these circumstances where basic needs are unmet, microfinance alone can do little to provide a pathway out of poverty.'

'In 2002, BRAC developed a model designed to create livelihoods for the ultrapoor in a way that also addressed the other dimensions of abject poverty creating barriers to their development. [...] BRAC's Targeting the Ultra Poor Program (the basis of the graduation approach) combined asset transfer with livelihood development and social support.'

'For two years, clients receive an integrated package of cash stipends, an asset (such as a cow or chickens) with

Social Environment (cont.)

training, and basic healthcare. Early into the program, clients cultivate strong savings behavior and learn the basics of financial management. The program also includes a large social component: regular household visits from our staff and integration in the community.'

'Notably, the model in Bangladesh does integrate microcredit for some clients; 70 percent of the graduates in Bangladesh actually received their assets as "soft loans," which they repay over the course of two years.'

'The results have been remarkable. Since 2002, 95 percent of the 1.4 million clients who have come through this program have graduated from ultrapoverty. The program is costly in one sense because it's grantbased and financially unsustainable, but the social returns are high and extend well beyond the end of the intervention period. An RCT has shown that even years after members graduate, most continue to experience growth in their household income and improved wellbeing.'

'The RCT results published in *Science*, which covered pilots in India, Pakistan, Ethiopia, Ghana, Honduras, and Peru, show definitively that they were successful. In all six of the countries studied, *all* treatment households witnessed significant improvements across a range of indicators that continued beyond the end of their programs. Today, the graduation approach is continuing to break ground with a range of other actors that include microfinance providers, multilateral agencies, NGOs as well as governments looking to improve costly social safety net programs that protect the poor from destitution but fail to put them on a ladder out of poverty.'

'[T]his model shows that financial services, when integrated within a broader set of wraparound services, is unquestionably transformational, even for those in the most desperate forms of poverty.'

[54%]

2016-028

Financial Literacy Around the World: Insights from the standard & poor's ratings services global financial literacy survey by Leora Klapper, Annamaria Lusardi, and Peter van Oudheusden. The World Bank Group. November 2015. www.finlit.mhfi.com

Keywords: financial literacy, retirement, gender gap, consumer protection

'33 percent of adults worldwide are financially literate. This means that around 3.5 billion adults globally, most of them in developing economies, lack an understanding of basic financial concepts. These global figures conceal deep disparities around the world.'

'In richer countries, proxied by GDP per capita, financial literacy rates tend to be higher. However, the relationship only holds when looking at the richest 50 percent of economies. In these economies, around 38 percent of the variation in financial literacy rates can be explained by differences in income across countries. For the poorer half of economies, with a GDP per capita of $12,000 or less, there is no evidence that income is associated with financial literacy. What this likely means is that national-level policies, such as those related to education and consumer protection, shape financial literacy in these economies more than any other factor.'

'Financial literacy rates differ in important ways when it comes to characteristics such as gender, education level, income, and age. Worldwide, 35 percent of men are financially literate, compared with 30 percent of women. While women are less likely to provide correct answers to the financial literacy questions, they are also more likely to indicate that they "don't know" the answer, a finding consistently observed in other studies as well.'

'This gender gap is found in both advanced economies and emerging economies. Women have weaker financial skills than men even considering variations in age, country, education, and income.'

'For the major advanced economies, financial literacy rates increase with age but then later decline with age (i.e., older people or older generations are less financially literate then middle-age ones).

'On average, 56 percent of young adults age 35 or younger are financially literate, compared with 63 percent of those age 35 to 50. Financial literacy rates are lower for adults older than 50, and rates are lowest among those older than 65. The pattern is different for the major emerging economies. In these economies, adults age 65 plus have the lowest financial literacy rates of any age group, but the young have the highest knowledge. At 32 percent, financial literacy in these economies is much higher for young adults than for the oldest adults of whom only 17 percent are financially literate.'

Social Environment (cont.)

'Financial literacy also sharply increases with educational attainment—which is strongly associated with math skills, as well as age and income. Globally, a gap of about 15 percentage points separates adults with primary, secondary, and tertiary education. In major advanced economies, 52 percent of adults with secondary education—between nine and 15 years of schooling—are financially literate. Among adults who have primary education—up to eight years of schooling—that figure is 31 percent. A similar divide separates adults with secondary education and adults with tertiary education: Among adults with at least 15 years of schooling, 73 percent are financially literate. The education gaps are similar in the major emerging economies.'

Many users of financial products lack financial skills

'Financial literacy skills are important for people who use payment, savings, credit, and risk-management products. For many, having an account at a bank or other financial institution—or with a mobile money service provider—is an important first step to participation in the financial system. Yet access to financial services is not an end in itself. Rather, it is a means to an end. When people have financial accounts and use digital payments, they are more able to provide for their families, save money for the future, and survive economic shocks. Digital payments can also reduce corruption by increasing transparency, and they help empower women by giving them greater control over their finances. But people who lack the knowledge to effectively use such services can face financial disaster, such as high debt or bankruptcy. It is, therefore, worth exploring the link between financial services and financial literacy.'

Account ownership and savings

'Account owners tend to be more financially savvy, but plenty of them still lack financial skills. Globally, 38 percent of account-owning adults are financially literate, as are 57 percent of account owners in major advanced economies and 30 percent in major emerging economies.'

'Account owners who lack financial knowledge may not be fully benefitting from what their accounts have to offer. One example is savings. Globally, 57 percent of adults save money, but just 27 percent use a bank or other formal financial institution to do so. Only 42 percent of account owners worldwide use their account to save, and 45 percent of these adult savers are financially literate.'

'Financial skills are even weaker among adults who do not have an account. Globally, 25 percent of these adults are financially literate, as are 22 percent in major emerging economies.'

'Gender, income, and education inequalities also prevail among the unbanked. Worldwide, 27 percent of unbanked men are financially literate, compared with 22 percent of unbanked women. In major emerging economies, unbanked adults in the richest 60 percent of households are 5 percentage points more likely to be financially literate than those in the poorest 40 percent of households. No matter how the data is spliced, women, the poor, and the lower educated lag behind the rest of the population.'

Credit

'In the major advanced economies, 51 percent of adults use a credit card, compared with only 11 percent of adults in the major emerging economies. A smaller share of adults borrows from a formal financial institution. Fifty-three percent of adults in major emerging economies who use a credit card or borrow from a financial institution are financially literate, much higher than the average financial literacy rate in these economies.'

'Credit cards are gaining popularity in many emerging countries, but knowledge of related financial concepts is not keeping up. Many short-term credit users do not fully understand the speed at which interest compounding can in ate total amounts owed.'

Conclusion

'Worldwide, just 1-in-3 adults show an understanding of basic financial concepts. Although financial literacy is higher among the wealthy, well educated, and those who use financial services, it is clear that billions of people are unprepared to deal with rapid changes in the financial landscape.'

'Financial literacy challenges confront developing economies and advanced economies alike. In China, for example, credit card ownership has doubled since 2011 to 16 percent, yet only half of credit card owners can perform simple calculations related to interest.'

'A retirement crisis looms in Europe as governments slash public pensions and call on their citizens to take a bigger role in retirement planning. They are not prepared. The continent is plagued by chronic under-saving for old age, especially in the East, and older adults lack the financial skills needed to deal with the economic

Social Environment (cont.)

challenges of retirement. The numbers in the EU as a whole are hardly more encouraging: Just 47 percent of those who do not save for old age show understanding of basic financial concepts.'

'Given these risks, policymakers should build strong consumer protection regimes to safeguard citizens from financial abuse and provide a smooth market environment. A research review by a team of World Bank experts found that targeted financial literacy programs that are focused on specific behaviors and populations can lead to smarter financial decisions. Researchers have also found that financially savvy adults are, in general, less likely to default on loans and more likely to save for retirement. Because of this, policymakers should consider providing specific financial literacy training to vulnerable groups, such as women, the poor, and adults approaching retirement.'

[20%]

2016-029

The flow towards Europe [interactive map] by Ville Saarinen and Juho Ojala. Lucify. February 2016. www.lucify.com

Keywords: migration, refugees, Europe, asylum seekers

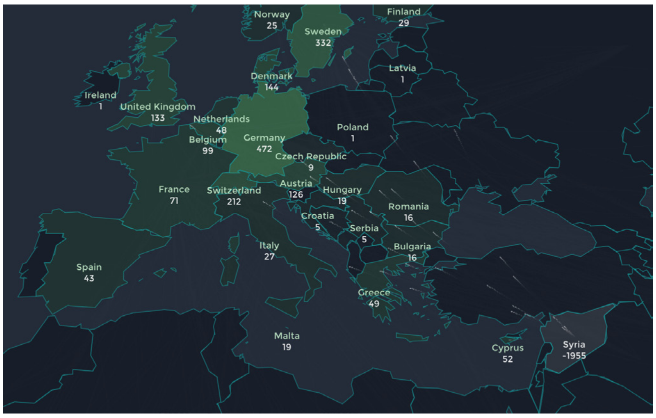
The interactive map developed by Lucify shows the flow of asylum seekers to European countries over time.

Each moving point on the map represents 25 people. That corresponds to approximately one busload with every other seat taken.

Visitors to the site can hover over countries to show details. Click on a country to lock the selection. The counts shown on hover represent the number of people who have left or arrived in a country since 2012.

The line chart displays the total rate of asylum seekers over time. Users can hover over the chart to move the map in time.

[Access the interactive map and infographics at http://www.lucify.com/the-flow-towards-europe/]



2016-030

The young continent. The Economist. December 2015. www.economist.com

Keywords: fertility, demographics, dependency ratio, population

'In the early 1990s the average Ethiopian woman had seven children and the country's population was growing by 3.5% a year. Women now have 4.1 children on average and population growth has slowed to 2.5%. By 2050, the UN reckons, growth will have slowed further, to 1.3%; by 2100 the population will actually be contracting slightly. By then, however, there will be 243m Ethiopians, up from 100m now and 18m in 1950.'

'Most other countries' demographic transitions have gone much further. Globally, the average woman now has 2.5 children, half as many as in 1960-65 and not much above the 2.1 at which the world population will stabilise. (This "replacement rate" is a little higher than two because some girls die before their childbearing years and fewer girls are born than boys.) The fertility rate is below replacement in most rich countries, and in plenty of developing ones. In Colombia it is 1.9, just as it is in America and Britain. In Iran it is 1.8 and in China 1.6. The UN calculates that 46% of the world's population lives in countries where the fertility rate is below the replacement rate.'

'How quickly Ethiopia and other African countries follow this example has implications not just for those countries but for the whole world. It is the most pressing question for demographers, since it will determine how fast the global population grows in the coming decades and how soon it might stabilise. That, in turn, has re-

Social Environment (cont.)

percussions for efforts to eliminate poverty, curb global warming and manage international migration.'

'Alarmingly, population growth in Africa is not slowing as quickly as demographers had expected. In 2004 the UN predicted that the continent's population would grow from a little over 900m at the time, to about 2.3 billion in 2100. At the same time it put the world's total population in 2100 at 9.1 billion, up from 7.3 billion today. But the UN's latest estimates, published earlier this year, have global population in 2100 at 11.2 billion—and Africa is where almost all the newly added people will be. The UN now thinks that by 2100 the continent will be home to 4.4 billion people, an increase of more than 2 billion compared with its previous estimate.'

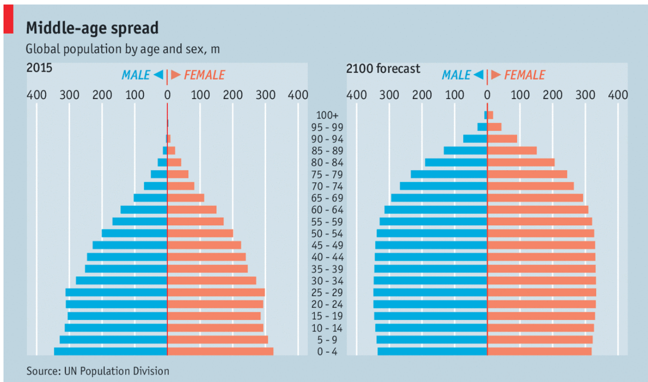
'If the new projections are right, geopolitics will be turned upside-down. By the end of this century, Africa will be home to 39% of the world's population, almost as much as Asia, and four times the share of North America and Europe put together. At present only one of the world's ten most populous countries is in Africa: Nigeria. In 2100, the UN believes, five will be: Nigeria, Congo, Tanzania, Ethiopia and Niger.'

'Although much could change in the next 85 years, none of those countries is a byword for stability or prosperity. A quadrupling of their population is unlikely to improve matters. If nothing else, the number of Africans seeking a better life in Europe and other richer places is likely to increase several times over.'

'What is more, Africa's unexpected fecundity will change the shape of the world's population. The declining birth rate elsewhere has brought the world to the verge of what Hans Rosling, a Swedish demographer, calls "peak child". In 1950 the world had some 850m people aged 14 or under. By 1975 that number had almost doubled, to 1.5 billion. This year it was a little over 1.9 billion—but it has almost stopped growing. It is expected to continue to climb only very slightly in the coming years, reaching 2 billion in 2024, but never exceeding 2.1 billion.'

'Thanks to the continued growth of Africa's population, however, the peak will be more of a plateau. High birth rates in Africa and low ones elsewhere will more or less balance out. Africans will make up a bigger and bigger share of the world's young people: by 2100, they will account for 48% of those aged 14 and under.'

'Moreover, the world's population will continue to grow despite the levelling off in the number of children. Up until now population has resembled a pyramid in structure, with children outnumbering young adults, young adults outnumbering the middle-aged and the middle-aged outnumbering the elderly. People now in their 60s, for instance, come from a generation that was less than half as big as the current cohort of children. As today's children age, they will make the upper echelons of the pyramid wider. But the lower ones will remain the same size, thanks to peak child, so the pyramid will come to look more like a dome (see chart). Were it not for continued growth in Africa, the pyramid might even have inverted, leaving more old people in the world than young ones.'



Economist.com

African exceptionalism

'The revision of population predictions for Africa partly reflects the fact that HIV/AIDS has not proved quite as catastrophic for the continent as seemed likely ten years ago. Mainly, however, it stems from the startling persistence in Africa of very big families. Women in the region still have more babies, on average, than those in Asia and Latin America did in the 1980s.'

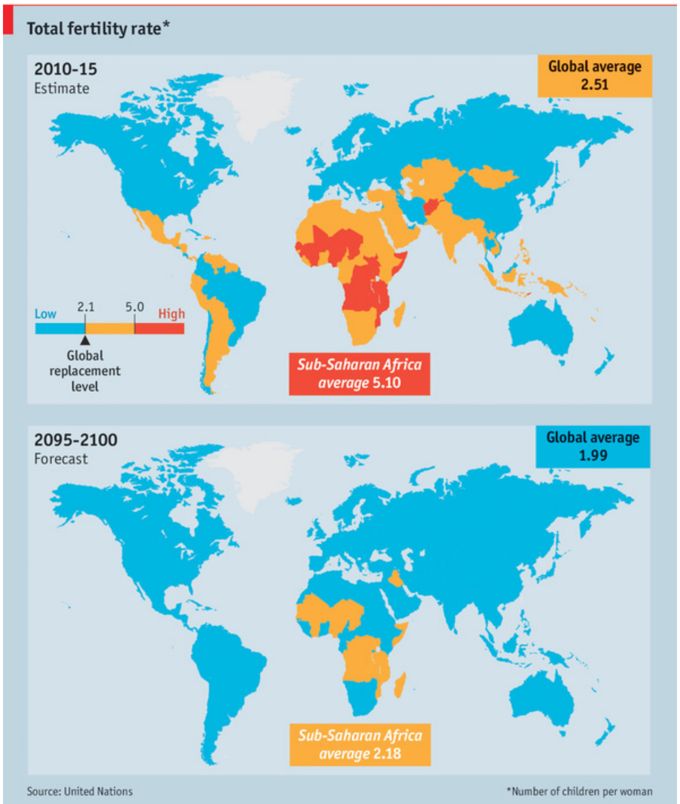
'There seems to be just a handful of prerequisites for a falling fertility rate: a modicum of stability and physical security, some education (especially for women) and wide access to contraception. The faster these conditions are met, the faster birth rates come down.'

'The only places where women continue to churn out babies are dirt-poor and unstable countries such as Afghanistan, Congo, East Timor and Niger (see map). Counter-intuitively, war, famine and other disasters tend to boost population in the long run, by keeping fertility rates high. It is only when parents are confident that their children will survive that they risk having fewer of them.'

'[...][E]ven relative to their levels of income, health and education, the countries of sub-Saharan Africa have high

Social Environment (cont.)

fertility rates. That has prompted some scholars to posit cultural explanations.'



Economist.com

'The African countries that have seen big falls in fertility are those, such as Burundi, Ethiopia and Senegal, with similar campaigns. In Ethiopia the fertility rate has fallen by about 0.15 a year for the past decade—blisteringly fast by demographic standards. That is probably thanks in large part to the nationwide network of 38,000 "health-extension workers"—one for every 2,500 people. Their job is to pay regular visits to each household within their locality and provide coaching on public health, from immunisations to hygiene. One of the 16 subjects in which they drill every Ethiopian is family planning.'

'For the prevalence rate [of contraceptives] to keep rising, however, contraceptives must be omnipresent and cheap. Western donors have offered support here, too. At a conference in London in 2012, a group of them agreed to devote $2.6 billion to it. The Gates Foundation, the world's biggest philanthropic organisation, promised to spend $140m a year. Since then, it claims, 24m women have gained access to contraceptives in the countries the group is targeting. It has also helped several African governments to build strong supply chains so that clinics in remote areas never run out and brought together a consortium of aid agencies that has promised to buy contraceptives in large quantities if their manufacturers lower the price. That has helped reduce the cost of contraceptive implants from about $24 a dose to about $8, says Lester Coutinho, who runs the charity's family-planning efforts.'

'Alas, there is lots more to do. The UN estimates that there are still 216m married women in the world who would like access to modern methods of contraception, but do not have it. The Copenhagen Consensus, a group of academics which rates development policies, reckons it would cost $3.6 billion a year to provide what they need. The benefits, in terms of the diminished need for infrastructure and social spending, reduced pollution and so on, would be $432 billion a year—120 times more. That is the second-most productive investment the project has identified, after liberalising trade, out of a welter of different development goals. Better yet, it helps with all the others.'

[53%]

2016-031

Aging and Financial Inclusion: Steal These Ideas! By Susy Cheston and Sonja E. Kelly. Center for Financial Inclusion Blog. November 2015. www.cfi-blog.org

Keywords: age discrimination, retirement, aging, financial security, demographics

'In Europe, the aging of the population is well acknowledged. With average life expectancy in Europe among the highest in the world, at 77 years, the proportion of the population reaching older age is naturally growing. About 25 percent of Europe's population is now over the age of 60, and that percentage is set to rise.'

'In most middle income countries, from Mexico to China, over60s are the fastest growing cohort of the population. Aging is a product of successful development. Increased life expectancy, better family planning mechanisms, and higher quality of life all contribute to growth in the proportion of the population that is older.'

Develop a toolkit for becoming an agefriendly institution.

'Ageproof channels and technology. Financial institutions recognize that new technology, new channels, and new products must be built with the user experience in mind. There are existing vehicles for testing channels and technology to ensure that they work for older people. As part of vetting channels and technology, financial institutions can leverage older persons' associations, assuring the technology's validity for later life.'

'Ensure that staff members are not discriminating based on age. Financial institutions and support organizations can test the customer experience through mystery shopping in order to better understand how people of different ages are treated when they walk into a branch. An exercise like this could inform marketspecific training modules to dispel myths about aging for staff of financial institutions.'

'Use existing data to create better products. Financial institutions have a wealth of data on clients that goes unused, and age is one data point that is collected because of the way that AML/CFT laws are translated into institutional policy. Financial institutions can use the data they have on clients to better understand how age influences client behavior.'

'Enhance financial security in older age by leveraging G2P and P2G early on. The shift toward electronic governmenttoperson and persontogovernment payments presents an opportunity for creating "onramps" to inclusion. Leveraging these products could include automatically diverting funds sent through electronic channels to help people save funds for older age (which is already happening in many parts of the world) or using electronic G2P payments that go to older people as collateral for loans (older people are often seen as higher risk).'

'Raise or eliminate age caps on credit and insurance. Over half of the institutions we surveyed earlier this year reported that they impose upper age restrictions on their products. Many age caps at microfinance institutions are based on outdated actuarial tables, and are ripe for being challenged or creatively eliminated.'

'Enable people to save for their older age. Pension systems were designed for a largely formal labor force, and the alternative channels for contributions at places like corner stores and through mobile phones. Financial institutions can also play a role, either serving as channels to collect funds for the pension system or by setting up independent longterm savings programs that promise a competitive interest rate.'

[49%]

2016-032

7 facts about population in Sub-Saharan Africa by Anne Margareth Bakilana. World Bank AfricaCan End Poverty Blog. October 2015. http://blogs.worldbank.org/africacan

Keywords: demographics, population, fertility, young people

1. 'The population of subSahara Africa has grown from 186 million to 856 million people from 19502010. That's about 11 million people a year for the past 60 years or approximately 670 million people in 60 years. By 2060, the population of subSahara Africa could be as large as 2.7 billion people. Compare this demographic shift to Europe's projection of a declining population—from 738 million people in 2010 to 702 million in 2060.'

2. 'Nigeria, Ethiopia, Tanzania, DRC, Niger, Zambia, and Uganda will contribute millions of people to the world total. Along with China and India, these countries will have the largest populations in the world.'

3. 'These staggering numbers are the results of decades of change in childbearing and mortality patterns. Until recently, on average a woman in sub-Sahara Africa had 6.5 children over her lifetime. Now women have 5.1 children on average, but this average masks considerable heterogeneity; in countries like Botswana, South Africa and Kenya women have fewer children, but in countries like Niger or among less educated rural poor women, the change is minimal, if any.'

4. 'Infant mortality rates have declined from 183/1000 children born in 195055 to 69/1000 children born in 20102015. As a result, life expectancy has increased from 36 years in 195055 to 56 years at present.'

5. 'Policies and public actions matter to population growth. The large variations in population

Social Environment (cont.)

across countries are caused by factors such as levels of education, poverty, urbanization, access to health care including family planning methods and attitudes towards population growth.'

6. 'The population structure of countries is shaped by birth and mortality rates. Today, most [African] countries are primarily made up of children aged 14 years and under.'
7. 'Countries that have managed to reduce both mortality and fertility rates increasingly find that the bulk of their population now consists of working age people and young adults. Still, Niger, Uganda and Chad all have populations with median ages below 16 years. Of the world's top ten countries with the youngest populations, eight are in subSahara Africa. By 2050, the region will be home to all 10.'

[50%]

2016-033

Generation Uphill. The Economist. January 2016. www.economist.com

Keywords: millenials, young people, demographics, youth employment

'There are 1.8 billion young people in the world, roughly a quarter of the total population. (This report defines "young" as between about 15 and 30.) [...][T]he young do have some things in common: they grew up in the age of smartphones and in the shadow of a global financial disaster. They fret that it is hard to get a good education, a steady job, a home and—eventually—a mate with whom to start a family.'

'This report takes a global view, since 85% of young people live in developing countries, and focuses on practical matters, such as education and jobs.'

'In some respects the young have never had it so good. They are richer and likely to live longer than any previous generation. On their smartphones they can find all the information in the world. If they are female or gay, in most countries they enjoy freedoms that their predecessors could barely have imagined. They are also brainier than any previous generation. Average scores on intelligence tests have been rising for decades in many countries, thanks to better nutrition and mass education.'

'Yet much of their talent is being squandered. In most regions they are at least twice as likely as their elders to be unemployed. Over 25% of youngsters in middle-income nations and 15% in rich ones are NEETs: not in education, employment or training. The job market they are entering is more competitive than ever, and in many countries the rules are rigged to favour those who already have a job.'

'Education has become so expensive that many students rack up heavy debts. Housing has grown costlier, too, especially in the globally connected megacities where the best jobs are.'

'For both sexes the path to adulthood—from school to work, marriage and children—has become longer and more complicated. Many young people now study until their mid-20s and put off having children until their late 30s.'

'Throughout human history, the old have subsidised the young. In rich countries, however, that flow has recently started to reverse. Ronald Lee of the University of California, Berkeley, and Andrew Mason at the University of Hawaii measured how much people earn at different ages in 23 countries, and how much they consume. Within families, intergenerational transfers still flow almost entirely from older to younger. However, in rich countries public spending favours pensions and health care for the old over education for the young. Much of this is paid for by borrowing, and the bill will one day land on the young. In five of 23 countries in Messrs Lee and Mason's sample (Germany, Austria, Japan, Slovenia and Hungary), the net flow of resources (public plus private) is now heading from young to old, who tend to be richer. As societies age, many more will join them.'

'Politicians in democracies listen to the people who vote—which young people seldom do. In autocracies the young are even more disillusioned. In one survey, only 10% of Chinese respondents thought that young people's career prospects depended more on hard work or ability than on family connections.'

'All countries need to work harder to give the young a fair shot. If they do not, a whole generation's talents could be wasted. That would not only be immoral; it would also be dangerous. Angry young people sometimes start revolutions, as the despots overthrown in the Arab Spring can attest.'

[51%]

2016-034

Africa: View on migration - Protect refugees with mobile banking. SciDev.Net. February 2016. www.scidev.net

Keywords: cross-border transfers, refugees, mobile transfers, migration, Europe

'[Nando Sigona, a migration researcher at Birmingham University] explains that, to move money around, refugees tend to use a mixture of informal money brokers, borrowed bank accounts, hard cash and valuables such as gold or jewelry. All these systems are open to grotesque abuse by the criminals who feed off the refugee crisis, and bribery and robbery are common. Even where people have temporary access to a bank account, there are stories of people never getting their money back or being charged huge fees.'

'Many refugees use an "informal Western Union [money transfer] system", often based on hawala, a traditional crossborder brokering service handled through agents and based on honour, passwords and promises, Sigona explains. In the sellers' market that is this crisis, though, brokers charge extortionate fees and sometimes money disappears altogether.'

'But the situation could be vastly improved by transparent mobile banking services, he says. For the thousands awaiting decisions on asylum claims, mobilebased peertopeer banking is a pragmatic solution where formal financial systems are out of reach.'

'"On the western Balkan route, the Vodafone Foundation has set up mobile WiFi posts where people can connect and recharge," Sigona says. Networks such as these could support access to secure mobile banking apps and mbanking cash agents, drawing inspiration from the 255 mobile banking systems used worldwide today.'

'But the extent of the crisis calls for coordinated action across mobile networks, rather than piecemeal initiatives. The Humanitarian Connectivity Charter launched in 2015 by GSMA, the global trade association for the mobile industry, aims to encourage and strengthen mobile operators' capacity for responding and coordinating during crises.'

'Allowing refugees to open bank accounts, as Germany plans to, is another positive step, Sigona stresses. Access to transparent financial services "will really make life easier and help people avoid exploitation and violence", he says.'

[75%]

2016-035

South Africa's youth unemployment problem: What we need to know by Motlalepula Mmesi. In On Africa (IOA). May 2015. www.inonafrica.com

Keywords: youth employment, entrepreneurship, South Africa, unemployment

'A shift in focus toward fostering entrepreneurship among youths could be one of the most effective means to mitigate both unemployment and social affliction in disadvantaged communities in South Africa.'

'Youth unemployment in South Africa has reached critical proportions: it was measured at 53.6% in 2013, and in 2014, youth comprised 41.8% of the total national unemployment rate of 25.4%.'

Who exactly are the unemployed youth and what is at stake?

'[...][W]ith South Africa currently forecasted to achieve only modest GDP growth of between 2.2% and 2.7% for 2015-2017 — growth well below the 5.4% level envisioned by the government in its National Development Plan necessary to meet its target of creating 5 million jobs by 2020 and 11 million by 2030 — a growing number of South Africa's unemployed and marginalised youth will not benefit from the economic status quo. Instead, this generation of South African youth, especially those with lower levels of education and in locations less accessible to infrastructure and services, face diminished chances for social mobility and employment.'

'The risks of long-term unemployment are dramatically higher for black youths, as they must often contend with adverse living conditions and social circumstances on top of the lack of availability of employment opportunities. With many black youths living on the outskirts of economic centres of activity, travel and administrative costs involved in a spirited job search quickly become expensive and unaffordable to those most in need of employment.'

Social Environment (cont.)

'Furthermore, youth employment matters beyond macro-economic indicators; South Africa's current generation of youth represent its next generation of leaders in business, government and civil society, and if too many remain unskilled and semi-literate, socio- economic inequalities will persist and intensify. More specifically, as black youths experience exclusion from the mainstream economy, not only are their skills progressively devalued, but their capacity to exercise citizenship is simultaneously diminished. For the generation dubbed the "Born Frees", this is a cruel paradox: despite political enfranchisement, far too many of South Africa's black youth now currently look forward to only a meagre chance at a prosperous future.'

Looking ahead

'Top-down initiatives such as the government's Extended Public Works Programme (EPWP), launched in 2004 and sold to the public as an means of short to medium-term labour absorption and income generation for poor households, have proven they cannot adequately address youth unemployment. The function of government should rather be to create an economic environment for business and entrepreneurs that has fewer barriers to entry; more effectively incentivises the private sector to implement skills development programmes for youth; and fosters attractive legislative and economic conditions that attracts levels of foreign direct investment that can be parlayed into a more sustainable and diversified economy.'

'One option to consider – and a role government is well-suited to play – is to accelerate funding and coordination to further the establishment of entrepreneurship incubation programmes. These incubation programmes can help to increase success rates of new businesses by providing aspiring entrepreneurs with start-up capital and micro-loans, skills-training, professional development and mentoring, and by exposing their ideas to outside investors. Successful examples of such incubators include i-CRE8 South Africa, an idea innovation incubator created by YouthLab that targets 18-30- year-old youths, and Shanduka Black Umbrellas, an NPO that offers targeted support for 100% black-owned businesses.'

'An encouraging government policy in this regard is the Youth Enterprise Development Strategy (YEDS), a programme launched in November 2013 by the Department of Trade and Industry (DTI) to "promote youth self-employment and youth-owned and managed enterprises." Also, startUP&go, a joint initiative begun by the International Labour Organisation (ILO) and over 60 secondary schools in the Free State province, offers a curriculum meant to cultivate learners' interest in entrepreneurship and has led to a "statistically significant increase" in learners wanting to start their own business after graduation compared to those that did not participate in the course.'

[31%]

Technological Environment

2016-036

Blockchain: A Fundamental Shift for Financial Services Institutions by Bart Cant, Christopher Vergne, Cliff Evans and Martina Weimert. Capgemini. November 2015. www.capgemini.com

Keywords: Bitcoin, blockchain technology, distributed ledgers, transaction security

'Perhaps even more revolutionary than the rise of Bitcoin is the underlying blockchain technology that makes it possible. Blockchain is a distributed database that maintains a continuously growing list of encrypted data records secure from tampering and revision. It is a new technology paradigm that could create fundamentally new ways of financial interaction and transaction exchange.'

'Blockchain has the potential to provide unprecedented transaction security through cryptography that avoids costly mainframes and data centers. It completely changes the financial transaction-processing cost model. Organizations ranging in size from small start-ups to major corporations and governments agencies are now investing in the technology, making it clear that blockchain will cause disruption to current business models in the financial services (FS) sector and beyond.'

A Brief History

'The Bitcoin payment system—and the underlying blockchain technology—was invented by Satoshi Nakamoto, who published the invention in 2008 and released it as open- source software in 2009. No one knows who Satoshi Nakamoto actually is, something that is still hotly debated today. Satoshi's idea was to produce a currency that was independent of any central authority and transferable electronically with very low transaction fees. Since then Bitcoin and other cryptocurrency usage has increased significantly worldwide. As of April of 2015, there are 530 cryptocurrencies available for trade in online markets and more than 740 in total.'

'Oliver Bussmann, CIO of UBS, estimates that blockchain technology could pare transaction processing time from days to minutes.'

How It Works

'The blockchain is a public ledger of digital events that records all transactions and distributes or shares them at the same time on all computers in that network. It can only be updated by consensus of a majority of the participants in the system. And, once entered, information can never be erased. The Bitcoin blockchain, for example, contains a certain and verifiable record of every single Bitcoin transaction ever made.'

'In order to be accepted by the rest of the network, a new block must contain either a proof-of-work or a proof-of-stake. A proof-of-work consists of a cryptographic puzzle that each contributor to the public ledger must solve. In the Bitcoin network, users are required to find a specific number (nonce), such that when the block content is hashed along with the nonce, the result is numerically smaller than the network's difficulty target. This takes a significant amount of work to compute, but is easily verified. With the alternative proof-of-stake, users need to prove that they have ownership in the currency and create distributed consensus.'

'More to the point, the structure of the blockchain makes it almost impossible to introduce fraud or to tamper with existing blocks. The blockchain architecture removes the need for a middle man to provide the element of trust, upending current data-center- focused models and thereby drastically changing the payment-cost model.'

Ethereum: A New Paradigm for Transaction Processing

'To understand how blockchain technology is transforming financial services, it is important to know a little about the emerging technologies in play today. An important player is Ethereum, a new platform that takes the blockchain concept a step further by creating an open model for a secure, decentralized, generalized-transaction ledger; in effect it is a new model for transaction processing. Launched on July 30, 2015 Ethereum is envisioned by its creators as "...a censorship-proof 'world computer' that anyone can program, paying exclusively for what they use and nothing more."'

'Blockchain technology enables the distributed processing of financial transactions, and Ethereum extends this concept into a generalized programmable model for processing leveraging the concept of smart contracts. A smart contract (according to Swanson) is often defined as "computer protocols that facilitate, verify, execute and enforce the terms of a commercial agreement." Richard Brown has written a newer and clearer definition: "A smart-contract is an event-driven program, with state, which runs on a replicated, shared ledger and which can take custody over assets on that ledger." In other words, you can think of a smart contract as a programmable calculator that can (1) receive inputs, (2) execute code, then (3) provide an output. Since it resides on a distributed ledger, it is difficult for any one party to modify (i.e. abuse) the program.'

'Arguably the most ambitious, next-generation cryptographic applications project to date – and the third-largest crowdfunded project of all time – Ethereum is aiming to create a new universe of programmable contracts, powered and secured by its own proof-of-work blockchain. As of today, Ethereum is still undergoing extensive testing and additional capabilities and tools (e.g. messaging and browser) are being added by its core team of developers. Over time, Ethereum will also make the switch from a proof-of-work algorithm to a proof-of-stake algorithm. Ethereum takes blockchain from an interesting financial payment processing opportunity to a new paradigm for financial transaction processing, totally transforming the IT model currently in use by all financial services companies worldwide and beyond.'

'[...][I]n Honduras, Factom is working with the government to build a secure land-title registry. Blockchain technology allows a truly tamper-proof database of land titles. The Isle of Man is currently working on government initiatives to store information and make contracts using blockchain applications.'

'In the financial services industry, Nasdaq is exploring the potential of blockchain technology for the record-keeping applications that support private-market trades. Nasdaq feels that blockchain technology will provide extensive integrity, audit ability, governance, and transfer of ownership capabilities. Nasdaq has also joined with Visa, Citi and other industry players to invest $30 million in Chain.com, a blockchain developer platform that serves the enterprise applications market. Additional investors include Capital One and Fiserv. American Express recently announced taking an investment in Abra, a mobile-to-mobile payment system that leverages bitcoin's blockchain as an underlying payment mechanism.'

'A new report from Santander InnoVentures claims blockchain technologies could reduce banks' infrastructural costs by $15-20B a year by 2022. Banks can save money by eliminating central authorities and bypassing slow, expensive payment networks.

'Distributed-ledger technology has the potential to be a major disruption in financial services. The disruption will likely begin as this new technology makes existing processes more efficient, secure, transparent, and inexpensive, and then later as the technology inspires the creation of new products. Since distributed-ledger processing can easily be transferred to the cloud, it could also have a significant impact on the use of mainframes and private datacenters.'

Blockchain and the Distributed Ledger

'According to Robert Sams, founder and chief executive of Clearmatics, "The financial industry isn't interested in alternative money and digital currencies. It's interested in the distributed ledger. Distributed ledgers could replace the entire technological back end of dematerialized securities in real time, without the need for reconciliations and lots of financial controls. That's what financial institutions find interesting."'

A couple of quick definitions:

- **'Permissionless:** In order to contribute to the processing of transactions and have your 'vote' counted, you do not need a previous relationship with the ledger, and your vote does not depend on having a prior identity of any kind within the ledger.'
- **'Permissioned:** Transactions are validated and processed by those who are already recognized by the ledger. Your vote counts proportionally against that of the other voters, based on the specific rules of the ledger.'

'The blockchain technology underlying Bitcoin is a permissionless ledger that relies on anonymous participants to validate transactions. Many financial institutions remain wary of Bitcoin for this reason. Bitcoin's designer attempted to create a permissionless system to accommodate pseudonymous actors. Bitcoin distinguishes friend from foe by requiring each participant to expend work on a math problem that on average takes about 10 minutes to solve.'

'By contrast, distributed but permissioned ledgers use legal entities to validate transactions, providing banks with official records of asset ownership and legally accountable participants. According to Tim Swanson in his recent report on the emergence of permissioned, distributed ledger systems, this approach makes more sense for banks since "in the real world of finance, all participants are already authenticated and entities like validators and transmitters require legal identities."'

'This new type of platform—the distributed but permissioned ledger—has the potential to help banks send cross-border payments and also to settle and clear derivatives more efficiently, among other uses. Several companies, including Ripple, Eris Industries, Hyperledger and Clearmatics, currently offer permissioned distributed-ledger systems.'

'[...][N]ew applications and tools are emerging from distributed ledger systems that may be indispensible to financial institutions. Nevertheless, the financial industry has a number of business-critical needs, including adherence to risk management, capital management, and compliance requirements. With its authorized validators and cryptographic auditability, it is possible that distributed ledger systems can meet these needs in a timelier, more cost-efficient manner than centralized-system alternatives.'

[43%]

2016-037

Smartphone-Led Digital Finance: Three Areas to Watch by Eric Tyler. CGAP Blog. 23 July 2015. www.cgap.org/blog

Keywords: digital finance, low-income consumers, smartphone data, mobile money transfers

'The rapid uptake of smartphones stands to enable a transformational opportunity for digital finance. Last year, less than a third of all connections in developing regions were smartphones, while in the next five years, four in every five smartphone connections globally are predicted to come from developing regions.'

'This dramatic trend also raises important questions concerning meaningful access and design for lower-income consumers as well as privacy and data security, as flagged in CGAP's recent publication, Doing Digital Finance Right. Here are three areas in particular for the digital finance field to watch as more smartphones make their way into the hands of financial consumers in the developing world: new functionalities, new players and new risks.'

New Functionality

'At the end of last year, there were almost 300 million mobile money accounts, but more than 60% were inactive. Mobile money usability research in India found that on average more than 25 errors were made trying to complete a single financial transaction on feature and basic phones. In contrast, smartphones aren't constrained by USSDbased interactions, which require numerous steps and are prone to timeouts, providing the potential for more intuitive, advanced services.'

'With the launch of GCash, Lenddo, MLedger, pesaDroid and Zuum, we saw the first wave of these more icondriven and dynamic digital finance apps in emerging markets. More experimentation is under way. For example:

- In early 2015, Alibaba in China announced a "Smile To Pay" app that uses smartphones' facial recognition capability as a biometric authentication to make secure mobile payments without using a PIN or password. This is currently being rolled out to its 190 million active Alipay Wallet users.
- ICICI Bank, the second largest commercial bank in India, launched an Android app called Pockets that has been downloaded more than a million times and eases registration for financial accounts by integrating your Facebook profile.
- In Nigeria, Paga's Android app links with your smartphone's GPS to direct you to one of its 8,000 agents across the country (in addition to other features like transfers and payments).'

New Players

'The flourishing Android smartphone ecosystem is not only driving down prices – as low as $40 on India's ecommerce platform Flipkart – it's also opening up market entry opportunities to new players. At the beginning of the year, Xiaomi, now the world's third largest smartphone maker, launched an interestbearing mobile wallet; Google recently launched Android Pay and is in the process of introducing a peertopeer payments app; and this month, Samsung has started trialing its new payment service in South Korea.'

'The financial inclusion field should also be paying particular attention to efforts tackling costly mobile data rates. This area is fertile ground for new business models and partnerships for serving lowincome customers.'

New Risks

'Smartphone data may become harder to protect in this more fragmented ecosystem and everchanging value chain. Security mishaps, such as what occurred at Venmo in 2014, suggest a prioritization in some companies of growth over security and privacy, and protective measures remain largely reactionary. In addition, reports of data breaches and malicious malware strains are hard to ignore [...].'

'As providers continue to garner richer user data through smartphone apps, the leaders in this mobile ecosystem will need to have better solutions and clearer answers to consumer concerns about the safety and privacy of their data. Last year, 6,000 consumers in 12 countries were asked the question, "If you are considering trying a mobile money transfer service, what would make you try it sooner?" Details of security and privacy measures were the top answers cited, and even more pronounced by those surveyed in emerging markets like India, Brazil and China regarding mobile payments.'

[58%]

2016-038

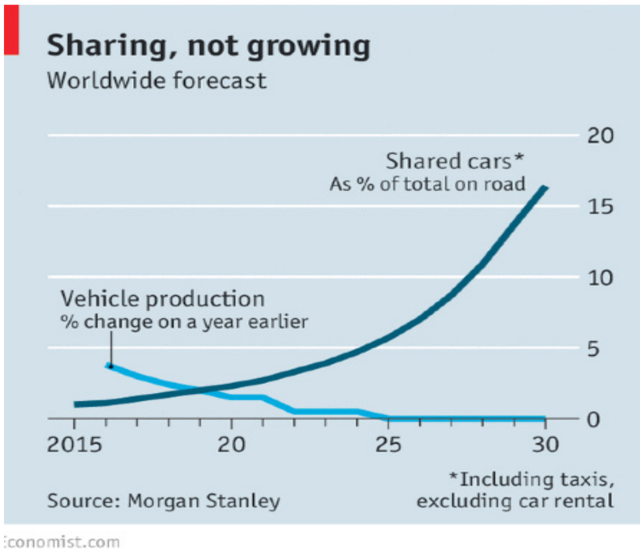
The driverless, car-sharing road ahead. The Economist. January 2016. www.economist.com

Keywords: driverless cars, car-sharing, automotive industry

'Incumbent manufacturers are recognising the double threat posed by technology, as car-sharing takes off and driverless vehicles come closer.'

'A rumoured tie-up between Ford and Google to produce driverless cars failed to materialise at [CES], but even the rumours underlined the disruption that tech firms are bringing to the motor industry. [...] Ford is teaming up with Amazon to connect its cars to sensor-laden smart homes. It was also revealed at CES that Toyota would adopt Ford's in-car technology, which is a competitor to Apple's CarPlay and Google's Android Auto, to access smartphone apps and other features.'

'Building and marketing cars, and dealing with safety and emissions regulators, is tricky. Tech firms could copy Tesla, which has built its own electric cars for more than a decade. Apple, which is said to be planning an electric car, may try to have them made in the same way as it does its iPhones, outsourcing to a contract manufacturer. But a more obvious route is to ally with an established carmaker.'



'Most [carmakers] are working on making their vehicles either fully or partly self-piloting, and a number are running their own car-sharing experiments. But Google remains the leading exponent of autonomous driving. Its robotics, drones and search engine all contribute expertise that helps to guide a driverless car down the road avoiding pedestrians, obstacles and other vehicles, using computing power and sophisticated software to interpret masses of data received both from the car's on-board sensors and from external sources through wireless connections.'

'Hitherto, new cars— even quite modest ones—have tended to be bought as status symbols and expressions of personal style, but if consumers become more interested in what software and entertainment systems a car can run, rather than what it looks like, the industry's whole business model may come apart.'

'Ride-sharing, car clubs and other alternatives to ownership are already growing fast. Young city- dwellers are turning their backs on owning a costly asset that sits largely unused and loses value the moment it is first driven. At CES Mark Fields, Ford's CEO, said that it would in future be "both a product and mobility company".'

'Membership of car clubs, which let people book by app for periods as short as 15 minutes, is growing by over 30% a year, according to Alix Partners, a consulting firm, and should hit 26m members worldwide by 2020.'

'At the same time, app-based taxi services such as Uber and its Chinese counterpart Didi Dache, which are often cheaper and more efficient than conventional cabs, are also growing quickly. Once these are able to dispense with drivers for their vehicles, the taxi, car-club and car-sharing businesses will in effect merge into one big, convenient and affordable alternative to owning a car.'

'So when will the fully autonomous car hit the showrooms? Google, whose cars have done 1.3m test miles (2.1m km) on public roads, once promised 2018, whereas most analysts reckoned the 2030s more plausible as carmakers introduced automated-driving features in stages. Now, Mr Fields is talking about autonomous cars being ready to roll by 2020. More conservative car bosses add five years.'

'Barclays, another bank, forecasts that the fully driverless vehicle will result in the average American household cutting its car ownership from 2.1 vehicles now to 1.2 by 2040. A self- piloting car may drop off a family's breadwinner at work, then scuttle back to pick up the kids and take them to school. The 11m or so annual sales of mass-market cars for personal ownership in America may be replaced by 3.8m sales of self-driving cars, either personally owned or part of taxi fleets, Barclays thinks.'

'Convincing regulators to allow fully driverless cars onto the streets is the next hurdle. Insurers and consumers also need to be won round. Within the industry, the big question is not whether this future will arrive, but whether tech firms or carmakers will grab the spoils.'

[54%]

2016-039

Technology Must Solve Real Problems for Low Income Customers by Nick Hughes. CGAP Blog. December 2015. www.cgap.org/blog

Keywords: low-income consumers, digital financial services, value chains, mobile money

'Mobile has been a game changer. Mobile technology has already disrupted the barriers of distance, speed and cost. Today there are tens of millions of people whose first ever 'noncash' transaction has been done using a mobile phone. This trend will continue as we see the regulatory inertia change, players moving from adjacent sectors driven by the hunt for new revenue or threat of displacement (for example network operators buying banks and vice versa).'

'As digital access becomes ubiquitous we will see, for example, accurate, enforceable digital identity; transparent, accessible digital public ledgers; the massive emerging world of connected, affordable equipment that can be a productive asset for the user.'

'This is complex and it is hard to make broad predictions on how this will work. Instead, I'll pick a few lessons from personal experiences that I believe apply to a digital future.'

1. Technology is a means to an end.

'We need financial products, services, applications that solve real problems. Traditional savings, loans and insurance products will always have a role, but when we use digital payments to tackle liquidity and flexibility, I think we can make a bigger difference in people's lives.'

'Drawing from my own experience at MKOPA, we use mobile payments to asset finance a 'connected' solar energy device, selling this as a service not hardware. Is this digital? Yes, in part. But more importantly it's a proposition that meets an acute need, in a way that provides the customer with a flexible pathway to new services.'

2. We can't take our eyes off operational delivery.

'I can't emphasize enough how critical it is to stay focused on operations. Technology does not and cannot replace the need to put boots on the ground, grow management capacity in a customer service organization, or do the 'hard yards' of running a business.'

3. New customers = new understanding.

'The ability to adapt and be flexible is critical as we discover new things about previously unreachable customers. We know today that the needs of lowincome consumer are varied and complex. Banked/unbanked; ongrid/offgrid; employed/unemployed – these categorizations are too simple and don't add much value when it comes to product design. Preconceived customer traits must be jettisoned and business models adapted.'

4. New rules; different value chains.

'More connectivity will blur lines of distinction between customer, enterprises, communities etc. Value will get created in more places than we think, and it will be more distributed than the traditional linear, service providero customer model.'

Technological Environment (cont.)

'Peer-to-peer lending and crowdfunding are obvious examples of new business models made possible by technology. More fundamentally, look at the employment and income created in successful mobile money agent networks. bKash in Bangladesh has done this brilliantly, focusing first and foremost on building a brand through a large network of incentivized agents. Other mobile money programs have faltered where the service provider does not invest in allowing others in the value chain to do well early on.'

[57%]

2016-040

Visa issues API to offer consumer control over card transactions. Finextra. February 2016. www.finextra.com

Keywords: Visa, API, bank cards, consumer controls

'Visa is to provide bank card issuers with an API to enable customers to set spending controls, receive transaction alerts and temporarily suspend their accounts with an on/off feature.'

'The API, available through the company's recently launched Visa Developer platform, will enable banks to provide cardholders with a range of customised control features either over the Web or via the user's mobile device.'

'Spending controls can be applied to different transaction types, date ranges, or overall card spending, while the on/off feature and transaction alerts via SMS text or e-mail are intended to provide an added layer of security for consumer peace-of-mind.'

[Watch the video that accompanies this article here: https://vimeo.com/154682974]

[17%]

2016-041

3D printing: Print me a pavilion. The Economist Technology Quarterly. December 2015. www.economist.com

Keywords: 3D printing, additive manufacturing, manufacturing

Additive manufacturing is a perfect way of using new materials

'Carmakers can spend a year building a working prototype for a new car. Setting up machines for a production run of one is laborious and costly, since much of the work is done by hand. But researchers in Tennessee have an automated system endearingly known as BAAM (Big Area Additive Manufacturing). Most people would call it a 3D printer, albeit a particularly large one—and it is used to print cars.'

'In one experiment it made most of the body and chassis for an electric replica of a Shelby Cobra, a classic 1960s sports car. The printed parts that went into the vehicle were built up using a mixture of 80% polymer and 20% carbon fibre and weighed a mere 227kg. It took the team just six weeks to design, print and assemble the car.'

'A few companies, such as Local Motors, a firm based in Phoenix, are using additive technologies to make limited runs of cars, but 3D printing is still too slow for mass-produced vehicles. Even so, it will quickly become part of the automobile industry, says Thom Mason, director of Oak Ridge, not just for prototyping or customising vehicles but also for making moulds, tools and dies.'

'In recent years, improved hardware and software has turned the basic technology—which is about 20 years old—into a broad assortment of different processes. They all rely on building up layers of material additively, using plastics, metals, ceramics and even biological feedstocks. Such printers range from desktop machines that cost a few thousand dollars to hulking monsters to print metal parts that cost over $1m.'

'The size of what could be printed used to depend on what would fit inside the machine. Now some printers, such as BAAM, are coming out of the box, so to speak. MX3D, a Dutch startup, plans to print a 15-metre (49-foot) footbridge across a canal, using robots fitted with steel-printing equipment.'

One of a kind

'One advantage of producing something additively is that material is deposited only where needed, so there is little waste. In traditional manufacturing perhaps 80% of the material is cut away. Moreover, the software used to design a product can also run the printer. And software is easy to tweak, so a different design can be produced every time without having to reset machines. The technique also lends itself to making complex shapes in new materials that can lead to dramatic performance gains. And although 3D printing is still slow compared with mass-production processes such as pressing steel and plastic injection moulding, in some industries that may not matter too much.'

[54%]

2016-042

Are you ready for 3-D printing? By Daniel Cohen, Katy George, and Colin Shaw. McKinsey Quarterly. February 2015. www.mckinsey.com

Keywords: 3D printing, additive manufacturing, manufacturing

'Systems for additive manufacturing, or 3-D printing as it's better known, represent just a fraction of the $70 billion traditional machine-tool market worldwide. Yet given the likelihood that this technology will start to realize its promise over the next five to ten years, many leading companies seem surprisingly unaware of its potential—and poorly organized to reap the benefits.'

'The mass adoption of 3-D printing—the production of physical items layer by layer, in much the same way an inkjet printer lays down ink—is probably years rather than months away. The 3-D printer industry has enjoyed double-digit growth recently; sales of metal printers, indeed, rose by 75 percent from 2012 to 2013. But expert consensus indicates that the market penetration is just a fraction (1 to 10 percent) of what it could be given the wide range of possible 3-D applications.'

'[Executives] see 3-D printing's ability to increase geometric complexity and reduce time to market as the key business benefits, closely followed by reduced tooling and assembly costs. Those who expect to be among the next wave of users were much more likely to cite reducing inventories of spare parts as one of the advantages. Additive manufacturing, in short, seems set to change the way companies bring their products to market and respond to customer needs. But predicting a "tipping point" is difficult.'

'Much will depend on when and how quickly overall printing costs fall, a development that should narrow the still-yawning gap between the cost of new and traditional manufacturing methods. In sintering-based 3-D printing technologies, for example, there are two major expense categories. The machines and their maintenance typically account for 40 to 60 percent of total printing costs. The materials used in the manufacturing process can account for 20 to 30 percent when using common materials such as aluminum, or 50 to 80 percent when printing with exotic materials such as titanium. Labor and energy make up the rest.'

'In all likelihood, prices for sintering-based printers will remain steady or rise in the near term thanks to the introduction of new technical features, such as enhanced automation. But patent expirations and new entrants in Asia should apply downward pressure over the next ten years. The cost of materials ought to drop in the long term as third-party firms become credible alternative powder suppliers and as increased demand for powder enhances scale efficiencies more generally. Throughput rates are expected to increase on the back of growing laser power, higher numbers of lasers, and better projection technology. All of that will serve to reduce expensive machine time.'

'Our research on sintering-based printers examined two possibilities. In the "base" scenario, costs remain largely at their present level and companies come to understand the benefits of additive manufacturing only gradually. In the "market shock" scenario, printing costs fall precipitously—say, by 30 or even 50 percent over a ten-year period.'

'CEOs and COOs above all need to examine the readiness of their companies for a future in which a range of integrated digital technologies (of which 3-D could be one of the most significant) will dominate manufacturing and competitors will probably be building additive manufacturing into their value chains.'

[35%]

2016-043

Welcome to the drone age. The Economist. September 2015. www.economist.com

Keywords: drones, aerial photography, unmanned vehicles

'The scale and scope of the revolution in the use of small, civilian drones has caught many by surprise. In 2010 America's Federal Aviation Authority (FAA) estimated that there would, by 2020, be perhaps 15,000 such drones in the country. More than that number are now sold there every month. And it is not just an American craze. Some analysts think the number of drones made and sold around the world this year will exceed 1m. In their view, what is now happening to drones is similar to what happened to personal computers in the 1980s, when Apple launched the Macintosh and IBM the PS/2, and such machines went from being hobbyists' toys to business essentials.'

'[...][T]he practical use of these small, remote-controlled aircraft is expanding rapidly. After dragging its feet for several years the FAA had, by August, approved more than 1,000 commercial drone operations. These involved areas as diverse as agriculture (farmers use drones to monitor crop growth, insect infestations and areas in need of watering at a fraction of the cost of manned aerial surveys); land-surveying; film-making; security; and delivering things (Swiss Post has a trial drone-borne parcel service for packages weighing up to 1kg, and many others, including Amazon, UPS and Google, are looking at similar ideas).'

The drones' club

'Nor is commerce the only area in which drones are making a mark. A glance at the academic world suggests many more uses await discovery. Because drones are cheap, geographers who could never afford conventional aerial surveys are able to use them to track erosion, follow changes in rivers' sources and inspect glaciers. Archaeologists and historians are taking advantage of software that permits drones fitted with ordinary digital cameras to produce accurate 3D models of landscapes or buildings. This lets them map ancient ruins and earthworks. Drones can also go where manned aircraft cannot, including the craters of active volcanoes and the interiors of caves.'

'How all this activity will be regulated and policed is, as the FAA's own flat-footed response has shown, not yet being properly addressed. There are implications for safety (being hit by an out- of-control drone weighing several kilograms would be no joke); for privacy, from both the state and nosy neighbours; and for sheer nuisance—for drones can be noisy. But the new machines are so cheap, so useful and have so much unpredictable potential that the best approach to regulation may simply be to let a thousand flyers zoom.'

'A drone that could fly for significantly longer—an hour, perhaps—would change the marketplace, as would one that was fitted with "sense-and-avoid" technology that would stop it running into obstacles by mistake. Researchers are busy in both these fields.'

Up, up and away

'Sense-and-avoid, needed for drones to operate safely in shared airspace without close human supervision, is hard without extra sensors, such as radar. Using a drone's own video camera to recognise objects in real time requires tremendous computing power. Some firms are, however, attempting to do just that.'

'Whichever approach—training and learning, or precooked recognition software—wins, drones that are able to understand their environments to even a limited extent will be a lot more useful. They could, for example, recognise their operator and home in on him when required. They might be set loose on frost-damaged roads, to look for potholes. They could be released to cruise over forests to spot fires early, or sent off to seek errant hikers who have failed to report in when expected.'

'Extended flight time will make all these putative uses more plausible, and many people are working on that, too. The most common approach is to switch in mid-air from being a helicopter, which relies on power-hungry rotor blades to stay aloft, to being an aeroplane, which gets its lift, more efficiently, from fixed wings.'

'Like a drone in a gust of wind, the future of the market will have many twists and turns—but all the signs suggest that the air will soon be abuzz with machines.'

[46%]

2016-044

Blockchain, its new rival, and their future in the enterprise by Martin Giles. Gigaom. December 2015. www.gigaom.com

Keywords: blockchain, Bitcoin, cryptocurrencies

'Bitcoin and other cryptocurrencies are already starting to shake up the financial services industry. They have also got entrepreneurs thinking about other applications for the blockchain technology that underlies them, including ones that address various processes inside non-financial companies such as contracts, audits and shipping. The digital signatures that certify each transaction and the distributed, write-only online ledger that constitute the core of the blockchain tech have the potential to offer even more security in these and other areas than more traditional approaches used by businesses.'

'The Linux Foundation recently revealed that it is leading an open source effort to develop an alternative to bitcoin's underlying tech. The initiative, which has been dubbed the Open Ledger Project, is being supported by a coalition of leading financial services and tech companies, including Wells Fargo, State Street, the London Stock Exchange Group, Cisco, Intel, VMware and IBM.'

'Investment banking firm Magister Advisors thinks that financial institutions will be spending a total of over $1 billion on blockchain-related projects in 2017. And finance is just one industry where the new technology could drive significant change. In the music world, startups such as PeerTracks and Bittunes are aiming to use it to revolutionize the way music is bought and shared. And in the art world, Verisartis harnessing the blockchain to improve the way art is secured and verified.'

'Many companies are still learning about the potential of blockchain technologies, so it may be some time before we see broad adoption beyond finance. But the potential is significant. Entrepreneurs are already exploring enterprise applications that cover everything from patent registration to recording the results of boardroom votes. Expect to see more and more businesses joining the blockchain gang in 2016 and beyond.'

[42%]

2016-045

Can technology-enabled collaborative consumption drive prosperity in Africa? By Ntando Kubheka. BizCommunity. February 2016. www.bizcommunity.com

Keywords: collaborative consumption, sharing economy, income inequality

'Oxfam indicates that by 2016, the wealthiest 1% of the world population, will own more than 50% of the world's wealth.'

'This is a result of several factors among them, the following:

- The post 2008 consolidation of global commerce
- Technological progress and innovation have resulted in new industries, new modes of production and new commerce altogether. Interestingly a substantial and growing number of new billionaires in the world are in technology related industries.

'One of the unfortunate consequences of this rate of accumulation has been the growth of inequality between the ultrarich [...] and the vast numbers of people living in poverty. This, together with the substantial growth of the middle class, especially in emerging economies, has created an interesting global socioeconomic environment.'

'Collaborative consumption is a new economic model. TIME magazine names collaborative consumption among 10 ideas that will change the world. Essentially, collaborative consumption is when people swap ownership for access to various assets that they need for their lives. Instead of buying and owning the asset, people rather choose to hire the asset as and when they need to use the asset. At the same time, this provides an opportunity for owners of assets [to] earn revenue by leasing them out to other people.'

'Collaborative consumption may take various forms:

- 'Productservice systems, also known as peertopeer collaboration, in which privately owned assets are made available for rental to others through various platforms. Assets in this category may include cars, houses, equipment, etc.'
- 'Redistribution markets, where people can pass on used or preowned assets to others using various platforms. Items used in this model include clothes

and other household items.'
- 'Collaborative lifestyles which is when people with common interests share intangible assets like time, space, skills, etc.'

'The sharing economy has also been facilitated by the growth of technological innovation occasioned mainly by the emergence of smartphones and tablets. These applications and related social media have been the driving force behind the growth of the sharing economy.'

[50%]

2016-046

A plug for the battery. The Economist. January 2016. www.economist.com

Keywords: batteries, lithium, electric cars, power generation

'Increasingly, lithium-ion batteries are vaulting out of pockets into power tools, vehicles, homes and even power stations. Carmakers in America, China and Japan are rushing to secure supplies of lithium to prepare for a more electric future. Such is the scramble, that the metal, used in small quantities in each battery cell, today is one of the world's only hot commodities. The price of lithium carbonate imported to China more than doubled in the last two months of 2015.'

'Until now, the limits on the use of batteries have been storage capacity, cost and recharging times. But large-scale production is overcoming these hurdles. The head-turner at this week's Detroit motor show was not a car but a battery—that of the 2017 Chevrolet Bolt, which General Motors' boss, Mary Barra, said had "cracked the code" of combining long range with an affordable price. Tesla, an electric-car maker, is promising to start mass production of lithium-ion batteries this year in a giant "gigafactory" in Nevada. A further emphasis on batteries is a big part of China's 2016-20 five-year plan.'

Rising power

'Electric cars are not the only source of demand. Batteries are also playing an increasingly important role in providing cleaner power on and off electricity grids. In South Africa, Australia, Germany and America, Tesla this year will start selling a $3,000 Powerwall for homeowners to store the solar energy from their roofs. Utilities are going even further. They are installing millions of lithium-ion battery cells into power plants to regulate supply at times of peak demand, and when it fluctuates because of intermittent wind and solar energy.'

'There is still a long way to go. As yet lithium-ion batteries do not have the capacity to store grid-scale power for more than a few hours. Costs are still too high; and the recent price spike in lithium will encourage researchers beavering away on other types of battery. Yet the more cells that are made, the more understanding and performance improve. Rising demand and higher prices will eventually also generate more lithium supply. Increasingly, lithium is becoming to batteries what silicon is to semiconductors—prevalent, even among worthy alternatives. In one form or another, the lithium-ion battery is the technology of our time.'

[64%]

2016-047

Will Africa take the lead in the Internet of Things? By Finbarr Toesland. African Business. January 2015. www.africanbusinessmagazine.com

Keywords: Internet of things, machine-to-machine communication, connected devices, sensors, mobile data networks

'The Internet of Things (IoT) has become one of the most talked about technological trends in recent history. It can seem complex but is simply the concept of connecting many devices to the internet – from washing machines and lights to wearable devices and coffee makers – that previously operated as stand-alone units with no interconnectivity.'

'[...][C]oncern has been raised over how secure this data will be and the risks of hacking. Major investment must be made in the security of cloud-based data, so that no private information can be compromised.'

'Market analysts Gartner forecast the global IoT market to total more than 26bn devices by 2020. Analysts believe the key driver is "the nexus of low-cost sensors, cloud computing, advanced data analytics and mobility," says Andrew Milroy, Vice President, ICT Practice, Frost & Sullivan Asia Pacific.'

Technological Environment (cont.)

'With an internet penetration rate of 16% and [Africa having] eight out of the 10 countries with the world's lowest internet access rates, there are major barriers to the adoption of the IoT. However, there is clear growth potential. Consulting firm McKinsey estimates that by 2025 Africa will have tripled internet penetration to over 50%, or around 600m people, and as it does not have the same extensive infrastructure as Western countries, it can adapt its cities for IoT solutions more easily.'

'The association of mobile operators, GSMA, sees the future of M2M connections in the developing world: "In Africa sometimes you can leapfrog and go to the latest in innovation and technology at the same time." This belief is not unfounded, as the number of IoT connections in the developing world will total 128m by the end of 2014, or 52% of worldwide connections. IoT's real value is in the connection of as many devices as possible, as then small improvements collectively will see major cost savings.'

[45%]

Political Environment

2016-048

Putin's Russia and Africa by Eugene Steinberg. Council on Foreign Relations Africa in Transition Blog. August 2015. http://blogs.cfr.org

Keywords: Russia, foreign relations, foreign direct investment, arms trade

'Russia's interests in Africa are manifold. As economic sanctions constrict its trade with the West, Africa is becoming an increasingly attractive investment opportunity. At the same time, Africa's fifty-four countries represent a political opportunity to relieve Russia's isolation and build support for its actions in the UN. Finally, Russia's prominence in Africa lends credibility to its reassertion of world power status. The effectiveness of Russia's re-engagement policy is still in question, but its progress is becoming increasingly difficult to ignore.'

'According to the Atlantic Center's Africa Center Director J. Peter Pham, between 2000 and 2012, Russia's trade with Africa increased ten times over. Russia has invested heavily in raw resource megaprojects, signing a $4 billion deal with Uganda in February to build and operate a crude oil refinery and $3 billion deal with Zimbabwe to develop a platinum mine.'

'Some of its trade has been more overtly political. Russia is a major supplier of arms to both North and sub-Saharan Africa. Russian arms are an increasingly popular alternative to U.S. weaponry, which still dominates the market despite higher monetary and political costs. The true extent of Russian security deals is difficult to measure because their opaqueness.'

'There are still some transparent indicators of Russian military presence in Africa that speak to the scale of Russia's commitment. As Pham has noted, Russian soldiers involved in peacekeeping operations in Africa surpass those of France, the United Kingdom, and the United States combined.'

'Russia's outreach goes further than financial and military bonds. Russian leaders visiting Africa capitalize on a narrative that emphasizes their historical support for African independence. [The] strategy of combining historical moralism with present-day moral relativism has had some limited success. Although the UN General Assembly voted to condemn Russian intervention in Ukraine by a large margin, two of the ten countries that voted with Russia were African, while a large portion of the rest of Africa abstained.'

'Despite formidable investments in Africa, Russia is still eclipsed by the United States, the United Kingdom, France, and China. Unlike those countries however, Russia's own abundance of natural resources may convince it to focus more on exporting arms. These weapons seem as likely to enforce stability and repress militants, as they are to fall into the wrong hands and spread instability. Russia's deteriorating economic situation, and more pressing concerns on its borders, may mean the current relationship won't be sustainable. Nevertheless, the current trend seems toward greater involvement [...].'

[59%]

2016-049

Global Microscope 2015: The enabling environment for financial inclusion. The Economist Intelligence Unit. December 2015. www.eiu.com/microscope2015

Keywords: Microfinance, consumer protection, financial regulation, electronic payment systems

Moving in the right direction, though slowly

'Of the 51 [countries] that are covered in the 2014 and 2015 indices (country composition has changed in the last year), 37 saw an improvement in their overall scores from last year, while only nine experienced a decline.' 'The real concern in this year's report is how limited progress has been. Although most countries saw higher scores than in 2014, on average the increase was only two points out of 100. Moreover, the overall average is just 48 out of 100. Put another way, only 22 out of 55 Microscope countries are more than halfway towards a robust and functioning policy environment that fully promotes all aspects of financial inclusion, and just three are more than three-quarters of the way along that journey. These figures have changed little since last year. Although, as discussed below, some countries are seeing important progress, worldwide financial inclusion is experiencing what could best be described as a slight positive drift.'

Looking at the big picture

'The countries seeing the fastest increases in their scores, and those which are at the top of the Index, are more likely to be pursuing a comprehensive strategy, or at least programmes and laws that tackle simultaneously multiple, often interlinked, barriers to inclusion. High scores for market-conduct rules were mostly correlated with a high overall score and, although the correlation was not high, it was statistically significant.'

'The results of such an approach can be seen rapidly. India saw the biggest increase of any country in its score this year (10 points), which largely reflected a substantial drive to make banking more accessible to the entire population. This included the issuing in July 2014 of guidelines for creating specialised Payment Banks and Small Finance Banks specifically aimed at the poor, and the in-principle approval of 11 of the former (as of August 2015) and 10 of the latter (as of September 2015). A month later, the Indian government, in conjunction with the banking industry, launched a programme to provide a basic bank account for every household, which included access to financial education, credit and insurance. By January 2015, nearly 100% of households had such a facility, although active use of the new accounts has been limited so far, with most accounts remaining dormant. Penetration of financial services in rural areas also remains low.'

'In addition to gains over the short term, Index results also indicate that comprehensive, national financial inclusion strategies drive long-term results. Of the six countries that get top scores for implementing such a strategy (Colombia, India, Pakistan, Philippines, Rwanda, Tanzania), five finish in the top seven places overall in the Index (Rwanda being the exception). In other words, strength in this sub-indicator drives results across the board.'

Lessons from the top of the standings

'Three countries form a top group that scores far higher in the Index than all the others: Peru (90 points), Colombia (86 points) and the Philippines (81 points). Several commonalities among them are noteworthy, in that they suggest key approaches to improving financial inclusion.'

- **'Commitment matters:** In all three countries, financial inclusion has been on the government's agenda for some time. The central banks of the Philippines and Peru, for example, were among the 17 original participants in the Maya Declaration in 2011 and, although Colombia took another year to join, its financial inclusion efforts date back to 2006.'
- **'Consistency matters:** The most striking similarity in the scores of these three countries is the breadth of their activities.'
- **'Previous success does not exempt countries from the new challenge of adopting electronic-payment systems:** The one indicator where all three of the leading countries are relatively weak is the Regulation of Electronic Payments. Here, each country scores only 75, although this is much higher than the Index average of 55 for this indicator. The issue is not the details of the regulation— it is adequate in all three cases—but the ability of the low-income population to use the electronic-payment infrastructure. In particular, electronic-payment systems tend to be expensive and fragmented, with only one of these countries, Peru, beginning to take advantage of mobile phones as payment-management tools.'

'The three leaders are not alone in this. Given the wide distribution of mobile phones, the degree of media attention that the use of mobile payments in East Africa has received, and the clear potential of such systems for enhancing financial inclusion, it is surprising how few countries have been able to create reliable electronic-payment systems that address the needs of low-income individuals.'

Insurance for low-income populations needs far greater attention

'Some form of insurance designed for the poor is [...] an essential part of full financial inclusion. The 2015 Index accordingly increased the number of sub- indicators covering this field in order to attain a more nuanced understanding of the state of play.'

'Despite the importance of insurance for low-income populations, the Index shows that it is a very common weakness in national financial inclusion efforts. The average score for Regulation of Insurance for Low-Income Populations was just 34 out of 100, by far the lowest for any indicator. Just as striking, 29 of the 55 countries scored only 25 points or less —a markedly greater proportion than for any other indicator—and this was also the sole indicator for which no country scored 100.'
'The most common issue seems to be lack of focus. Too often, insurance for low-income populations is regulated as part of the mainstream insurance market, but

its particular requirements, such as low levels of coverage, as well as a lack of simple policy conditions that can be explained by non-specialist agents and understood easily by purchasers, require more specific frameworks and oversight. Just six countries have implemented such targeted regulations in a comprehensive way. None of those six receive the top score for protecting consumers who buy policies, and 46 countries out of 55 score 50 points or below (out of 100).'

'[P]otential buyers may be put off until the market is deemed safe enough, after which effective regulation and protection makes offering insurance to low-income populations a viable business option.'

In too many countries, consumer protection remains a challenge

'As of 2015, only eight of the 55 countries, including just one outside of Latin America, provide a comprehensive framework and capacity to protect the financial consumer. There were some, but not many, improvements in this category from 2014 to 2015, with El Salvador, Colombia and the Dominican Republic improving their scores. Most countries stayed the same, with only Tajikistan seeing its score dropping. More worrying still, just eight countries have clear regulations aimed at preventing aggressive sales and unreasonable collection practices, while 20 countries score zero on this sub-indicator, indicating a complete absence of such protection.'

'[N]o country gets top scores for legal protection for buyers of insurance targeting low-income populations. Similarly, only 14 countries have deposit-insurance schemes that cover, with the same conditions, all institutions allowed to receive funds from savers. Many states have such insurance for banks or other traditional financial institutions, but lower or no coverage at all for accounts at co-operatives or other deposit-taking institutions. Indeed, we downgraded the score of 12 countries for this indicator in this year's Index because a close examination of the regulations revealed such a disparity.'

Financial inclusion requires capable customers

'Indices can include only indicators for which data are available, which means that some factors of potentially great importance to understanding an issue may have to be left out.'

'For financial inclusion, one such issue is low financial literacy among the poor in many, if not most, developing countries. Measurement of the levels of such literacy is a major gap, although data from a new initiative, Standard & Poor's Ratings Services Global FinLit Survey, was being released as this report went to press. Even for developed countries, the OECD is only now undertaking a project to define the term and measure financial literacy.'

'Although not asked to comment specifically on the question, the authors of roughly half the country assessments in this publication specifically mention poor financial literacy or the need for financial education as a leading inclusion challenge.'

[2%]

2016-050

India and Africa: Partners With Potential by Ashlyn Anderson. Council on Foreign Relations Africa in Transition Blog. November 2015. http://blogs.cfr.org

Keywords: India, foreign direct investment, foreign relations, official development assistance

'India recently hosted a milestone summit attended by delegations from all fifty-four African countries. Confronting similar development challenges, India and the nations of Africa charted plans to deepen ties and unite to address shared global concerns. India is one of many countries keen to participate in Africa's rise, and the third IndiaAfrica Forum Summit signaled an alignment of interests and the potential for a closer relationship.'

'Following the summit, the group released the Delhi Declaration 2015 along with the IndiaAfrica Framework for Strategic Cooperation that outline their shared vision. The countries cited a common priority of inclusive economic growth, and strategies to address such development challenges as climate change, gender inequality, poverty alleviation, and terrorism.'

'Along with political ties, India and the African continent share many social links. A 2010 report from the Indian Ministry of Overseas Indian Affairs reported the Indian diaspora in Africa surpassing two million in 2001 with the largest concentrations in South Africa (1,000,000), Mauritius (715,756), and Kenya (102,500). Africans increasingly migrate to India for employment and education.'

'India-Africa trade currently stands at nearly $72 billion, twice as much as five years ago but still small in comparison to the value of the China-Africa trade, over $200 billion.'

'India's total foreign direct investment (FDI) in Africa places it among the continent's top investors. However, Indian investment in Africa has not been without obstacles and a disproportionate amount of India's Africa FDI stock is in Mauritius [...].'

'As Western countries adjust to slower economic growth and China reacts to its recent downturn and steps up its engagement with other areas such as Latin America, India has an opportunity to play a much larger role than in the past.'

'At this year's summit, India announced $10 billion in lines of credit would be extended to African nations over the next five years in addition to another $7.4 billion pledged in 2008. The announcements of $600 million in grant assistance along with a $100 million India-Africa development fund and a $10 million India-Africa health fund demonstrates India's transition to a more active development donor and partner.'

[53%]

2016-051

The Blue Amazon by Nathan Thompson and Robert Muggah. Foreign Affairs. June 2015. www.foreignaffairs.com

Keywords: Brazil, foreign relations, arms trade, military cooperation

'After years of shoring up security alliances in Latin America and the Caribbean, Brazil is now looking eastward, asserting its influence across the Atlantic Ocean. Brazil started quietly, providing Africa with technical assistance in science, technology, and professional development. But over the past decade, Brazil has coupled soft-power initiatives with a dramatic boost in military cooperation with Africa, conducting joint naval exercises, providing military training and arms transfers, and establishing outposts in ports across the continent's western coast. Today, Brazil's official defense posture is even more far-reaching, involving the ability to project power from Antarctica to Africa.'

'Brazil's transatlantic partnerships are the culmination of a long-standing ambition. In 1986, alongside Argentina, Uruguay and 21 African countries, Brazil proposed the South Atlantic Peace and Cooperation Zone. The unstated goal then, as now, was to minimize external meddling in the region, especially by NATO.'

'The desire to keep foreigners out of the South Atlantic is motivated in large part by commercial interests. Brazil, in particular, wants to safeguard its on- and offshore natural resources, which the navy calls the Amazônia Azul, or Blue Amazon. These include extensive petroleum and gas reserves, as well as fishing and mining concessions within and beyond its current maritime frontiers.'

'To secure the boundaries of the Blue Amazon, Brazil is petitioning the UN Commission on the Limits of the Continental Shelf to extend its exclusive economic zone, the area stretching 200 nautical miles out from the coast, in which a country has special rights to explore and use marine resources.'

'To shore up its demands, Brazil is creating a sophisticated surveillance system to monitor the Blue Amazon. The so-called Blue Amazon Management System is intended to scan more than 4,600 miles of coastline for foreign military and commercial vessels through a combination of satellites, radar, drones, naval vessels, and submarines.'

Pivot to Africa

'In Africa, Brazil's influence extends beyond the continent's six Portuguese-speaking countries. Its total trade with African nations ballooned from roughly $4.3 billion in 2000 to $28.5 billion in 2013. Not surprisingly, Brazil's security partnership with Africa is motivated to a large extent by a desire to expand business opportunities for Brazilian defense firms.'

'Brazil is [...] providing Africa with military, air, and navy training. Between 2003 and 2013, the Brazilian Naval School and Naval War School trained as many as 2,000 military officials from Namibia alone. The Brazilian air force has provided support to pilots from Angola, Guinea-Bissau, and Mozambique. And since 2009, the Brazilian Cooperation Agency has partnered with the country's Ministry of Defense, budgeting roughly $3.2 million from 2009 to 2013, for training programs for African military personnel.'

'Brazilian arms manufacturers have ramped up their efforts to align weapons development and technology

Political Environment (cont.)

production pipelines with African demand.'
'Brazil is also cashing out at international arms fairs, and some of its major clients are based in Africa. The country shipped more than $70 million in small arms and ammunition to 28 African countries from 2000 to 2013, according to the latest available UN data. Algeria tops the list of Brazil's small arms and ammunition clients, with purchases of more than $23 million. Algeria is followed by Botswana, South Africa, Kenya, and Angola.'

'Arms fairs offer important opportunities for Brazil to deepen its south–south cooperation with Africa. At the 2013 Latin America Aerospace and Defense fair, the largest in the region, Brazil's minister of defense met with 14 ministers or deputy ministers from African and Latin American countries over the course of just three days. Such events confirm that Brazil is hardening its soft power across the South Atlantic. In the process, Brazil is using Africa to signal its arrival as a global player on the world stage.'

[49%]

2016-052

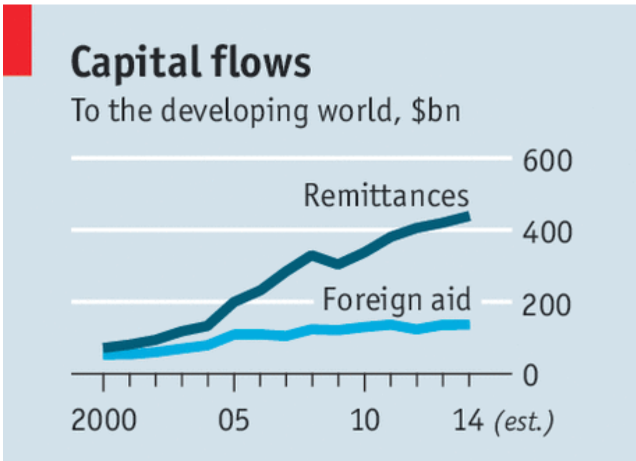
Costly cash. The Economist. September 2015. www.economist.com

Keywords: capital flows, remittances, mobile money, transaction costs

'Suppose there were a way of getting money to some of the world's poorest people precisely when they need it. Suppose, too, that the flow hardly ever diminished, even during a global financial crisis. Finally, suppose the cash could not be creamed off by corrupt local officials. Surely every right-minded government in the world would want to encourage this and make it as cheap and easy as possible?'

'Alas, no. Remittances [...] are individually tiny but collectively enormous. The World Bank estimates that flows to developing countries will be worth $440 billion this year—more than twice as much as foreign aid. And that is just the payments the bank can track.'

'Yet remitting money is expensive. In 2009 the G8, a club of rich-country governments, said it would try to cut the global average cost of sending funds from 10% (as it was then) to 5% over five years. The world is not even halfway there: the average stands at 7.7%, if wide exchange-rate spreads are counted as well as transaction fees. That is despite the emergence of rivals to giant money-transfer outfits such as MoneyGram and Western Union, which use networks of agents to collect and pay out cash. Peer-to-peer transfer services have popped up, slashing the cost of shunting money around the rich world.'



Economist.com

'The problem is that, even as technology boosts competition and cuts costs, regulation is pushing in the opposite direction. Guidelines intended to prevent money-laundering and the financing of terrorism imply that all sorts of cross-border transfers should be treated as very risky. The costs of complying with the rules are high, and the penalties for breaching them stringent.'

'For fear of red tape and ruinous fines, banks have simply withdrawn from some markets. The effect is worst in war-torn countries like Somalia, which most need remittances. When it becomes inconvenient and expensive to send money legitimately, money flows illegitimately. It can be stuffed into suitcases or sent through informal hawala networks, which are lubricated by trust and do not actually move money across borders. At that point, the paper trail disappears.'

'First, rich countries need to target their anti-money-laundering regulations much more precisely. Organisations like the Financial Action Task Force, an inter-governmental body, should spell out in finer detail what makes a transaction highly risky. Banks should be reassured that they will not be prosecuted so long as they follow certain procedures, such as checking wire-transfer information against lists of suspected terrorists and criminals.'

Political Environment (cont.)

'Second, remittance-receiving countries should do their bit. They can invest in watertight national-identity systems, such as India's biometric one. These make it easier to track money, whether it is paid out in cash or sent to somebody's mobile account. They should also ensure that mobile money does not end up reducing competition. There are welcome signs of telecoms firms in sub-Saharan Africa allowing payments between rival mobile-money systems, even across borders. In some cases they have been prodded into so doing by courts and regulators, which should keep on prodding.'

[69%]

Natural/Physical Enviroment

2016-053

The Future Of Farming In The Face Of Climate Change by John Converse Townsend. Ashoka Changemakers Blog. November 2015. www.changemakers.com/blog

Keywords: digital service delivery, agriculture, climate change, SACCOs, digital content

'The challenges faced by farmers are immeasurable. They'll have to produce an additional ton of **food per acre by 2050 to ensure that nine billion** people can get their fill—no easy feat. But agriculture's tech revolution, or Ag 3.0, looks to be a game-changer.'

'Tomorrow's food producer will benefit from data-driven farming—checking satellite images and sensors attached to both equipment and crops will be routine. Farmers already benefit from access to vital information about weather patterns, soil conditions and market demand, and can even access financial services with a few taps of their mobile phone.'

'Ag 3.0 is a serious boost for smallholder farmers, 500 million strong, who produce most of the world's food on a quarter of the planet's farmland. Why? Because they're not only strapped for resources in emerging markets, but are also disproportionately affected by climate impacts. Many smallholders in Africa, for example, are struggling to cope with drought, flooding and shifts in rainfall. The Intergovernmental Panel on Climate Change (IPCC) predicts that farmers in some countries on the continent may see yields from rain-fed agriculture halved by 2020.'

'[Alloysius Attah] co-founded Farmerline with Emmanuel Owusu Addai in 2013. It's a mobile messaging platform that caters to thousands of farmers in Nigeria, Malawi, Sierra Leone, Cameroon, and their home country, Ghana, where smallholders account for 80 percent of domestic food production. Attah's goal is to equip farmers with the tools to thrive despite the unknowns presented by climate change.'

'"We push agriculture content to small-scale farmers to help them succeed: weather forecasts, financial tips, agro-informatics, market prices," Attah said. "Technology gives farmers a few days notice. It helps them deal with changes and better manage their inputs."'

'The content is delivered through Farmerline's MergData technology—SMS, mobile surveys and voice recordings in a dozen local languages—which makes the service inclusive for farmers with little formal education as well as those who are illiterate.'

'Two-thirds of Africa's labor force works in agriculture, which means there's massive potential for data- driven farming to transform livelihoods—and the tech seems to be taking care of itself. Nowhere have mobile subscriptions grown faster than in Africa, which is projected to have 1.2 billion subscriptions by 2018 (with 412 million smartphone connections).'

'[Opio] David and his business partner, Gerald Otim, launched the mobile money service Ensibuuko in 2012. Their tech enables farmers to plow through another barrier to productivity and profitability: limited access to finance.'

'Many smallholders do [...] belong to Savings and Credit Cooperative Societies (SACCOS). "But most of these institutions are still not digitized. They use paperwork to manage records and operations, which is inefficient," David said.'

'"The software we built, MOBIS, takes those processes online. MOBIS is also integrated with a digital wallet we call ChapChap, which translates to 'QuickQuick' in Kiswahili. With this wallet, farmers can request credit, repay their loans, check financial statements, and deposit savings."'

'"Ensibuuko's banking solution has half a million subscribers," David said. "They're making a combined 1,500,000 transactions every month, valued at about $350,000. This tells us that farmers, even those in rural areas, are willing to take on digital solutions to access financial services." The Ensibuuko team hopes to connect 1,000 SACCOS by 2017.'

'In West Africa, Attah and his team are in talks with NGOs interested in "riding" his MergData system to further improve livelihoods. MergData stands to deliver more than agricultural information: It's been optimized for use in 19 countries and it won't be long before rural farming families will be able to opt-in to receive information and updates relating to human rights, health, women's empowerment, and more.'

[63%]

2016-054

Southern Africa's food crisis in numbers by Obi Anyadike. BizCommunity. January 2016. www.bizcommunity.com

Keywords: agriculture, crop failure, Southern Africa, drought, food security

'Southern Africa is facing the threat of extensive crop failures this year as a result of record low rainfall in a region in which 29 million people are already going hungry. "With little or no rain falling in many areas and the window for the planting of cereals closing fast or already closed in some countries, the outlook is alarming," the World Food Programme has warned.'

'Southern Africa is feeling the impact of an intense El Niño that began last year. According to the Famine Early Warning Systems Network, continued belowaverage rainfall and high temperatures are likely to persist in 2016, with the food crisis lasting into 2017.'

'"The region is illprepared for a shock of this magnitude, particularly since the last growing season was also affected by drought. This means depleted regional stocks, high food prices, and substantially increased numbers of food insecure people," the UN agency said.'

South Africa

'It's the region's main maize producer, but last year output fell 30 percent below the bumper 2014 season and it may have to import around six million tonnes. Planting of the 2016 cereal crop began later than normal due to delayed rains. Smallscale farmers have been hammered by the drought, with emergencies declared in five out of nine provinces, as well as areas of two other provinces.'

Malawi

'The 2014/15 cereal harvest was 24 percent down on the fiveyear average. Currently, 2.8 million people are hungry out of a population of 16 million as a result of flooding and drought last year. Average maize prices were at a record high in December 2015. The government's $146million Food Insecurity Response Plan is so far 48 percent funded.'

Zimbabwe

'The 2014/15 cereal harvest was 42 percent down on the fiveyear average. An estimated 1.5 million people currently don't have enough food, with 600,000 in "crisis" phase. Zimbabwe's $132million drought response plan is 44 percent funded.'

Angola

'A drought that scorched Namibia spread into Angola's three southern provinces Cunene, Huila, and Cuando Cubango. Whereas Namibia is on top of its crisis, Angola, even though it is Africa's second largest oil producer, is not. In Cunene, 800,000 people 72 percent of the population have been hit by crop losses and livestock deaths, with child malnutrition rates beyond the emergency threshold of 15 percent. Nationwide, 1.25 million are at risk.'

Mozambique

'El Niño's climate impact splits the country in two in the north there has been flooding, in the south drought. More than 176,000 people are in crisis in the provinces of Gaza, Inhambane, Sofala, and Niassa, until at least the next harvest. A further 575,455 people are at risk of food insecurity, especially in Zambézia, Maputo, and Niassa provinces. Around 50,300 people are receiving food assistance in Gaza and Sofala.'

Zambia

'Zambia has been an exporter of maize to the region, but last year's production was 21 percent down on 2014. Zambia's ample stocks enabled it to still export to neighbouring and needy Zimbabwe, but close to 800,000 Zambians are also at risk of food and livelihoods insecurity.'

Lesotho

'Some 650,000 people onethird of the population do not have enough food. Some projections indicate the numbers affected could surpass 725,000. Water rationing is under way in several districts, impacting not just agriculture, but also industries, schools, and hospitals. Water shortages are increasing the likelihood of waterborne and livestock diseases. The government has committed $9.7 million towards a $36.5 million appeal.'

Madagascar

'Nearly 1.9 million people 46 percent of the population were "food insecure" in 2015, with 450,000 of them in crisis. The droughthit southern regions of Androy, Anosy, and Atsimo Andrefana are struggling badly, with 380,000 people 30 percent of the population affected.'

Swaziland

'One of the countries least able to cope with the crisis. Though nominally a lowmiddle income country, levels of stunting among children are historically around 31 percent. More than 201,000 people out of 1.1 million one fifth of the population are food insecure. Maize prices have increased by 66 percent in a country in which just under half of the population are unemployed, and which has the world's highest rate of HIV infection.'

Namibia

'The 2015 maize crop was 44 percent lower than 2014's (aboveaverage) output. Around half of all dryland commercial farmers experienced total crop losses as a result of the drought and high temperatures. An estimated 370,316 people are food insecure and the target of a government drought relief programme.'

The Democratic Republic of Congo

'Fighting in the east of the county worsens DRC's food insecurity. Orientale, Equateur, South Kivu, and Katanga provinces are already at emergency levels. An estimated 6.6 million people face food shortages.'

[87%]

2016-055

Microfinance and climate change adaptation: An overview of the current literature by Adrian Fenton, Jouni Paavola and Anne Tallontire. Centre for Climate Change Economics and Policy. September 2015. www.cccep.ac.uk

Keywords: microfinance, climate change, microfinance institutions, climate resilience

'There is growing interest in the role microfinance could play in facilitating adaptation to climate change. This article contributes to this interest by reviewing the state of the literature on microfinance and climate change adaptation which has two key areas. The first area of the literature focuses on the potential for microfinance to facilitate household adaptation, which has been only partially successful in linking microfinance and adaptation because of weak conceptualisation of adaptation and terminological shortcomings. The second area of literature examines the vulnerability of microfinance institutions to climate change, highlighting they are directly vulnerable to climate change themselves as well as indirectly vulnerable through their beneficiaries. The realisation of climate-resilient microfinance requires both climate proofing internal operations to reduce direct vulnerability, and promoting climate-resilience amongst beneficiaries. This may have already happened serendipitously to an extent, but there is scope for further action. We conclude that more evidence is needed to substantiate the links and thus progress the literature, particularly studies employing an adaptation lens.'

[Abstract]

Statistical Appendix

Agriculture

- Globally, farmers will have to produce an additional ton of food per acre by 2050 to be able to feed the projected global population of 9 billion. (The Economist)
- There are an estimated 500 million smallholder farmers worldwide. They produce most of the world's food on a quarter of the planet's farmland. (The Economist)
- Africa has about 24% – 600 million hectares – of the world's arable land. (African Economic Outlook 2015)
- Africa generates only 10% of global agricultural output and accounts for less than 5% of the world agribusiness GDP. (IPE)
- Two-thirds of Africa's labor force works in agriculture. (The Economist)
- The Intergovernmental Panel on Climate Change (IPCC) predicts that farmers in some African countries may see yields from rain-fed agriculture halved by 2020 as a result of changing climates.

Banking

- 2 billion people worldwide still lack access to regulated financial services. (Center for Financial Inclusion)
- More than 300m of the world's unbanked population lives in Africa (IPE)
- 80% of the adult population in Africa is without access to simple banking services (IPE)
- The 2008 and 2012 FinScope surveys showed that financial inclusion in Rwanda had doubled from 21 to 42 percent (Finmark Trust)
- In Nigeria, only 14% of small to mediumsize enterprises have access to a bank loan or overdraft protection. (World Bank)
- Women in developing countries are 20 percent less likely than men to have an account and 17 percent less likely to have borrowed from a formal financial institution in the past year. (Center for Financial Inclusion)
- Some 355 million adults in developing countries that report having transaction accounts still remit money in cash or overthecounter. (Center for Financial Inclusion)

Blockchain Technologies

- A new report from Santander InnoVentures claims blockchain technologies could reduce banks' infrastructural costs by $15-20B a year by 2022.

Business

- By 2025, China will be home to more large companies than either the United States or Europe. (McKinsey & Company)
- By 2025, it is expectd that nearly half of the world's large companies will be headquartered in emerging markets. (McKinsey & Company)
- Africa's combined consumer spending was USD 680 billion in 2008 and is projected at USD 2.2 trillion in 2030. (AfDB)

Commodities

- Africa hosts an estimated 10% of the global reserves of oil, 40% of gold and 80-90% of chromium/platinum group metals. (AfDB, 2013)

Data

- More than 90 percent of data in the world has been created in the last two years. (McKinsey & Company).

Demographics

- In the United States alone, 85 million millennials, all digital natives, are coming of age. (McKinsey & Company)
- By 2060, the population of subSahara Africa could be as large as 2.7 billion people. (World Bank)
- SSA's population of 1 billion in 2010 should double by 2050. (African Economic Outlook 2015)
- The UN now thinks that by 2100 the continent will be home to 4.4 billion people, an increase of more than 2 billion compared with its previous estimate.
- By the end of this century, Africa will be home to 39% of the world's population, almost as much as Asia, and four times the share of North America and Europe put together. (The Economist)
- There are 1.8 billion young people (aged 15 to 30 years) in the world, roughly a quarter of the total population. (The Economist)
- 85% of young people live in developing countries. (The Economist)
- Africans will make up a bigger and bigger share of the world's young people: by 2100, they will account for 48% of those aged 14 and under. (The Economist)
- Niger, Uganda and Chad all have populations with median ages below 16 years. (World Bank)
- Of the world's top ten countries with the youngest populations, eight are in subSaharan Africa. By 2050, the region will be home to all 10. (World Bank)
- Currently, only one of the world's ten most populous countries is in Africa: Nigeria. In 2100, five will be: Nigeria, Congo, Tanzania, Ethiopia and Niger. (United

Nations)
- Life expectancy in SSA has increased from 36 years in 195055 to 56 years at present. (World Bank)
- By 2013, about 60 percent of the world's population lived in countries with fertility rates below the replacement rate. (McKinsey & Company)
- About 25 percent of Europe's population is now over the age of 60, and that percentage is set to rise. (Center for Financial Inclusion)

Digital Financial Services
- At the end of 2014, more than one-fifth of mobile connections in Sub-Saharan Africa were linked to a mobile money account. (GSMA)
- It is estimated that there are more than 2,000 start-ups offering traditional and new financial services today. (McKinsey & Company)
- Nearly $23 billion of venture capital and growth equity has been deployed to fintechs over the past five years, and this number is growing quickly: $12.2 billion was deployed in 2014 alone. (McKinsey & Company)
- There were 135 live digital financial services across SSA as of December 2014. (GSMA)
- Kenyan mobile money (African Review of Business and Technology):
- Subscriptions reached 26mn in 2014, representing 60.6 per cent of the total Kenyan population;
- Cash deposits made via mobile money agents reached US$12.7bn in 2014 compared to US$10.3bn in 2013
- Total transfers grew by 24.7 per cent to US$23.7bn from US$19.02bn in 2013.

Ecology
- Africa hosts a quarter of the world's approximately 4,700 mammal species, a fifth of the world's 10,000 bird species and 40,000-60,000 plant species. (UNEP, 2006)

Employment/Labor
- The African workforce is expected to increase by 910 million people between 2010 and 2050, of which 830 million in sub-Saharan Africa and 80 million in North Africa. (African Economic Outlook 2015)
- This upcoming growth in Africa's workforce represents two-thirds of the growth in the workforce worldwide. (African Economic Outlook 2015)
- In Kenya, the informal sector accounts for 82.7 per cent of total employment. (African Review of Business and Technology)
- If [the current demographic] trend continues for the next 20 years, Africa will have the highest labour population surpassing both China and India. (Biz-Community)
- Over 25% of young people (15-30) in middle-income nations and 15% in rich ones are NEETs: not in education, employment or training. (The Economist)

Financial Literacy
- Worldwide, just 1-in-3 adults show an understanding of basic financial concepts. (World Bank)
- Around 3.5 billion adults globally, most of them in developing economies, lack an understanding of basic financial concepts. (World Bank)

Gender Equality
- In SSA, on average, the level of female human development is 13% lower than that for males. (African Economic Outlook 2015)
- African women are currently 13% less likely than African men to own mobile phones. (GSMA)

Internet of Things (IoT)
- The global IoT market is expected to total more than 26bn devices by 2020. (Gartner)
- The number of M2M (machine-to-machine) connections in SSA is expected to reach 30m by 2020.

Investment
- In 2014, a record $4bn (€3.7bn) in private equity was raised in Africa. (IPE)
- Foreign direct investment in SSA increased by a factor of five from 2001 to 2012. (BCG)

Military and Arms
- Russian soldiers involved in peacekeeping operations in Africa surpass those of France, the United Kingdom, and the United States combined (The Atlantic Center)

Mobile Industry
- There were 386 million mobile subscribers in Sub-Saharan Africa (SSA) (41% penetration rate) in 2015. (GSMA)
- By 2020, there will be 518 million mobile subscribers in SSA (49% penetration rate); This represents a 6.2% compound annual growth rate (CAGR). (GSMA)
- There were 722 million SIM connections in SSA (excluding M2M). (GSMA)
- By 2020, there will be 982 million SIM Connections (excluding M2M); This represents a 6.3% CAGR.

(GSMA)

- Capital investment in sub-Saharan Africa's mobile industry in 2014 was $9 billion; it is set to reach $13.6 billion (24% of total revenues) by 2020. (GSMA)
- In 2015, mobile broadband connections in SSA represent 24% percent of total mobile users; this is expected to increase to 57% by 2020. (GSMA)
- In 2015, there were 160m smartphones in SSA; this is expected to increase to 540m by 2020. (GSMA)
- In the next five years, four in every five smartphone connections globally are predicted to come from developing regions. (CGAP)
- By 2025, Africa will have tripled overall internet penetration to over 50%, or around 600m people. (McKinsey & Company)
- Mobile internet penetration was 23% of the SSA population in 2015; this is expected to increase to 37% by 2020.
- Mobile industry contribution to GDP (GSMA)
- $102bn (5.7% of GDP) in 2014
- $166bn (8% of GDP) in 2020
- Mobile industry contributions to employment (GSMA)
- 2m jobs directly supported by mobile ecosystem in 2014
- 2.7m jobs expected to be directly supported by mobile ecosystem in 2020
- Additional 3.4 million indirect jobs expected to be supported by 2020

Official Development Assistance (ODA)

- ODA to SSA declined in 2015 to USD 54.9 billion and is projected to diminish further. (African Economic Outlook 2015)
- More than two-thirds of states in SSA, the majority of which are low-income countries, will receive less aid in 2017 than in 2014. (African Economic Outlook 2015)

Remittances

- Total flows from remittances to developing countries are expected to be worth $440 billion this year—more than twice as much as foreign aid. (World Bank)

Trade

- Minerals and ores account for two-thirds of Africa's merchandise exports. (African Economic Outlook 2015)
- Over the first decade of the century, African exports to Europe doubled, exports to emerging economies quadrupled and exports to China alone increased by a factor of 12. (African Economic Outlook 2015)
- The volume of trade between China and Africa rose from $9 billion in 2000 to $211 billion in 2012. (McKinsey & Company)
- Between 2000 and 2012, Russia's trade with Africa increased ten times. (The Atlantic Center)
- India-Africa trade currently stands at nearly $72 billion, twice as much as five years ago. (Council on Foreign Relations)
- Brazil's total trade with African nations grew from roughly $4.3 billion in 2000 to $28.5 billion in 2013. (Foreign Affairs)

Transportation

- McKinsey's Energy Insights unit projects that in 2030, about 10 percent of all cars in the 34 member countries of the [OECD] will be at least partially electric.
- Membership in car clubs, which let people book by app for periods as short as 15 minutes, is growing by over 30% a year, and should hit 26m members worldwide by 2020. (Alix Partners)

Urbanisation

- By 2030, it is forecast that more than half of Africa's population will live in urban areas, up from one-third today. (IPE)
- It is expected that close to half of the continent's population will live in large cities within the next decade. (BizCommunity)
- The global urban population has been rising by an average of 65 million people annually during the past three decades, the equivalent of adding seven Chicagos a year, every year. (McKinsey & Company)

Wealth Distribution

- By 2016, the wealthiest 1% of the world population will own more than 50% of the world's wealth. (Oxfam)

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