



Institute  
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of Actuaries

**A Case Study to**

# **A Cashless Society-** Benefits, Risks and Issues (2017 Addendum)

**A paper by:**

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## **A Cashless Society in Africa** Spotlight on the South African and Zimbabwean environments

February 2019

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## Reading pre-requisites

This paper supplements the interim paper and addendum papers: A Cashless Society – Benefits, Risks and Issues, published by the cashless society [working party on the Institute and Faculty of Actuaries \(IFoA\) website](#) in December 2017.

Resource URLs:

Interim paper: A Cashless Society – Benefits, Risks and Issues

<https://www.actuaries.org.uk/documents/cashless-society-benefits-risks-and-issues>

Addendum paper: A Cashless Society – Benefits, Risks and Issues Addendum

<https://www.actuaries.org.uk/documents/cashless-society-world-motion-2017-addendum>

Cashless Society Working party: <https://www.actuaries.org.uk/practice-areas/finance-and-investment/finance-and-investment-research-working-parties/cashless-society-working-party>

## Executive Summary

The Institute and Faculty of Actuaries (IFoA) is a chartered professional body dedicated to educating, developing and regulating actuaries based in the UK and internationally. The IFoA promotes and supports a wide range of research and knowledge exchange activities with its members, external stakeholders and international research communities.

A volunteer working party published an interim report in December 2017, sponsored by the Finance & Investment board at the IFoA, titled “Cashless Society – Benefits, Risks and Issues”, and further addendum papers have been written since. It concluded, “A cashless society and its underpinning digital economy should open opportunities for most stakeholders in many economies, including the financially excluded.”

This paper constitutes a Case Study addition to the Interim Paper and explores attempts to contextualise the operating environments of two example African countries by highlighting cashless initiatives currently being developed or operating in South Africa and Zimbabwe. The paper considers the wider African context of a large, fast changing and diverse continent out of step with many other areas of the globe from a development and economic perspective. There are vast rural-urban divides in existence across the continent leading to different responses and needs for a cash less society in the future. The issue of distrust in technological change and cost of access is much larger in rural communities who are hesitant to embrace mobile or technological innovations, whilst urban populations are leading some of the fastest growing technology innovations in the world. The need for forms of cash in a largely informal and unbanked economy has led to the variety of options and speeds in the continent as it embraces cash less transactions.

The World Bank has identified three major barriers to financial access. First, the lack of financial literacy hinders take up of financial products. Second, people unable to identify themselves through official government issue documentation are prohibited from engaging with established financial providers. Third, the role of woman in society and their independence also influences take up of financial products and services.

Cashless systems remove the need for proximity to financial services infrastructure. However, infrastructure development across Africa is not uniform. Data coverage may not be wide-spread enough to enable complete adoption. Such challenges also influence the affordability of mobile services. Basic handsets can still function using USSD technology but actual data costs range extensively. A study by ICT Research Africa in 2017 indicated that the average cost for fifty minutes and one hundred text messages ranges from \$1.17 in Egypt up to \$66 in Guinea-Bissau.

For a cashless ecosystem to exist, it needs to enable the transfer of funds between people, the purchase of goods and services between people and businesses and the provision of and repayment of loans. A comprehensive cashless system needs to be able to facilitate domestic, cross border and international transactions for all these transaction types.

Africa seems to face some issues that are more of an issue to overcome than other countries and regions in the world. Cashless adoption is heavily influenced by the role cash plays in Africa by funding illicit activities, i.e. the shadow economy. When there are large amounts of cash in

circulation, it enables money laundering due to the anonymity of cash payments. The Basel Institute of Governance publishes the Basel Anti-Money Laundering (AML) Index. 65% of African countries are not included in the index, due to the lack of information available. The estimated African average of 6.38 is therefore understated, even though it is already much higher than the index value of 5.44.

This is further reinforced by the perception that Africa is the most corrupt region in the world. The Transparency International surveys measures and confirms this. The United Nations has identified corruption as “the most daunting challenge to good governance, sustainable economic growth, peace, stability and development in Africa”. While corruption is a global phenomenon, the impact is felt more in poor and underdeveloped countries, where resources for development are unduly diverted into private hands, which exacerbates.

The South African environment is explored by presenting some environmental descriptions on how the formal and informal economies interplay with each other along with a few of the existing innovations making their mark on this large African economy. Whilst the South African financial industry is one of the most advanced on the continent, the size of its unbanked and informal economy means that there is not yet a uniform view on how the future changes to a cashless society will emerge.

The success of Mpesa in Kenya is a well-known case study. Safaricom had a significant market share and worked together with government, regulators and banks right from the start. This meant consumers trusted the product and so adoption was a success initially and continued to grow. However, Mpesa was attempted but failed in South Africa, Egypt and Romania. In South Africa, the lack of trust in mobile operators to handle money, challenging regulations and the need for compulsory bank partnership hindered the successful deployment and consumer adoption of Mpesa in these environments.

In Zimbabwe, the unique cash-less circumstance that has ended up becoming the long term status quo has been explored by considering the back ground to the ongoing economic challenges facing the nation and how politics and decisions made by authorities and consumers have contributed to the response by businesses in Zimbabwe. This nation once prosperous nation is now largely disconnected from the world financial infrastructure and is charting its own course, almost going backwards whilst seemingly going forwards quickly.

A SWOT analysis at the end of this report details the risks and benefits faced by the general economy, the public, non-financial businesses, governments and banks as well as the payments ecosystem operating in African countries.

## Key Findings

1. Each African country faces different challenges and a cashless solution that works for one country may not work for another African country (or other non-African countries).
2. Different cashless solutions in Africa would need to integrate across platforms (e.g. mobile networks), countries and currencies.
3. Due to poverty, infrastructure, costs and the technological ecosystems (e.g. simple vs smartphones, apps) the needs of the poor must be addressed to drive wider adoption.
4. Africa's digital future requires affordable access, shared infrastructure, and forward-looking regulation.
5. When customers are forced to find alternative mediums of exchange, adoption of cashless transactions would be high.
6. Market share of cashless enabling institutions may influence adoption.
7. Government support and regulation influence adoption of cashless systems.
8. Mobile phone penetration is quite high across Africa (and continues to increase) and is relatively on par with the rest of the world; this means that access to cashless systems now has a much wider reach across the African continent.
9. Cashless payment innovations can solve major economic and infrastructure challenges such as limited payment infrastructure (like ATMs) or even a physical cash crisis (as is the case in Zimbabwe).
10. Innovation, regulation and addressing customer needs are probably the strongest drivers to cashless adoption.

## Approach, Methods and Acknowledgements

Information for this document has been sourced through one-on-one discussions and supplemented with online research to validate the content.

## Keywords

cashless society; cashless transactions; risks and issues of a cashless society; cashless society pro; cashless society con; pros and cons of a cashless society; cashless society problems; digital economy; bank payments society; Fintech; financial technology; cash and crime; tax evasion; cash and tax evasion; cash and fraud; tax gap; removal of cash; local currency; financial exclusion; financial inclusion; benefits of a cashless society; SWOT analysis; stakeholders in a cashless society; Africa cashless; South Africa cashless; Zimbabwe cashless; mobile payments; mobile money; contactless payments; cash transactions; the unbanked; means of payments; payment systems; payments ecosystem; digital economy readiness; cashless change leadership; security of transactions data and biometrics; security; social value of cash; economic activity; promises of a cashless society; alternative means of payment; innovation politics versus innovation; financial stability; ATM; payment automation; interoperability; digital infrastructure; mobile wallets; digital disruption; card payments; illegal immigration; M-Pesa; notes in circulation; digital transaction;

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## Acronyms

AML	Anti-Money Laundering
ATM	Automated Teller Machine
B2B	Business-to-business
CCPI	Credit Card Push Instruction
CPI	Corruption Perception Index
DRC	Democratic Republic of Congo
GDP	Gross Domestic Product
ICT	Information Communication Technology
IFoA	Institute and Faculty of Actuaries
ML/TF	Money Laundering/Terror Financing
P2B	Person-to-business
P2P	Person-to-person
PPP	Purchasing Power Parity
SARB	South African Reserve Bank
SASSA	South African Social Security Agency
SIM	Subscriber Identity Module
STATSSA	Statistics South Africa
SWOT	Strengths, weaknesses, opportunities and threats
USD	United States Dollar
USSD	Unstructured Supplementary Service Data

## Section 1: Introduction

The Cashless Society Working Party has already published papers which cover examples from the African continent: The Interim Paper “A Cashless Society – Benefits, Risks and Issues” and Addendum Papers, “Cashless World in Motion” which are global reviews taking us up to the end of 2018. The South African and Zimbabwean environments have been explored in this supplement to give more detail of cashless opportunities and challenges in Africa.

There are 54 countries making up the African continent. Each country has their own form of governments, infrastructure, cultures, languages and currencies in place. Africa accounts for 17% of the world’s population and has a very young and disproportionately poor population. The opportunity for cashless systems exists in many places however there are basic infrastructure challenges that impede establishing cashless systems across the continent.

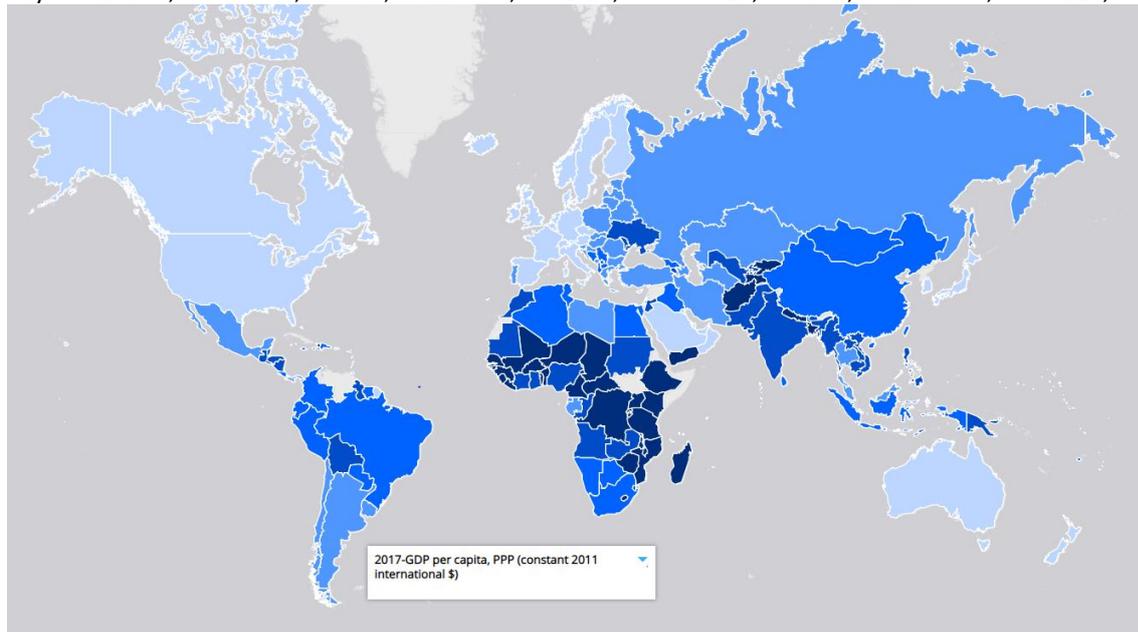
Some of the notes are not necessarily unique to Africa. However, the developing world faces additional challenges compared to the first world where fundamental requirements for a cashless society may already be in place and accessible to the clear majority. This is not necessarily true for every African.

Although a myriad of cashless solutions exists throughout the African continent, there is no uniform solution applicable to each country. Different forms of government operate across the continent with varying degrees of regulations and financial systems in place. Each African country is unique; there are different languages and ethnic groups as well as different histories with a range of legacies that influence their experience of the modern world today. Consider the following example of how a legacy can influence the current day: Railway system incompatibility. Various narrow and wide gauge railways stretch across the continent but are mostly country specific, serving the needs of that country and not necessarily for cross-country transportation. The point of this anecdote is that Africa is a diverse continent with a fragmented history; it is probably not possible to copy and paste a “one size fits all” cashless society solution for Africa. This means that the progression of cashless societies across the African continent is a diverse phenomenon.

There are 1.2 billion Africans (United Nations, 2017) making up around 17% of the world’s population. The African population is the fastest growing in the world, set to surpass Asia in the middle of this century (United Nations, 2018). The African populations are also a lot younger. The median age of the African population is in their teens or early twenties (Central Intelligence Agency, 2018).

The African continent contains a large number of poor nations. The World Bank map below illustrates the GDP per capita (2017) for countries across the globe. In the map below; the darker the shade of blue the lower the GDP per capita. It is evident that African countries are a lot poorer than any other grouping of nations in close proximity.

Figure 1: The World Bank: GDP per capita, PPP<sup>1</sup>current international \$ (2017) (The World Bank, 2017)  
 Key: ■ 725.9-3,868.8 ■ 3,868.8-9,684.2 ■ 9,684.2-17,073.5 ■ 17,073.5-34,503.5 ■ 34,503.5-128,374.3



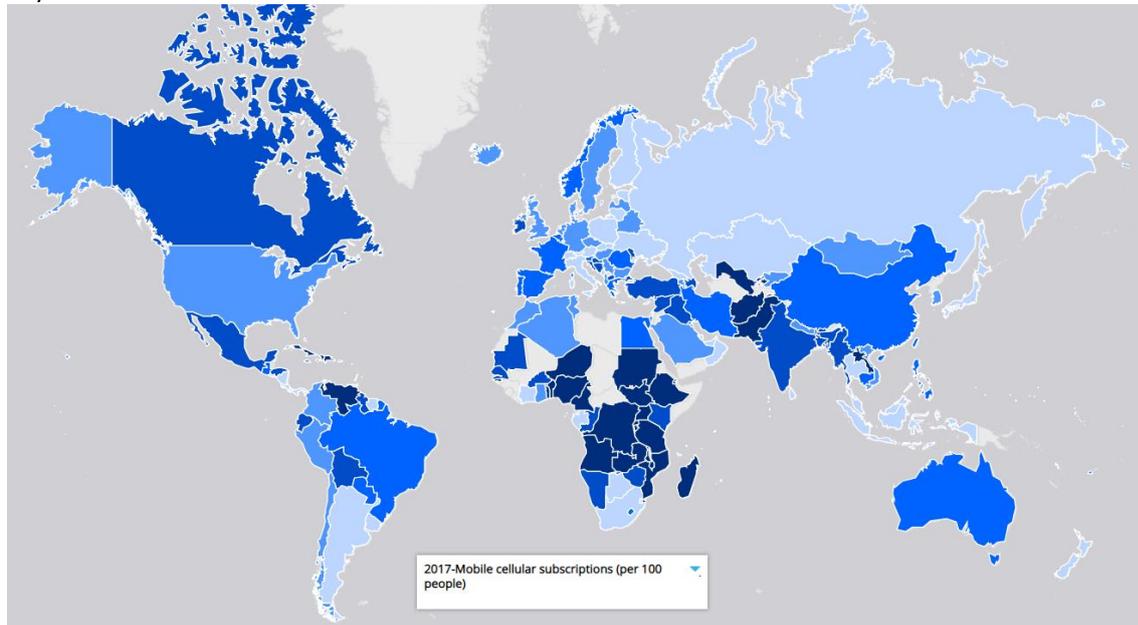
The World Hunger Organisation research indicates that 27% of Africans are affected by severe food insecurity. A primary cause of this is poverty. The World Bank recorded that 42% of the population of sub-Saharan Africa lived on \$1.90 or less per day during 2013 (World Hunger, 2018). This has not changed much since then despite the incredible wealth of natural resources across the continent.

The World Bank map below illustrates the prevalence of mobile cellular subscriptions per 100 people based on 2017 data. The darker the shading, the lower the number of mobile subscriptions. However, there is significant mobile activity across the continent to advocate for mobile and cashless payments, despite a lower prevalence in comparison overall to the rest of the world. This is mainly due to no subscription phone contracts or pay as you go usage which is high due to the large informal sector of African economies.

<sup>1</sup> GDP per capita (PPP based) is gross domestic product converted to international dollars using purchasing power parity rates and divided by total population. An international dollar has the same purchasing power over GDP as a U.S. dollar has in the United States.

Figure 2: The World Bank: Mobile Cellular Subscriptions (per 100 people, 2017) (The World Bank, 2017)

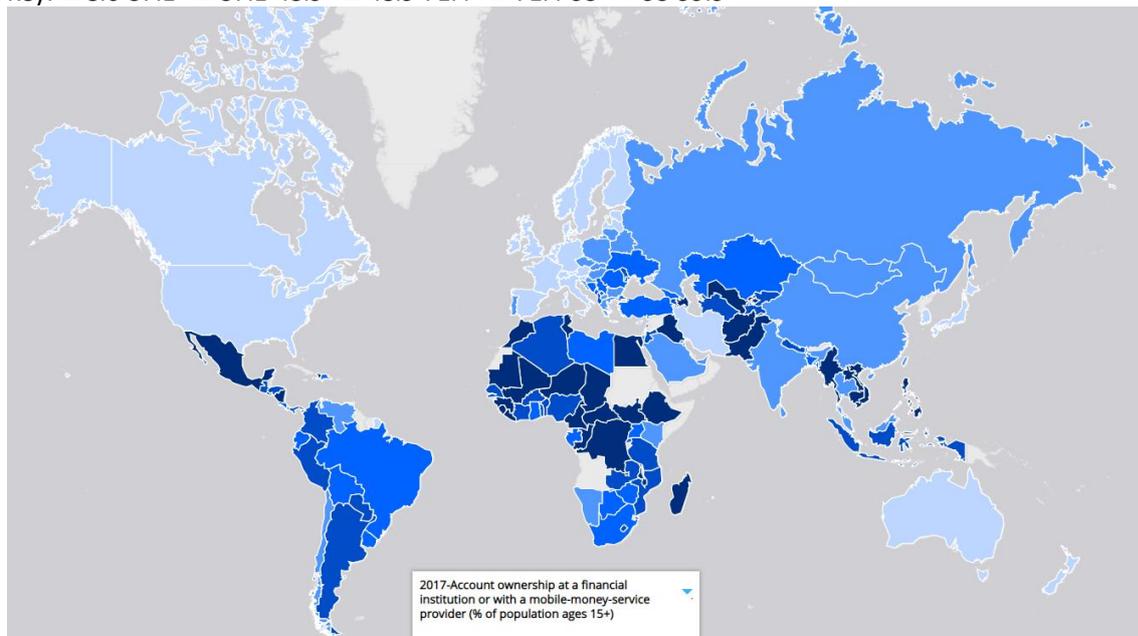
Key: ■ 12-81.9 ■ 81.9-104.5 ■ 104.5-118.7 ■ 118.7-129.1 ■ 129.1-249



In comparison, the next World Bank illustration shows the proportion of the population (older than 15 years of age) with account ownership at a financial institution or with a mobile-money-service provider based on 2017 data. Parts of sub-Saharan African fare better when looking at both types of accounts, however, it is still quite low in comparison to the rest of Africa relative to the world averages. Darker shades of blue represent lower proportions of account ownership at financial or mobile phone institutions.

Figure 3: The World Bank: Account Ownership at a Financial Institution or with a Mobile-money-service Provider, % of population ages 15+ (2017) (The World Bank, 2017)

Key: ■ 8.6-37.1 ■ 37.1-48.9 ■ 48.9-71.4 ■ 71.4-93 ■ 93-99.9



Considering the vast number of Africans, limited financial resources and appetite for mobile technology, unique cash-less solutions need to be developed for this under-served population.

## 1.1 Requirements for a Cashless Society

National payments systems that are available across Africa are still underdeveloped. Traditional payments infrastructure exists, but it is accessible only to a proportion of the population (Elixirr, 2017)<sup>2</sup>.

### 1.1.1. Barriers to financial access

The World Bank (Grandolini, 2015) has identified some themes that impede financial access:

1. *Financial literacy and capability influence the ability of people to make sound financial decisions and use the most appropriate financial products. Incorrect financial products will reduce the usefulness of a financial product; people may then revert to cash.*
2. *Valid identification documents are essential in accessing financial services. Obtaining an identity document is the first hurdle to cross as not all areas have government centres and available paper work to document the population. Without a proper identity document, it is not possible to open a bank account.*
3. *Women in developing countries are less likely to have a bank account and operate independently in budgeting and managing finances. This is partly influenced by the role of women in a society and the recognition of their rights as an individual. In addition, rural communities are often poorer and less likely to follow technological advances, and therefore forced to remain a cash society.*

Limited access to financial systems and financially underserved areas leads to a deep division between a more prosperous and well bank serviced community, and a poorer under-banked community. This can in turn create a wealth gap by giving the well-off the means to increase their prosperity, leaving the unbanked behind. The mobile phone has changed this though (Hamilton, 2017).

### 1.1.2. Access to mobile technology

Cashless systems remove the need for proximity to financial services infrastructure. Instead by utilising mobile transactions, users are empowered to manage their finances better and have access to more financial services such as savings, payments, credit and insurance. Access and use of appropriate financial services can help people better manage risks, step out of poverty and build a better life (Grandolini, 2015).

Already, many Africans have access to a mobile phone with USSD<sup>3</sup> (Unstructured Supplementary Service Data) or smartphone capability. Mobile penetration is quite high for the continent considering the lower GDP contribution compared to population. The World Bank (Khokhar, 2016) published a report in 2016 that ranked the expense of mobile phone usage costs. It indicated that the cost of mobile phones and usage is higher in the African countries compared to the rest of the world.

Data coverage is not universal, and data can be pricey. However, unlike before, African communities are now connected both locally and globally. Connectivity and access can be used to improve the

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<sup>2</sup> “The small size of national markets, a lack of financial literacy, low income levels, political instability and weak judicial systems have created a constrained African banking system”

<sup>3</sup> Any mobile phone user can access USSD functionality without restriction. This is a primary access mechanism the unbanked can access when transacting in a digital way.

lives of the poor in many ways, including bringing financial services right into the palm of their hands.

### 1.1.3. Affordability of mobile services

Research ICT Africa (Research ICT Africa, 2017) conducts public-interest research on ICT policy and regulation. It developed an index to score African countries based on the cheapest prepaid mobile voice product in Africa based on thirty calls split into fifty minutes based on user split between networks and peak / off-peak / off-off peak times; and one hundred text messages (data for Q2 2017). The table depicts the results from the scores.

Figure 4: Average cost for fifty minutes and one hundred text messages (Q2, 2017), ICT Africa

Country	US \$	Country	US \$	Country	US \$
Egypt	1.17	Burkina Faso	7.20	Comoros	10.09
Tunisia	1.66	Zambia	7.64	Congo Brazzaville	10.40
Ghana	2.24	Mozambique	7.91	Sao Tome and Principe	10.70
Nigeria	2.25	Benin	8.08	Cote d'Ivoire	10.78
Kenya	2.30	Algeria	8.31	Chad	11.15
Tanzania	2.34	Morocco	8.32	Central African Republic	11.35
Ethiopia	3.03	Senegal	8.40	Swaziland	12.42
Rwanda	3.04	Lesotho	8.57	Seychelles	13.76
Sudan	3.18	Niger	8.57	Angola	19.29
Mauritius	3.23	Togo	8.77	South Sudan	37.67
Sierra Leone	3.38	D.R Congo	8.80	Guinea-Bissau	66.43
Guinea	3.76	Zimbabwe	8.95		
South Africa	3.88	Gabon	9.48		
Gambia	4.19	Mauritania	9.95		
Uganda	4.23				
Namibia	4.64				
Madagascar	4.86				
Cape Verde	4.98				
Liberia	5.00				
Malawi	5.69				
Mali	6.21				
Botswana	6.25				
Burundi	6.40				
Libya	6.60				
Cameroon	6.73				

### 1.1.4. Full service mobile functionality

For a cashless ecosystem to exist, it needs to enable the transfer of funds between people, the purchase of goods and services between people and businesses and the provision of and repayment of loans. A cashless system needs to be able to facilitate domestic, cross border and international transactions for all these transaction types. The minute a cashless ecosystem can't accept a popular form of payment, it begins to decline. Cash is a closed payment ecosystem, since the minute it moves beyond a border, the system doesn't work. However, a card<sup>4</sup> allows for truer interoperability. As more and more closed and open payment ecosystems develop, integration of the systems will influence the longevity and success of the payment ecosystems.

<sup>4</sup> Card is part of an open payment ecosystem.

Africa's digital future requires affordable access, shared infrastructure, and forward-looking regulation across country borders.

## 1.2 The African Challenge

Essentially there are dual economies operating in African countries: the formal and informal. The proportion of the one relative to the other varies from one African country to the next. Regulation controls the formal economy and allows the existence of the informal economy. Regulation across Africa is vastly different but is tightening up as the world becomes more and more connected.

There is no uniform currency across the African continent. Currencies in different countries are stronger or weaker than other neighbouring countries. Some countries prefer the US Dollar. There are some parts in sub-Saharan Africa where there are different currencies, but the currency values are equivalent, i.e. South African Rand, Namibian Dollar, Lesotho Loti and the Swazi Lilangeni.

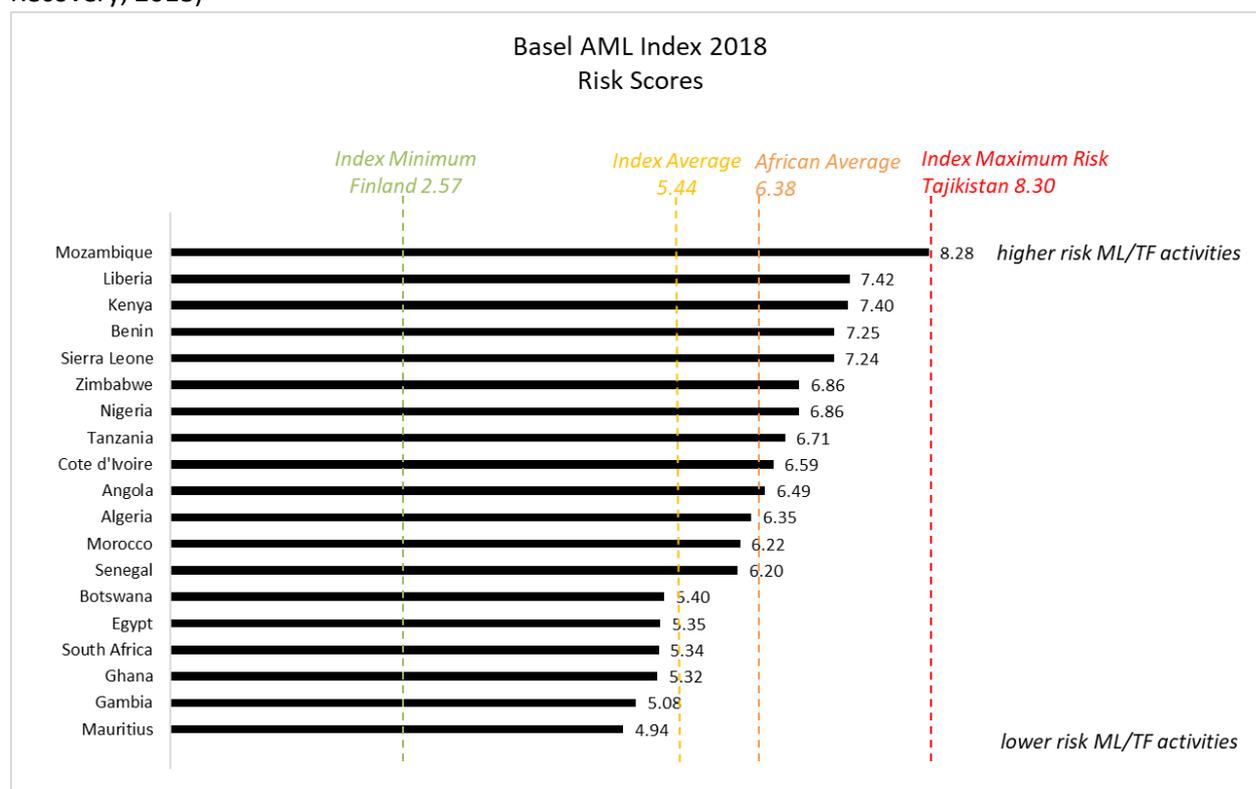
### 1.2.1 Cash funds illicit activities

Sadly, a primary reason why cash remains a preferred means of payment, especially in smaller businesses – is for tax evasion (The Cashless Working Party, Institute and Faculty of Actuaries, 2017). A study done by the Association of Chartered Certified Accounts indicates that the shadow economy of South Africa is estimated at 24% of GDP by 2020 (The Association of Chartered Certified Accountants, 2017) (Peyper, 2017). In comparison, the shadow economies of the UK the USA are estimated at 11% and 7% of GDP respectively (The Association of Chartered Certified Accountants, 2017). The global average is at 22% (The Association of Chartered Certified Accountants, 2017). Cash is more difficult to track and follow. A lack of transaction records deprives the Treasury of revenue (Smith, 2016). Another dark side of why there is a requirement for the cash economy is payment for sex and drugs (Warby, 2000). South Africa has seen many cash-in-transit heists as cash enables the expansion of illicit drug and sex trade (an der Spuy, 2018). Illegal activities are difficult to trace when funded through cash. Up to a point, the path of the funds can be traced but once converted to cash, the transactions are hard to trace.

### 1.2.2 Money laundering and terror activities

Wherever there are large amounts of cash in circulation, it enables money laundering due to the anonymity of cash payments. The Basel Institute of Governance publishes the Basel Anti-Money Laundering (AML) Index (International Centre for Asset Recovery, 2018) which is an independent annual ranking that assesses the risk of money laundering and terror financing around the world. The higher the score, the higher the risk of Money Laundering/Terror Financing (ML/TF) activities. Of the 54 African countries, only 19 appear on the index as they are the only African countries that have sufficient data available to calculate a reliable ML/TF risk score. That means that 65% of African countries do not have sufficient data available for at least 8 out of 14 indicators. This means the African average included in the chart is severely understated. The information presented in the graph is from the 2018 Basel AML Index report. Averages have been calculated from the report (International Centre for Asset Recovery, 2018).

Figure 5: Basel AML Index Risk Scores for African Countries (2018) (International Centre for Asset Recovery, 2018)



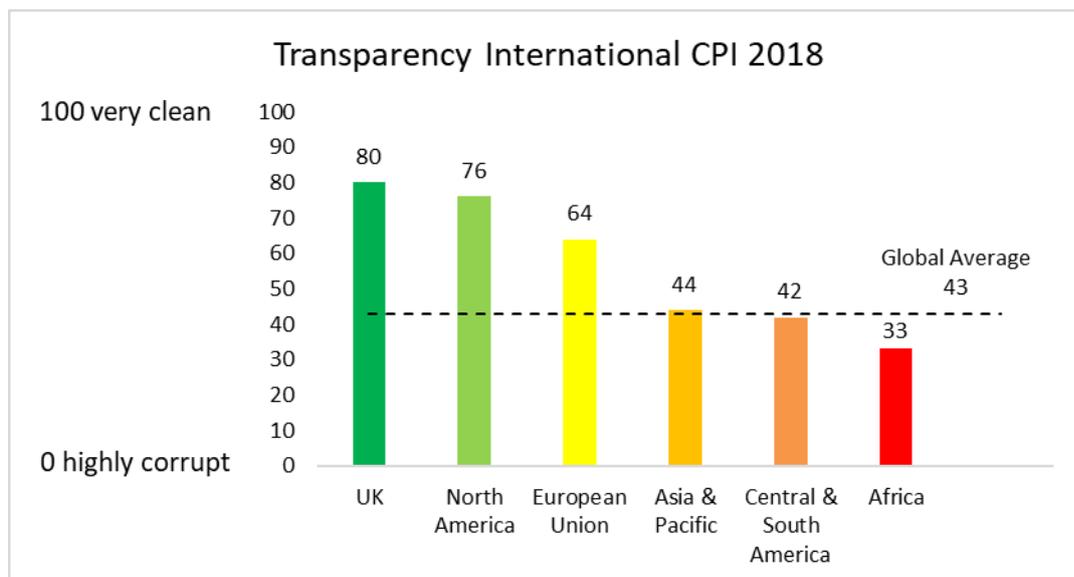
### 1.2.3 Corruption

The United Nations (United Nations, n.d.) has identified corruption as “the most daunting challenge to good governance, sustainable economic growth, peace, stability and development in Africa”. While corruption is a global phenomenon, the impact is felt more in poor and underdeveloped countries, where resources for development are unduly diverted into private hands, which exacerbates poverty (United Nations Office on Drugs and Crime, 2018). In many corruption perception surveys, Africa is perceived as the most corrupt region in the world (Transparency International, 2019) (Transparency International, 2019), as well as the most underdeveloped.

The chart below illustrates the 2018 Transparency International’s Corruption Perceptions Index (CPI)<sup>5</sup> (Transparency International, 2018) for various regions. The information presented in the graph has been summarised from the full result set to indicate regions and a global index average (Transparency International, 2018). Scores range from 0 (highly corrupt) to 100 (very clean).

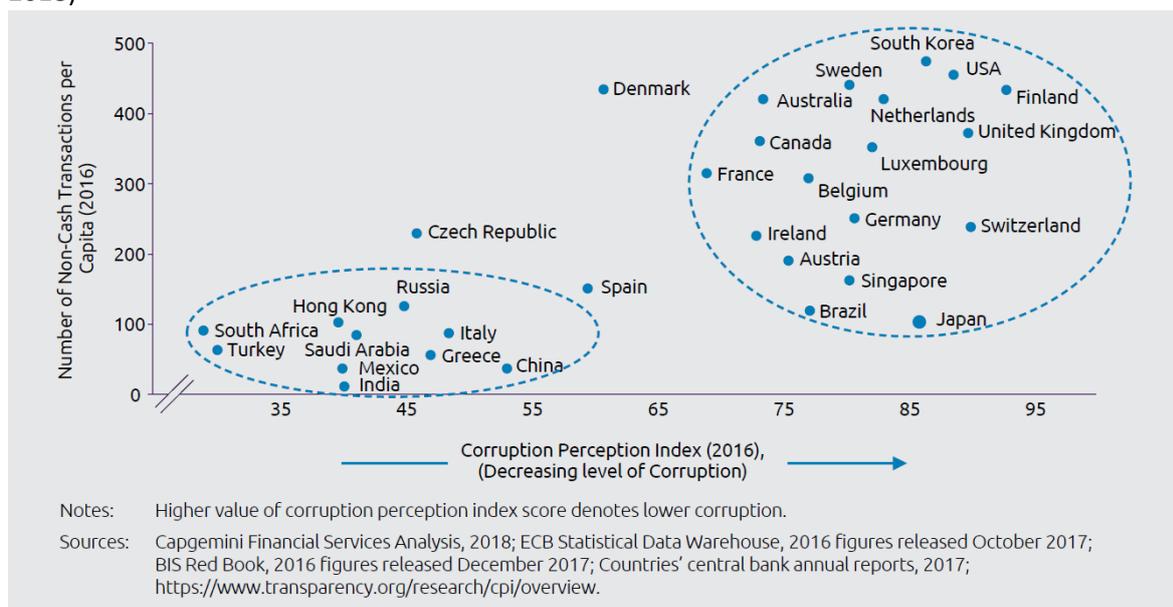
<sup>5</sup> The index, which ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and businesspeople, uses a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean. More than two-thirds of countries score below 50 on this year’s CPI, with an average score of just 43. It reveals that the continued failure of most countries to significantly control corruption is contributing to a crisis in democracy around the world. While there are exceptions, the data shows that despite some progress, most countries are failing to make serious inroads against corruption.

Figure 6: Transparency International Corruption Perception Index by Region (2018) (Transparency International, 2018)



Hence, addressing the problem of corruption in a strategic and comprehensive way is of paramount importance as a development priority for Africa. Corruption enables illicit money to leave Africa, which reduces money available to African Governments to create jobs through the development of their economies (Smith, 2016). The 2018 World Payments Report found that non-cash transactions share a positive linear correlation with the corruption perception (BNP Paribas, 2018). The figure below is based on a sample of countries mapped by number of non-cash transactions and corruption perception. The bottom left corner of the graph indicates higher corruption perception and low non-cash transactions, i.e. high cash transactions. South Africa lies in this area of the graph, although there are more non-cash transactions in this country, it has the worst corruption perception of this grouping, yet is one of the most advanced economies in Africa.

Figure 7: Global non-cash transactions per capita vs corruption perception index (2016) (BNP Paribas, 2018)



Without addressing corruption in this continent, the evolution and progress of cashless systems and a cashless society may be hindered. This could play a further role in holding Africa back economically compared to the rest of the world.

#### **1.2.4 Employment that is not uniformly regulated**

A large portion of informal labour takes place in the developing economies across the continent. The informal labour workforce is often supplied by illegal immigrants (Cashless Working Party, Institute and Faculty of Actuaries, 2017). Payment for the work done is often made in cash. There are fees in place for cash deposits. After depositing funds, there is less money available to holding physical cash. These fees can deter (World Bank Group, 2018) people from transacting in a cash-less way. Furthermore, low interest rates don't incentivise people to keep their money in a basic bank account. Depending on the deposit method, funds may not always be immediately available. These factors reduce the attraction of safe and convenient cash-less transactions. Access to the formal banking system is restricted because of a lack of documentation or illegal entry into a country. For a significant premium, illegal immigrants may gain access the security of banking infrastructure where they can receive their salary, withdraw funds and make payments.

Africa has major tourism appeal. During 2016, Africa held a 5.1% share in worldwide tourism arrivals and a 3.0% share of worldwide tourism receipts (African Development Bank Group, 2018). Often tour packages are sold on an all-inclusive basis. All-inclusive packages are most likely for tourist destinations in remote areas where access to activities and different meal options are limited. Developing infrastructure may also be challenging for foreigners to navigate and there may also be language barriers when communicating with locals. All-inclusive packages remove the need for travellers to source local transport, safety and health care. All-inclusive packages would not include tips and so cash would be used for tipping staff facilitating hospitality, tours and excursions. There are multiple blogs and advice articles on recommended tipping amounts for hospitality staff across the world, including the different destinations across Africa (Cammack, 2014) (Zijlma, 2018) (Couwenbergh, n.d.) (D'Souza, 2017) (Africa Geographic, n.d.)<sup>6</sup>.

The next section explores the environment of cashless societies in South Africa and Zimbabwe. South Africa has been considered as it is one of the major gateways of doing business in Africa and has the most financially sophisticated economy. Zimbabwe has been considered because of the economic and political turmoil and the peculiar cash crisis it faces and the response of individuals, entrepreneurs and businesses to the crisis.

## Section 2: Case Studies

### 2.1 South Africa

#### 2.1.1 Formal and informal financial systems

South Africa has a relatively sophisticated financial system that is robustly regulated<sup>7</sup> by African standards. This regulation has enabled the development of a world class financial system but may also inhibit the deployment of new innovative banking-type activities seen in less well-regulated parts of Africa like East Africa.

Despite both financial sophistication and some representation by international banks, the local banking industry is dominated by five South African banks (Business Tech, 2018) (Business Tech, 2018). Despite this, cash is still king (van Zyl, 2017). Cash transactions account for at least 50% (van Zyl, 2017) (Pymnts.com, 2017) (Cape Business News, 2017) of the country's GDP and some sources claim that around 90% (Mybroadband.co.za, 2017) (Tech Financials, 2017) of transactions still take place using cash, and cash usage (Pymnts.com, 2017) is growing despite there being a forty year legacy of debit and credit cards in South Africa (Competition Commission, 2015).

The challenge is that South Africa has both a formal and a significant informal economy. Banking has significant penetration within the formal economy; the same cannot be said of the informal economy. The national payments system is not designed to meet the needs of an informal economy and questions remain as to how to get these communities to make the changeover from cash to digital platforms (Hamilton, 2018).

Cash availability and usage continues to grow. The sheer size of the informal economy drives cash usage. Cash demand is mainly influenced by the level of financial exclusion and the inaccessibility to and the cost of changing to cashless systems. Literacy levels may also influence cash demand. The World Bank estimates South Africa's literacy level is around 95% (The World Bank Data, 2015). The definition of literacy is very broad, i.e. it is based on the proportion of people ages 15 and above whom can both read, write and understand a simple statement about their everyday life. Considering that there are eleven official languages, this literacy rate does not mean technological tools would necessarily be readily understood by everyone.

#### 2.1.2 Poverty premium hurdle

Due to the cost of cashless alternatives and the additional poverty premium (Evans, 2018) of accessing and utilising cashless means, cash continues to circulate in these communities. A benefit of being cash-based is that the only risk of holding cash is the threat of the physical cash being stolen. Whereas using an app or transacting by electronic funds transfer have additional cyber security risks attached along with additional costs for data and network connectivity.

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<sup>7</sup> There are two key regulations required in the South African financial industry. Financial Intelligence Centre Act (FICA) was introduced to fight financial crime such as money laundering, tax evasion and terrorist financing activities by revealing the movement of moneys. Know Your Customer (KYC) which is the process of a business identifying and verifying the identity of its customers.

A large portion of the population is very poor. A 2017 report from Statistics South Africa (STATSSA) estimates that around 55% (Statistics South Africa, 2017)<sup>8</sup> of the population are living in poverty. The United Nations estimates that 66% (United Nations, 2018) of South Africans reside in urban areas and 34% in rural areas. STATSSA also indicates that at June 2018, unemployment levels were around 27% (Statistics South Africa, 2018). For people under the age of 24, that figure is at an astronomical 54% while for people aged 25 to 34 years it is down to 34% (but still a very high unemployment rate by world standards). This report also estimates unemployment rates by sector: formal 50%, informal 13%, agricultural 4% and private households 6%.

Physical infrastructure along with a water and electricity supply is not available everywhere nationally. Banking infrastructure such as banks and ATMs are also constrained by such underdevelopment. This means that there are many unbanked people in the underdeveloped areas. The population that is banked does not necessarily behave in a “banked”<sup>9</sup> way. Rather, when funds are deposited into accounts, all the funds are withdrawn in cash and then used throughout the month (Finmark Trust, 2017) in the informal economy. This market segment still prefers to transact in cash (World Bank Group, 2018). Cash is a straightforward payment method that is easily transported and recycled within communities (mybroadband.co.za, 2017). “Banked” does not only include the traditional cheque account or savings account but can also include other financial type products like loans (also including micro-lenders) and store accounts from a range of retail establishments.

### **2.1.3 Spaza shops**

Small shops within the community, called Spaza shops, primarily service the retail and financial needs of the cash dependent communities described above. Trading in cash means that there is cash on the premises, making them targets for robberies (Cape Town Project Center, 2010), which are frequent in this high crime risk nation. Having cash on hand also means that payment for stock is in large amounts of cash. Truck drivers are at risk of being robbed after returning from delivering goods to such areas. Lack of financial infrastructure and high crime rates are two major obstacles for the spaza shops to operate optimally (Moloi, 2014).

Cashless innovation is helping address these challenges. Spaza shop owners can register on a mobile application, Spazapp (Tech Central, 2017) (Mastercard, 2017) (Business Tech, 2017). The app connects small businesses with big suppliers. Stock is ordered through the app. It requires an ATM deposit or electronic payment for the cash to enter the system (electronic payment can even be made by scanning a QR code on the supplier’s invoice). This will reduce the risk of theft if payment is made on delivery by app instead of cash in hand. It does not remove the risk of handling the physical cash the shop owner has on hand though. The app can also be used by customers to pay for goods instore.

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<sup>8</sup> (based on the using the upper-bound poverty line (UBPL) of R992 per person per month (pppm) in 2015 prices)

<sup>9</sup> Behaving in a “banked” way would mean maximising the benefits a bank account has to offer, i.e. using it to transact as well as using other financial products. Not behaving in a “banked” way could mean, having a bank account, receiving a deposit and immediately withdrawing all the funds from the account.

#### 2.1.4 Stokvels

Community funding and savings take place in the form of Stokvels (News24, 2017) (Mpete, 2018). This is a group account where multiple people contribute to a pool of savings (like the friendly societies in the UK). Individual contributions do not usually happen monthly but rather every now and then depending on financial circumstances. This alleviates the monthly savings burden. It also makes larger amounts of funds more readily available in times of need, for example; funerals<sup>10</sup>. Stokvels savings work well when they operate from a bank account. There are several applications in the market to facilitate Stokvel savings digitally but the take up has not been as successful as anticipated by developers. This could be since the target market of consumers may have a lower level of trust in digital savings products than they have in traditional banking institutions or are less financially sophisticated.

#### 2.1.5 Mobile innovations

Financial regulation in South Africa is at a higher standard than the rest of Africa. Any institution that accepts deposits requires a banking license. Electronic wallets are pricey and so many companies with these innovations will often need to leverage off existing banks and their licenses through a partnership agreement to operate in a commercially viable way.

Government departments do not follow a uniform payment strategy and so businesses are unable to leverage off this source of business successfully. Vehicle license and vehicle/road user fines are required to be paid in cash; however, government grants are distributed through cards.

##### *Grant payments*

A successful cashless innovation has been observed in action at the South African Social Security Agency (SASSA) which distributes social grants through cards which work like a debit cards (South African Social Security Agency, 2017-2018). Payments can be made with the card and balances checked at certain retailers. Funds can be withdrawn from ATMs. More than seventeen million grants are paid out annually through this system. Security of the card is enabled through a PIN as well as biometric fingerprint identification.

##### *Mobile wallets, QR<sup>11</sup> codes and tokens*

Mobile wallets and QR codes to make payments using SnapScan<sup>12</sup>, Zapper<sup>13</sup> and MasterPass<sup>14</sup> are increasing in popularity, especially for some small businesses at markets and events – reducing the need for cash to provide change (Moyo, 2018). MasterPass is also integrated with SnapScan and Zapper allowing greater cross payment interchangeability. In this case, the business owner only requires the QR code to allow transactions to occur with customers and the infrastructure is the responsibility of the consumer.

There are major developments with the mobile payments. Digitisation of cards using tokens instead of physical cards is in an advanced stage of development. The requirement is then for the issuing

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<sup>10</sup> Funerals are major events in African cultures. Celebrations and memorials take place over an extended period of time and cost a significant amount of money.

<sup>11</sup> QR code: quick response code is a machine-readable code consisting of an array of black and white squares, typically used for storing URLs or other information for reading by the camera on a smartphone.

<sup>12</sup> <http://www.snapscan.co.za/>

<sup>13</sup> <https://www.zapper.com>

<sup>14</sup> <https://masterpass.com>

and acquiring devices to handle the complexity of this payment mechanism. However, once this has been set up the transactions are simple and seamless for the customer.

### *Transit systems*

Contactless cards are being used in transit systems (Shezi, 2016). The taxi transport system in South Africa is a unique transport system. Minibus taxis serve the general population and travel to areas not serviced by the country's bus and rail networks<sup>15</sup>. The minibus taxi system is part of the informal economy which means there is little transparency and tax evasion is possible throughout the industry (tax is paid through the fuel levy but not through other company tax rates (IOL.co.za Saturday Star, 2014)). Despite these disadvantages (from a fiscal point of view), it is an essential component of the South African economy and significant form of transport for a large proportion of the population. Pilot projects are in place to accept cashless alternatives in this area of the economy (Shezi, 2016).

### *Real-time funds*

Bankserv<sup>16</sup> is Africa's largest automated clearing house by value of transacted funds. There is ongoing development in modernising electronic transfers so that funds will in future be transferred between accounts in real time. Bankserv and the South African Reserve Bank (SARB) enable the regulatory framework to operate effectively.

#### **2.1.6 The MPesa mishap**

A push transaction is initiated by a debtor sending money to a creditor. Push Payments are gaining popularity. For instance, SARB is busy developing a flat fee to facilitate a Credit Card Push Instruction (CCPI). Funds from one consumer's credit card are transferred and reflect within thirty minutes to another consumer's credit card. Keeping the fee standard can encourage the transfer of funds between people on different card providers using this method.

This is a similar model to how MPesa operates in Kenya.

MPesa<sup>17</sup>, in Kenya, is one of the most well-known examples of a cashless society. This topic has already been examined as a case study in the Interim Paper, further information is added here to illustrate why MPesa was such a success. To recap; the limited ATM infrastructure from which to draw cash forced Kenyans to adopt alternative mediums of exchange, hence the rapid adoption of MPesa. It allows users to make four basic types of transactions: transfers from person to person, transfer from individuals to businesses, cash withdrawals at designated outlets as well as loan repayments.

MPesa is a service platform developed between Vodafone, consulting company Sagentia and integrated into the mobile wallet of Safaricom. Safaricom is the leading mobile network provider in Kenya. It has recently ranked within the top 20 of Fortune's "Change the World" firms due to its role in addressing social challenges faced by the Kenyan population (Daily Nation, 2018).

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<sup>15</sup> Routes are determined by the drivers and there are no specific scheduled stops. Taxis stop wherever a passenger needs to alight. Taxis are hailed using a sign language for each route and destination. There are safety concerns using these taxis including: some unlicensed drivers; some drivers tend to drive recklessly endangering all road users; vehicles are often overloaded; not all vehicles are maintained properly, and some vehicles are not even road worthy.

<sup>16</sup> <https://www.bankservafrika.com/>

<sup>17</sup> The word is derived from the Swahili word "pesa" which means cash.

There are several factors that contributed to the success of MPesa:

1. *Safaricom had a very large market share of the Kenyan network market*
2. *Specific trusted agents were selected to facilitate the service. This put customers at ease as they could then trust the process. Consistent branding and training helped to deliver the right user experience.*
3. *Government, regulators and banks were involved right from the start. This ensured that there was no obstruction from these parties.*
4. *Starting out as loan repayments, the service was quickly adjusted to accommodate person-to-person (P2P) payments after a survey advised of the customer preference demonstrating quick responses to consumer needs.*

However, MPesa did not succeed when it attempted to start up operations in South Africa and did not succeed even after a re-launch in 2014 (Timeslive.co.za, 2016). Lack of trust in mobile operators to handle money and the need for compulsory bank partnerships are some of the major factors contributing to the MPesa failure in South Africa despite the roaring success in East Africa. Interestingly, MPesa also failed in Egypt and Romania.

The absence of this combination in other countries (South Africa, Romania, and Egypt) further confirms the requirement of a combination of regulation, government support, customer trust and high initial adoption rates when seeking to sustainably change financial behaviour of a society.

## 2.2 Zimbabwe

Zimbabwe is cashless by a different definition – there is no cash available nor has there been for many years now. This situation arose in the late 1990s when Zimbabwe was taken to war in the DRC (Democratic Republic of Congo) to prop up the dictatorship of Laurent Kabila, in return for stakes (for the political elite) in diamond mines in the Congo. The monthly cost of this intervention was estimated at USD 25 million (BBC News, 2000). At the same time the Government was rapidly losing popularity after failing to live up to independence promises from 1980. In 2000 the nation voted overwhelmingly against a Government sponsored referendum (BBC News, 2000) that had proposed compulsory acquisition of white and some black owned farm land along with the removal of presidential term limits (amongst many other adjustments to the existing Constitution<sup>18</sup>). Veterans of the independence struggle against white minority rule, encouraged by the president and political elite, invaded farms (Meldrum, 2000). This resulted in mass looting, pillaging and destroying the once productive agricultural sector and plunging the economy into a downward spiral. Rigged elections and political violence led to international sanctions (Gov.uk, 2013) that are largely still in place as of the start of 2019. The once prosperous export economy endowed with abundant natural resources was reduced to importing what it once produced locally and spending more money on imports than it is producing and even relying on donor aid.

### 2.2.1 Liquidity crisis

The printing of money to pay and pacify a restless security apparatus over many decades and the endemic patronage system led to runaway inflation approaching approximately eighty million percent before measurement was stopped (Financial Times, n.d.) . A liquidity crisis ensued with a cash-to-deposits ratio at an unsustainable level of low single digit percentages. The government, now short of foreign currency without the earning capacity of the key agricultural sector, resorted to emptying foreign currency reserve accounts at the central bank (Zimbabwe Today, 2015). This robbing of individuals and companies sowed the seeds of distrust that currently manifests in individuals and companies not wanting to hold local currency bank balances. Pensions and life savings were worthless after such a long period of hyperinflation. This left the population with no trust at all in leaving deposits in financial institutions, most preferring to either hide it under the pillow or invest in stock or commodities to sell onward to keep pace with the rampant inflation.

The country abandoned (BBC News, 2009) the local currency, the Zimbabwe Dollar, in 2009 and replaced it with the USD, GBP and the Rand along with several other international currencies. Citizens did not have to deal with hyper-inflation any more but the confusion of a multitude of currencies, an unproductive economy, economic sanctions and poor government policy led to a flourishing black market with high frictional costs through higher fees and facilitation payments especially when dealing with the public sector. This resulted in multiple middle men in every transaction no matter how small or informal.

Banks increasingly rationed any cash deposited resulting in queues for even paltry amounts. Everyday life became a steady state of queuing for everything from sugar and cooking oil to fuel. This cash crisis has become a reality of everyday life for the average Zimbabwean (News Day, 2018). A monopoly like currency called 'Bond money' was introduced by the central bank. Coins were introduced in 2014 (Reserve Bank of Zimbabwe, 2014) and notes during 2016 (Reserve bank of

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<sup>18</sup> Lancaster House Constitution

Zimbabwe, 2016). Though, technically, the Bond money is denominated at the same rate as the USD, it cannot be used outside the country. The lack of trust or usability of this currency has resulted in the sprouting of alternatives; a mobile payment platform denominated in USD: EcoCash<sup>19</sup>.

### 2.2.2 EcoCash

So dire has been the cash crisis and so successful has been EcoCash that penetration of mobile payments in Zimbabwe is currently over 80% of the population (about 8 million customers) (Econet Wireless Zimbabwe Limited, 2018).. The mobile network behind the platform covers 90% of the population. This is in spite of the chaotic nature of the economy, which has been in free fall since the early 2000s. EcoCash, which is the largest mobile payment platform in Zimbabwe, is a mobile and online banking platform very similar to MPesa in East Africa (Econet Wireless Zimbabwe Limited, 2018).

Zimbabwe is now a nation almost without physical cash. Even street vendors transact using EcoCash. The Zimbabwean government is actively encouraging mobile networks, who each have similar payment platforms to EcoCash to improve interconnectivity and portability to solve the ongoing cash crisis (Karombo, 2018). Unfortunately, the networks cannot transact between one other at this stage (TechZim, 2018), but plans are advanced for interoperability to happen in future.

The EcoCash platform is well connected to the local banking system and is further integrating into all the payment aspects of the Zimbabwean society. According to the 2017 Econet annual report (Econet Wireless Zimbabwe Limited, 2018): *“To date EcoCash is integrated with over 90% of banks countrywide enabling customers to enjoy the convenience of moving money from their bank accounts into their EcoCash wallets and vice versa”*. The same annual report highlights that EcoCash holds a mobile money market share of 99.8%.

The reach of mobile money networks is much wider than and growing much faster than that of the formal banking sector, offering the prospect of much lower cost access to the financial services sector in a largely informal economy, including importantly the rural areas who traditionally have been ‘un-banked’.

EcoCash has mastered the banking industry and monopolised the transactions that banks formerly performed (Payroll/bulk transfers, bill payments, vendors). Companies, both corporate and non-retail, indicate that 95% of transactions are bank transfers, 2% swipe cards, 1% cash and now 2% mobile EcoCash transactions. Personal transactions are generally smaller in size. Payments made are mostly for retail purchases.

Integration with mobile technology is advanced. For example, to pay via EcoCash, after a consumer is finished shopping; the vendor sends a prepopulated text that includes the vendor and payment details to which the consumer responds, to this to make payment. All EcoCash transactions are ultimately linked to a bank account and therefore provide instant value on transactions.

Data on the level of transactions on the various payment systems is available. The trends indicate increased bank transfers for larger corporates and more mobile transactions for individuals, with less than 2% physical cash usage by number of transactions or transaction amount (Reserve Bank of

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<sup>19</sup> <https://www.ecocash.co.zw/about>

Zimbabwe, 2016) (Reserve Bank of Zimbabwe, 2017) (Reserve Bank of Zimbabwe, 2017) (Reserve Bank of Zimbabwe, 2017).

### **2.2.3 Benefits of EcoCash:**

1. EcoCash does not require the use of an application or an internet connection, the minimum requirement is for a 2G mobile network.
2. The introduction of Swipe (Point of Sale) machines (used by all the banks) effectively ends any need for physical cash for transactions and is very quickly growing in use and prominence in the economy (Marufu, 2018).
3. EcoCash functions using a PIN so even if a mobile phone and wallet are stolen, without the PIN, no transactions can take place.
4. The use of prepopulated transaction texts to transact means that even older mobile phones can be used.
5. Fraud is mitigated by the fact that Zimbabwe is not connected to the world's banking systems (similar to North Korea due to various sanctions in place due to human rights abuses (Gov.uk, 2013)). Instant messages inform you of a transaction which will highlight anything unusual immediately.

### **2.2.4 Risks of EcoCash:**

1. Interoperability between networks is not currently available and needs to be developed for a truly seamless and complete system to take root. If the EcoCash system is down, a large proportion of the population will be unable to purchase even basic goods. This will result in pressure on other types of "cash" including the very scarce physical cash notes. Such a system failure occurred in July 2018 (Karombo, 2018).
2. There is the ongoing danger that the government (Which is authoritarian and currently controlled by elements of the army after the November 2017 "soft coup") may take the company over and have access to personal information and funds.
3. It is difficult for outsiders like immigrants and tourists to use the EcoCash technology. Cash remains the only other option (and a source of foreign currency and physical cash for the country).

### **2.2.5 Types of cash in Zimbabwe**

In summary, there are currently three types of "cash" currency in Zimbabwe:

1. US Dollar: The USD is now the currency of choice since the collapse of the local Zimbabwean Dollar (Oanda.com, n.d.). USD is the highest quality form of cash and has a premium of 45% to 50% (As of 2018) over the local 'Bond' currency. This premium fluctuates with market forces and demand.
2. Bond money: Bond money is a government supported currency introduced as coins in December 2014 and notes in November 2016. Bond money is denominated in US dollars. It circulates along with eight other currencies but can't be used outside of Zimbabwe and is not trusted or popular even in Zimbabwe. Withdrawals from Zimbabwean bank accounts are issued in Bond Notes. They are in two denominations: 2 Dollars and 5 Dollars.
3. EcoCash: EcoCash is a mobile money transfer facility run by Econet Wireless Zimbabwe. It not only allows the sending of money but also allows users to make purchases, settle debts and many other transactions taking the role typically reserved for traditional banks. Other products and services offered include a debit card that allowed international transactions

(but was disabled following the cash crisis), cash remittances from the diaspora, payroll and business bill payments service.

## Section 3: SWOT Analysis

The African environment faces several risks in developing cashless societies. Overcoming these challenges would greatly improve the daily lives of many African people. The SWOT analysis below summarises many of the previous commentary in this paper relative to the different stakeholders of society: the general economy, the public, non-financial businesses, governments and banks (including central banks), and the payments eco-system.

### 3.1 SWOT: The General Economy

<b>The General Economy</b>	
<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>Multiple cashless systems are in existence across African countries allowing for diversification in the case of a system failure.</li> <li>For the adoption of cashless systems to be successful, it is dependent on several factors such as infrastructure existence, consumer trust and government support.</li> <li>Not all African countries share the same currency, for example, the South African Rand, Namibian Dollar, Lesotho Loti and Swazi Lilangeni are equivalent in value but are in different neighbouring countries. The widespread adoption of US dollars as the preferred tender in Zimbabwe and Nigeria. Cashless solutions may be easier to implement.</li> <li>Cashless systems transcend the single purpose they may have been created for. For example, churches benefit significantly from cashless payments made via applications. It is easier and safer in the high crime African nations for consumers to make the payment with their phone, rather than carrying cash. Also, many market vendors take payments through applications using QR codes. This alleviates the need for change to be given and carrying a large cash amount around at risk of theft.</li> </ul>	<ul style="list-style-type: none"> <li>Financial systems across Africa are not integrated and aligned with one another and cross border transactions incur significant costs.</li> <li>Cashless solutions are most likely specific to single African countries and are not necessarily a solution that would accommodate other African countries unless significant political and financial will is exercised.</li> <li>African contribution to worldwide GDP is not aligned to the population size; hence the needs of the under-represented and vulnerable may not be met as they may not be able to drive the satisfaction of their needs.</li> <li>Africa offers many tourist destinations. Packages may be sold all-inclusive upfront, but staff at such resorts still requires payment in cash.</li> <li>More advanced and homogeneous economies (Such as South Africa) are in a better position in terms of a uniform society and infrastructure availability to successfully evolve into a cashless society. However, African populations range from many very poor, a growing middle class and a very small proportion wealthy. The disproportion of wealth in the various African economies is an obstacle when trying to design a system that can meet the needs of the very poor and wealthy. Depending on the cashless system solution presented, it may increase social inequality by only catering to the needs of a certain population cohort.</li> </ul>
<i>Opportunities</i>	<i>Threats</i>

<ul style="list-style-type: none"> <li>• There is potential for integrated cashless payments systems to be developed that can facilitate African-wide payments.</li> <li>• An integrated African-wide payments system could foster more trade between African countries with lower transaction costs and increased fiscal provision.</li> <li>• Cashless payments could reduce barriers to doing business between African countries.</li> <li>• Dual formal and informal economies exist across many African countries presenting business opportunities for entrepreneurial businesses.</li> <li>• The lack of an existing payment system accessible to all sectors of the population in African nations provides the opportunity for a unique innovative system to be implemented. By satisfying a need the consumers and businesses have, a cashless system could be adopted a lot quicker. For example, MPesa in Kenya has been adopted successfully. Similarly, Zimbabwe required a payment platform (EcoCash) to address the lack of cash in the economy.</li> </ul>	<ul style="list-style-type: none"> <li>• Corruption across Africa is rife and may hinder the establishment of a continent wide cashless payments system, as this would increase transparency and hinder facilitation payments which operate in obscurity and secrecy</li> <li>• An integrated system across the African continent can open consumers, who are largely unsophisticated and naïve to the risk of cyber-attack and even businesses to fraudulent transactions. Closed systems can mitigate fraudulent transactions as the exposure is not as great.</li> </ul>
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### 3.2 SWOT: The Public

<b>The Public</b>	
<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>• Mobile adoption in Africa is already quite high, due to the lack of a fixed line network and the rapid installation of mobile technology.</li> <li>• Mobile phones give any user access to cashless payment systems, both locally and internationally. International money transfers are a significant opportunity due to the large African diaspora population supporting relatives back on the continent.</li> <li>• In a transparent society where press freedom is allowed, transactions can happen rapidly, and the public can react very quickly to negative market sentiment about an institution or commodity. This is not the case in most African countries however.</li> <li>• The largely rural demographic who were previously un-banked have rapidly taken onto the technology which connects them to their city and international relatives and allows easy fund transfer and provision.</li> </ul>	<ul style="list-style-type: none"> <li>• Not all mobile users are smart phone users, so cashless payment technology needs to facilitate at least USSD transactions or else the use of a 2G mobile network. Where education is not a priority of governments (who prefer defence spending over infrastructure and education), financial sophistication is low.</li> <li>• Not all existing traditional payments systems are accessible by all people. People have developed payment systems like barter and cash in hand as a way around these systems.</li> <li>• The main risk of holding cash is the threat of theft or hyper-inflation, however there are many technological risks (some unknown) which a consumer or business may be exposed to when adopting a cashless system.</li> <li>• Technological solutions may not be appropriate for every monetary behaviour. In South Africa, community funding and</li> </ul>

<ul style="list-style-type: none"> <li>• Micro insurance and other mass market propositions have moved on the back of mobile platforms offering a simple and cheap product and faster delivery of payments.</li> <li>• Political activism and economic freedom have worked hand in hand, even in oppressive states.</li> </ul>	<p>savings take place in the form of Stokvels. Adoption of Stokvel applications has been quite low and could be due to the lack of trust consumers have in applications that are not widely known about or accepted despite their simple design along with relatively higher trust in traditional banking institutions to instead safeguard money.</p> <ul style="list-style-type: none"> <li>• Cashless systems that are closed systems may not be accessible to foreigners entering the economy (e.g. tourists). This forces such consumers to rely on cash once again.</li> </ul>
<p><i>Opportunities</i></p>	<p><i>Threats</i></p>
<ul style="list-style-type: none"> <li>• The sheer volume of the youth in Africa could speed up the adoption of a cashless society if Africans have access to and utilise the technology willingly.</li> <li>• There are a lot of migrant workers across Africa. Utilising a cashless system can make the transferring of funds from workers to family members in other countries and rural areas easier and less of a barrier to mobility across the continent.</li> <li>• Cashless systems can make access to finance and financial systems easier for any mobile phone user, thus facilitating financial inclusion.</li> <li>• Where no payment system is in existence or reliable, a cashless system would succeed. For example, MPesa in Kenya was a success since there was little banking infrastructure and limited access to cash.</li> <li>• Cashless and digital solutions can be inclusive, if people can access it without too much of a premium.</li> <li>• There is the potential for the general population to have better access to savings, insurance and pensions products.</li> <li>• Adoption of cashless systems could potentially reduce the wealth gap between the poor and the wealthy as more of the population would have access to financial services more easily.</li> <li>• Utilising cashless payments systems could open opportunities for people to access financial services including payments, credit cards, loans, insurance and pensions.</li> <li>• Illegal immigrants may not adopt cashless systems due to their vulnerable status in a country. To avoid attracting attention or</li> </ul>	<ul style="list-style-type: none"> <li>• The wealth gap between banked and un-banked communities could be exacerbated if traditional payment systems and infrastructure are leveraged for new cashless systems. The financially excluded will still be excluded and instead marginalised.</li> <li>• The lack of security of personal information on digital platforms may lead people to distrust such technology. The risk of authoritarian regimes taking advantage of such personal information is a significant risk due to the prevalence of such regimes across the continent.</li> <li>• The inherent risks of technological platforms may not be understood by the lay person and could open them up to be victims of cybercrime and fraud.</li> <li>• Changing the perception that mobile money is not safe is a difficult task due to cultural hesitancy to change across the continent and the distrust of the younger generation in a largely patriarchal society.</li> <li>• The existence of entrenched payment systems may already meet the needs of consumers and not encourage the adoption of new cashless systems unless a new need is explained and sold to the customer base effectively.</li> </ul>

<p>providing a trail of evidence of their activities, they may not adopt cashless systems. Cashless systems could help make it more difficult for illegal immigrants to operate undocumented within a country.</p>	
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### 3.3 SWOT: Non-Financial Businesses

<b>Non-Financial Businesses</b>	
<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>Businesses utilising payment applications such as Master Pass, SnapScan or Zapper only require a QR code. The infrastructure requirements are then the responsibility of the consumer for them to be able to utilise the payment mechanism.</li> </ul>	<ul style="list-style-type: none"> <li>Financial exclusion can mean those businesses not keeping up with the technology may be left behind in their cost structure or even just operationally.</li> </ul>
<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> <li>Reducing barriers to make payments between consumers and businesses will create more connected and inclusive economies within and between African countries.</li> <li>Innovation in reducing the volume of cash to pay large suppliers of small Spaza shops in South Africa is through the Spazapp. Shop owners register on the app which connects the small business with big business through which stock can be ordered and paid for via an ATM deposit or electronic transfers. This reduces the risk of theft when goods are paid for on delivery.</li> <li>The market share of cashless transaction enabled businesses would influence the adoption of cashless systems to a certain extent. I.e. if consumers cannot satisfy their needs elsewhere they may have no other option than to adopt the preferred payment methods of businesses.</li> <li>The adoption of cashless systems by the informal and formal economies could integrate the sectors.</li> </ul>	<ul style="list-style-type: none"> <li>Businesses may need to change their business models to facilitate more P2P, P2B and B2B payments. This could mean additional costs in accommodating such platforms. Especially if moving from cash to a digital payment system, additional business technology would be required. As well as training of staff to facilitate the transactions.</li> <li>The lower governance and compliance standards in Africa may allow loopholes that are easier to exploit in Africa, making Africa more vulnerable to cyber threats.</li> </ul>

### 3.4 SWOT: Governments and Banks

<b>Governments and Banks</b>	
<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>Government support of cashless systems can increase the adoption of the technology. For example, the government support in the establishment of MPesa in Kenya was one of the contributing factors</li> </ul>	<ul style="list-style-type: none"> <li>Governments may not support regulation that enables cashless payments. There was no direct support from government in the MPesa launch in South Africa like there was in Kenya, which may have been a</li> </ul>

<p>that encouraged the sustainable adoption of the payment system in that country.</p> <ul style="list-style-type: none"> <li>• Governments can boost their tax revenues by bringing a larger part of the informal economy into the formal sector where payments can be traced, and tax must be paid.</li> <li>•</li> <li>• Tax evasion is facilitated through cash transactions as it is difficult to track and follow cash movements. The adoption of a cash-less framework may undermine the fiscal drain from tax evasion.</li> </ul>	<p>contributing factor in the failure of this payment system in South Africa considering who the target market for MPesa in South Africa was; the poor and unbanked, who traditionally take the lead from government and community leaders.</p> <ul style="list-style-type: none"> <li>• Financial regulation across Africa varies from one country to the next and is not as advanced when the global context is considered.</li> <li>• South Africa has a relatively sophisticated financial system that is robustly regulated by African standards. This regulation can be a barrier for many innovative cashless systems. A banking licence is required to accept deposits which then forces innovative non-banking companies to partner with banks.</li> <li>• Cashless systems may not be governed in an ethical manner under the control of some current governments or major African power, especially in states with a more dictatorial National Administration.</li> <li>• Regulation controls formal economies and allows informal economies but does not support integration of these essential components of society.</li> <li>• Corrupt government officials may use their influence to deter the adoption of cashless systems to serve their own needs.</li> <li>• Payment strategies of government departments may not be uniform and so may not be able to support a cashless system. For example, the vehicle licensing department in South Africa only accepts cash however government grants are issued through a card.</li> <li>• Existing payment systems of banks that are entrenched may be difficult to modify to accommodate cashless systems.</li> <li>• Can control citizens and even prosecute perceived opponents.</li> </ul>
<p><i>Opportunities</i></p>	<p><i>Threats</i></p>
<ul style="list-style-type: none"> <li>• African governments and central banks that do not satisfy the needs of their people, open the door for citizens and businesses to develop their own solutions catering primarily to the needs of the people.</li> <li>• Establishing forward looking regulation that facilitates, supports and enables cashless</li> </ul>	<ul style="list-style-type: none"> <li>• Regulation may not be implemented to the benefit of broader society.</li> <li>• Corruption could influence regulation.</li> <li>• Monopolies that facilitate cashless systems may be at risk to be taken over by governments for control and power and to access consumer information.</li> </ul>

<p>systems could promote digital payment adoption and utilisation.</p> <ul style="list-style-type: none"> <li>• Enabling the tracing and flow of funds between parties reduces the opportunity for money laundering.</li> <li>• Interoperability between mobile networks can be encouraged, as is the case for the government in Zimbabwe to help solve the ongoing cash crisis.</li> <li>• There is the potential to reduce the influence of corruption, crime, economic growth and tax evasion by adopting cashless systems which remove the anonymity that cash affords.</li> </ul>	<ul style="list-style-type: none"> <li>• Additional laws may need to be established to deal with potential cybercrime and scams that could be detrimental to cashless systems if not implemented appropriately or with full understanding of the issues at stake.</li> </ul>
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### 3.5 SWOT: The Payments Eco-System

<b>Payments Eco-system</b>	
<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>• Equitel in Kenya has identified that consumers are comfortable utilising more than one network service provider. The Thin SIM is ultra-thin SIM technology which is a film placed directly on an existing SIM card. The SIM communicates directly with the mobile phone.</li> <li>• Integration of mobile and technology platforms have largely taken the place of traditional banks combining banking with insurance and other services to effectively squeeze banks to the fringes of even the financial sector as is the case with EcoCash in Zimbabwe.</li> </ul>	<ul style="list-style-type: none"> <li>• Network access may be limited to particular areas. When the network is down, transactions can't occur.</li> <li>• Data coverage not always dependable and established across vast areas of Africa.</li> <li>• Data costs are high in Africa. This is a barrier for many users. Especially considering the large proportion of poor people making up the African population.</li> <li>• Fluctuations in digital currencies are not feasible for African economies that already operate in environments with fluctuating and undervalued currencies. This could lead to a general mistrust of digital currencies which could take generations to overcome.</li> <li>• Developers and innovators carry the burden of developing solutions to incentivise new users to adopt cashless systems, especially if new and unknown (and therefore unfamiliar and not trustworthy).</li> <li>• A true cashless system needs to enable cross-border and international transactions for all transaction types, i.e. between people and businesses.</li> <li>• How do innovators and businesses identify what incentivises previously unbanked and non-digital people to migrate to digital payments without incurring great costs through the research or through costly business strategy failures?</li> </ul>

	<ul style="list-style-type: none"> <li>• African countries are poorer. Developing economies and infrastructure may lag behind the rest of the world which may negatively influence the integration of cashless systems world-wide. This may add to the poverty premium experienced by these countries.</li> <li>• Point of Sale devices are used by all banks but are still dependent on network connectivity and electricity availability. These are resources that are not necessarily stable and available across the entire African continent.</li> <li>• Corruption could diminish the support of Fintechs and other businesses pioneering cashless solutions.</li> <li>• Most investments have focussed on a small number of African countries who are open to foreign investment, leaving the rest of the continent behind and dashing any hope of a continent connected with a truly seamless payment framework.</li> </ul>
<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> <li>• Affordable access and shared infrastructure can facilitate cashless system adoption.</li> <li>• Establishment of network infrastructure could create highly skilled employment opportunities and improve the quality of the lives of people who couldn't access such infrastructure before.</li> <li>• Cashless systems open the opportunity to develop the technological and innovation sectors of an economy as there are consumer needs that have not yet been met.</li> </ul>	<ul style="list-style-type: none"> <li>• The technological requirement for cashless systems may be at risk as electrical and network infrastructure is not always available or operational.</li> <li>• MPesa and cash payments are closed payment systems that are limited to the economy they operate in and cannot facilitate transfer of funds outside of their system.</li> <li>• Infrastructure is often stolen or destroyed in marginalised communities. The establishment of network infrastructure may be vandalised, damaged or stolen by people in need who try and sell it for money to meet their short-term needs, although destroying the long term benefits such infrastructure may provide.</li> <li>• Additional technology that opens a consumer's sensitive information, like the Thin SIM from Equitel in Kenya that communicates directly with the phone, could open consumers to additional risks. This Thin SIMS could be hacked, giving criminals access to other personal information.</li> <li>• Cashless systems that monopolise the transactions of an economy are exposed to</li> </ul>

	<p>far more risk as the failure leads to a national crisis.</p> <ul style="list-style-type: none"><li>• Corruption is a barrier to investment in Fintechs. As a result, most of the investment has focused on a small number of African countries and meaning many countries miss out on developing vital skills and infrastructure to compete in the global economy.</li></ul>
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## Conclusion

The people of a nation will decide the form of the payment that is most suitable. African economies are primarily cash driven through cultural hesitations to take on new and less well understood technologies. This could be due to the disinclination of African nations to change their behaviour and their different approach in rural and urban areas to adopting and accepting change and technological advancements. Trust is a key determinant towards the success of cashless solutions being implemented in Africa. Developers and innovators are faced with the challenge: how would a perfect solution work that would incentivise consumers and businesses to switch to cashless transaction systems?

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Due to publishing restrictions, some third-party resources may not be accessible from all geographies or devices. Some require registration or subscription; the latter has been avoided. Although all content has been verified as available prior to publishing in September 2018, some resources may become unavailable over time. This is unavoidable; however, a new link is often found when a title is searched for. It is recommended that readers switch on reliable antivirus protection when accessing these resources.

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