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COMPETITION DYNAMICS IN MOBILE MONEY MARKETS IN TANZANIA

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Executive summary

Introduction

Tanzania has witnessed very rapid growth of mobile financial services since the introduction of mobile money by mobile network operators (MNOs) in 2008. With the launch of additional services, including mobile credit products in 2014, there has been a qualitative deepening of available mobile financial services.

The development of mobile financial services in Tanzania

The mobile telecom services market in Tanzania is competitive among the three main MNOs, with a fourth recent entrant. The MMT services market also reflects active competition, but is more of a duopoly structure. The market for banking services is competitive with the four largest banks controlling less than 50% of market share and the ten largest banks controlling less than 75% of market share by several measures.

The growth in MMT since its introduction in 2008 has been dramatic. While Vodacom was the first of the three main MNOs to launch an MMT service, introducing M-Pesa in 2008, its first mover advantage was limited. As of early 2016, Vodacom, Tigo and Airtel each have roughly a third of the MMT subscribers. Today many banks are offering similar services to compete with the MNOs' basic MMT services.

Since the launch of MMT services, the offering of mobile financial services has evolved in Tanzania to include:

- bill pay and transfers to and from bank accounts;
- mobile insurance products;
- merchant payment services; and
- mobile savings and credit products.

Regulation of mobile financial services in Tanzania has been led by the Bank of Tanzania (BOT), through a regulatory approach which has been characterized as 'test and learn'. It is this flexible and proactive approach that has been credited with the rapid expansion of MMT in Tanzania. Beginning in 2007, the BOT's practice was to issue letters of "no objection" to banks partnering with MNOs. A bank's role would be limited to holding the underlying trust account and the issuance of such a letter allowed an MNO to proceed with offering MMT services. However, at the end of 2015, this system was replaced with a new licensing and approval framework.

Factors shaping the development of mobile financial services

We identify and examine 11 country-specific factors or categories of factors that have influenced the development of mobile financial services in Tanzania. These are:

- the Government's financial inclusion policy which prioritizes the role of mobile financial services in financial inclusion;
- a flexible regulatory framework led by the 'test and learn' approach of the BOT;

- a competitive mobile services market in which the three main MNOs have similar subscriber numbers and no MNO has over 50% market share;
- little resistance from the banking sector to the introduction of MMT services by the MNOs;
- absence of issues with access prices for USSD charged by MNOs;
- an early and extensive public awareness campaign initiated by Vodacom throughout Tanzania to educate the public on the use of its M-Pesa service;
- absence of agent exclusivity and rapid agent network growth;
- the achievement of voluntary bilateral account interoperability among the primary MMT services;
- the distribution of interest payments that had accrued on trust accounts directly to the accounts of MMT users and agents;
- the role of business aggregators, which serve as a bridge between the MNOs and third parties who want access to the MMT platform; and
- the lack of a national ID and functioning credit information sharing, which have both inhibited the development of mobile credit products.

Competition assessment

In terms of subscriber numbers, both mobile telecom services and MMT services appear to effectively be triopolies. However, estimates of market shares in terms of revenues indicate that Airtel lags behind, especially in mobile money transfer revenues. In effect, the mobile money transfer market is more of a duopoly with rivalry between Vodacom and Tigo driving the pricing and offerings in this market.

Banks, through direct bilateral arrangements and arrangements with third-party business aggregators, have widespread connectivity with mobile wallets. Bill payment services from mobile wallets have developed due to the convenience they afford the account holder. Merchant payment services are relatively undeveloped in Tanzania. A key challenge has been the disincentives that agents who are also retailers face as the merchant payment means they forego the cash out charge and potentially incur a charge. Vodacom, Airtel and Tigo have all launched mobile credit products and Vodacom also has a mobile savings product. Uptake of the mobile credit services has been slow but uptake of the mobile savings product has been more significant.

Despite the duopolistic market structure, MMT appears to be quite competitive. This is largely due to the challenge that has been mounted by Tigo. Interoperability among the main MMT services reduces network effects that restrict customers' freedom to switch and improves user experience, however, Vodacom only implemented interoperability in February 2016. The development of mobile financial services in the form of savings and credit has lagged somewhat. However, this does not appear to be largely due to competition considerations.

Unlike in the Kenyan market, there have been no issues regarding agent exclusivity in Tanzania. Competition between MNOs has in turn driven incentivisation of agents. MMT agents have proliferated in part because banks have recognized them as an alternative to ATM networks (which are expensive) or bank agents (which have higher regulatory hurdles).

The relationship between banks and the MNOs entails a mix of competition in some markets and complementarity in others. MNOs are in competition with banks for some services such as bill pay and offering interest on savings. In the provision of credit, the ability for MNOs to partner with banks or unregulated lenders means that competition is between traditional banks and MNO-lender partnerships.

Recommendations

Tanzania is a success story in terms of the rapid roll-out of MMT, the openness of its market and the dynamic rivalry between different operators, including the role of business aggregators. The facilitating regulatory approach is also notable.

The following are areas in which action would help address the competition and other issues identified in this paper.

1. Ensuring that regulators are monitoring and addressing competition issues in mobile financial services, including obtaining more disaggregated data on an ongoing basis.
2. Building consensus and cooperation among policy makers and regulators through seminars and workshops.
3. Establishing a reliable national ID system.
4. Ensuring that credit information is reported by mobile credit lenders to promote financial inclusion.
5. Monitoring account interoperability among the MMT services of MNOs and encouraging further levels of interoperability.
6. Exploring measures to improve uptake of merchant payment services.
7. Establishing a regional working group of competition agencies and financial and telecommunications regulators.

1 Introduction

Tanzania has witnessed very rapid growth of mobile financial services since the introduction of mobile money by mobile network operators (MNOs) in 2008. Today, Tanzania boasts more mobile money users than neighbouring Kenya.² Acceptance took several years, with the number of active users exceeding one million by 2010 and 10 million by 2013 before reaching 19 million in 2015. As in other countries, mobile financial services initially began largely as mobile money (person-to-person) transfer (MMT) and airtime purchase services. With the launch of additional services, including mobile credit products in 2014, there has been a qualitative deepening of available mobile financial services.

The development of mobile financial services in Tanzania is interesting in a number of regards as it has differed from development in many other countries. In particular, Tanzania has continued to have active rivalry between the major MNOs. This is unusual given the intrinsic network effects at work both in the markets for mobile and mobile financial services. In our analysis of the competition questions we consider the intensity and nature of competition in terms of outcomes (prices, services), processes of rivalry between market participants, including aggregators who have played quite a large role in Tanzania, and arrangements among market participants such as agent exclusivity (or its absence) and interoperability.

An important premise of this paper is that mobile financial services should not simply be lumped together. There are very significant differences between MMT, mobile payments, and mobile savings and credit products. While growth in MMT suggests the basis for a progression to these other mobile financial services, it is not a given that it will happen. We focus on the evolution of services, considering how and why they have grown as they have. This provides the basis for comparisons with other countries.

In this, we consider the specific successes and shortcomings in the development of mobile financial services in Tanzania. For example, in merchant payments a number of approaches and business models have been tried without significant success. In savings, the distribution by MNOs of bank interest accrued on trust accounts to mobile wallet account holders means there is an overlap of MMT services with true bank deposit accounts. In lending, the M-Shwari model from Kenya has been largely duplicated by a partnership between Vodacom Tanzania and Commercial Bank of Africa. As in Kenya, the proliferation of mobile credit products raises critical questions about the ability to collect, analyse, use and share information on individuals' behaviour.

The regulatory approach of the Bank of Tanzania (BOT) has played a significant role in the development of mobile financial services. The BOT's proactive approach, which has been characterized as 'test and learn,' has nurtured the development of these services.³ However,

² Mazer and Rowan (2016) compare registered users and observe Tanzania with higher numbers. There are different estimates of active users. See for example, McKay and Mazer (2014) which estimated 12.2 million active users of M-Pesa in Kenya to which Airtel users would have to be added (although the majority of Airtel users are "dual-SIM"). This is close to the total number of active users in Tanzania in 2014, however, Tanzania users grew strongly in 2015. It must also be noted Tanzania is a larger country in terms of population (with 51.82 million in 2014 compared to 48.6 million in Kenya in 2014) and land mass (with 947,300 sq. km, compared to 580,370 sq. km in Kenya), according to the World Bank's World Development Indicators.

³ See e.g. Mazer and Rowan (2016).

the possible uncertainty that this approach could imply may also militate against the investments required to roll-out mobile financial services. In addition, there are important and interesting questions about the institutional credibility underpinning an adaptive approach to address problems as the industry progresses.

Our analysis of the impact of different factors in the Tanzanian experience distinguishes those factors which relate to the country conditions and those which relate to policy and regulatory decisions. There are important path dependencies, which means that fortuitous circumstances can place a country on a particular road. We also consider the dangers in *ex post* rationalization where the record is presented as if it was intended to turn out as it did.

The paper is structured as follows. Section 2 considers the evolution of mobile money services in terms of breadth and depth along with the key factors which explain the developments observed. It starts by providing a snapshot which locates mobile money alongside the mobile telecommunications and banking sectors before considering in more detail the development of different services and the role of the regulatory regime. Section 3 analyses the market structure, market power and competition at different levels and in different services. Finally, Section 4 draws together the key insights from the Tanzania experience.

2 The development of mobile financial services in Tanzania

In this section, we explore the development of mobile financial services in Tanzania. To provide context we first present a snapshot of the three main markets that are relevant to mobile financial services: mobile telecom, MMT and banking services. We then examine the evolution of mobile financial services in Tanzania from simple MMT services to more elaborate products. Next, we consider the policy and regulatory framework that has shaped the development of mobile financial services. Finally, we examine several country-specific factors that have shaped the path of development of mobile financial services in Tanzania.

2.1 Snapshot of the MMT services and related markets

In this subsection, we provide brief snapshots of the three main markets that impact mobile financial services: mobile telecom, MMT and banking services. The mobile telecom services market is competitive among the three main MNOs. The MMT services market also reflects active competition, but is more of a duopoly structure. The market for banking services is competitive with the four largest banks controlling less than 50% of market share and the ten largest banks controlling less than 75% of market share by several measures.

At the outset we note that Tanzania has an MNO-led MMT market. MNOs were the first significant providers of MMT services and their products dominate that market. No banking license is required to provide MMT services. However, both financial institutions (such as banks) and non-financial institutions such as business aggregators are fast growing in the development of products in the MFS market, as we discuss further below.

Regulation of mobile financial services in Tanzania has been led by the BOT, through a regulatory approach which has been characterized as ‘test and learn.’ It is this flexible and proactive approach that has been credited with the rapid expansion of MMT in Tanzania. The Tanzania Communications Regulatory Authority (TCRA) which regulates telecommunications and the fair Competition Commission (FCC) which regulates competition across the economy, have not been very active in regulating or promoting the development of

mobile financial services, though there is no indication that they stood in its way. The regulatory landscape is discussed in Section 2.3.

2.1.1 Snapshot of the mobile telecom services market

At the time of writing, there are seven MNOs operating in Tanzania. These are:

- Vodacom Tanzania (Vodacom) owned 65% by Vodacom Group (Pty) Limited, South Africa which, in turn, is a subsidiary of Vodafone Group UK and 35% by Tanzanian shareholder Mirambo Ltd. and operating in Tanzania since 2000;⁴
- MIC Tanzania Limited (Tigo), currently owned by Millicom International Cellular of Luxembourg (MIC) and operating in Tanzania since 1994;⁵
- Airtel Tanzania (Airtel) owned by Indian telecommunications company Bharti Airtel since 2010 and operating in Tanzania since 2001 under other brand names;⁶
- Zanzibar Telecom (Zantel) owned 85% by MIC (as a result of an October 2015 acquisition from Etisalat Group)⁷ and 15% by the Government of Zanzibar and operating in Tanzania since 1999;⁸
- Tanzania Telecommunications Company Limited (TTCL), the former state-owned fixed line operator which currently offers mobile voice and data services;⁹
- Smart Telecom (Smart), owned by Industrial Promotion Services (IPS), the Kenya-based infrastructure and industrial development arm of the Aga Khan Fund for Economic Development and launched in 2014;¹⁰ and
- Viettel Tanzania operating under the Halotel brand (Halotel), owned by Vietnam's Viettel Group and launched in October 2015.¹¹

Although Tigo and Zantel are now both owned by MIC as a result of a recent merger, we understand that these two MNOs will continue to be operated as separate businesses.¹²

⁴ <https://www.vodacom.co.tz/aboutus/whoweare>

⁵ <http://www.tigo.co.tz/en/about-us>

⁶ <http://africa.airtel.com/wps/wcm/connect/africarevamp/Tanzania/Home/About/>

⁷ <https://www.telegeography.com/products/commsupdate/articles/2015/10/27/millicom-completes-zantel-takeover/>

⁸ http://zantel.co.tz/corporate_information.php

⁹ http://www.ttcl.co.tz/Voice_Mobile.asp

¹⁰ <https://www.telegeography.com/products/commsupdate/articles/2014/04/14/smart-telecom-enters-crowded-tanzanian-mobile-market/>

¹¹ <https://www.telegeography.com/products/commsupdate/articles/2015/10/15/viettel-launches-tanzanian-operations-under-halotel-brand/index.html>

¹² Meeting with Tigo, 19 January 2016.

As of September 2015, mobile voice subscriber market shares were: Vodacom (35%), Tigo (30%), Airtel (30%), Zantel (4%) and TTCL (1%).¹³ The remaining MNOs did not appear in the published statistics of the TCRA (Halotel had not launched until October 2015). Due to the prevalence of “multi-simming” in Tanzania, subscriber market share figures are of limited value. Revenue market shares for voice services are not publicly available, however, as of January 2016, Tigo estimated its market share at around 32%¹⁴ and Vodacom estimated its at around 40%.¹⁵ This implies Airtel is in third place, which is consistent with the views of other market participants.

2.1.2 Snapshot of the MMT services market

Only Vodacom, Tigo, Airtel and Zantel offer MMT services. These are M-Pesa, Tigo Pesa, Airtel Money and EzyPesa, respectively. Zantel’s “Z Cash” (which was later relaunched as EzyPesa in 2012)¹⁶ and Vodacom’s M-Pesa, were both launched in 2008.¹⁷ In 2009, Zain (which become Airtel in 2010 when acquired by Bharti Airtel¹⁸) launched its “ZAP” mobile money service¹⁹ which was later rebranded as Airtel Money. Tigo was the last entrant, launching Tigo Pesa in late 2010.

As of September 2015, MMT subscriber market shares were Vodacom (38%), Tigo (33%), Airtel (27%), and Zantel (2%).²⁰ Again, due to “multi-simming” these numbers are of limited value. Revenue market shares for mobile money are not publicly available, but we understand that they are even more skewed than for mobile telecom services with possible implications for competition. MNOs’ estimates as of January 2016 placed Vodacom’s revenue share at 53-54%, Tigo’s share around 40% and Airtel’s share around 10%, while Zantel was negligible.²¹ This implies more of a duopoly than observed in mobile telecom services, and it will be interesting to see if over time the MMT services market structure exerts effects on the market for mobile telecom services.

2.1.3 Snapshot of the banking services market

In terms of number of accounts, the Tanzanian banking sector is led by two institutions with their roots respectively as the state-owned cooperative bank (CRDB Bank plc) and in microfinance (National Microfinance Bank Plc, NMB). The network of CRDB is linked to its position as the banker to farmers and small businesses, while NMB handles payments for all

¹³ TCRA Quarterly Communications Statistics Report, July-September 2015 Quarter, available at <http://www.tcra.go.tz/images/documents/telecommunication/telcomStatsSept15.pdf>

¹⁴ Meeting with Tigo, 19 January 2016.

¹⁵ Meeting with Vodacom, 20 January 2016.

¹⁶ http://www.zantel.co.tz/press_release/PR%20ZANTEL%20-%20Ezy%20Pesa%20Launch.pdf

¹⁷ <https://www.telegeography.com/products/commsupdate/articles/2008/04/10/zantel-to-pip-vodacom-to-cash-transfer-service-launch/index.html>

¹⁸ <https://www.telegeography.com/products/commsupdate/articles/2010/11/22/bharti-rebrands-african-subsidiaries/index.html>

¹⁹ <http://www.zain.com/en/media-center/press-releases/zain-dials-up-mobile-banking-in-africa-with-zap/>

²⁰ TCRA Quarterly Communications Statistics Report, July-September 2015 Quarter.

²¹ Interviews with Tigo, 19 January 2016, Vodacom, 20 January 2016, Airtel, 21 January 2016

government employees and entities across the country. It is notable that these are also the only two banks that participated in the negotiation process facilitated by the International Finance Corporation to achieve account-to-account interoperability of MNO wallets (described further in Section 2.4.8).

Other banks are largely limited to major urban areas, principally Dar es Salaam. As of the end of 2014, Tanzania had 53 banking institutions consisting of 34 fully-fledged commercial banks, 12 community banks, 4 financial institutions and 3 deposit-taking microfinance companies.²² However, despite the large number of banks, the banking sector is dominated by a few large players. As of the end of 2014, the four largest banks by assets, CRDB, NMB, NBC Limited and Standard Chartered bank held 49.48% of the total assets, 48.23% of total capital, 49.52% of total deposits and 50.03% of total loans, advances and overdrafts in the sector.²³ The next six largest banks collectively held market shares in the same categories of between 20-25%.²⁴

CRDB was the first bank to offer agency banking services in Tanzania at the beginning of 2013 and now boasts 1,500 agents across the country.²⁵ Bank agents are subject to higher regulatory scrutiny than mobile money agents, and banks frequently outsource agent acquisition to third party agent aggregators. The overall number of bank agents is increasing rapidly in Tanzania. From the end of 2013 to the end of 2014, the number increased by 180% to 1,652 from 591 reported in the previous year. As of 2014, agents remained disproportionately clustered in the Dar es Salaam region.²⁶ The increase in agents is also due to very few banks.

2.2 The evolution of mobile financial services

In this subsection, we discuss the evolution of mobile financial services from basic MMT services to more elaborate products, such as insurance and credit. We present these roughly in chronological order of their initial appearance in the market, though providers introduced these services at different times.

2.2.1 MMT services

The development and launch of basic MMT services by the four major MNOs was facilitated by the BOT's 'test and learn' regulatory approach. As discussed in Section 2.3.3, this approach allowed for the development of an MNO-led model, while ensuring the proper scrutiny and regulation of the banks that held the underlying trust accounts.

The growth in MMT since its introduction in 2008 is dramatic when measured by number of active users, which reached over 19 million (the majority of the adult population) in 2015 (see Table 1).²⁷ Note, the number of registered accounts is much larger but is misleading as it

²² Directorate of Banking Supervision, Annual Report 2014, p.1, available at <http://www.bot-tz.org/BankingSupervision/Reports/DBS%20ANNUAL%20REPOR%202014.pdf>

²³ Directorate of Banking Supervision, Annual Report 2014, p.2.

²⁴ Directorate of Banking Supervision, Annual Report 2014, p.2.

²⁵ <http://crdbbank.com/tz/our-profile/about-us.html>

²⁶ Directorate of Banking Supervision, Annual Report 2014, at 32

²⁷ The total population is around 50 million (half of which are under 18). These data still include a single user having multiple accounts, which is understood to be relatively common.

includes accounts which are no longer or may have never been used. This large number reflects the ease with which an MMT account is opened. One MNO, Airtel, automatically registers an Airtel Money account for each mobile subscriber. The number of MMT accounts compares with mobile telecom subscribers of nearly 36 million (see Table 1). MNO trust account balances as of 2014 were nearly a third of all balances held by banks and financial institutions.²⁸

From 2008 to 2010 the level of mobile money penetration was relatively low. There were then very big absolute increases in 2011 and 2012 in active users, 2.5 million in 2011 and 4.2 million in 2012. From around 2011, the average number of transactions per active account has been relatively stable at between 85 and 94 per annum. The average transaction value has been relatively stable over the whole period, fluctuating around TZS30,000 (implying a small decline in US\$ terms), while the average trust balance per active user has been similar. This implies that while people are making close to two transactions per week on average, the balance in wallets (and therefore in the trust accounts) is no more than a single transaction's value. Money which comes into wallets is transferred and used and mobile wallets are not being used for saving. Note that Vodacom's M-Pawa balances are CBA bank accounts and are not held in MNO trust accounts and hence savings in them are not captured in this data.

²⁸ Trust account balances were TZS450,957 million (see Table 1) and total deposits held in banks in financial institutions, excluding the BOT, were TZS1,444,009 million (see Directorate of Banking Supervision, Annual Report 2014, p.39), calculated as 31.23%.

Table 1: Growth in MMT services

	2008	2009	2010	2011	2012	2013	2014	2015
Registered Accounts (number)	14,640	2,498,329	5,439,449	15,500,717	26,387,914	31,830,289	41,380,791	53,843,917
Registered Active Users (90 days)	3,168	367,977	1,028,740	3,566,513	7,817,748	11,016,657	13,856,667	19,006,176
Mobile telecom subscriptions ²⁹	13,008,793	17,469,486	20,983,853	25,666,455	27,450,789	27,442,823	34,108,851	35,920,090
Registered live agents	423	2,454	8,318	29,469	66,841	118,618	159,535	170,043
Trust Accounts Balance (TZSmn)	1,336	5,720	28,261	98,866	209,823	303,711	450,957	583,773
Avg trust account balance per active user (TZS)	421,675	15,544	27,472	27,721	26,839	27,568	32,544	30,715
Transactions, number	763,221	31,471,052	228,109,705	314,379,970	665,941,834	1,031,259,611	1,299,709,248	1,691,71,0681
Transactions, value (TZSmn)	24,177	925,730	6,330,164	9,427,070	17,462,757	28,888,172	41,816,803	50,755,354
Avg transaction value (TZS)	31,677	29,415	27,751	29,986	26,223	28,013	32,174	30,002
Avg transactions /active account	241	86	222	88	85	94	94	89
Exchange rate, annual avg (TZS:USD)	1178	1304	1420	1564	1562	1584	1630	1997

Source: BOT, except as otherwise indicated.

The number and coverage of agents is essential for the spread of mobile money. From 2010 to 2012, there was a substantial increase to 66,841 which reflected coverage of the entire country. The agents continued to increase thereafter with greater density of coverage. Note that the registered live (active) agents double counts an agent acting for multiple providers

²⁹ TCRA Telecommunications Statistics from 2000 to 2009, December 2009, available at <http://www.tcra.go.tz/index.php/2009/december-2009> ; TCRA Quarterly Communications Statistics Report, July-September 2015 Quarter, available at <http://www.tcra.go.tz/images/documents/telecommunication/telcomStatsSept15.pdf>; 2015 is as of September and may include fixed line subscriptions.

and so it is unclear how many separate businesses are active as agents.³⁰ Some estimates placed the number of active agents as around 80,000 to 100,000, which is one agent for around 250-300 adults.³¹ Near ubiquity of mobile money reflects the extensive agent coverage across the country by 2014. According to the Financial Access Point Census of the FSD carried out at the end of 2013 and early 2014, in most of the country's regions (including naturally the most densely populated) more than 50% of the people are within 5 km of a mobile money agent (p23) (FSD, 2014). It identified 55,851 financial access points of which 81.1% were mobile money agents.³²

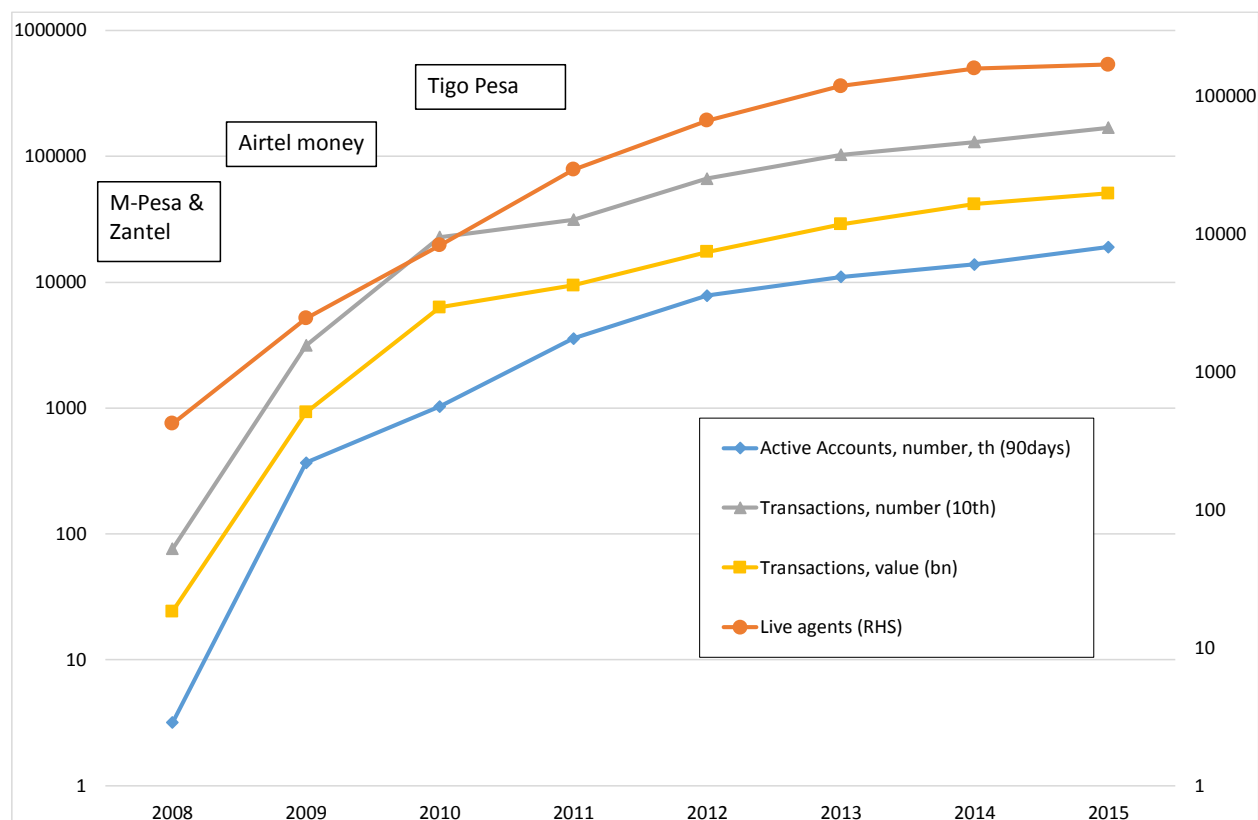
The growth of agents alongside active accounts, and total transactions (by volume and value) is apparent in Figure 1. The log-scale (where a constant gradient reflects the same rate of growth) indicates the rate of growth declining after 2010 in terms of transactions and from 2011 in terms of the number of active accounts and agents. There was a slight increase in the growth rate of transactions in 2012, which is consistent with the vigorous promotion of mobile money as a result of intense competition between providers.

³⁰ Note that the total number of registered agents in 2015 was 270,974, including agents that are not 'live.'

³¹ As an illustrative thought exercise, if all of Tigo's 50,000 agents were already M-Pesa agents, and of these 30,000 were also Airtel Money agents then this would amount to 130,000 agents, leaving around 30,000-50,000 agents who would have to almost all be sole agents to add to the total of 170,000 registered live agents. Note, an agent may not be viewed as 'live' for all the operators. It may have registered as an agent for all but found that one or more are not paying off.

³² It also identified that two-thirds of agents are not shared across networks, but it is not clear if this means shared across types of financial service providers as the number of agents compared with the BOT data on active agents can only be consistent if there are multiple agents recorded separately by the BOT.

Figure 1: Growth of accounts, transactions and agents (log scale)



Source: as for Table 1

While Vodacom was the first of the three main MNOs to launch an MMT service, introducing M-Pesa in 2008, its first mover advantage was limited. Later entrants were able to piggy-back on an extensive educational campaign that Vodacom used to inform the population about MMT (discussed in Section 2.4.5). Also, by 2010 the BOT had expressly prohibited agent exclusivity, which allowed later entrants to recruit Vodacom agents who were familiar with the MMT agent business model, rather than having to build and educate an agent network from scratch (discussed in Section 2.4.7).

As of 2016, Vodacom, Tigo and Airtel each have roughly a third of the MMT subscriber market share. Vodacom has a larger share of the market by revenue (estimated at 53-54%). In terms of revenue, the market is more duopolistic with Tigo's share estimated at 40% and Airtel's at 10%. The presence of at least one effective rival to the market leader (in contrast to many other countries) may be a result of the competitive environment for mobile telecom services, where no single MNO has been able to leverage market power in the market for mobile services to impede competition in the MMT market (discussed in Section 2.4.3). The MMT services market has also recently been further protected from the consequences of network effects through the negotiation of bilateral interoperability of MMT services among the three main MNOs as well as the fourth, Zantel (discussed in Section 2.4.8).

In 2009, NMB became the first bank in Tanzania to offer mobile banking services in Tanzania which was delivered through a USSD channel and allowed basic functionality.³³ NMB also launched an MMT service in 2009 which never gained traction. After an abortive attempt by NMB to sell this service to Zantel, it was discontinued.³⁴

Today many banks are offering similar services to compete with the MNOs' basic MMT services. For example, NMB, CRDB and Access Bank offer bill pay services from bank accounts through their mobile banking services. NMB has developed its Pesa Fasta service which permits NMB bank account holders to transfer money to recipients without a bank account who can then access the transferred funds from an NMB ATM.

In Tanzania, MNOs provide access to mobile financial services through the Unstructured Supplementary Service Data (USSD) channel (discussed in Section 2.4.5). The placement of the MMT service directly onto the SIM toolkit (STK) menu, as is done by Safaricom in Kenya, was not a viable option for Vodacom in Tanzania as the market did not have 64K SIM cards as in Kenya, only 32K.³⁵ The cost of upgrading these SIM cards was prohibitive. There are also a number of other advantages in using USSD, including the ability to make upgrades on the MNO gateway instead of having to get all users to download updates to their SIM card. However, agents do use STK to interface with Vodacom's MMT service due to the ability to have a more secure PIN.³⁶

The lack of apparent inherent advantages of using STK (rather than the importance of consumer familiarity) is also highlighted by the Airtel experience. Airtel initially launched its mobile money offering on the STK menu, following the experience of Safaricom in Kenya. However, it relaunched at the end of 2012 using USSD after consumers did not relate to the STK experience.³⁷

The MMT services market in Tanzania is unique in the fact that four MNOs have entered into voluntary, bilateral arrangements for interoperability of MMT accounts. The framework for these arrangements were agreed as part of a multilateral negotiation initiated in 2013 which was facilitated by international donor organizations and endorsed (though not mandated) by the BOT. In August 2014, Airtel Money and Tigo Pesa were the first to negotiate and implement account interoperability. By February 2016 EzyPesa and M-Pesa had joined as well.³⁸

The negotiation process envisions other layers of interoperability, including:³⁹

- cash-in/cash-out interoperability (where subscribers can cash-in and cash-out from any MNO agent for any service);

³³ Meeting with NMB, 21 January 2016.

³⁴ Meeting with NMB, 21 January 2016.

³⁵ Meeting with Vodacom, 20 January 2016.

³⁶ Meeting with Vodacom, 20 January 2016.

³⁷ Meeting with Jumo, 21 January 2016.

³⁸ http://www.mobileworldlive.com/money/news-money/tanzania-in-mobile-money-first-for-africa/?utm_campaign=MWL-M-20160218&utm_medium=email&utm_source=Eloqua

³⁹ Meeting with Martin Warioba, 18 January 2016.

- bulk pay interoperability (where companies can distribute salaries to various mobile wallets of employees, as opposed to having to choose a single service);
- agent-to-agent interoperability (where agents for multiple services could combine the “floats” they maintain for the various services); and
- merchant payment interoperability (where merchants could easily accept payments from multiple services to a single account).

However, there is no indication that any substantive progress has been made on these other forms of interoperability.

Another unique development in MMT services in Tanzania is the distribution of interest payments that have accrued on underlying trust accounts to mobile money subscribers and agents. In 2014, Tigo Pesa was the first MNO to make these distributions and M-Pesa and Airtel Money have since followed. These distributions, which reflect an annual interest rate of as high as 10%, are competitive with savings accounts.

2.2.2 External transfers: banks and bill pay

The ability of MMT subscribers to move MMT balances in and out of the mobile money ecosystem without the need for a cash-out represents a distinct progression in the evolution of mobile financial services. The two most common manifestations of this are transfers to and from bank accounts and bill pay services to utilities and other third parties. Today all four MNO MMT services provide for these external transfers.

M-Pesa was the first service to integrate with traditional banks to allow seamless transfers between mobile wallets and bank accounts. Vodacom describes its mindset during this time as wanting to emphasize the complementary relationship between banks and mobile wallets.⁴⁰ For example, mobile wallets (and their extensive network of cash-out agents) can serve as a means for bank account holders to withdraw their funds without a need for branches or ATMs.

Vodacom initially negotiated individual commercial arrangements for transfers with NMB and then CRDB and this practice continued with some of the larger banks.⁴¹ However, this model was not effective for smaller banks. MNOs lack the capacity to individually negotiate commercial arrangements with each bank and the smaller banks lack the leverage to negotiate favourable terms.

The same issue arose with utilities and other third parties who wished to integrate into MMT services to allow their customers to directly pay bills through an MMT transfer.

These smaller banks, utilities and other third parties who sought integration were able to rely on business aggregators (discussed in Section 2.4.10) to negotiate terms with MNOs on their behalf often provide the technological functionality that makes these transfers possible. These aggregators proved to be essential links between the MNOs and third parties, extending the

⁴⁰ Meeting with Vodacom, 20 January 2016.

⁴¹ Meeting with Vodacom, 20 January 2016.

scope of financial services available through an MMT account. Tigo deals exclusively with one aggregator, Selcom, in negotiating these arrangements with banks.⁴²

2.2.3 Insurance

In 2012, Tigo launched a life and hospitalization insurance product through a third party, Bima, which is underwritten by Golden Crescent Assurance.⁴³ Premiums are automatically deducted from Tigo Pesa accounts. Although the product is still available, Tigo acknowledges that uptake has been limited.⁴⁴ Vodacom previously had a health insurance product which was not successful and it does not believe that there is interest in the Tanzanian market for mobile insurance products.⁴⁵ Airtel is currently exploring the possibility of an insurance product.⁴⁶

2.2.4 Merchant payments

MNOs, banks and others have launched and continue to launch mobile merchant payment services. For example, in September 2014, Vodacom launched its Lipa Kwa M-Pesa service for merchant payments.⁴⁷ Airtel has also developed a separate merchant payment service, including developing a payment card linked to Airtel Money. Tigo has not launched a separate merchant payment platform. Rather, it encourages merchants to use their ordinary Tigo Pesa accounts to receive payments.⁴⁸

According to Tigo, merchant payments can simply be viewed as person-to-person transfers with the merchant simply placing a Tigo Pesa sticker on their retail location to flag it appropriately. As there is no separate platform, the merchant payments are interoperable with M-Pesa and Airtel Money. Tigo reports having around 50,000 merchants (30,000 active) presumably with a large overlap with their agents.

Airtel and Vodacom subscribers have separate merchant payments solutions this means they are effectively closed solutions and are not interoperable. Airtel and Vodacom have charge structures for these as merchant payments and are also exploring other payments solutions. Airtel is in the process of developing a merchant payment platform.⁴⁹ However, rather than operate through USSD, Airtel is distributing cards equipped with near field communication (NFC) technology. Merchants receive point of sale (POS) devices that can read the cards. The NFC cards will not store any value, rather payment amounts will be deducted directly from Airtel Money accounts and deposited into the merchant's wallet. The customer 'taps' the card rather than using USSD to access the Airtel Money account. As of January 2016, 2,500 merchants had been signed up for the service.

⁴² Meeting with Tigo, 19 January 2016.

⁴³ <http://www.bimamobile.com/news-and-media/news/pona-na-tigo-bima-launches-new-hospitalization-and-life-cover-with-tigo-tanzania>

⁴⁴ Meeting with Tigo, 19 January 2016.

⁴⁵ Meeting with Vodacom, 20 January 2016.

⁴⁶ Meeting with Airtel, 21 January 2016.

⁴⁷ <http://www.telecompaper.com/news/vodacom-tanzania-launches-lipa-kwa-m-pesa-merchant-service--1037408>

⁴⁸ Meeting with Tigo, 19 January 2016.

⁴⁹ Meeting with Airtel, 21 January 2016.

As of January 2016, business aggregator Selcom was poised to launch a merchant payment card that could be topped up from mobile wallet transfers.⁵⁰ NMB is also developing a merchant payment card that can be topped up via bank or mobile wallet transfer.⁵¹

Despite these available services, mobile merchant payment platforms have largely been unsuccessful in the Tanzanian market. Several reasons were posited by stakeholders.

First, consumers are not familiar with merchant payment platforms in general. In particular, cards are usually thought of as ATM cards and other functions are unfamiliar to consumers. As a result, there has not been a large uptake in payment cards.

Second, it has been difficult for MNOs and others to convince retailers to bear fees when customers use merchant payment services. Because of limited uptake, there is a lack of pressure from consumers to use these services, despite the fact that they either eliminate the costs to them of cashing out (in the case of cash purchases) or eliminate transfer fees (in the case of MMT payments to the merchant). In the absence of demand from consumers to use these services, retailers have no incentive to adopt them over other payment methods.

Finally, there is a large overlap between mobile money agents and retailers. When a customer cashes out in order to pay for goods, the agent/retailer would receive a cash-out commission. If a merchant payment service is used, the agent/retailer would forego the cash-out commission and instead incur a charge for use of the merchant payment service. The incentivisation of agents to promote the expansion of mobile money transfer has thus, in this one case, apparently worked against the deepening of mobile financial services.

2.2.5 Savings and credit

Mobile savings and credit products are among the most recent mobile financial services to appear in Tanzania. While MNOs are not permitted to offer traditional bank accounts without a banking license, they have the ability to partner with third-party institutions capable of offering these services as well as other unregulated forms of lending. These services can then be accessed by consumers through a mobile wallet service. Even though these savings and credit services are carried out by third parties and not by MNOs, to a consumer, the transition from wallet to banking services may appear seamless.

Savings

As of early 2016, M-Pawa, a partnership between Vodacom and CBA that launched in May 2014 and is exclusively available through M-Pesa, is the only MNO savings product that utilizes a true bank deposit account. An M-Pawa account is a CBA bank deposit account. Interest rates range from around 2% (for deposits below TZS200,000) to around 5% (for deposits that exceed TZS1 million).⁵² Although CBA has existing traditional bank accounts and a mobile banking service available to those account holders, M-Pawa accounts are handled separately by a different team.

⁵⁰ Meeting with Selcom, 20 January 2016.

⁵¹ Meeting with NMB, 21 January 2016.

⁵² Meeting with CBA, 19 January 2016.

However, the model of linking interest-bearing deposit accounts to MMT accounts, which has worked in neighbouring Kenya, is being challenged in Tanzania by the recent practice of distributing interest accrued on trust accounts to MMT subscribers (see discussion in section 2.4.9).

Credit

As of February 2016, all three of the main MNOs have launched or are about to launch mobile credit products. M-Pesa offers through M-Pawa short-term, unsecured credit from CBA. Airtel offers Timiza, a short-term, unsecured credit service that is the result of its partnership with Jumo, a microfinance institution. In February 2016, as this paper was being written, Tigo announced that it would launch a credit product called Tigo Nivushe with Jumo, though detailed information on this service were not yet available.⁵³

a. M-Pawa

In addition to access to savings accounts, M-Pawa account holders can apply for loans from CBA over their mobile devices. CBA uses an automated credit scoring engine that draws on Vodacom's M-Pesa user information to score the credit worthiness of loan applicants.⁵⁴ Initial loans are based on an applicant's history of M-Pesa deposits (in order to open an M-Pawa account, a customer must have an M-Pesa account for 6 months), including amounts deposited over time, an analysis of the values and frequency of M-Pesa usage and Vodacom airtime purchases and usage.⁵⁵ Subsequent loan applications take into account M-Pawa usage and loan repayment activity.⁵⁶

The minimum loan amount on M-Pawa is TZS1,000 and the maximum is TZS500,000.⁵⁷ All loans have a 30-day term. CBA charges a 9% facility fee on disbursement of the loan. If the loan is not repaid within thirty days, it rolls over for a second thirty days and CBA charges a second 9%. CBA charges no other fees or interest, making the maximum effective interest rate 9% per month for two months. If after 60 days, a loan is still not repaid, CBA may freeze any savings deposits in the customer's M-Pawa account to offset the amounts due. However, CBA cannot access any amounts in the customer's linked M-Pesa account. After 65 days, CBA will begin making phone calls to customers and customers will lose their ability to borrow airtime from their M-Pesa accounts. However, except for access to M-Pawa deposits, an M-Pawa loan is unsecured and CBA has no further recourse other than to prevent the same customer from receiving future loans.

Vodacom and CBA share revenues derived from M-Pawa. Vodacom receives a portion of the facility fees and a portion of the returns generated from intermediation of M-Pawa deposits.⁵⁸ There are no charges to subscribers for transfers between M-Pesa and M-Pawa accounts.

⁵³ <http://www.cgap.org/blog/tigo-nivushe-tanzania-5-ways-build-trust-digital-lending>

⁵⁴ Meeting with CBA, 19 January 2016.

⁵⁵ Meeting with CBA, 19 January 2016.

⁵⁶ Meeting with CBA, 19 January 2016.

⁵⁷ <https://www.vodacom.co.tz/mpesa/mpawa/fag> . The information in this paragraph is from meeting with CBA, 19 January 2016.

⁵⁸ Meeting with CBA, 19 January 2016.

Vodacom naturally also levies cash-out charges if an M-Pawa loan is drawn as cash. CBA and Vodacom have agreed to an exclusivity period with respect to savings and credit products for a limited time which expires in 2016.⁵⁹ However, Vodacom envisions expanding its services so that multiple banks can offer competing credit products through its M-Pesa platform and is interested in exploring the possibility of offering longer-term loans.⁶⁰

Vodacom characterized M-Pawa uptake as “slow” but estimates that approximately 40% of its mobile money subscriber base has used M-Pawa.⁶¹ This is consistent with CBA’s estimate that as of January 2016 there were approximately 3.5 million M-Pawa users.⁶² Vodacom believes that most of the use has been for savings deposits and estimates that only approximately 500,000 M-Pawa subscribers have taken out loans.⁶³

As a licensed bank, CBA is required to report credit reference information of its loan holders to Tanzania’s Credit Reference Databank, however, as of January 2016 no such reporting has occurred.⁶⁴ The BOT believes that this is likely due to the fact that credit reporting is still in its infancy in Tanzania and it fully expects that such information will be reported in the future.⁶⁵

b. Timiza

Timiza was launched in November 2014 as a partnership between Airtel and Jumo (formerly African Financial Business), to offer a short-term, unsecured credit product linked to Airtel Money. As a microfinance institution (MFI), rather than a traditional bank licensed under the Banking and Financial Institutions Act, 2006, Jumo cannot take deposits. Jumo is regulated by the Ministry of Industry and Trade, rather than the BOT⁶⁶ and the BOT considers it to be a “non-regulated microfinance institution.”⁶⁷

Airtel subscribers must have an active Airtel Money account for at least 3 months to apply for a Timiza loan. Initial loan approval is based on usage of the Airtel Money account and other information available to Airtel.⁶⁸ Loans are available for as little as TZS2,000 to as high as TZS400,000.⁶⁹ Higher loan amounts are only available to subscribers who have a history of repaying Timiza loans. Loans are available for 7-, 14-, 21- and 28-day terms.

Loans are subject to a 10% initiation fee and a pre-paid interest rate of 0.5% per day. However, the fee and rate may be slightly reduced for subscribers with a prior history with Timiza. Interest accrues for the entire loan term, regardless of whether the loan is repaid early. However, if the loan is not repaid at the end of the term, a single 10% penalty is assessed but

⁵⁹ Meeting with Vodacom, 20 January 2016.

⁶⁰ Meeting with Vodacom, 20 January 2016.

⁶¹ Meeting with Vodacom, 20 January 2016.

⁶² Meeting with CBA, 19 January 2016.

⁶³ Meeting with Vodacom, 20 January 2016.

⁶⁴ Meeting with the BOT, 21 January 2016.

⁶⁵ Meeting with the BOT, 21 January 2016.

⁶⁶ Meeting with Jumo, 21 January 2016.

⁶⁷ Meeting with the BOT, 21 January 2016.

⁶⁸ Meeting with Airtel, 21 January 2016.

⁶⁹ The information here and in the following two paragraphs is from meeting with Jumo, 21 January 2016.

interest does not continue to accrue after the loan term. After a loan is three weeks past due, Jumo is able to recover unpaid balances from a subscriber's current Airtel Money balance, but otherwise it has no recourse. Jumo acknowledges that Airtel Money balances are typically very low and do not provide substantial security.

As of October 2015, approximately one million Airtel Money subscribers had taken out Timiza loans and the number of individual loans is higher. As an MFI, Jumo has no regulatory obligation to report the credit history data generated from Timiza loans. Jumo and Airtel share revenues from Timiza, though neither is subject to any exclusivity arrangement. Jumo and Airtel have launched a similar credit service with more favourable terms exclusively for Airtel agents.

c. Tigo Nivushe

In early 2016 Tigo announced the launch of a mobile credit product through a partnership with Jumo. This occurred after the fieldwork stage of the research. At the time of writing, there is very little information available on this service. However, Tigo press releases indicate that loans will have 1-, 2- and 3-week terms with "variable fees based on length of tenure" and that Tigo Pesa accounts will not be accessible for recovery of unpaid balances.⁷⁰

2.2.6 International transfers

Two of the main MNOs have launched international transfer services. In February 2015, Tigo launched international transfers between Tigo Pesa accounts in Tanzania and Tigo Cash accounts in Rwanda⁷¹. Similarly, in March 2015, Vodacom launched international transfers between M-Pesa accounts in Tanzania and M-Pesa accounts offered by Safaricom in Kenya.⁷² In August 2015, Tigo partnered with WorldRemit to allow its subscribers to send and receive remittances internationally.⁷³

Despite leading in the market for mobile remittances, Tigo has indicated that it does not believe that Tanzania is a big remittance economy (either for sending or receiving), and it is not aggressively pursuing this market.⁷⁴ Airtel says that it recently received BOT approval for international transfers beginning with Rwanda and that it plans to expand to other countries in the future.⁷⁵

2.3 Descriptive review of legislation, regulations and regulatory bodies

There are three primary legal and regulatory frameworks that potentially impact the provision of mobile financial services in Tanzania: competition, telecommunications and financial services. We describe each of these below as they relate to mobile financial services.

⁷⁰ <http://www.cgap.org/blog/tigo-nivushe-tanzania-5-ways-build-trust-digital-lending>

⁷¹ <http://www.thecitizen.co.tz/Business/TZ-Rwanda-cash-transfers-open/-/1840414/2220990/-/e3psxs/-/index.html>

⁷² <http://www.businessdailyafrica.com/Corporate-News/MPesa-payments-between-Kenya--Tanzania-launched/-/539550/2646864/-/s4s2qyz/-/index.html>

⁷³ <http://news.cision.com/millicom-international-cellular/r/tigo-pesa-and-worldremit-enable-easy-international-money-transfers-for-the-tanzanian-diaspora,c9815397>

⁷⁴ Meeting with Tigo, 19 January 2016.

⁷⁵ Meeting with Airtel, 21 January 2016.

2.3.1 Telecommunications framework

The Tanzania Communications Regulatory Authority Act, 2003 establishes the Tanzania Communications Regulatory Authority (TCRA) as the regulator of telecommunications, postal and other services. The Electronic and Postal Communications Act, 2010 (EPOCA) confers the TCRA with the “power of licensing and regulating electronic communications systems and services” in Tanzania.

The EPOCA and the subsequent Electronic and Postal Communication (Licensing) Regulations, 2011 set out the relevant categories of licenses for the provision of electronic communications services. Acquisition of appropriate telecommunications licenses are a prerequisite for mobile money provision under the BOT’s financial services framework. In addition, the EPOCA and the subsequent Electronic and Postal Communications (Competition) Regulations, 2011 grant the TCRA the authority to regulate competition in the sector.

Based on our interviews with mobile financial service providers and other stakeholders, TCRA’s involvement in mobile financial services has been minimal. The service providers acknowledge that they were required to obtain telecommunications licenses, but beyond that they have had little or no contact with the TCRA. To our knowledge, the TCRA has not taken any regulatory action relating to competition in the markets for mobile financial services.

2.3.2 Competition framework

The Fair Competition Act, 2003 (FCA) establishes the Fair Competition Commission (FCC) as the independent competition regulator in Tanzania. The FCA governs competition in all sectors of the Tanzanian economy, except where expressly excluded by subsequent legislation. The EPOCA, which was enacted in 2010, included an amendment of the FCA, adding:

Where, in the course of performing its functions under [the FCA], the Fair Competition Authority [sic], encounters any matter related to electronic or postal communications, as those terms are defined in [the EPOCA], it shall request the written advice of the [TCRA] on such matter and. Upon receiving such request, the [TCRA] shall have the power to provide the Fair Competition Authority [sic] with such advice.

The FCC has interpreted this amendment to essentially remove competition issues arising in the telecommunications sector, including mobile financial services, from its jurisdiction.⁷⁶ The one exception in this interpretation is the FCC’s continued review of mergers in the sector, such as the recent acquisition of Zantel by MIC, which the FCC conducts in consultation with TCRA.⁷⁷ Accordingly, beyond review of mergers, the FCC does not appear likely to take any action to regulate competition in mobile financial services.

⁷⁶ Meeting with the FCC, 17 January 2016.

⁷⁷ Meeting with the FCC, 17 January 2016.

2.3.3 Financial services framework

Regulation of mobile financial services in Tanzania has been led by the BOT, through a regulatory approach which has been characterized as ‘test and learn.’ It is this flexible and proactive approach that has been credited with the rapid expansion of MMT in Tanzania.

The BOT’s authority to regulate mobile financial services

The Banking and Financial Institutions Act, 2006, and the regulations issued thereunder, grant the BOT the authority to regulate the activities of banks and financial institutions in Tanzania. While an extensive regulatory framework exists for the regulation of banks, the focus of this review is on regulation of non-bank mobile financial services providers.

Section 6 of the Bank of Tanzania Act, 2006 grants the BOT the authority to oversee payment, clearing and settlement systems. This oversight authority extends not only to banks but to non-banks that are “infrastructure service provider[s] or compan[ies].” It is this language that forms the basis of the BOT’s authority to regulate mobile financial services provided by MNOs and other non-banks.

The prior framework, 2007-2015

In May 2007, the BOT issued the Electronic Payment Schemes Guidelines, 2007 (EPSG). The EPSG applies to banks and non-banks offering “electronic payment schemes services,” a broad term which covers, among other things, electronic payment systems delivered through mobile devices, including mobile banking.

The EPSG requires that entities intending to offer an “electronic payment scheme” apply to the BOT. Banks may apply directly, but non-banks, such as MNOs, must submit their application through a bank which will ultimately hold the underlying trust accounts. The partnering banks are required to show that they meet certain minimum requirements and risk management guidelines. The BOT’s practice was to issue letters of “no objection” to the partnering banks in order to permit the MNO to proceed with offering the service. This regulatory approach allowed MNOs to lead in the development of MMT services without becoming directly subject to onerous banking regulation or needing to have retail services delivered through a licensed bank. However, it also ensured the institutions holding the underlying trust accounts were appropriately regulated as banks.

Although not stated in the EPSG, the BOT required that the entity offering the services obtain telecommunications licenses from the TCRA.⁷⁸ These licenses provided the BOT with some comfort on the operational and reputational risk of applicants and ensured the geographic reach of their services.⁷⁹ The EPSG did not require interoperability of these schemes, only that they should “be open systems capable of becoming interoperable with other payment system[s] in the country.”

⁷⁸ Meeting with the BOT, 21 January 2016.

⁷⁹ Meeting with the BOT, 21 January 2016.

The BOT subsequently issued several circulars that related to mobile financial services. In 2010 the BOT issued a circular prohibiting exclusivity of mobile money agents.⁸⁰ In February 2014, the BOT issued a circular requiring that interest on trust accounts “directly benefit the respected beneficiaries.”⁸¹ Although the BOT never intended that this language require direct distributions of interest to mobile wallet account holders⁸², Tigo, and later other MNOs, were prompted by this language to make such distributions (as discussed in Section 2.4.9).

The new framework

The National Payment System Act, 2015 (NPS Act), which came into effect on 1 October 2015, supersedes the EPGS and establishes a new licensing framework to govern payment systems in Tanzania.⁸³

The NPS Act sets up two tiers of licenses that would apply to mobile money issuers. First, banks and non-banks must obtain a “payment system license” from the BOT prior to operating a payment system. Second, in order to issue “electronic money,” a bank would further require an “electronic money approval” and a non-bank would require an “electronic money license” (EML) from the BOT. A third “payment instrument” approval or license is required for the issuance of certain payment cards.⁸⁴ According to the BOT, for existing service providers operating under the prior framework, required licenses and approvals must be obtained by 1 April 2015.⁸⁵

In October 2015, the BOT issued the Payment System Licensing and Approval Regulations, 2015 and the Electronic Money Regulations, 2015 (EMR) to further set out procedures and conditions applicable to these new licenses.

The EMR require that non-banks ensure that receipt of funds in exchange for the issuance of electronic money does not constitute a taking of a deposit. All such funds must be held in trust accounts held at banks. When aggregate trust account balances of a licensee are greater than or equal to TZS100 million, the licensee must not place more than 25% of the total aggregate balance in a single bank. Interest on trusts accounts must be used “for the direct benefit of the electronic money holders as determined by the [BOT].” Whether this provision requires direct payments of interest is unclear. The EMR also require that non-banks provide copies of valid telecommunications licenses as part of a license application. Licensees are only permitted to have non-exclusive agents.

Regulation of lending and credit reporting

Under the BFIA, the BOT has the authority to regulate banks, including their lending activity, as well as credit reference services. Although the focus of this review is on the regulation of non-bank providers of mobile financial services, Vodacom has partnered with CBA, a bank, to

⁸⁰ Meeting with the BOT, 21 January 2016. Although requested, the BOT was unable to locate a copy of this circular.

⁸¹ BOT Circular No: NPS/MFS/01/2014, 26 February 2014.

⁸² Meeting with the BOT, 21 January 2016.

⁸³ Meeting with the BOT, 21 January 2016.

⁸⁴ Meeting with the BOT, 21 January 2016.

⁸⁵ Meeting with the BOT, 21 January 2016.

provide mobile credit services and others MNOs are exploring similar opportunities. As a result, the regulation of credit reference information and other lending activity is relevant to these entities.

The Bank of Tanzania (Credit Reference Databank) Regulations, 2012 (CRD Regulations) established the Credit Reference Databank (CRD) which receives, stores, processes and distributes credit information. All “reporting institutions” (which includes banks, among others) are required to report credit information on all new and existing credit facilities to the CRD and to update these monthly and are also granted access to credit information in the CRD. Credit reference bureaus, which specialize in the collection and sale of credit information, are also granted access to the CRD under the CRD Regulations. There are currently two credit reference bureaus in Tanzania licensed by the BOT under the Bank of Tanzania (Credit Reference Bureau) Regulations, 2012. Multiple market participants report that as of January 2016 neither one is fully functional.

2.4 Factors shaping the development of mobile financial services

In this subsection we identify and examine 11 country-specific factors or categories of factors that have influenced the development of mobile financial services in Tanzania. We note the need to distinguish factors which underpin the spread of MMT (broadening mobile money) from those relating to the evolution of mobile financial services (deepening mobile money) where progress has been much slower in Tanzania.

2.4.1 Government policy

The development of mobile financial services has been at the centre of the Government’s financial inclusion policy. In 2013, the National Financial Inclusion Framework (2014-2016) highlighted the positive impact that financial services can have on economic growth and poverty reduction, particularly by providing access to financial services to the poor. It targeted access to formal financial services for 50 percent of Tanzanian adults by 2016.

The Framework is important in prioritizing the role of mobile financial services in financial inclusion. It aimed to establish a broad and robust infrastructure to support growth of appropriate financial services with the use of technologically driven delivery channels. The approach leverages the development of mobile telephony technology.

2.4.2 Flexible regulatory framework

As discussed in detail in Section 2.3, the rapid development of mobile money in Tanzania by MNOs was facilitated by a flexible regulatory framework, led by the ‘test and learn’ approach of the BOT. In order to enter the market, MNOs were required to engage a local bank, whose role was limited to holding underlying trust accounts. The bank was required to apply for and receive a “letter of no objection” from the BOT before the MNO could offer MMT services. This regulatory framework is now in the process of a major overhaul.

2.4.3 Competitive market for mobile telecom services

One of the most distinctive features of mobile financial services in Tanzania is the competitive mobile services market in which the three main MNOs have similar subscriber numbers. While Vodacom is the largest in terms of subscribers and revenue and the first mover in terms of MMT services, it does not have a market share in mobile telecom services greater than 50%.

Rather than Vodacom generating a strong leading position in MMT services which would then reinforce its position in mobile telecom services (as in some countries, such as Kenya), in Tanzania, the market outcomes have been influenced by the intensity of competition between the three MNOs (as analysed in more detail in Section 3). While a fourth smaller participant, Zantel, was acquired by MIC (the owner of Tigo), there has also been a new and vigorous entrant in mobile telecom services in the form of Halotel (Viettel) which has invested in network infrastructure across rural Tanzania.

Recent studies support the conclusion that competition in mobile financial services is inextricably linked to competition among MNOs for mobile telecom services. Evans and Pirchio⁸⁶ considered whether mobile money schemes established by MNOs naturally tend to monopolies as a result of scale economies, network effects, and positive feedback results. They found that this was not the case, but rather the evolution of the mobile money business tends to track the evolution of the mobile telecom business. When there is a dominant MNO, as in Kenya, that MNO establishes a dominant mobile financial services business, which may strengthen the unilateral position in the mobile telecom services market. When there are several competing MNOs, such as in Tanzania, each of them is able to establish a competing and viable mobile financial services business.

2.4.4 Lack of strong opposition from banks

Unlike in other countries, in Tanzania there was little resistance from the banking sector to the introduction of MMT services by the MNOs. Banks have recognized the complementary nature of their relationship with these services. In particular, bank account holders are able to transfer funds to wallets to proceed to convenient agent cash out, without the need for banks to invest in expensive branches or ATM networks.

However, while there has been no concerted opposition to the rapid expansion of MMT services, banks do recognize that they are in direct competition with MNOs for some services. These include bill pay, money transfer and, with the advent of trust account interest distributions by MNOs, savings (discussed in Section 2.4.9).

2.4.5 Use of USSD

In Tanzania, MNOs provide access to mobile financial services through the Unstructured Supplementary Service Data (USSD) channel. USSD is a technological channel controlled by the MNOs and access is available to any subscriber with a 2G device. Subscribers input a code (usually a '*' followed by a three- or four-digit number and terminating with a '#') to access a session-based text menu. Use of USSD by MNOs is in contrast to the practice in neighbouring Kenya, where MNOs utilize SIM Toolkit (STK) technology. STK-based interfaces have a set of commands stored on the user's SIM card. To access the STK menu, the customer accesses the SIM application menu embedded on the device.

When Vodacom launched M-Pesa in Tanzania it chose to use USSD over STK (which was already in use in Safaricom's M-Pesa in Kenya) because most devices in Tanzania lacked

⁸⁶ Evans, D. and A. Pirchio (2015) 'An Empirical Examination of Why Mobile Money Schemes Ignite in Some Developing Countries but Flounder in Most,' Coase-Sandor Institute for Law and Economics Working Paper no 723 at 28.

64K SIM cards (only 32K were available) which were necessary to offer the mobile money service.⁸⁷ Upgrading the SIM cards was prohibitively expensive. In addition, keeping SIMs updated with the most recent menus presented difficulties that could be avoided by utilizing USSD.

One exception to the exclusive use of USSD was the original launch of Airtel Money on STK.⁸⁸ The service was subsequently re-released on USSD at the end of 2012 and its initial lack of success is attributed by some to consumers' lack of familiarity with the STK channel.⁸⁹

Third-party mobile financial services that require access to USSD, such as banks offering mobile banking, did not report any issues with access prices for USSD charged by MNOs. Vodacom typically charges subscribers for USSD sessions for mobile banking.⁹⁰ Airtel and Tigo do not charge customers or banks for USSD sessions for mobile banking.⁹¹

2.4.6 Public education campaign

After the launch of M-Pesa, Vodacom initiated an extensive public awareness campaign throughout Tanzania to educate the public on the use of its M-Pesa service. This campaign was funded in part by a USD 5 million grant from the Bill & Melinda Gates Foundation.⁹² Later entrants were able to piggy-back off this campaign as, once consumers understood mobile money conceptually, they only needed to learn to input different USSD codes on other MNO networks. This reduced the investment required by later entrants to launch competing services and helped to mitigate Vodacom's first mover advantage.

2.4.7 Absence of agent exclusivity and rapid agent network growth

The establishment of extensive agent networks was critical to the uptake of mobile financial services. In Tanzania agents are typically not stand-alone agents, but rather have retail businesses that are supplemented by income from agent activity. The establishment of proper agent incentives, including compensation and support, was critical to expanding agent networks, which was a precursor to subscriber use. For example, Tigo credits the success of Tigo Pesa in part to its ability to manage its agent network, including ensuring there are sufficient commissions for agents while keeping agent territories manageable and paying a premium on commissions over competitors.⁹³ In addition, the practice started by Tigo of passing on the interest earned on funds in the trust accounts at commercial banks (see Section 2.4.9) benefitted agents on whose behalf a substantial proportion of funds are held.

⁸⁷ Meeting with Vodacom, 20 January 2016.

⁸⁸ Meeting with Jumo, 21 January 2016.

⁸⁹ Meeting with Jumo, 21 January 2016.

⁹⁰ Meeting with CBA, 19 January 2016.

⁹¹ Meetings with Airtel, 21 January 2016 and Tigo, 19 January 2016.

⁹² Meeting with Vodacom, 20 January 2016.

⁹³ Meeting with Tigo, 19 January 2016.

In Tanzania, MNOs were never allowed to impose exclusivity on agents due to a prohibition issued in a 2010 BOT circular.⁹⁴ As a result, Tigo, Airtel and Zantel were able to capitalize on an initial major investment in agent networks made by M-Pesa. For example, Tigo acknowledges that the lack of exclusivity allowed it to save on educating potential agents. As many were already agents of M-Pesa, the learning curve to become Tigo Pesa agents was significantly reduced.⁹⁵ Although Tigo was the last MNO entrant into MMT, the lack of restrictions on agent recruitment allowed it to grow quickly into the number two position.

The expansion of agent networks was also facilitated by third-party agent aggregators. For example, starting in around 2011, M-Pesa began engaging agent aggregators to recruit, vet, train and provide ongoing support to agents.⁹⁶ In return these agent aggregators receive a share of the agents' commissions (initially 20% which was later reduced to 10%).⁹⁷

2.4.8 Interoperability

All four MMT services have achieved bilateral account interoperability. This achievement was a direct result of a multilateral negotiation initiated in 2013 which was facilitated by International Finance Corporation, supported by the Bill & Melinda Gates Foundation and Financial Sector Deepening Trust of Tanzania, and endorsed (though not mandated) by the BOT. All four MNOs offering MMT services participated in the process as well as the two largest banks, CRDB and NMB. The banks largely played an advisory role offering the benefit of their experience with inter-bank transfers. The process focused on defining the broad technical and commercial parameters of account interoperability that would permit subscribers to transfer money between services for the same price as an "on-net" transfer.

While these broad parameters were agreed in principle, the MNOs had to subsequently negotiate the specific bilateral commercial terms of these transfers. For example, as a result of a transfer between services by a subscriber, the "transferring" MNO would likely forego and the "receiving" MNO would now likely receive the benefit of a cash-out charge on the transferred amount. Because the MNOs agreed that the subscriber could not be charged an increased or "off-net" transfer fee, some form of compensation from the receiving MNO to the transferring MNO would need to be negotiated.

In August 2014, Airtel Money and Tigo Pesa were the first to negotiate and implement account interoperability. EzyPesa subsequently became interoperable with these two services and in February 2016 M-Pesa followed.⁹⁸

2.4.9 Interest payments

Beginning in September 2014, Tigo Pesa became the first mobile money service to distribute interest payments that had accrued on trust accounts directly to the accounts of its individuals

⁹⁴ Meeting with the BOT, 21 January 2016. Although requested, BOT was unable to locate a copy of this circular.

⁹⁵ Meeting with Tigo, 19 January 2016.

⁹⁶ Meeting with Vodacom, 20 January 2016.

⁹⁷ Meeting with Vodacom, 20 January 2016.

⁹⁸ http://www.mobileworldlive.com/money/news-money/tanzania-in-mobile-money-first-for-africa/?utm_campaign=MWL-M-20160218&utm_medium=email&utm_source=Eloqua

and agents. These distributions were not strictly required by the BOT (see discussion in Section 2.3.3). In 2015, M-Pesa and Airtel Money also began distributing interest to its account holders.

It is important to understand that the interest distributions paid by MNOs do not reflect interest accrued directly on mobile wallet accounts, as those are not deposit accounts under Tanzania's banking regulations. Rather, these distributions reflect interest accrued by MNOs on their underlying trust accounts held through banks, which are then passed on to mobile wallet account holders in proportion to the balances in their wallets.

Because the underlying trust accounts are so large, and the balances tend to remain relatively stable each month, MNOs are able to negotiate very favourable interest rates with the banks. According to Tigo, the effective annual interest rate on its mobile wallet accounts is 10%, which it compares to a typical retail savings account rate of 2% before accounting for bank charges and high minimum balance requirements.⁹⁹

Although Tigo has not seen a step change in account balances since it began making interest distributions, it has noticed a gradual increase in these balances.¹⁰⁰ Also, while most individual wallet accounts have low maximum balance limits in their wallet accounts (TZS5 million, in the case of Tigo Pesa), agents are allowed higher maximum balance limits (TZS50 million, in the case of Tigo Pesa).¹⁰¹ Tigo has noticed that some subscribers have begun applying for agent licenses for the sole purpose of accessing the higher balance limits to use mobile wallets as a *de facto* savings account.¹⁰²

Banks have begun to feel competitive pressure from these interest-paying wallet accounts. NMB acknowledged that it has noticed balances moving from savings accounts to mobile wallet accounts.¹⁰³ NMB confirmed that its retail savings accounts typically pay between 2-3% in annual interest which cannot compete with the payments made by MNOs.¹⁰⁴

Banks have also identified a deeper threat to their business than a loss of deposits accounts. Balances in wallet accounts are ultimately held in trust accounts which are part of the banking system. In theory, there should be no net loss of aggregate deposits across the banking system. However, from the point of view of the banks, deposits from small, traditional savings with low interest rates are effectively being replaced by large balances in trust accounts with high interest rates. Banks are therefore losing the benefit of a large pool of low-interest funds available for intermediation. This may require banks to either drastically reduce their expenses or increase the rates at which they offer credit.

⁹⁹ Meeting with Tigo, 19 January 2016.

¹⁰⁰ Meeting with Tigo, 19 January 2016.

¹⁰¹ Meeting with Tigo, 19 January 2016.

¹⁰² Meeting with Tigo, 19 January 2016.

¹⁰³ Meeting with NMB, 21 January 2016.

¹⁰⁴ Meeting with NMB, 21 January 2016.

2.4.10 The role of business aggregators

Business aggregators (as opposed to “agent aggregators” which facilitate agent network growth and support for MNOs) are active in Tanzania. These aggregators serve as a bridge between the MNOs and third parties who, most commonly want access to USSD on the MNO network (for example, banks who want to offer mobile banking) or require access to the mobile money platform itself to offer value added services (for example, utilities that want to offer bill pay from wallets, employers that want to make salary distributions directly into wallets). These aggregators are paid by the third parties, not the MNOs and typically negotiate rates and provide technical support to allow integration with mobile money platforms. Vodacom stressed the value of these aggregators in eliminating the need for it to manage relationships and technical requirements with third parties.¹⁰⁵ The incentive of the aggregators is also clearly in developing the product offering, while the two parties on either side each have an interest in a larger share of the returns for themselves and in preventing any possible cannibalization of existing products. The aggregators can therefore be viewed as more neutral intermediaries in determining the appropriate pricing and service offering. It is also notable that an aggregator was involved in trial of interoperability between Airtel Money and Tigo Pesa.

2.4.11 Factors inhibiting the expansion of mobile credit

Stakeholders nearly uniformly cited two obstacles to the expansion of mobile credit services.

The first obstacle is the absence of a national identification to provide a uniform means of verifying the identity loan applicants. The inability to verify identity prevents mobile credit providers from screening out repeat borrowers who have defaulted on loans and then open a new account under a different mobile number.

The second obstacle is the absence of an effective means of sharing credit reference information. Tanzania’s credit reference regulation is in its infancy. Its fledgling credit bureaus are not yet fully functional and not all banks are reporting credit reference information, as required under the BOT’s regulations. For example, CBA reports that in making credit decisions for traditional loans it often relies on *ad hoc* and informal communications with a handful of competitor banks to check account histories of loan applicants.¹⁰⁶ Such procedures are not practical in mobile credit. This means that mobile credit providers are unable to access available credit histories of customers, which could supplement their analysis of transactional data.

These are obstacles that are not limited to the mobile space, impacting traditional lending in Tanzania as well. However, a functioning national ID system combined with the ability to access borrower’s credit history could permit mobile credit providers to take bigger risks, increasing loan sizes and loan terms.¹⁰⁷

3 Competition assessment

¹⁰⁵ Meeting with Vodacom, 20 January 2016.

¹⁰⁶ Meeting with CBA, 19 January 2016.

In this section we assess competition in the Tanzanian markets for mobile financial service. We begin by assessing the market structure and concentration at different levels, along with the commercial arrangements in place including connectivity and exclusivity. We next consider the prices and charges. We then analyse competition issues in more detail, taking into account network effects, the interactions among MNOs, banks and other lenders and business aggregators, and the balance between incentivizing investment and maintaining openness to smaller rivals and entrants.

It is important to bear in mind that the types of competition issues that arise depend on the stage of evolution of the markets. This is particularly important in the difference between competition *among* MNOs (including with banks as partners) and competition *between* MNOs and banks.

At first, mobile money enables the unbanked to make transfers. As acceptance grows, those with bank accounts start to use it as well, including because there are many unbanked people with whom they can now make transfers. Issues may arise where banking services and MMT services are viewed as actual or potential substitutes and not just complements.

In functionality, a mobile wallet is similar to a deposit account for the holder who is simply looking for transactional services. Daily, weekly or monthly income is held in the wallet/account and drawn down for spending.

Now that the three main MNOs are distributing trust account interest to wallet account holders (see Section 2.4.9), these account holders may be incentivized to move money from deposit accounts (with lower effective interest rates) into their wallet (subject to the maximum cap allowed). Individuals considering opening a bank account may reconsider given the functionality of their mobile wallet.

At the same time, banks have started to provide the means for their services to be used through mobile channels. For example, a person-to-person transfer between two banked people through the banking system can be transacted through a mobile interface enabled by USSD. Making banking more convenient and mobile reduces the attraction of using MMT for such a service.

Increasing the ease and lowering the cost of bank-to-wallet and wallet-to-bank transfers can make both systems more attractive while simultaneously increased the overlap between them. Similarly, in merchant payments and bill payments, there are complementarities and aspects of actual or potential competition.

Competition has important dynamic aspects. Vigorous competition between MNOs will likely increase the the willingness of the MNOs to make platforms interoperable with each other, and open up the platforms to many third parties (as opposed to exclusive arrangements). The economics of this are complex. We discuss the efficiency rationales for exclusive arrangements and the effects on competition in Section 3.4.1.

3.1 Market shares and concentration at different market levels

3.1.1 Mobile money transfer

In terms of subscriber numbers, both mobile telecom services and MMT services appear to effectively be triopolies (see Table 2). However, estimates of market shares in terms of

revenues indicate that Airtel lags behind, especially in mobile money transfer revenues. In effect, the mobile money transfer market is a duopoly with rivalry between Vodacom and Tigo driving the pricing and offerings in this market.

Table 2:. MNOs market shares in voice and mobile money subscribers

	Vodacom	Tigo	Airtel	Zantel
Voice subscriber shares^a	35%	30%	30%	4%
Voice revenue shares (estimate)^b	40%	32%	24-26%	2-4%
Mobile money subscriber shares^a	38%	33%	27%	2%
MMT revenue shares (estimate)^c	50%	40%	10%	

Sources: ^a TCRA Quarterly Communications Statistics Report, July-September 2015; ^b Interviews with Tigo and Vodacom, 19 and 20 January 2016, respectively.

Overcoming the first-mover advantages

In the absence of interoperability in MMT accounts, there are substantial first-mover advantages, as is observed in the estimated revenue share for Vodacom. Vodacom only implemented interoperability in early 2016, after the completion of the fieldwork for this paper.

However, despite this advantage, Tigo has built a mobile money market share which is estimated to exceed its mobile telecom services market share in terms of both subscribers and revenue. Tigo Pesa got traction and critical mass in 2012 with around 1 million subscribers. Currently, Tigo Pesa has just under 5 million subscribers (60-day active).¹⁰⁸ Tigo's success reflects innovative strategies adopted by Tigo to attract subscribers to use its MMT services.

The ability of Tigo to substantially catch-up with Vodacom, and largely overcome its first-mover advantage, appears to be due to a number of factors. First, as a latecomer (the fourth to introduce MMT services after Vodacom, Airtel and Zantel), Tigo could benefit from customer acceptance and familiarity with MMT services. Tigo was able to learn from what has worked, including from the mistakes of the Airtel and Zantel. For example, Airtel initially opted for using STK, rather than USSD, which critics say hindered adoption of Airtel Money.¹⁰⁹ Second, Tigo adopted an agent-oriented approach which was enhanced by a prohibition on agent exclusivity. Agents were motivated to push Tigo's services which drove subscriber enrolment, as the agents are typically important retailers who people in a given town or village would be visiting in any case in order to make purchases. Third, Tigo also effectively used third-party agent and business aggregators to rapidly acquire a critical mass of agents and partners such as banks and utilities for bill-pay signed up. Finally, Tigo differentiated itself by becoming the first to distribute interest accrued on underlying trust accounts to MMT subscribers and agents and (along with Airtel) the first to enter into bilateral account-to-account interoperability with another MNO.

Geographic differentiation

¹⁰⁸ Meeting with Tigo, 19 January 2016.

¹⁰⁹ Meeting with Jumo, 21 January 2016.

In geographic terms, while all MNOs are present in Dar es Salaam, they have different areas of network reach in the remainder of the country. Vodacom has the widest geographic reach across rural areas. Tigo's network is strongest along the coastal belt. Airtel is focused around Lake Victoria, and Zantel's base is in Zanzibar and the other islands.¹¹⁰ The absence of roaming agreements means that network coverage is important and provides each MNO with a core customer base in addition to Dar es Salaam. Further investments in network coverage are eroding these disparities to an extent. For example, Tigo indicated they are growing in the Mwanza lake region where Vodacom is the key player.¹¹¹ The growing practice of sharing towers is also reducing infrastructure investment costs.¹¹² The increased importance of MMT services is apparently also stimulating investments in network coverage.

Agent network growth

As is widely recognized (Evans and Pirchio, 2015; Sitbon, 2015), an extensive agent network is imperative for the growth of mobile money. While Vodacom was the market leader in setting up its agent network, its first-mover advantage was significantly curtailed due the BOT's 2010 prohibition on the exclusivity of agents.¹¹³ Tigo acknowledged the value to them, as a follower, in in this prohibition which allowed them target existing agents (often established retailers) of the other MNOs. The learning curve for agents was shorter and Tigo also benefited from the advertising public education campaigns unrolled by the other MNOs, especially Vodacom.

Most agents operate as such for two or more MNOs. The typical agent also operates another business such as retailing which is the agent's primary source of income. According to Vodacom, it had around 85,000 active mobile money agents in early 2016.¹¹⁴ Tigo indicated that it had 50,000 agents. This compares with only around 500-600 bank ATMs in the country.¹¹⁵ Further, in terms of regulatory hurdles, it is easier to set up mobile agent networks than banking agent networks (which are subject to the BOT's vetting requirements) and banking agents are unable to open customer accounts.¹¹⁶

The three main MNOs all recognize the central role that agents played in the development of their mobile money offering. Vodacom's business model was based on providing good commissions to their agents. Vodacom's strategy of integrating banks into their system also

¹¹⁰ Meeting with Martin Warioba, 18 January 2016.

¹¹¹ Meeting with Tigo, 19 January 2016

¹¹² Meeting with Vodacom, 20 January 2016

¹¹³ Meeting with the BOT, 21 January 2016. Although requested, the BOT was unable to locate a copy of this circular.

¹¹⁴ Meeting with Vodacom, 20 January 2016.

¹¹⁵ Meeting with Airtel, 21 January 2016

¹¹⁶ meeting with CRDB, 19 January 2016/

built customer confidence in their agent systems. They were able to convince the banks as to the benefits of the agent network., serving as a substitute for an expensive ATM network.¹¹⁷

Tigo similarly attributes their competitive position to incentivizing their agent network. Tigo has employed a strategy of breaking the agent network into manageable territories, incentivizing super-agents in these territories, paying higher premiums to agents than competitors and better planning of the growth of agents in an area to protect commission for agents. The passing on of interest on trust accounts also provides a reward to agents who typically hold large balances in their agent accounts.¹¹⁸

3.1.2 Wallet-to-bank and bank-to-wallet connectivity

As discussed in Section 2.2.2, banks, through direct bilateral arrangements and arrangements with third-party business aggregators, have widespread connectivity with mobile wallets. This appears to reflect early adoption of mobile banking on the part of the major banks, NMB in particular, and the strategy of Vodacom to promote MMT as a complementary service to banking. Indeed, in 2009, NMB became the first bank in Tanzania to offer mobile banking services in Tanzania which were delivered through a USSD channel and allowed basic functionality.¹¹⁹

By enabling transfers from mobile wallet to bank account and vice versa, the banks are able to benefit from the extensive cash-in/cash-out agent network of the MMT service providers. In this way, mobile money has led agent-based banking solutions. For example, where MMT transfers are from an income-earner in a city or town to an extended family member, then there is a high probability that the sender will have a bank account. However, the receiver may well not have a bank account and will keep the money in their wallet or cash out at a mobile money agent.

Vodacom's strategy to partner with the main banks early on to enable transfers between M-Pesa and bank accounts (through mobile banking) added to the attraction of M-Pesa. Almost from the beginning Vodacom linked with the two largest banks, CRDB and NMB. The connectivity from bank account to wallet grew the overall number of users of MMT. Vodacom earns revenues from the USSD sessions that are required for mobile banking themselves and from the cash-out, in particular.

The substantial charges for bank-to-wallet transfers are charged to the account holder by the bank. As is typical, there is no charge for money to come into a wallet or into a bank account. The charges are levied when the money is transferred out, or in the case of wallets, used for a further transfer, payment and/or cashed-out. Charges are set out in Section 3.2 below.

As the number of people with a bank account increases, so does the ability of bank account holders to make transfers via the payments system. However, the ability to use the money transferred depends on the bank branches and agents. The alternative is to transfer into the mobile wallet and then do the cash-out (through an agent) or the bill-pay or further transfer from there. A comparison of charges is not straightforward as they change with different

¹¹⁷ Meeting with Vodacom, 20 January 2016.

¹¹⁸ Meeting with Airtel, 21 January 2016

¹¹⁹ Meeting with NMB, 21 January 2016.

thresholds. For a relatively sizable amount of around US\$100, moving the funds from a bank account to a wallet will cost around 0.5%, a mobile money transfer another 0.3%, and then a further 2% for the person cashing out. This is more expensive compared to bank charges in the case of both parties being banked and not having to make the transfer into a mobile wallet, plus the ATM withdrawal fee (of just around 0.25%).

3.1.3 Bill payment services

Bill payment services from mobile wallets have developed due to the convenience they afford the account holder. These services remove the need to cash out, but they also eliminate waiting in long lines to pay utility and other bills. As discussed in Section 2.2.2, business aggregators have played a major role here and work with all the major MNOs to facilitate the payments. In principle, this represents an alternative to using the banking system. Selcom, a business aggregator, has been particularly aggressive in establishing bill-pay services. Selcom estimates it has a 75-80% market share in bill payments.¹²⁰

3.1.4 Merchant payments

As discussed in Section 2.2.4, merchant payment services are relatively undeveloped in Tanzania. A key challenge has been the disincentives that agents who are also retailers face as the merchant payment means they forego the cash out charge and potentially incur a charge. Vodacom's Lipa Kwa M-Pesa was 18-months old at the time the fieldwork while others are still developing their services and trying different approaches.

3.1.5 Mobile savings and credit

From its launch in May 2014, M-Pawa, Vodacom and CBA's mobile savings and credit product, rapidly became well-established. It has an estimated 3.5 million users as of January 2016, of which around 500,000 have taken out loans. Most are thus using the facility for savings.

Airtel automatically opens an Airtel Money account for each mobile subscriber which allows them to access Timiza after three months. However, ongoing active usage of this is relatively low. While around one million subscribers have taken out loans, the large number of defaults on initial loans (approximately 30-40%)¹²¹ means a much smaller number are ongoing Timiza clients. These data suggest that, in terms of credit, M-Pawa and Timiza are of similar size.

As described in Section 2.2.5, only in 2016 has Tigo announced the launch of its own credit product. It is notable that this does not appear to have significantly held back its mobile money offering.

It is notable that banks are also looking to develop mobile credit offerings as part of branchless banking which places them in head to head competition with the MNO's offerings, while requiring USSD from the MNOs in order to reach their clients.

¹²⁰ Meeting with Selcom, 20 January 2016

¹²¹ Meeting with Jumo, 21 January 2016

The mobile money participants see expansion of the market as the main challenge to these new offerings. In terms of competition, these products are also alternatives to other non-mobile microcredit offerings beyond the scope of this paper.

Currently, MNOs have been entering into partnerships with lenders whereby they exchange customer transactional information which can be used for credit scoring for a revenue share from lending revenues. An alternative trajectory is for the MNO's to open their platform to whichever lenders wish to place products on it and have a revenue sharing arrangement as partners. This appear to be the strategy of Vodacom. Once the exclusivity agreement with CBA expires in 2016 it plans to open up its platform to other banks, ensuring the banks compete with each other to offer the most favourable terms (to the customers as well as presumably to Vodacom).¹²² The lenders have alternatives in the form of Tigo and Airtel although neither has yet developed a banking product, instead working with the unregulated lender Jumo.

There are a number of important questions from a competition perspective surrounding the relationships between MNOs and banks and other lenders. These are discussed in Section 3.4.

3.2 Prices

3.2.1 Mobile telecom services

Of the three major MNOs (that is, Vodacom, Tigo and Airtel), Vodacom has the lowest calling tariffs, followed by Tigo (see Table 3). In line with having the largest network coverage and subscribers, Vodacom has the smallest share of off-net traffic and the highest share of on-net calls. Off-net prices are higher than on-net prices for all operators, with Tigo having by far the largest differential. A time series would be required rather than a single snapshot to analyse the nature and intensity of competition. The higher prices of Airtel and Tigo may reflect their ability to retain subscribers due to the regional focus of their network and other value-added offerings.

Table 3: Prices and traffic as of September 2015 (TZS, except where noted)

	Vodacom	Tigo	Airtel	Zantel
On-Net prices	270	302	360	232
Off-Net Prices	330	480	456	238
On-Net local Traffic (%)	37%	32%	27%	4%
Off-Net local Traffic (%)	19%	30%	48%	3%

Source: TCRA Quarterly Communications Statistics Report, July-September 2015 Quarter

The TCRA sets maximum call termination rates (interconnection rates) (see Table 4). The companies are free to negotiate new interconnection agreements and file with the regulator.

¹²² Meeting with Vodacom, 20 January 2016.

**Table 4: Interconnection Rates (maximum) as determined by the TCRA
(TZS/minute)**

	1 Mar 2013	1 Jan 2014	1 Jan 2015	1 Jan 2016	1 Jan 2017
Voice call termination rates	34.92	32.40	30.58	28.57	26.96

Source: TCRA, www.tcra.go.tz

3.2.2 MMT charges

There are several categories of charges related to mobile money:

- Cash-out charges
- Wallet-to-bank and bank-to-wallet charges
- MMT transfer charges
- USSD charges which apply to mobile banking
- Mobile credit charges

Some of these charges may be alternatives such as whether funds for making a mobile money transfer are in the form of cash or come from a bank account. However, it is important to remember that in the case of the bank account the funds would still originally have been deposited in a branch or from a salary.

The basic money market transfers typically involve a transfer and a cash-out charge (there are no charges for cash-in). Of these the larger charge is the cash-out charge (see Table 5).

Table 5: Vodacom and Tigo Mobile Money Transfer Tariffs

Vodacom			Tigo			Airtel		
Transaction range	Transfer to M-Pesa user	Withdraw (Cash-out)	Transaction range	Transfer to Tigo user	Withdraw (Cash-out)	Transaction range	Transfer to Airtel user	Withdraw (Cash-out)
100 - 999	10	N/A	200 - 999	10	N/A	100-999	10	N/A
1,000 – 2,999	30	500	1,000 – 1,999	25	350	1,000 – 2,999	25	450
			2,000 – 2,999	35	350			
3,000 – 4,999	60	600	3,000 – 3,999	50	600	3,000-3,999	45	470
			4,000 – 4,999	75	600	4,000-4,999	45	550
5,000 – 9,999	120	800	5,000 – 9,999	120	800	5,000-6,999	90	700
						7,000-7,999	90	700
						8,000-9,999	90	700
10,000–19,999	300	1,200	10,000–19,999	300	1,250	10,000-19,999	240	1,100
20,000–39,999	350	1,500		350	1,500	20,000-29,999	280	1,300
						30,000-39,999	300	1,400
40,000–49,999	350	1,800		400	2,250	40,000–49,999	300	1,650
50,000–99,999	600	2,200		600	2,250		450	1,900
100,000–199,999	650	2,600		650	2,750		490	2,300
200,000–299,999	850	4,200		850	4,200		650	3,400
300,000–399,999	1,200	5,500		1,200	5,500		900	4,400
400,000-499,999	1,400	6,500		1,400	6,000		1,050	5,400
500,000–599,999	1,850	7,000		1,850	6,500		1,400	5,700
600,000–699,999	2,000	7,000		2,250	6,500		1,500	6,100
700,000–799,999	2,000	7,200		2,250	7,000		1,500	6,200
800,000–899,999	2,250	7,400		2,250	7,500		1,700	6,500
900,000 – 1,000,000	2,500	7,500		3,000	7,500		1,875	6,600
1,000,001 – 3,000,000	5,000	8,000		5,000	7,500		3,750	6,900

Source: Vodacom, Tigo, Airtel websites, last accessed 12 April 2016

Cash-out charges

MNOs typically do not charge customers for cash-in, i.e., converting cash to mobile money, even though agents receive a commission from the MNO. However, customers are charged for cash-out. Cash-out charges are approximately 5% of the transaction amount for the average transaction which is TZS30,000 (US\$15), and slightly lower on Airtel (see Table 5).

Of this charge we understand that around half is commission for the agent, and half is retained by the MNO (according to Tigo).¹²³

The cash-out charges are proportionately much larger for small amounts. For example, to cash out TZS2,000 costs TZS500 (25%) on Vodacom or TZS350 (17.5%) on Tigo, and TZS450 on Airtel. Higher amounts cost proportionately somewhat less, with a TZS250,000 (US\$125) costing TZS4,200 (1.7%) on Vodacom and Tigo, and TZS3,400 (1.4%) on Airtel.

Wallet-to-bank and bank-to-wallet

Bank-to-wallet charges are assessed by banks for transfers to wallets. We understand these are typically around TZS1,000 for a TZS200,000 transfer (or 0.5%). There is no charge from the MNO for transfers into wallets.

Wallet-to-bank charges can be viewed as similar to a person-to-person transfer fee, although appears to be higher than these charges. Airtel indicated that wallet-to-bank charges are less than its cash-out charges.¹²⁴ Tigo charges around 1% of the value on average (the charge is less than 1% for larger values, higher for smaller ones). For example, for a TZS200,000 transfer the customer is charged TZS1,500 (that is, 0.75%). For smaller amounts up to TZS7,000, the charge is TZS300 (that is, $\geq 4.3\%$). Generally, wallet-to-bank transfers involve higher values.

3.2.3 MMT transfer charges

MMT charges for the average transfer of TZS30,000 are TZS350 (1.2%) on both Vodacom and Tigo, and TZS280 (0.9%) on Airtel (see Table 5). These charges decline in proportionate terms for larger transactions, with TZS250,000 costing TZS850 (0.3%) on Vodacom and Tigo, and TZS650 on Airtel.

If the transfer is to someone on another network (or not registered for mobile money) then Vodacom charges both the transfer and withdrawal (cash-out) fee just for the transfer. However, now that the MNOs are all interoperable for MMT transfers across service, all such “off-net transfers” are priced the same as “on-net” transfers.

3.2.4 Mobile banking charges

Mobile banking is undertaken using the USSD channel. USSD codes are provided to mobile banking services directly from the TCRA. This is in contrast to the practice in Kenya where codes are assigned by the telecommunications regulator to MNOs who then make a secondary assignment to the bank.

Airtel and Tigo do not charge customers or banks for USSD sessions for mobile banking.¹²⁵

3.2.5 Mobile credit charges

For Vodacom’s M-Pawa service, CBA charges a 9% facility fee on disbursement of the loan. If the loan is not repaid within thirty days, it rolls over for a second thirty days and CBA charges

¹²³ Meeting with Tigo, 19 January 2016.

¹²⁴ Meeting with Airtel, 21 January 2016.

¹²⁵ Meetings with Airtel, 21 January 2016 and Tigo, 19 January 2016.

a second 9%. CBA charges no other fees or interest, making the maximum effective interest rate 9% per month for two months.

For Airtel's Timiza service, loans are subject to a 10% initiation fee and a pre-paid interest rate of 0.5% per day. However, the fee and rate may be slightly reduced for subscribers with a prior history with Timiza. Interest accrues for the entire loan term, regardless of whether the loan is repaid early. However, if the loan is not repaid at the end of the term, a single 10% penalty is assessed but interest does not continue to accrue after the loan term. There are no additional charges.

The pricing of Tigo's new Tigo Nivushe service is not available. It is not clear that this service has been rolled out at the time of writing.

3.3 Competition issues in MMT services

Despite the duopolistic market structure, MMT appears to be quite competitive. This is largely due to the challenge that has been mounted by Tigo. Tigo's success is based on a number of factors which have been addressed in this paper. These include competitive nature of the mobile telecoms market and, the 'test and learn' regulatory approach adopted by the BOT, the prohibition on agent exclusivity and, more recently, the implementation of interoperability to facilitate competition. Other factors include the ability of Tigo to quickly roll-out agents, with substantial incentivisation of their agents through the commissions offered as well as more recently passing on the full interest on trust accounts.

Bill payments have also grown rapidly, apparently due to the competition between aggregators as value-added service providers. There is impressive innovation in looking for new solutions using mobile platforms.

However, the development of mobile financial services in the form of savings and credit has lagged somewhat. This does not appear due to competition considerations. The MNOs have linked up with banks and other lenders to make services available. The MNOs supply mobile and MMT transactional data on customers that the lenders are able to use to make credit evaluations. As discussed in Section 3.1.5, while Vodacom and CBA had an exclusivity arrangement that is set to expire this year, the MNOs seem to open to supplying transactional data to multiple lenders..

In the cases of each of M-Pawa and Timiza,¹²⁶ the credit record information is not shared with credit bureaus. Jumo (the MFI lender behind Timiza) has no regulatory obligation to share this information and CBA (the bank lender behind M-Pawa) is not complying with its obligation to do so. However, because the credit bureaus are still not fully functional, it is not clear that this reporting would make the information accessible in the short term. The inability of mobile credit providers to access the credit information of their competitors may provide a private competitive capability for each credit product.

¹²⁶ Information on Tigo Nivushe was not available at the time of writing. However, because the lender behind this product is reported to be Jumo, the same MFI behind Timiza, we presume that there is no credit information sharing.

3.3.1 *Agent networks and exclusivity arrangements*

Unlike in the Kenyan market, there have been no issues regarding agent exclusivity in Tanzania. In 2010, the BOT issued a circular prohibiting exclusivity of agents to any MNO.¹²⁷ This prevented Vodacom from enjoying first mover advantages in agent networks from launching its M-Pesa product first.

The promotion of MMT by Vodacom drove acceptance of the service, to the benefit of the followers.¹²⁸ Competition between MNOs has in turn driven incentivisation of agents.¹²⁹ MMT agents have proliferated in part because banks have recognized them as an alternative to ATM networks (which are expensive) or bank agents (which have higher regulatory hurdles).¹³⁰

3.3.2 *Interoperability*

By comparison with connectivity with third parties, as discussed in Section 2.4.8, the mobile money networks themselves did not become interoperable (on a bilateral basis) until August 2014 in the case of Airtel and Tigo (followed soon after by Zantel in December 2014), and February 2016 in the case of Vodacom. The achievement of interoperability brings about cost savings, convenience to customers and mobile services providers.¹³¹

The different speed with which interoperability was agreed and implemented by the MNOs has been ascribed to differing technical requirements. However, some stakeholders have attributed Vodacom's slow adoption of interoperability to a lack of financial incentives. As Vodacom has the largest agent network and subscriber, interoperability may undermine the attraction this network provides to customers.¹³²

Interoperability was promoted through 'soft regulation' in the form of the BOT's endorsement of the multilateral negotiations initiated in 2013 among the MNOs. As described in Section 2.4.8, the negotiations were facilitated by International Finance Corporation, supported by the Bill & Melinda Gates Foundation and Financial Sector Deepening Trust of Tanzania, and endorsed (though not mandated) by the BOT.

Tigo was the leader in initiating interoperability with Airtel. A trial phase was first organized through an aggregator, Selcom, to prove that interoperability was technically and commercially viable.¹³³ Since formal interoperability has been implemented between the two services, more money was sent from Airtel Money wallets to Tigo Pesa wallets than vice versa.¹³⁴ However,

¹²⁷ Meeting with the BOT, 21 January 2016. Although requested, the BOT was unable to locate a copy of this circular.

¹²⁸ Meeting with Tigo, 19 January 2016.

¹²⁹ Interviews with Tigo and Vodacom, 19 and 20 January 2016, respectively.

¹³⁰ Meeting with CRDB, 19 January 2016.

¹³¹ Mazer and Rowan (2016)

¹³² Meeting with Vodacom, 20 January 2016.

¹³³ Meeting with Tigo, 19 January 2016.

¹³⁴ Meeting with Tigo, 19 January 2016.

overall money flowing into to Airtel Money wallets has remained about the same.¹³⁵ According to Tigo, growth in mobile money revenue is mainly attributed to subscriber growth and interoperability is not yet perceived to have made a significant difference.¹³⁶ There is still a need for more consumer awareness on interoperability which Airtel has tried to develop through its radio campaign.¹³⁷

The potential benefits to competition arising from interoperability include:¹³⁸

- *Reduction in network effects that restrict consumers' freedom to switch.* Due to interoperability, the customers are therefore free to use quality services and on-net prices for money transfers without being forced to switch to MNO that is the largest.
- *Improved user experience.* With interoperability customers are able to enjoy on-net pricing for transfers and hence customers can easily send money to other networks.

3.4 Competition issues between MNOs and banks and other lenders

In Tanzania, the relationship between banks and the MNOs entails a mix of competition in some markets and complementarity in others. MNOs are in competition with banks for some services such as bill pay and offering interest on savings. In the provision of credit, the ability for MNOs to partner with banks or unregulated lenders means that competition is between traditional banks and MNO-lender partnerships.

Central to understanding competition and complementarity between banks and MNOs in mobile financial services is the recognition that these are two-sided platforms, as set out in the framework paper (see also Bourreau and Valletti, 2015; Aron 2015). There are network effects which mean that the attractiveness of the platform is associated with the number of members. Both mobile telecom services and banking services are existing platforms, however, the existing platforms of mobile telecom services subscribers are much bigger which is why MNO-led models have generally taken off while bank-led have not.

The bargaining power of the MNOs is also greater than that of banks as a result of the size of their subscriber base. However, competition between MNOs diminishes this power. Potential counterparties, including banks, can to some extent play off MNOs against each other.

To understand the issues of competition in banking and payments systems in Tanzania it is important to take into account static and dynamic effects. The static terms relate to the prices for the services being supplied. Here, the cost of loans provided by MNOs appear high on their face, however, these need to be compared to traditional microfinance loans and “informal” sources of credit and take into account the unsecured nature of the lending and the default rates. With regard to the latter, the information provided on Timiza loans indicates the default rate on the first time loans is extremely high.

The more important dimension is the dynamic one of the development of new services and extension of services to new consumer segments. In this regard, the development of banking

¹³⁵ Meeting with Airtel, 21 January 2016.

¹³⁶ Meeting with Tigo, 19 January 2016.

¹³⁷ Meeting with Airtel, 21 January 2016.

¹³⁸ Mazer and Rowan (2016).

services by MNOs has been slow to take off. While Vodacom essentially extended its partnership with CBA in Kenya to Tanzania to offer the M-Pawa product in May 2014 and Airtel followed with Timiza a few months later. Tigo only is beginning to offer a credit product in 2016.

The incentive to invest in a new product depends on being able to appropriate the returns from the innovation. If others can readily copy the product's innovation, then it weakens the incentives to invest in it. The development of the M-Pawa service was covered by an exclusivity provision between Vodacom and CBA which expires in 2016, meaning that the shared knowledge and capabilities developed could not be separately exploited by either party until the term of exclusivity ended. The Timiza and Tigo Nivushe loan products have both been developed with Jumo and do not appear subject to exclusivity.

3.4.1 Incentives in loan finance

The development of services in Tanzania illustrates that MNOs face potentially conflicting incentives in considering the terms on which they develop credit products. Having a range of offerings from which consumers can choose would make a platform more attractive to consumers. Ensuring that the providers of credit compete with each other in the 'shop window' of the platform also works to ensure the most competitive terms are offered to subscribers.

On the other hand, as discussed above, the development of the services involves investment, including in the algorithms and systems which underlie the product as well as in marketing. First-movers will be concerned that others can free-ride on their investment if they can readily launch services. Exclusivity thus protects the incentives to make the investment. Direct subsidies for development costs can also address the incentive problem, as appears to have been the case with Gates Foundation support for M-Pawa.

Where the MNO has built a platform (and, importantly has a proprietary information base on subscriber's MMT behaviour) it has an incentive to extract the best terms from financial institutions who wish to partner to provide credit to others. Competition between providers can work to provide the best revenue share for the MNO as well as providing the best terms for subscribers. However, contracting and appropriability problems may mean that getting credit providers to compete for the market will generate a better deal for the MNO.

In addition, where the MNO has substantial market power and is concerned that the banks and other lenders are likely to sponsor rivals, there is an incentive to keep a tight control over the development of the service, maintaining it 'in-house,' and reinforcing the market power of the MNO. This motivates working with a bank without a retail footprint or strong consumer credit offering, in essence, simply to be obtaining a banking license. The MNO further retains control over the information which is an essential competitive advantage in unsecured lending.

The expansion of mobile financial services has increased the importance of the telecommunications channels through which these services are delivered. It is therefore possible that an MNO could restrict access to the channels that financial institutions and other third parties depend on. This relates both to the terms of USSD provision, as well as the terms by which banking and financial services are developed as part of the mobile money offering. The pricing of the channel could raise potential competition concerns such as foreclosure of the market to providers (banks or non-financial institutions) competing in the same space as the MNOs, constituting a barrier to entry. It could also limit the scope for innovation by firms

with potentially high-value and high-demand products and services, who cannot use prevailing access channels to serve potential customers. Further, uptake of the service by the consumers may be hindered due to the high cost of the channel passed on to them.

In Tanzania, competition between the MNOs is driving the development of services. Vodacom has opted for a short period of exclusivity with CBA followed by the stated intention to open up mobile credit services to other providers who wish to offer services. Vodacom's strategy is to have banks competing for loans on their platform. Airtel and Tigo are both working with the Jumo to provide mobile credit services. This means Jumo can learn lessons from each about how best to attract and evaluate possible clients, to improve the offering which will make the Airtel and Tigo products more attractive relative to M-Pawa.

3.4.2 Information and regulatory challenges

A critical dimension in the expansion of credit is related to information enabling an evaluation to be made of risk. The MMT record of subscribers is a key source of information which can enable algorithms to be developed for the automated assessment of credit worthiness. This information is in the hands of the MNO.

As discussed in Section 2.4.11 there are two main obstacles to the expansion of mobile credit services. The first obstacle is the absence of a national identification to provide a uniform means of verifying the identity loan applicants. Without the ability to identify customers, those that have defaulted with one provider can register under a new mobile number and potentially obtain credit. Also, a national identification system would allow credit decisions to reliably take into account other available information on applicants beyond their mobile and mobile money transactional data. Such information might make credit decisions more reliable, reducing costs and/or allowing lenders to take bigger risks with larger loan amounts.

The second obstacle is the absence of an effective means of sharing credit reference information. Tanzania's credit reference regulation is in its infancy. Its fledgling credit bureaus are not yet fully functional and not all banks are reporting credit reference information, as required under the BOT's regulations. In particular, CBA has not reported any credit reference information relating to M-Pawa loans.¹³⁹ As an unregulated MFI, Jumo, which is the lender behind both Airtel's and Tigo's mobile credit services, currently has no regulatory obligation to report credit reference information.¹⁴⁰

The lack of identity verification and reliable credit reference information for customers means that institutions have to rely on 'trial and error' and only customers that have used M-Pawa loan¹⁴¹ or Timiza¹⁴² loan and repaid are deemed as credit worthy (Mazer and Rowan, 2016). As a record is built up with one provider then larger loans can be provided. However, because this positive history is not shared, there is a gap in being able to move to longer-term secured

¹³⁹ Meeting with the BOT, 21 January 2016.

¹⁴⁰ Meeting with Jumo, 21 January 2016.

¹⁴¹ Meeting with CBA, 19 January 2016.

¹⁴² Meeting with Jumo, 21 January 2016.

credit using the credit record built-up on M-Pawa or Timiza, effectively a 'road block' in deepening access to credit.

However, the closed information system can also incentivize a firm to provide additional products that support the different needs of consumers. For example, as a result of information collected from its M-Pawa customer base, CBA is now considering to offer products for corporate clients to make payments through M-Pawa.¹⁴³

3.5 Competition with business aggregators

Business aggregators are also offering financial services that compete with MMT services. For example, Selcom has approval to engage in interbank person-to-person transfers and approval for a store of value card with wallet for retail payments. It also has an agent network, and has a 75% - 80% market share in bill payments.¹⁴⁴ Certain aggregators have indicated that they have exclusive dealings with MNOs or banks, as in the case of Tigo which exclusively uses Selcom.¹⁴⁵

4 Key issues and recommendations for Tanzania

4.1 Key issues

4.1.1 A success story in MMT

Tanzania is a success story in terms of the rapid roll-out of MMT, the openness of its market and the dynamic rivalry between different operators, including the role of business aggregators. The facilitating regulatory approach adopted is also notable. At the same time, there remain concerns about the magnitude of some charges, the lack of sharing of credit data and the deepening of financial services.

However, three years ago Tanzania was seen by some as a failure relative to Kenya. Argent et al. (2013) summarized the issues as follows:

- Safaricom in Kenya had greater incentives to invest as they were two years before a rival launched, and had an 80% market share in mobile telecommunications.
- There were lower levels of education and financial literacy in Tanzania, coupled with less investment in consumer awareness and the use of USSD instead of placing on the STK in Kenya.
- There were lower and different demand in Tanzania due to less urban-rural remittances than in Kenya.
- Vodacom did not develop and manage the agent network well, and invested less in it than in Kenya, while the lack of national ID hampered the KYC needed for agent registration (citing McKinsey, 2012).
- Vodafone Global Services (VGS, the owner of the M-Pesa platform) moved to a license fee model instead of the shared revenue model used in Kenya. This meant VGS did not share the risk and Vodacom Tanzania had to pay a fee to VGS for each registered

¹⁴³ Meeting with CBA, 19 January 2016.

¹⁴⁴ Meeting with Selcom, 20 January 2016

¹⁴⁵ Meeting with Selcom, 20 January 2016

M-Pesa customer. This meant that Vodacom constrained roll-out as far as possible to active users.

- A more complicated fee system was implemented in Tanzania which was confusing to users (citing IFC, 2010).

A major contribution from this case study is in identifying what factors led to the take-off of mobile money despite the issues listed above.

The demand-side factors such as the geography of the country and lower demand for transfer services referred to by Argent et al. as reasons why mobile money did not take off appear to be incorrectly identified. Indeed, the larger land area and more dispersed population in Tanzania was referred to in interviews as reasons for the rapid expansion of services in recent years. Tanzania does not have well-developed banking and financial services and this meant significant latent demand existed for mobile money.

The observation of Argent et al. about use of USSD compared to STK also appears incorrect given that Airtel opted for STK at first but found consumer acceptance was poor and that USSD had advantages of flexibility.

The incentive of the dominant MNO in Kenya, Safaricom, to invest as the first-mover by two years does not have a parallel in Tanzania. This relates to a wider and important discussion as to whether the development of mobile money as a new service is best supported by a single dominant MNO, including with exclusivity and the absence of interoperability to protect the returns from its investment, or whether competitive rivalry between MNOs spurs investment in rolling out services. There is also an incentive which relates to reinforcing market power in telecommunications. In simple terms, competitive rivalry in mobile telecoms and MMT have been consistent with rapid mobile money expansion in Tanzania.

Vodacom evidently does not have the single firm dominance in mobile telecom services in Tanzania that Safaricom enjoys in Kenya and hence the same incentive to invest in mobile money to reinforce network effects in the telecoms market. With regard to mobile money, Zantel and Airtel launched their products very soon after Vodacom. All of these firms could benefit from learning in Kenya, reducing the costs of development (although in Airtel's case also leading it to launch at first on STK, which proved an error). Airtel and Zantel do not, however, appear to have been strong challengers for various reasons. Effective rivalry came from Tigo in 2012 (after its launch in late 2010).

Tigo's successful expansion highlights the critical role of agents. While the prevention of agent exclusivity weakened incentives on the part of Vodacom to invest in the agent network, at the same time it strengthened Tigo's position. The rivalry between mobile money operators has in turn driven agent investments.

The experimental nature of M-Pesa was also linked to Safaricom receiving additional support, both from its parent company and from donors. Similar support was provided at a later stage by the Bill & Melinda Gates Foundation to Vodacom in Tanzania for the expansion of M-Pawa.

4.1.2 The 'test and learn' approach in Tanzania – a regulator-led strategy?

It is important to remember that the regulatory framework has favoured the MNOs' provision of MMT services as well as the participation of other non-bank actors, such as business

aggregators and unregulated microfinance institutions. Given this over-arching consideration, the maintenance of an open and competitive market is due to two main factors.

First, it is due to competition at the MNO level. We have noted this above, and do not discuss this further here.

Second, competition in mobile money has been encouraged by hard and soft regulation, mainly on the part of the BOT. It is this approach which makes Tanzania an important natural experiment, especially given the contrast with other similar countries in the region, where the same firms operate.

The approach implies some uncertainty which can weaken incentives to invest as the returns may be appropriated through a change in regulations, including by free-riding rivals. This is not how market participants generally view things, however.

4.1.3 Assessing the potential bottlenecks

We revisit the main potential bottlenecks and assess the regulatory action where appropriate.

Connectivity

This has not been an issue which explicitly arose, as the approach of Vodacom and the follower operators has been to work with the main banks from an early stage. This was motivated by the perceived benefits in making it easier for mobile wallets to be linked to bank accounts. It facilitates flows into mobile money from bank accounts, such as on the sending side where a banked person wishes to transfer to an unbanked. It also means that mobile agents can be used by banks for cashing out, and has been part of the expansion of agency-based (branchless) banking.

The Tanzanian banks have also not sought to compete head-to-head with the MNOs. This is possibly because banking services are so limited and the expansion of mobile money into mobile banking is relatively limited.

The main challenge in connectivity has been the transactions costs in making it work in practice. In this, the MNOs, banks, and other participants such as utilities for bill-pay have been assisted by aggregators.

The negotiation process for interoperability has provided a space where the two main banks and MNOs can engage to consider issues relating to development of mobile financial services.

Agents

The order of the BOT preventing agent exclusivity is perhaps the most direct intervention. The effects appear quite clear. On the one hand, it weakened Vodacom's incentives to invest in the roll-out of agents due to the concerns about free-riding. On the other, it allowed the rivals to incentivize businesses who already understood the mobile money model and what was required from an agent. The BOT order on agent exclusivity was in 2010, quite early in the development of mobile money. If it had delayed (and this had been understood by participants) it is likely there would have been faster roll-out in the earlier years, at least by Vodacom. However, this must be weighed against the negative effect on agent roll-out by rivals. And, the record since 2010 has been of strong growth in the agent network.

Interoperability

While interoperability has been actively pursued by the BOT in its regulatory capacity, it has only effectively been implemented relatively recently and cannot be a reason for the expansion of mobile money. It is notable that the rivals interoperated first, which is consistent with their incentives to offer a more attractive alternative to Vodacom. The effect of Vodacom agreeing to interoperate is not yet clear as it was only implemented in early 2016.

Applications

These have not been an important competition issue, likely reflecting the fact that because MMT services are competitive, the MNOs are eager to allow third parties to interconnect with their platforms. In practice, MNOs have permitted business aggregators to serve as a bridge between these third party applications and their platforms, managing technical issues related to use of their APIs.

Data

MNO's have control over the mobile and MMT transactional data of their subscribers, a key input for credit evaluation in mobile credit services. Vodacom and CBA have a limited exclusivity arrangement which is set to expire in 2016. Jumo and Airtel do not have any exclusivity arrangement. The MNOs appear open to partnering with or otherwise making this data available to multiple lenders, ensuring competition in mobile credit services.

Other factors

With regard to mobile banking services, other factors than competition appear to be more important which relate to intrinsic market failures in financial markets. The most substantial challenge with unsecured lending is the information problems. In this regard the under-developed nature of credit bureaus and there not being a national identity system is an important hindrance. This also currently provides an advantage to the providers of MMT services who use the MMT record of subscribers to evaluate their riskiness.

4.1.4 Looking forward?

There are reasons to expect the Tanzanian market to become even more competitive. There is an additional entrant, Halotel, in mobile communications and which has started rolling out mobile money. Halotel invested in MNO infrastructure in rural areas before vigorously promoting its mobile money transfer facilities.

There is also the spread of smart phones which allow the user to simply use the handset as a means to access mobile financial services via mobile internet without the need to rely on channels controlled by the MNO operator. Because the MNO MMT services are now interoperable and third parties are generally able to connect their applications to all MNO platforms, the liberation of most of these services from particular SIM cards may not have a great impact. However, there may be a greater impact on the development of mobile credit services, which are currently tied to MNO data.

Smart phone apps like Branch and Tala (formerly Mkopo Rahisi) have been developed in Kenya and are now becoming available in Tanzania. This next generation of mobile credit services operates by extracting transactional data directly from a user's smart phone, including call and mobile money transaction activity, GPS data, SMS content, the identity of contacts and social media activity and connections. These new services have the potential to upend the current model for mobile credit by eliminating the need to obtain transactional data from MNOs.

The levels of smart phone use in Tanzania are, however, quite low and likely to remain so for a number of years.

4.2 Recommendations

The following are areas in which action would help address the competition and other issues identified in this paper. In many cases, the policy makers and regulators involved would benefit from assistance from expert economists and lawyers, which could be procured from the public budgets or with the assistance of development and other institutions.¹⁴⁶

1. ***Ensuring that regulators are monitoring and addressing competition issues in mobile financial services:*** Although the market for MMT services appears on its face to be competitive, a thorough competition assessment is beyond the scope of this paper. A critical issue is to collect more disaggregated data on an ongoing basis across providers and services. Furthermore, as mobile financial services evolve beyond MMT, competition issues may arise in markets for new products. Currently it is unclear whether any regulator is actively monitoring competition issues in mobile financial services. While the BOT has led regulation of mobile financial services, it has not addressed competition issues, which may fall outside of its regulatory mandate. The FCC has interpreted recent legislation to essentially remove competition issues (other than merger review) arising in the telecommunications sector, including mobile financial services, from its jurisdiction. Based on interviews with stakeholders, the TCRA's involvement in mobile financial services has been minimal. Accordingly, there is a risk that competition issues in mobile financial services may fall through a regulatory gap and remain unaddressed. Policy makers and regulators should consider whether any action is necessary to prevent this from happening. This may require changes in legislation and/or regulations to clarify or expand the mandates of one of these regulators. It will also likely require coordination among the regulators.
2. ***Building consensus and cooperation among policy makers and regulators through seminars and workshops:*** Holding a series of seminars and workshops for policy makers and the three potentially relevant regulators on the issues raised by this paper including international experts in competition and digital financial services, particularly mobile financial services, would assist in deepening understanding of and focusing attention on such issues. These could, for instance, begin by discussing the observations and findings of this study.

¹⁴⁶ We understand that the Bill and Melinda Gates Foundation and others have supported such assistance in the past.

3. ***Establishing a reliable national ID system:*** Stakeholders universally cited the absence of a uniform means of verifying the identity of customers as an obstacle to the development of mobile credit products. Technical and legal experts could provide assistance to the Government in developing and implementing such a system.
4. ***Ensuring that credit information is reported by mobile credit lenders to promote financial inclusion:*** CBA, a bank, and Jumo, an MFI, are the two lenders that have partnered with MNOs to offer mobile credit products. In February 2016 neither was reporting credit information to Tanzania's Credit Reference Databank, which would make such information available to the credit bureaus and other lenders. Furthermore, because the credit reporting system is still new, neither credit bureau is fully functional. Credit information sharing could promote financial inclusion by allowing borrowers to leverage their positive history of repaying small loans through mobile credit to obtain larger loans at other institutions. As a bank, CBA is required by the BOT to report this information. Accordingly, this is likely an enforcement issue for the BOT. As an MFI, Jumo has no obligation to report credit information. However, the BOT has indicated that it is working on a draft legislation that might impose such an obligation on MFIs.¹⁴⁷ BOT and policy makers could benefit from assistance in determining the best ways to ensure such reporting takes place and that the credit reporting system becomes more reliable in general.
5. ***Monitoring account interoperability among the MMT services of MNOs and encouraging further levels of interoperability:*** The voluntary, bilateral account interoperability agreed among the four MNOs is a major achievement. This may serve as a model for policy makers and regulators in other jurisdictions. The implementation of this arrangement should be studied to ensure that it is carried out as was originally conceived and to monitor how the MNOs handle unexpected challenges. In addition, the BOT and the other parties that facilitated the original multilateral negotiations (International Finance Corporation, the Bill & Melinda Gates Foundation and Financial Sector Deepening Trust of Tanzania) should consider building on this success and pressing for further layers of interoperability, as was originally conceived. As described in Section 2.2.1, these include:
 - cash-in/cash-out interoperability, where subscribers can cash-in and cash-out from any MNO agent for any service;
 - bulk pay interoperability, where companies can distribute salaries to various mobile wallets of employees, as opposed to having to choose a single service;
 - agent-to-agent interoperability, where agents for multiple services could combine the "floats" they maintain for the various services;
 - and merchant payment interoperability, where merchants could easily accept payments from multiple services to a single account.
6. ***Exploring measures to improve uptake of merchant payment services:*** Uptake of merchant payments services has been limited. Stakeholders identified several potential causes for this (see Section 2.2.4), but more in-depth study on this particular

¹⁴⁷ Meeting with the BOT, 21 January 2016.

issue might identify the root causes with greater certainty. If stakeholders are correct, and consumers' lack of familiarity with such services is inhibiting demand, then a public education campaign may prove useful. If it appears that merchant uptake is inhibited because merchants also often serve as MMT agents, and are thus incentivized to seek a cash-out commission rather than be charged a merchant fee on a payment system, perhaps alternate compensation and fee arrangements might be explored.

7. ***Establishing a regional working group of competition agencies and financial and telecommunications regulators:*** Establishing a regional competition working group between countries in East Africa (including Kenya, Tanzania, Rwanda, Uganda, and possibly Zambia and Zimbabwe) that provides a platform for competition agencies and sector regulators could significantly improve understanding of competition problems and the merits of different solutions. Such a working group would provide a network for information sharing, capacity-building, and support on competition matters, and serve as a foundation for development of best practices. In this region in particular, such practices might be the focus of attention beyond the region as others look to it for leadership in a sector in which it has unparalleled success. This is a longer-term solution, but has the additional benefit of facilitating close working relationships between regulators in the region. Such a network could be facilitated by universities or research institutions within the region.

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