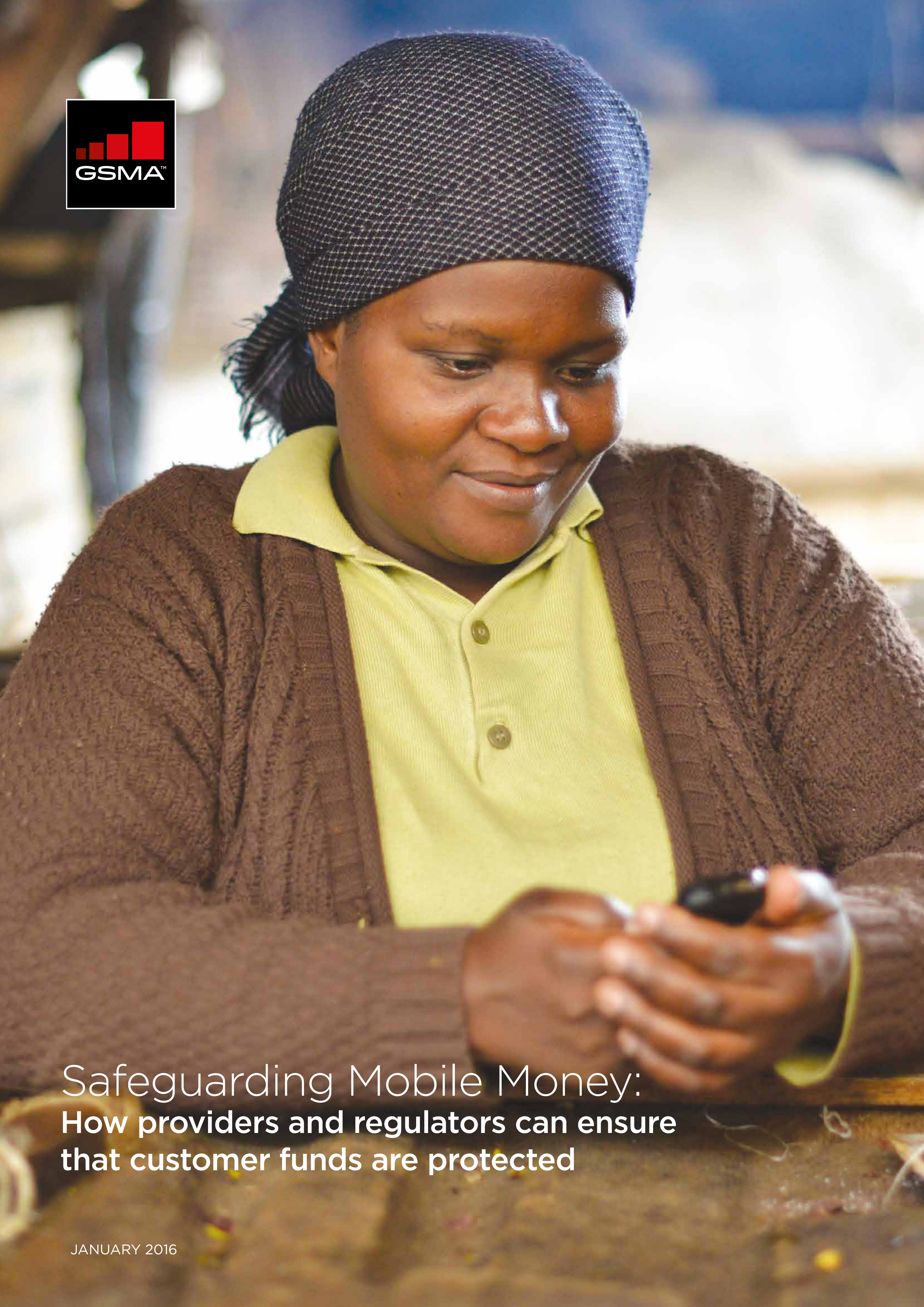

Safeguarding Mobile Money:

How providers and regulators can ensure that customer funds are protected

JANUARY 2016

GSMA

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CONTENTS

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"Ultimately, the best approaches to safeguarding are those that achieve a high level of protection of customer funds in the least burdensome and most cost-effective manner possible ... Regulators should consult closely with mobile money issuers and other industry stakeholders to develop well-tailored, cost-effective safeguarding measures that do not negatively impact adoption of mobile money services by low-income and unbanked customers."

Executive Summary

Allowing both banks and nonbanks to issue mobile money is fostering financial inclusion. Like all financial services, however, mobile money presents risks that must be effectively mitigated. One of the important risks is the risk of loss of customer funds.

Customer funds can be lost due to imprudent investment or due to the insolvency of the mobile money issuer, the trustee or fiduciary managing the customer funds (if applicable), or the bank holding the customer funds.[1] While this paper looks specifically at the risks when a nonbank issues mobile money directly to customers, many of these risks are also relevant when the provider is a bank.

The paper addresses three risk areas:

1. **Insufficient funds set aside in safe, liquid investments to meet customer demand for cash**
2. **Insufficient assets to repay customers in event of *issuer's (or trustee/fiduciary's)* insolvency**
3. **Insufficient assets to repay customers in event of *bank's* insolvency**

To mitigate the risk that mobile money issuers will be unable to fulfill customer demand for reimbursement, regulators should require mobile money issuers to hold funds equivalent to 100% of outstanding mobile money liabilities in safe, liquid investments such as commercial bank deposits and low-risk government securities. While most countries require most or all funds to be stored in commercial banks, the safest investment will depend upon the risk of loss of customer funds in the event of bank insolvency (as discussed in Risk #3) and how this risk compares to the risk of alternative liquid investments such as government bonds.

In the event of an issuer's insolvency, other creditors might attempt to claim customer funds. One way to mitigate this risk is to require mobile money issuers to establish a trust (in common law countries) or use fiduciary contracts (in certain civil law countries) to isolate and ring-fence customer funds from the issuer's assets. In common law countries, the establishment of a trust also protects customer funds in the event of a trustee's insolvency. In civil law countries, the availability of fiduciary contracts and the extent to which customer funds are protected in the event of a fiduciary's insolvency vary significantly.

Where available and practical, issuers should use trusts, fiduciary contracts, or other arrangements that provide a similar level of protection against the insolvency of both the issuer and the trustee or fiduciary. In the absence of such legal arrangements, regulators should evaluate the efficacy of other options such as including explicit fund isolation and ring-fencing requirements in relevant regulation.

1. This paper does not address the risk of loss of customer funds due to fraud (internal or external).

Even if a trust or equivalent mechanism is in place, customer funds may be lost if a bank holding some or all of these funds becomes insolvent. A number of mitigating measures are possible, depending upon the country context. Possible measures include providing deposit insurance to individual mobile money accounts, either by directly covering mobile money accounts or by establishing a pass-through deposit insurance regime; using the bank as the trustee/fiduciary; purchasing private insurance; obtaining a guarantee from the bank's parent group; diversifying customer funds among multiple banks and/or using only highly-rated banks; and establishing initial and ongoing capital requirements.

In general, the ideal solution is to ensure that individual mobile money accounts are covered by deposit insurance. In most countries, however, this is currently not a possibility, so alternate approaches will have to be considered. In such cases, identifying the best approach will require a country-specific analysis of market risk and financial infrastructure.

Ultimately, the best approaches to safeguarding are those that achieve a high level of protection of customer funds in the least burdensome and most cost-effective manner possible. Given significant variations in available legal instruments and market infrastructure, this will vary according to the country context. Regulators should consult closely with mobile money issuers and other industry stakeholders to develop well-tailored, cost-effective safeguarding measures that do not negatively impact the adoption of mobile money services by low-income and unbanked customers.

Introduction

Ensuring that customer funds are safe is a matter of paramount importance both for regulators and for providers of mobile money services (hereinafter, "mobile money issuers").

In a typical mobile money model, customers receive mobile money in exchange for cash. If a bank is issuing mobile money directly to customers, the bank typically will pool and store funds from many different customers in a single account rather than opening an individual deposit account for each customer.

Similarly, if a nonbank issues mobile money directly to customers, the nonbank typically will pool and store funds received from many different customers in a single account per bank, though it may hold funds in more than one bank.

Allowing both banks and nonbanks to issue mobile money and to use pooled accounts to store customer funds is helping to foster financial inclusion. Many countries with high levels of mobile money adoption have relatively low levels of bank account usage. In Kenya, for example, more than twice as many adults were using mobile phone-based financial services (11.5 million) as were using banking services (5.4 million) in 2013.[2] As of the end of 2014, 16 countries had more registered mobile money accounts than bank accounts, of which 15 were low-income countries in Sub-Saharan Africa.[3]

Like all financial services, mobile money issuance presents risks that must be effectively mitigated. Perhaps the most significant risks from the customer's perspective are that (1) customers will be unable to access their funds upon demand or that (2) customers will lose funds stored on the electronic account.

What is mobile money?

For the purposes of this paper, "mobile money" shall refer to electronically stored monetary value that is (1) available to a user to conduct transactions through a mobile device, (2) issued upon receipt of funds, (3) accepted as a means of payment by persons other than the issuer, and (4) redeemable for cash. In most countries, traditional bank accounts that are accessible via electronic means are excluded from the definition of "mobile money". Mobile money services are a subset of electronic money services, which may be delivered via mobile phones, prepaid cards, or other means. While this paper refers to mobile money services, the recommendations are relevant to other forms of electronic money as well.

2. FinAccess (2013), "FinAccess National Survey 2013: Profiling Developments in Financial Access and Usage in Kenya," p19.
3. GSMA (2015), "2014 State of the Industry: Mobile Financial Services for the Unbanked," p26.

Inability to access funds upon demand may be due to insufficient liquidity, while loss of funds stored on the electronic account may occur due to insolvency of the mobile money issuer, a trustee or other fiduciary party that is responsible for managing the mobile money funds, or a bank that holds part or all of the mobile money funds.

These risks exist both for banks and nonbanks that issue mobile money. If the issuer is a bank, some of these risks may already be mitigated through existing prudential requirements, such as liquidity ratios, capital requirements, and deposit insurance.[4] For nonbank issuers, relevant risk mitigation requirements typically need to be established through regulation.

This paper focuses on how regulators can effectively safeguard customer funds when a nonbank issues mobile money. In countries where this is permitted, regulators and nonbank mobile money issuers have taken a number of steps to mitigate the risk that the latter will be unable to reimburse their customers.

The purpose of this paper is to help regulators and mobile money issuers better understand how to effectively safeguard customer funds against risk of loss due to (1) imprudent investment of customer funds, (2) insolvency of the mobile money issuer or trustee/fiduciary, or (3) insolvency of the bank holding the customer funds. The paper includes a discussion of the pertinent risks and the various operational and regulatory responses to these risks. The paper also includes an analysis of the impact of different legal traditions (common law vs. civil law) on protection of customer funds in the event of insolvency. Where relevant, results from a 2015 survey of safeguarding practices adopted by GSMA members offering mobile money services have been included as well.[5] A sample workflow is provided to help guide regulators and mobile money issuers through all the key risks and potential solutions. The paper concludes by presenting some solutions that regulators and issuers may adopt to address the identified risks and identifying areas for future research.

4. Even when banks issue mobile money, deposit insurance may not mitigate the risk of loss of funds due to bank insolvency. See discussion of Risk #3 below.

5. GSMA survey of customer fund safeguarding practices (June-July 2015). The survey was completed by 23 GSMA-member mobile money providers operating in Africa, Asia, and Latin America.

RISK #1

Insufficient funds set aside in safe, liquid investments to meet customer demand for cash

Most financial institutions that accept funds from customers are required to set aside a certain percentage of these assets in liquid assets to fulfill customer demand for reimbursement. In addition, banks and other financial institutions that intermediate customer funds must set aside more capital for riskier investments. Unlike bank mobile money issuers, which typically are permitted to invest most of the funds received from customers in loans and other less liquid investments, nonbank mobile money issuers almost universally are required to hold funds equivalent to 100% of outstanding mobile money liabilities in safe, liquid investments such as commercial bank deposits[6] and low-risk government securities. 22 of 23 GSMA-member survey respondents stated that they were subject to such a requirement.[7] In addition, Table 1 provides several examples of country regulations requiring nonbank mobile money issuers to set aside customer funds in safe, liquid investments.

6. Once these funds are deposited in a bank, the investment of these funds by the bank typically is subject to the same norms and prudential requirements that apply to other bank deposits. Therefore, the risk of loss due to bank insolvency remains. See discussion of Risk #3 below.
7. GSMA survey of customer fund safeguarding practices (June-July 2015).

TABLE 1

Requirements to set aside funds in safe, liquid assets in selected countries[8]

Country	Requirement	Source(s)
Bolivia	Funds equal in value to outstanding mobile money liabilities must be held in a regulated financial institution. Funds can be held in cash or invested in (1) securities issued by the Bolivian Central Bank or National Treasury; or (2) securities issued by a national Treasury of certain sovereign nations with a risk rating assessment from a well-known international credit risk agency [NOTE: In practice, this requires a AAA or AA rating from Standard & Poor's, Fitch, or Moody's].	• Circular ASFI/102/2011, Section 5 • Recompilation of Regulations for Banks and Financial Institutions, Title I, Chapter 17, Art. 12
Chad	Funds received from customers must be placed in liquid assets defined by the Bank of Central African States (COBAC).	• Regulation on E-Money Issuance, Art. 14
Colombia	Mobile money issuers are required to deposit all customer funds in a demand deposit account in the Central Bank or another financial institution.	• Decreto 1491 de 13 July 2015, Art. 8
Congo, Democratic Republic	Mobile money issuers must maintain liquid assets equal in value to all outstanding mobile money obligations.	• Instruction on E-Money Issuance, Art. 20
European Union (EU)	The EU offers two safeguarding options: (1) 100% of customer funds must be isolated from the mobile money issuer's other funds and deposited in a separate account in a credit institution or invested in "secure, low-risk assets"; or (2) the mobile money issuer must obtain insurance covering the full value of outstanding mobile money liabilities.	• EU E-Money Directive 2009, Article 7 • EU Payments Systems Directive 2007, Article 9
Ghana	100% of the mobile money float must be kept in unencumbered liquid assets, including (1) cash balances held in universal banks (separate from other balances of the mobile money issuer) and (2) any other liquid asset prescribed by the Bank of Ghana.	• E-Money Guidelines, Art. 16
India[9]	Outside of funds held with the central bank to meet Cash Reserve Ratio requirements, at least 75% of customer funds must be invested in short-term government securities and up to 25% of customer funds may be held in commercial banks.	• Guidelines for Licensing of Payments Banks, Art. 5
Kenya	Mobile money issuers must set aside funds equal to or greater than their obligations to customers. These funds should be placed in licensed commercial banks.	• National Payment System Regulations 2014, Art. 25-26

8. Sources: GSMA, Mobile Money Regulatory Guide; country regulations.

9. While India's regulations refer to "Payments Banks" rather than mobile money issuers, payments banks are not permitted to store customer funds and are only permitted to invest in bank deposits and short-term government securities. Therefore, payments banks more closely resemble mobile money institutions than banks that have wide latitude over how customer funds are invested and stored.

Country	Requirement	Source(s)
Lesotho	Funds collected from users must be deposited in a licensed bank and managed separately from the mobile money issuer's other funds.	• Guidelines on Mobile Money, Principle 4, Appendix 10.
Malawi	Funds equal to total outstanding mobile money liabilities must be kept in a bank account.	• Guidelines for Mobile Payment Systems, Art. 8
Namibia	Mobile money issuers must set aside funds equal to "at least 100% of the value of aggregate outstanding mobile money liabilities." Customer funds must be held in banks.	• Determination on Issuing of Electronic Money in Namibia, Art. 11.2 • Guidelines for Issuers of Electronic Money & Other Payment Instruments in Namibia, Art. 7
Paraguay	Mobile money issuers are required to set aside funds equal to at least 100% of outstanding mobile money obligations. These funds may only be deposited in authorized financial institutions.	• Resolución No. 6 de 2014 – Reglamento de Medios de Pagos Electrónicos, Art. 15.
Peru	Funds equal in value to outstanding mobile money issued must be placed in trust. The banking supervisor may also prescribe alternative mechanisms for guaranteeing the safety of outstanding mobile money liabilities.	• Law 29,985 on Electronic Money, Art. 6.1
Philippines	Mobile money issuers must at all times have "liquid assets equal to the amount of outstanding mobile money issued." These funds may be invested in bank deposits, government securities, and/or other permitted liquid assets.	• Circular 649
Sri Lanka	100% of the value of funds collected from mobile money accountholders must be set aside in one or more "custodian accounts" in licensed commercial banks.	• Mobile Payments Guidelines No. 2 of 2011 for Custodian Account Based Mobile Payment Services
Uganda	Funds must be placed by the mobile money service provider (MMSP) in an "escrow account" in a licensed financial institution. These funds belong to the mobile money holders, not the MMSP. Reconciliation between the escrow account and outstanding mobile money liabilities should take place daily.	• Mobile Money Guidelines 2013
West African Economic and Monetary Union (WAEMU)	Mobile money institutions must set aside an amount at least equal to their financial commitment related to outstanding mobile money issued. Funds must be invested in one or more of the following: (1) bank deposits; (2) securities issued by central governments; (3) securities issued by regional financial institutions; and/or (4) securities issued by companies listed on the West African Regional Securities Exchange.	• BCEAO Instruction regarding E-Money Issuance, Art. 33-34

At minimum, mobile money issuers should be required to ensure that sufficient assets are set aside to cover outstanding mobile money liabilities. All of the countries listed in Table 1 require issuers to set aside assets worth 100% of the value of outstanding mobile money liabilities (except for the European Union, which allows mobile money issuers to use private insurance to cover any unfunded liabilities). The latter approach has not been adopted outside of the EU, and it is unlikely to be feasible in most developing countries where insurance markets are not yet well-developed. As a general rule, regulators should require providers to set aside assets worth 100% of the value of outstanding mobile money liabilities.

While most countries require funds to be stored in commercial banks, the safest approach will be country-specific. In countries where the risk of loss of customer funds in the event of bank insolvency is low, storing funds in banks probably will be the safest approach. In countries where this risk is higher, regulators may wish to compare the safety of bank assets to other liquid assets, such as government securities, and consider other options such as private insurance or bank guarantees. The risk to customer funds in the event of bank insolvency is addressed in the discussion of Risk #3.

RISK #2

Insufficient assets to repay customers in event of issuer's (or trustee/fiduciary's) insolvency[10]

As discussed above, most regulators require nonbank mobile money issuers to set aside sufficient funds to meet 100% of the outstanding mobile money obligations in safe, liquid assets. In the event of an issuer's insolvency, however, such a requirement may be insufficient to guarantee that customers will be reimbursed for the full value of their mobile money holdings. In the absence of additional mechanisms to safeguard customer funds, customers may be limited to an unsecured claim on the issuer's assets that is unlikely to be paid in full.

As a result, most regulators require mobile money issuers to isolate and ring-fence mobile money funds.

Effective isolation and ring-fencing can reduce the risk that outside creditors can claim customer funds in insolvency proceedings. At least ¾ of survey respondents segregate customer funds from issuer funds in some manner, often using a trust account or other custodial account to mitigate the risk to customer funds in the event of the issuer's insolvency.[11]

The specific legal mechanisms used to isolate and ring-fence customer funds vary by jurisdiction. One of the most important factors affecting the available legal mechanisms is whether the country's legal system has been largely influenced by Anglo-American common law or Continental European civil law.

10. This section includes excerpts from GSMA, "Ringfencing and Safeguard of Customer Money."

11. GSMA Survey of customer fund safeguarding practices (June-July 2015).

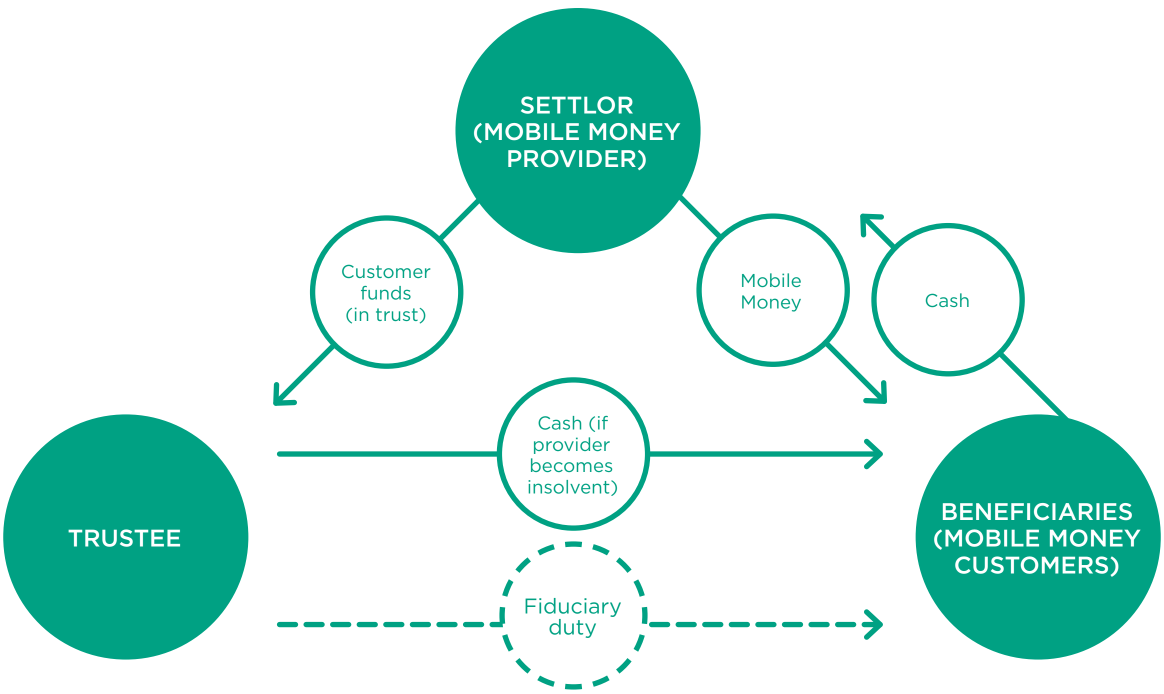
Isolation and ring-fencing of funds in common law countries

Countries whose legal systems (or commercial legal systems)[12] have been largely influenced by Anglo-American common law often have developed the legal concept of a "trust". Generally speaking, a trust is an arrangement whereby the settlor transfers property to the trustee, who manages the property for the benefit of one or more beneficiaries. The trustee is given **legal title** to the property held in trust, which enables the trustee to manage and invest the trust assets. The trustee, however, has a fiduciary duty to manage and invest the trust assets solely for the benefit of the beneficiaries, who receive an **equitable interest** in the property held in trust. Thus, the trust allows for subdivision of property rights among the trustee (legal ownership) and the beneficiaries of the trust (equitable ownership).[13]

In the context of mobile money services, the settlor would be the mobile money issuer. The issuer would facilitate the delivery of legal title of all customer funds to the trustee. The trustee could be any individual or legal entity that assumes responsibility for managing the customer funds for the benefit of the beneficiaries. The beneficiaries would be the mobile money issuer's customers (see Figure 1).

FIGURE 1

Typical trust arrangement in the context of nonbank mobile money issuance



12. In some cases, a country's legal system may be predominantly influenced by civil law, yet the laws affecting trade and commerce may rely heavily upon common law.
13. See, e.g., Hansmann and Mattei, The Functions of Trust Law: a Comparative Legal and Economic Analysis, *New York University Law Review 5*, pp438-440 (1998).

Under common law, funds held in trust are not considered to be assets of the settlor. In addition, these funds are legally treated as separate assets from the other assets of the trustee. Therefore, funds held in trust may not be claimed by creditors of either the settlor or the trustee in the event that either becomes insolvent.

Table 2 provides some examples of the application of trust law to mobile money services in countries with a common-law legal tradition.

TABLE 2

Applicability of trust law to mobile money services in selected countries

Country	Applicable trust law	Relevant provisions in mobile money regulation
Ghana	Derived from common law and UK Trustees Act of 1860.	Funds must be held in trust on behalf of mobile money customers and shall remain unencumbered in the event of the mobile money issuer's insolvency (E-Money Guidelines, Art. 7(4)).
India	The Indian Trusts Act, 1882 (as amended)	Funds must be invested in government bonds and bank deposit accounts, but there is no specific requirement to use a trust (Guidelines for Licensing of Payments Banks, Art. 5).
Kenya	Derived from common law and UK Trustees Act of 1860. 1982 Trustees Act (as amended through 2012) describes powers that may be exercised by resident trustees.	Payment service providers (including mobile money issuers) must establish a trust for customer funds and ensure these funds are segregated from other funds (NPS Regulations, Art. 25).
Lesotho	The common law concept of the trust was adopted from the English legal tradition (and influenced by South African trust law and case law).	Mobile money issuers must open a trust account in a licensed commercial bank. These funds are not part of the assets of the trustee bank and are not impacted in the event of the bank's insolvency (Guidelines on Mobile Money, Appendix 10).
Malawi	The common law concept of the trust was adopted from the English legal tradition.	Mobile payment service providers must maintain a trust account for customer funds (Guidelines for Mobile Payment Systems, Art. 8).
Namibia	The Trust Moneys Protection Act 34 of 1934 sets out the requirements for establishing a trust.	Outstanding mobile money liabilities must be held in trust in one or more licensed banks, subject to a written instrument under the Trust Moneys Protection Act (Determination on Issuing of Electronic Money in Namibia, Art. 11.2; Guidelines for Issuers of Electronic Money, Art. 7).
Philippines	References to trusts are explicitly included in the Civil Code, along with a statement that the general Law of Trusts applies in the absence of a conflict with certain key legislation (Civil Code, Art. 1440-1457).	While mobile money issuers are required to set aside customer funds in liquid assets that "should remain unencumbered", there is no specific requirement to establish a trust (Circular 649, Section 5).
Uganda	The common law concept of the trust was adopted from the English legal tradition.	Uganda's Mobile Money Guidelines requires an "escrow account" to safeguard and reconcile customer funds, but they do not specifically require establishment of a trust. The Guidelines do, however, mention that the bank has a "fiduciary responsibility" to properly manage the funds held in the escrow account (Art. 6(b)). Furthermore, in practice escrow agreements are required to stipulate that funds held in escrow belong to mobile money customers, not mobile money issuers.

As a general rule, holding customer funds in trust is the most reliable way to ensure that these funds are (1) **isolated** from the other assets of the mobile money issuer; and (2) **ring-fenced** to protect against claims from creditors of the mobile money issuer or the trustee.

Use of escrow accounts appears to provide a similar level of protection in Uganda, but this has not been tested in the event of a mobile money issuer's insolvency. It is also unclear how much protection is offered by regulatory provisions stating that customer funds should remain unencumbered (e.g., Philippines).

Therefore, regulators and providers should first consider the use of trusts where this is possible.

Like all other risk mitigation measures discussed in this document, the decision whether to use trusts to isolate and ring-fence funds requires an assessment of the country context. For example, if the rules governing the establishment and/or operation of a trust are particularly rigid or burdensome, a trust arrangement may be impractical for managing mobile money customer funds. In such cases, alternate legal arrangements that provide a similar level of protection should be evaluated.

Isolation and ring-fencing of funds in civil law countries

Mechanisms for isolation and ring-fencing of customer funds are less straightforward in countries whose legal systems have been largely influenced by Continental European civil law ("civil law countries"). Historically, civil law countries have restricted the division of legal and equitable property rights along the lines of the Anglo-American trust to a limited set of circumstances, such as mortgages and guardianship agreements for minors and other legally incompetent parties.[14]

In other circumstances, parties in some civil law countries may avail of legal agreements derived from the Latin concept of the "fiducia".[15] Such legal agreements include fiduciary contracts, which are a type of agreement whereby the Transferor transfers property to the fiduciary, who assumes **both legal and equitable ownership** of the property. At the same time, the Transferor and the fiduciary enter into a contract that provides for the fiduciary to act as the Transferor's agent in managing the property for the benefit of one or more beneficiaries. If the fiduciary fails to manage the property in the beneficiaries' interest, the Transferor (and in some countries the beneficiaries as well) can sue to enforce the contract, seek restitution, or seek to remove and replace the manager.

In the context of mobile money services, the relationships are quite similar to those depicted in Figure 1. The issuer is the Transferor (analogous to the settlor), a trusted third party (often a financial institution) serves as the fiduciary (analogous to the trustee), and the mobile money customers are the beneficiaries.

While fiduciary contracts have been adopted in a number of civil law countries with active mobile money services, other civil law countries have not developed such a legal construct. As demonstrated in Table 3, the available evidence indicates that some form of fiduciary contract has been adopted in many Latin American countries but does not appear to have been established in Francophone Sub-Saharan Africa.

Even those countries that have adopted fiduciary contracts may not protect beneficiaries to the same extent as a common law trust. One reason is because beneficiaries typically do not obtain an equitable interest in the property once it has been transferred to the fiduciary. This has important implications, one of which is that beneficiaries are less able to monitor the manager and enforce the provisions of the agreement.[16]

14. Hansmann and Mattei, The Functions of Trust Law: a Comparative Legal and Economic Analysis, *New York University Law Review 5*, pp440-442 (1998).
15. Legal arrangements derived from the fiducia are known by a variety of names, including "fiducie" (Switzerland) and "fideicomiso" (Latin America).
16. Dante Figueroa, Civil Law Trusts in Latin America: Is the Lack of Trusts an Impediment for Expanding Business Opportunities in Latin America?, *Arizona Journal of International & Comparative Law, Vol. 24, No. 3, pp725-726* (2007).

More importantly, however, the beneficiaries' lack of an equitable interest in the funds held by the fiduciary can create particular challenges in the event of a mobile money issuer's insolvency. As noted earlier, under common law funds held in trust are ring-fenced and protected from creditors of the trustee in the event that a trustee becomes insolvent. Many civil law countries do not offer the same level of protection (see Table 3), thereby increasing the risk that mobile money accountholders would receive less than 100% of the value of their mobile money in the event of a mobile money issuer's insolvency. To some extent, this risk can be addressed by requiring the fiduciary to (1) sign a contract agreeing to ring-fence the assets; and (2) identify ring-fenced assets in any other contract that the fiduciary signs with an outside creditor. In practice, however, this risk has proven to be significant enough that in general, the choice of fiduciaries in civil law countries – whether for mobile money or otherwise – typically is limited to banks or other institutions perceived as presenting a low risk of insolvency (see Table 3).[17]

The greater risk posed in the event of a mobile money issuer's insolvency in many civil law countries has led many regulators to take steps to mitigate this risk, such as including explicit isolation and ring-fencing requirements in mobile money regulations (see Table 3). These regulatory measures have not yet been tested in the event of a mobile money issuer's insolvency.

TABLE 3

Applicability of fiduciary protection to mobile money services in selected countries

Country	Does regulation provide for ring-fencing of funds held under fiduciary contracts?	Who may serve as a fiduciary?	Relevant provisions in mobile money regulation
Chad	There does not appear to be a formal regulatory mechanism governing fiduciary contracts.	N/A	Fund set aside to meet obligations to mobile money accountholders are not subject to seizure or any other form of attachment (Regulation on E-Money Issuance, Art. 15).
Colombia	Yes. Funds are treated as autonomous assets not subject to seizure by creditors of the settlor or the fiduciary. (Código de Comercio, Articles 1226-1244).	Financial institutions or specially authorized fiduciary companies.	Mobile money issuers are required to deposit all customer funds in a demand deposit account in the Central Bank or another financial institution. No specific provisions on ring-fencing have been included (Decreto 1491 de 13 July 2015).
Congo, Democratic Republic	There does not appear to be a formal regulatory mechanism governing fiduciary contracts.	N/A	Funds received in exchange for mobile money must be held in a fiduciary capacity and are not subject to seizure or any other form of attachment (Instruction on E-Money Issuance, Art. 18).
Côte d'Ivoire	There does not appear to be a formal regulatory mechanism governing fiduciary contracts.	N/A	Funds received in exchange for mobile money must be immediately placed in one or more banks or MFIs. These funds must be clearly identified, but there are no specific provisions to ensure that these funds are protected in the event of the mobile money issuer's insolvency (BCEAO Instruction regarding E-Money Issuance, Art. 32).

17. Hansmann & Mattei, The Functions of Trust Law: a Comparative Legal and Economic Analysis, *New York University Law Review 5*, pp454-459 (1998).

Country	Does regulation provide for ring-fencing of funds held under fiduciary contracts?	Who may serve as a fiduciary?	Relevant provisions in mobile money regulation
El Salvador	The property title to the funds is transferred to the fiduciary. The fiduciary can only handle the funds according to the fiduciary agreement. It is unclear, however, whether creditors may claim these assets in the event of the fiduciary's insolvency. (Código de Cómercio – Decreto No 671, Article 1233-1262).	Banks or specially authorised credit institutions.	Mobile money issuers must deposit funds equal to 100% of outstanding e-money liabilities in the Central Bank of El Salvador. These funds may only be used to guarantee repayment of outstanding e-money liabilities and are not subject to attachment by creditors of the mobile money provider (Ley para Facilitar la Inclusión Financiera, Art. 10).
Honduras	The property title to the funds is transferred to the fiduciary. The fiduciary acts as proprietor of the funds, but only to the extent of the fiduciary agreement. It is unclear, however, whether creditors may claim these assets in the event of the fiduciary's insolvency. (Código de Comercio – Norma º 73-50, Articles 1033 - 1062)	Banks that have been specifically authorized to provide fiduciary services.	N/A (no mobile money regulation)
Mali	There does not appear to be a formal regulatory mechanism governing fiduciary contracts.	N/A	Funds received in exchange for mobile money must be immediately placed in one or more banks or MFIs. These funds must be clearly identified, but there are no specific provisions to ensure that these funds are protected in the event of the mobile money issuer's insolvency (BCEAO Instruction regarding E-Money Issuance, Art. 32).
Paraguay	Yes. Funds are treated as autonomous assets not subject to seizure by creditors of the settlor or the fiduciary (Ley No. 921 de Negocios Fiduciarios, Art. 10, 13).	Banks, financial companies, and specially authorized fiduciary companies (Ley No. 921 de Negocios Fiduciarios, Art. 19).	Mobile money issuers are required to store customer funds in autonomous funds managed by one or more fiduciaries (Resolucion No. 6 de 2014 – Reglamento de Medios de Pagos Electronicos, Art. 15.
Senegal	There does not appear to be a formal regulatory mechanism governing fiduciary contracts.	N/A	Funds received in exchange for mobile money must be immediately placed in one or more banks or MFIs. These funds must be clearly identified, but there are no specific provisions to ensure that these funds are protected in the event of the mobile money issuer's insolvency (BCEAO Instruction regarding E-Money Issuance, Art. 32).

As a first choice, fiduciary contracts that protect customer funds from seizure by creditors of the mobile money issuer and the fiduciary should be used, if available (e.g., Colombia, Paraguay) and practical. Such arrangements would appear to provide a comparable level of protection to the use of trusts in common-law countries. Where such mechanisms are unavailable or provide limited protection, other measures should be considered, such as regulatory provisions stating that customer funds are not subject to seizure or any form of attachment (e.g., Chad, Democratic Republic of Congo). Providers and regulators should conduct a country-specific legal analysis to identify the most effective means of isolating and ring-fencing customer funds.

RISK #3

Insufficient assets to repay customers in event of bank's insolvency[18]

Even if a mobile money issuer has set aside and ring-fenced sufficient funds to repay all obligations to its customers, customer funds can still be lost if a bank holding part or all of the funds fails.

While most regulators require mobile money issuers to hold part or all of customer funds in prudentially regulated banks (either directly or through a trustee/ fiduciary), bank failure is a fairly common occurrence, both in times of recession and in times of growth.[19]

Given that bank failures are fairly common and are difficult to anticipate in advance, simply requiring mobile money issuers or trustees/fiduciaries to ring-fence and store customer funds in a licensed bank is insufficient to ensure that customer funds are protected. If a bank holding part or all of the customer funds becomes insolvent, the mobile money issuer may be unable to recover 100% of the value of the funds held on behalf of its customers.

Following are some issues that should be considered when evaluating the safety of funds held in a bank account:

18. This section includes excerpts from GSMA, "Ringfencing and Safeguard of Customer Money."
19. For example, not only did over 300 US banks fail from 2008-2010 in the aftermath of the 2008 financial crisis, but 24 US banks failed in 2013, a year in which US unemployment dropped and the stock market registered large gains. See Dave Manuel (2015), "A History of Bank Failures in the United States".

1. Is the bank holding the customer funds also serving as the trustee/fiduciary?

One possible way to mitigate this risk would be if the issuer were to nominate the bank holding customer funds as a trustee/fiduciary and establish strict limits on how customer funds may be invested. In the absence of a deposit insurance regime that will fully compensate individual mobile money account holders in the event of a bank's insolvency (see points #2-3 below), the trust deed or fiduciary contract could require the bank trustee/fiduciary to invest customer funds in low-risk investments such as central government bonds (or could prohibit their investment altogether and require the bank to merely safeguard the funds). As long as (1) these funds are effectively segregated from the other assets of the bank and (2) bank creditors are prevented from claiming assets held within the Trust/fiduciary account,[20] customers should be fully reimbursed in the event of the bank's insolvency. To ensure that customer funds are segregated from the other assets of the bank, the bank would have to be designated as the trustee or fiduciary.[21]

While such an approach would appear to protect customer funds in the event of bank insolvency, it has not been tested in practice. In addition, this approach requires the mobile money issuer to strictly limit how the bank may use customer funds. If banks are prohibited from intermediating customer funds, they may be unable to pay interest to the mobile money issuer (or to the customer, in countries where this is permitted or required). Furthermore, the banks can be expected to charge mobile money issuers for providing these services if they are unable to invest these funds profitably; this cost will be passed along to customers. Therefore, while this approach may effectively protect customer funds, regulators and mobile money issuers should also explore alternate approaches that achieve the same objective in a less restrictive and costly manner (see below).

2. Does the country have an operational deposit insurance regime?

Many of the countries where mobile money services have developed do not have a fully operational deposit insurance regime in place to protect small depositors (see Table 4); the same is true for over half of GSMA survey respondents.[22] In such countries, mobile money customers would not be entitled to priority status with respect to reimbursement of liabilities in the event of a bank's insolvency. Instead, the reimbursement of pooled funds would receive the same level of priority treatment as other deposits, which varies from country to country. For example, Ethiopia provides for the following priority of claims in the event of a bank's insolvency:[23]

i. Secured claims;

ii. Remuneration and reasonable expenses of the receiver;

20. As noted earlier, funds held in trust are protected from outside creditors in the event of a trustee's insolvency. Funds held under fiduciary contracts may or may not be protected; different country approaches are discussed in Table 3.

21. Conversation with David Ramos Muñoz, Senior Lecturer of Commercial Law, Universidad Carlos III de Madrid (July 2015).

22. GSMA survey of customer fund safeguarding practices (June-July 2015).

23. See Banking Business Proclamation No. 592/2008 , Art. 45.

iii. Claims of creditors that offered new credit following the declaration of insolvency;

iv. Salaries and expenses of non-managerial staff for three months prior to insolvency;

v. Deposits;

vi. Taxes;

vii. Other claims; and

viii. Interest on claims.

In such a case, it is likely that customers holding small amounts of funds in mobile money accounts – like other holders of low-value deposits – would receive less than 100% of the value of these funds.

TABLE 4

Existence of explicit deposit insurance schemes (as of 2013)[24]

Country	Explicit deposit insurance	No explicit deposit insurance
Bangladesh	✓	
Chad	✓	
Colombia	✓	
Congo, Democratic Republic		✓
Côte d'Ivoire		✓
El Salvador	✓	
Ghana		✓
Honduras	✓	
India	✓	
Kenya	✓	
Lesotho		✓
Madagascar		✓
Mali		✓
Malawi		✓
Namibia		✓
Pakistan		✓

24. Source: Asli Demirgüç-Kunt, Edward Kane, and Luc Laeven (2014), "Deposit Insurance Database", Table 1, IMF Working Paper.

Country	Explicit deposit insurance	No explicit deposit insurance
Paraguay	✓	
Philippines	✓	
Rwanda		✓
Senegal		✓
Somalia		✓
South Africa		✓
Tanzania	✓	
Thailand	✓	
Tunisia		✓
Uganda	✓	
Zimbabwe	✓	

If a country has an operational deposit insurance regime, regulators and providers should explore options for fully insuring individual mobile money accounts in the event of bank insolvency (see point #3 below). If an operational deposit insurance regime does not exist, regulators and providers should consider adopting other measures to protect customer funds in the event of bank insolvency, such as use of bank as trustee/fiduciary (see point #1), use of private insurance, requiring a guarantee from the bank's parent group, evaluation of strength of bank(s) holding deposit(s), diversification requirements, and/or minimum initial and ongoing capital requirements (see points #4-7).

3. If the country has a functional deposit insurance regime, are individual mobile money accounts fully covered?

Even in countries where a deposit insurance scheme is operational, individual mobile money customers may be at risk. In most models run by nonbanks, mobile money issuers combine funds obtained from many customers in pooled accounts that are kept in one or more commercial banks. While the pooled accounts represent the value of many individual customers' accounts, each pooled account usually is treated as a single account for the purposes of deposit insurance. As a result, individual customers may only be guaranteed a small percentage of the actual value of their account.

For example, suppose a mobile money issuer pools funds from 20,000 customers with a total value of USD 1 million in a single account (an average of USD 50 per customer). If the deposit insurance limit is USD 10,000, typically the governmental entity responsible for deposit insurance will conclude that only USD 10,000 of the USD 1 million (1%) is covered by insurance. In this case, each individual customer would only be guaranteed USD 0.50 (1% of the average account value).

One way that this problem can be addressed is through the application of **pass-through deposit insurance**. In jurisdictions where pass-through insurance is recognised,[25] the deposit insurance provider acknowledges that under certain circumstances, funds that are combined and held in a single account may be better characterised as a number of smaller accounts for the purposes of deposit insurance protection. In the United States, for example, the Federal Deposit Insurance Corporation has determined that each individual mobile money holder will be eligible for full deposit insurance protection if all of the following three conditions are met:[26]

- The mobile money issuer must identify the account as a custodial account, with funds held on behalf of the underlying customers;
- Either the issuer, the bank, or some other third party must maintain records identifying each beneficial owner and the amount owed to each; and
- The underlying customers must legally own the funds in question.

Currently, pass-through deposit insurance is virtually non-existent in countries with high levels of mobile money adoption.[27] None of the survey respondents indicated that mobile money funds could benefit from pass-through deposit insurance.[28] Kenya enacted a Deposit Insurance Act in 2012, which provides for 'pass through' deposit insurance "*where a depositor acts as a trustee for another and the trusteeship is disclosed on the records of the institution*".[29] In the future, such coverage should reduce the risk to customers in the event of the insolvency of one or more Kenyan banks holding customer funds. However, the Act still awaits a commencement date.

An alternate approach that is beginning to gain currency is the **direct application of deposit insurance to individual mobile money accounts**. In 2014, Colombia and India established "*societies specializing in deposits and electronic payments (SEDPEs)*" and "*payments banks*", respectively, both of which are functionally quite similar to mobile money issuers. Both countries have specifically stated that customer funds held by these institutions will be covered by deposit insurance in the event of the institution's insolvency.[30]

Where this is permitted by regulation, mobile money issuers should structure bank account holdings so that individual mobile money accounts can benefit from direct or pass-through deposit insurance. In other jurisdictions, regulators and mobile money issuers should consider the alternate safeguarding measures described in point #1 and points #4-7.

25. Recognition of pass-through insurance remains uncommon. A 2013 survey of 58 members of the International Association of Deposit Insurers (IADI) found that only 16% had some form of pass-through coverage. See IADI (2013), "Financial Inclusion and Deposit Insurance", Section III, Question 20.
26. See Federal Deposit Insurance Corporation, New General Counsel's Opinion No. 8 (2008).
27. Other countries that have approved or are planning to approve some form of pass-through deposit insurance include the Czech Republic, Jamaica, Malaysia, and Nigeria.
28. GSMA survey of customer fund safeguarding practices (June-July 2015).
29. Kenya Deposit Insurance Act, Section 29. See also Brian Muthiora (2014), "Reinventing the Wheel: "Pass Through" Deposit Insurance Coverage for Mobile Money in Kenya", GSMA MMU.
30. See Ley 1735 de 21 Oct 2014, Art. 1, para. 2; and Guidelines for Licensing of Payments Banks, Art. 4(i).

4. Are customer funds insured by a private insurer?

As noted in Table 1, the EU does not require mobile money issuers to maintain 100% of customer funds in bank deposits or other low-risk assets if they safeguard customer funds by obtaining private insurance cover. While the EU offers this as a substitute for safeguarding, private insurance could also serve as a substitute for deposit insurance in a country that lacks a pass-through deposit insurance regime. At least one mobile money issuer has taken out private insurance to cover some of the customer funds held in banks.

Private insurance suffers from certain limitations, however. The cost of insurance will vary from country to country, as will the financial strength of the available insurance companies. In addition, some providers may be unable to obtain private insurance if the insurance industry is unable to effectively assess and diversify the risk of loss of funds due to bank insolvency.[31] Therefore, the feasibility of private insurance will need to be evaluated on a case-by-case basis.

5. Can issuers obtain a guarantee from the bank's parent group?

Some issuers have included a guarantee from the bank's parent group in their contracts with banks holding customer funds. In the event of the bank's insolvency, the issuer would have a contractual right to seek reimbursement from the parent group for any losses.

Where available, this approach could serve as a practical and cost-effective alternative to traditional private insurance. Such an approach is only possible, however, in a country with a competitive banking sector and at least one multinational bank. In addition, the strength of this guarantee depends upon the financial strength of the parent group.

6. Are there specific requirements regarding the number and/or the strength of banks holding customer funds?

Some regulators attempt to mitigate the risk of bank failure through requirements to spread mobile money holdings across multiple banks. The theory behind such diversification requirements is that a mobile money issuer will be better able to absorb and reimburse customer losses if only a portion of the funds is lost when a bank fails.[32] In Kenya, for example, if customer funds are less than KES 100 million (approx. USD 990,000), the funds must be placed in one or more banks that the Central Bank of Kenya rates as "strong" banks. Once customer funds exceed KES 100 million, they must be diversified among four or more banks (of which at least two must be "strong rated"), with no bank holding more than 25% of total customer funds.

31. For further discussion of the risks related to the use of private insurance in the mobile money context, see David Ramos, Javier Solana, Ross P. Buckley, and Jonathan Greenacre (2015), "Protecting the Funds of Mobile Money Customers in Civil Law Jurisdictions", p21-22, GEG Working Paper, University of Oxford.

32. In some cases, diversification requirements serve an additional purpose: to limit an individual bank's exposure to mobile money liabilities. This would only pose a significant risk if mobile money liabilities were to grow to constitute a "large exposure" from the perspective of an individual banking institution.

In practice, many providers diversify funds even in the absence of an explicit regulatory requirement. Approximately two-thirds of GSMA member survey respondents store funds in a single bank and approximately one-third use multiple banks.[33]

In the absence of a practical mechanism to fully reimburse customers in the event of bank insolvency, diversification requirements can help to mitigate the impact of such an event. Similarly, bank strength requirements may help to reduce the risk of bank failure, though it is worth noting that many banks believed to be strong have failed in the past. When combined with capital requirements (see point #7), such requirements should increase the likelihood that a mobile money issuer can survive the failure of one or more banks holding part of the customer funds.

7. Are issuers subject to initial and ongoing minimum capital requirements?

Virtually all jurisdictions require nonbank mobile money issuers to meet initial minimum capital requirements in order to receive a license to operate. In addition, some jurisdictions require issuers to meet ongoing minimum capital requirements as well. Ongoing requirements, which typically are calculated as a percentage of outstanding mobile money liabilities, are intended to ensure that the mobile money issuer's capital continues to grow along with its obligations. If the customer is not fully reimbursed in the event of a bank insolvency, the issuer will be expected to maintain sufficient capital to make up the difference. Table 5 lists initial and ongoing minimum capital requirements for nonbank mobile money issuers in selected countries.

TABLE 5

Initial and ongoing minimum capital requirements for nonbank mobile money issuers in selected countries

Country	Initial Requirement	Ongoing Requirement
Colombia	COP 5.846 billion (approx. USD 2.1 million)	2% of outstanding mobile money liabilities
Congo, Democratic Republic	USD 2.5 million	The greater of (1) current outstanding mobile money liabilities; (2) six-month average of outstanding mobile money liabilities; or (3) initial minimum capital.
Côte d'Ivoire	XOF 300 million (approx. USD 509,000)	The greater of (1) XOF 300 million (approx. USD 509,000); or (2) 3% of outstanding mobile money liabilities.
Ghana	Not specified	Not specified
India	INR 1 billion (approx. USD 15.8 million)	(1) Minimum 15% of risk-weighted assets and (2) liabilities may not exceed 33.33 times net worth (i.e. 3% leverage ratio)

33. GSMA survey of customer fund safeguarding practices (June-July 2015).

Country	Initial Requirement	Ongoing Requirement
Kenya	KES 20 million (approx. USD 198,000)	KES 20 million (approx. USD 198,000)
Lesotho	Not specified	Not specified
Mali	XOF 300 million (approx. USD 509,000)	The greater of (1) XOF 300 million (approx. USD 509,000); or (2) 3% of outstanding mobile money liabilities.
Malawi	Not specified	Not specified
Namibia	NAD 2.5 million (approx. USD 205,000)	The greater of (1) NAD 2.5 million or (2) 2% of outstanding mobile money liabilities
Paraguay	Not specified	Not specified
Philippines	PHP 100 million (approx. USD 2.2 million)	PHP 100 million (approx. USD 2.2 million)
Senegal	XOF 300 million (approx. USD 509,000)	The greater of (1) XOF 300 million (approx. USD 509,000); or (2) 3% of outstanding mobile money liabilities.
Uganda	Not specified	Not specified

As Table 5 demonstrates, initial and ongoing minimum capital requirements vary significantly across jurisdictions. Initial requirements range from approximately USD 200,000 in Kenya and Namibia to over USD 15 million in India. There is a lack of consensus on how to establish appropriate initial minimum capital requirements for nonbank mobile money issuers. Regulators may wish to consider factors such as start-up costs for building a sustainable mobile money business (which may vary significantly depending upon the addressable market),[34] along with the need to strike a balance that fosters innovation while limiting the number of licensed institutions to ensure that they are effectively supervised.

Ongoing minimum capital requirements are designed to ensure that the capital available to address bank insolvency and other shocks remains sufficient as the mobile money issuer grows. Many countries use a percentage of outstanding mobile money liabilities, typically 2-3%. Higher requirements are neither practical nor necessary for mobile money business. The Democratic Republic of Congo's 100% requirement has not been enforced in practice, while the West African Economic and Monetary Union's previous 8% requirement[35] was reduced to 3% when the regulations were updated in May 2015.

34. For example, start-up costs can be expected to be significantly lower for a provider in Namibia (approx. adult population 1.5 million) than for one in India (approx. adult population 900 million). For population estimates, see Central Intelligence Agency (2015), The World Factbook.

35. An 8% capital requirement is comparable to typical capital adequacy ratios for banks. Such a requirement is unnecessary for mobile money issuers that do not intermediate customer funds.

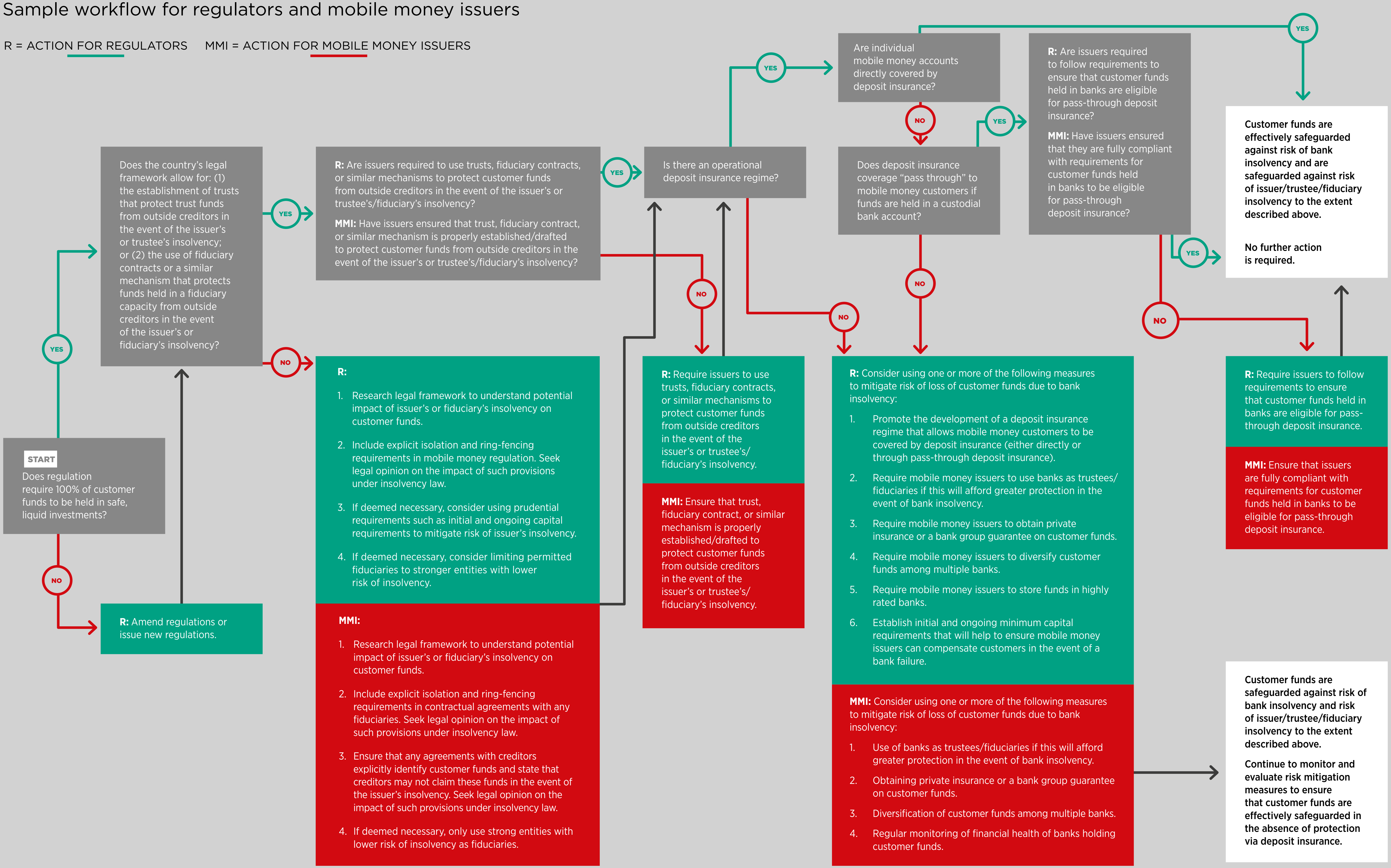
Sample workflow for regulators and mobile money issuers

Figure 2 provides a sample workflow for regulators and mobile money issuers.[36] Regulators considering applying some or all of the risk mitigation measures listed below should consult with mobile money issuers and other industry stakeholders to ensure that the proposed measures will not be unduly burdensome or costly, as this could impact adoption of mobile money services by low-income and unbanked customers.

36. This workflow is generic in nature and cannot capture all potential country-specific issues; it is not intended to substitute for an in-depth, country-specific legal analysis..

FIGURE 2

Sample workflow for regulators and mobile money issuers



Conclusion

Regulators and mobile money issuers can take a number of measures to effectively mitigate the risk that customers will be unable to access their funds upon demand or will lose funds stored on the electronic account.

Table 6 provides a summary of these risks and possible operational and regulatory responses that can be adopted by regulators and mobile money issuers.

TABLE 6

Key safeguarding risks and possible operational and regulatory responses

Risk	Possible operational and regulatory responses
Insufficient funds set aside in safe, liquid investments to meet customer demand for cash	• 100% reserve requirement • Strict limitations on permitted investments
Insufficient assets to repay customers in event of issuer's (or fiduciary's) insolvency	• Use of trusts or other fiduciary arrangements to (1) separate customer funds from issuer's (or fiduciary's) personal assets and (2) prevent creditors of insolvent issuer (or fiduciary) from claiming customer funds
Insufficient assets to repay customers in event of bank's insolvency	• Use of bank as fiduciary • Pass-through deposit insurance • Private insurance or bank group guarantee • Requirements regarding the number and strength of banks holding customer funds • Ongoing capital requirements

As a general rule, regulators should require providers to set aside assets worth 100% of the value of outstanding mobile money liabilities. These assets should be stored in safe, liquid investments. While most regulators require funds to be stored in banks, the safest investments will vary by country. **To protect against loss of customer funds in the event of the mobile money issuer's (or trustee/ fiduciary's) insolvency, mobile money issuers should establish trusts, fiduciary contracts, or other arrangements that provide a comparable level of protection.** Including specific isolation and ring-fencing requirements in regulations may also provide a certain degree of protection, though this needs to be assessed on a case-by-case basis.

Where deposit insurance exists and may be applied to individual mobile money accounts, mobile money issuers should ensure that customer accounts benefit from such protection. In most countries, however, this is not a possibility, so regulators and mobile money issuers should consider alternate means of mitigating bank insolvency risk, such as nominating the bank holding the funds as a trustee/fiduciary, use of private insurance or guarantees from the bank's parent group, diversifying fund holdings, evaluating the financial strength of banks holding customer funds, and/or applying proportional initial and ongoing minimum capital requirements.

For each of the identified risks, the best safeguarding approach will depend upon the country context. Regulators often require mobile money issuers to store customer funds in trust/fiduciary accounts in banks, but this approach only makes sense if the risk of loss of funds in the event of bank insolvency is low and if the use of trust/fiduciary accounts for mobile money is both practical and cost-effective. Ultimately, regulators and mobile money issuers should aim to achieve a high level of protection of customer funds in the least burdensome, most cost-effective manner possible. Given significant variations in available legal instruments and market infrastructure, regulators should consult closely with mobile money issuers and other industry stakeholders prior to establishing safeguarding requirements. This will help to ensure that the chosen requirements will effectively protect customer funds without negatively impacting adoption of mobile money services by low-income and unbanked customers.

Safeguarding mobile money customers' funds is a complex legal matter with significant variation from country to country. Ongoing research into safeguarding customer funds in common law[37] and civil law[38] jurisdictions is helping to improve understanding of many of these issues.[39] Nevertheless, a number of topics for further research remain, including the following:

1. **How are customer funds protected from issuer and fiduciary insolvency in civil law countries that have not formally adopted fiduciary contracts?** Most Latin American countries have adopted some form of fiduciary contract deriving from *el fideicomiso*, beginning with Mexico in the early 1900s.[40] On the other hand, most Francophone countries have not yet developed a fiduciary contract mechanism along the lines of la fiducie, which was only adopted in France in 2007.[41] Future research could explore the country-specific mechanisms that are available for segregating and protecting customer funds in Francophone countries and other civil law countries that have not formally adopted fiduciary contracts.

2. **To what extent do fiduciary contracts and specific regulatory requirements protect against attachment by creditors in civil law countries?** As noted above, the level of protection in the event of the issuer's (or fiduciary's) insolvency may vary, particularly for issuers in countries with a civil law legal tradition. Future research could evaluate the extent to which fiduciary contracts and/or specific regulatory requirements provide effective protection in the event of the issuer's or fiduciary's insolvency.

3. **In the absence of pass-through deposit insurance, how can issuers protect funds held in a bank in the event of the bank's insolvency?** As noted above, it may be possible to protect funds against bank insolvency in certain countries if the bank serves as the trustee/fiduciary and funds are subject to strict limits on investment. Future research could explore this issue in more depth and offer specific guidance to mobile money issuers and regulators.

37. See Jonathan Greenacre and Ross Buckley (2014), "E-Money Knowledge Product: Trust Law Protections for E-Money Customers", Centre for International Finance and Regulation Working paper; Jonathan Greenacre and Ross Buckley (2014), "Using Trusts to Protect Mobile Money Customers".
38. See David Ramos, Javier Solana, Ross P. Buckley, and Jonathan Greenacre (2015), "Protecting the Funds of Mobile Money Customers in Civil Law Jurisdictions", GEG Working Paper, University of Oxford.
39. In addition, CGAP is researching the potential applicability of deposit insurance to mobile money and similar financial products. See CGAP, "Deposit Insurance for Digital Finance Products".
40. See Maria Eugenia Retteg (2009), "The Mexican Fideicomiso: Theoretical and Practical Approach", Universite de Geneve; and Ignacio Arroyo Martinez (1982), "Trust and the Civil Law", Louisiana Law Review, Volume 42, Number 5.
41. For a description of the historical development of *la fiducie* in France, see Michel Grimaldi (2011), "Introduction of the Trust into French Law", Henri Capitant Law Review, No. 2.

For further information, please visit the website at www.gsma.com/mobilemoney

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