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A Technical Note

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This Technical Note addresses key safeguarding measures for customer funds of nonbank electronic money issuers (EMIs), specifically the implications of each measure and relevant global regulatory approaches.[1] While Staschen and Meagher (2018) take a broad view of implementing the four basic regulatory enablers for digital financial services—nonbank e-money issuance, use of agents, risk-based customer due diligence, and consumer protection—this Technical Note focuses on nonbank e-money issuance, with a detailed look at maintaining customer funds in bank accounts, diversifying funds across several banks to reduce the concentration risk, and the option of placing them (partially or totally) in other safe, liquid assets (e.g., government securities).

Countries that have specific EMI rules allow them to operate without being subject to the full range of prudential regulations that apply to traditional banks provided that (i) they do not intermediate the funds they accept from the public (**e-float**) and (ii) these funds are kept in safe and liquid assets. One of the concerns of regulators is what constitutes safe and liquid assets. With the increase in the number of EMIs and volumes of electronic money (**e-money**) funds, this concern is only growing in importance. A useful approach to protect e-float is to consider various scenarios of what can go wrong with the EMI and the financial institution(s) holding the e-float. Standards on the diversification of e-float holdings can play a crucial role in mitigating risks.

E-money issuance presents important risks, including loss of customer funds and unavailability of customer funds upon demand. Inability to access funds upon demand may be due to insufficient liquidity or operational failures (e.g., system downtime), while loss of customer funds may be due to loss of the e-float resulting from imprudent investment or due to insolvency of (i) the EMI or another fiduciary party such as a trustee holding the funds on behalf of the customers or (ii) a bank that holds part or all of the e-float.

Regulatory requirements of fund safeguarding are meant to protect against risk of loss and unavailability of customer funds. These requirements are aimed at ensuring that the e-float is sufficient, safe, and liquid to meet customer demand for converting e-money into cash. Such measures typically include the following:

- Restrictions on the use of the e-float
- Requirements that the e-float be placed in their entirety in safe, liquid assets
- Diversification of the e-float across several banks[2]

[1] Some countries use a term other than e-money issuer for similar stored-value models (e.g., "mobile financial services provider" in Myanmar and "mobile money service provider" in Uganda). The discussion in this Note will equally apply. Also, India's payment banks are not EMIs, but banks. Since they are subject to similar fund safeguarding rules, they are also covered in this Note.

[2] In addition, rules on how much money can be held in e-money accounts at any time limit the overall risk exposure per client.

E-float is typically pooled into **float accounts** that are held either under the name of the EMI or by a trustee or some other type of fiduciary relationship; they are not held under the name of the customers. When float accounts are held under the name of the EMI, the EMI is the legal owner of the e-float. This makes the e-float vulnerable to claims by the EMI's creditors if the EMI becomes insolvent (Tarazi and Breloff 2010). Without additional mechanisms to protect e-float, customers are unlikely to be paid the full value of their e-money holdings in the event of EMI insolvency. One way to address this has been to require the segregation and ring-fencing of e-float in a trust account that protects against claims of third parties on the EMI (and the trustee).[3] In such cases, the trustee is responsible for managing e-float for the benefit of the customers, and the customers are considered the owners of the e-float (the ultimate beneficiaries of the trust account). Whether the e-float is held by the EMI or by a trustee has implications on who benefits from interest or investment income paid on the e-float, subject to specific rules on this.[4]

Regulatory Options

1. Depositing funds with the central bank

Some regulators may choose to require EMIs to hold the e-float in the central bank. (However, this is not one of the most common approaches.)

Example: El Salvador

Pros

- The risk of loss of funds is minimal because a central bank is unlikely to become insolvent.

Cons

- Where the central bank does not pay interest on e-float, there would not be potential interest income for the EMI and/or customers. This may lead EMIs to charge higher prices to their customers.
- E-float will not be brought into the banking system and used for productive purposes, which could lead to less private sector investment.
- This could create operational challenges for an EMI if it needs to deposit cash at the main office or at central bank branches. Some countries lack the infrastructure for electronic fund transfers between the bank accounts of the EMI and the central bank.

[3] Depending on a country's legal system, this type of account may be called trust, custodial, escrow, or fiduciary account and the level of protection of the e-float may vary.

[4] While the EMI will typically benefit when the float account is under its name and the customers (as the beneficiaries of the trust) would benefit in the case a trustee manages the float account, some countries set specific rules that either prohibit the payment of interest to the customers or define how such interest payments should be done (e.g., by passing on a percentage or by requiring the interest income to be used for charitable purposes). See Staschen and Meagher (2018, p. 13f) for examples.

- Where EMIs are not eligible to have a reserve account at the central bank, they have to use the reserve account of another bank to comply with the requirement of holding e-float with the central bank. Because of this, EMIs may need to pay considerable fees to the bank.

2. Holding funds in bank accounts

The most common approach in regulating the safeguarding of customer funds is to require all e-float to be pooled and deposited in one or several banks.[5] This way, any e-money issued is backed 100 percent by the pooled accounts. According to the World Bank's Global Survey on Financial Inclusion and Consumer Protection (2017), 86 percent of respondents (61 jurisdictions out of 71 responding) require that 100 percent of the e-float be kept in an account at a prudentially regulated financial institution (which may include the central bank).[6] Among these 61 jurisdictions, 25 percent of them specify that the e-float must be spread across accounts in more than one prudentially regulated financial institution.

Pros

- E-float can constitute a source of funds for the economy where it is intermediated by banks.
- Bank accounts may be more liquid compared to other investment options such as government securities.
- The EMI and/or customers could earn interest on the e-float in countries where this is permitted or required.

Cons

- There could be a greater risk of loss of funds due to bank failure where banks are not effectively supervised and/or the banking industry is weak.
- In countries where banks are not allowed to intermediate the e-float, they may charge EMIs for holding the funds, and this cost may be passed on to e-money customers.[7]

Holding e-float in bank accounts may entail (i) depositing in one bank or (ii) spreading the e-float across several banks.

A. Depositing e-float in one bank

In some jurisdictions (e.g., Lesotho, Malawi, Turkey, and Zambia), regulations require EMIs to place the e-float in an account with a bank and use "bank" in the singular, without

[5] Funds may be held in commercial banks, depository institutions, credit institutions, microfinance institutions, and/or other prudentially regulated financial institutions depending on the country context. The term "bank" is used in this paper to refer to all financial institutions used in different regulations/guidelines.
[6] In four of the relevant responding jurisdictions, an account at the central bank must be used.
[7] An example is Turkey, where EMIs should hold the e-float in a separate account at a bank. However, Turkish regulations require the banks holding the funds to block the amount deposited by the EMI at their accounts held at the Central Bank of Turkey. In this case, those banks cannot intermediate the funds of the EMI customer.

explicitly prohibiting placing the e-float in several banks. In others (e.g., Jamaica, Namibia, and Sri Lanka), there is no such reference to "bank" in the singular, but also no requirement to diversify the e-float across several banks.

Examples: Jamaica, Lesotho, Malawi, Namibia, Sri Lanka, Turkey, Zambia

In these countries, EMIs **can** maintain all e-float in a single bank.

Pros

- It is easier to manage one single float account and conduct a single daily or more frequent reconciliation between the float account balance and the total e-money issued.
- Since reconciliation involves only one bank, there could be less operational risk for the EMI (e.g., the risk of failure in reconciliation procedures).[8]

Cons

- Holding the e-float in a single bank can create concentration risk for the investor (the EMI) and the investee (the bank holding the e-float):
  - The EMIs cannot reduce their risk through diversification, so the e-float may be entirely or partially lost in the event of insolvency of the bank holding it—in particular, where there is no proper deposit insurance scheme that fully guarantees e-money accounts.
  - There could be depositor concentration risk for banks in which the e-float represents a significant portion of their liabilities. A sudden shift of e-float holdings from one bank to another could lead to liquidity issues for the bank previously holding the e-float.

B. Spreading funds across several banks

In many countries, regulators either do not prohibit or explicitly require an EMI to diversify its e-float holdings across several banks.

Pros

- Diversification could reduce the depositor concentration risk of individual banks by reducing the amount of e-float held by each bank.
- Diversification could mitigate the impact of a bank insolvency on an EMI. For instance, if the totality of the funds held at the insolvent bank is lost, it would not represent the totality of the e-float. The EMI could potentially absorb the loss with other funds to avoid customer losses.
- It could facilitate agent cash management (in the many countries without interoperability across bank branches from different banks) by increasing the number of banks from which agents can withdraw cash.

[8] Reconciliation between the total e-money and float account balance requires an exchange of information and funds between the float account, the EMI account system, and the EMI's operational bank accounts (i.e., the accounts used for e-money operations, including receiving transaction fees, paying agent fees, and paying employee salaries). The more float accounts there are, the more complex the reconciliation process can be.

Cons

- Diversification of e-float holdings adds complexity to the daily management of the e-float—in particular, the reconciliation process, which has the potential to increase operational risk.

Regulation may also mandate EMIs to place funds in financially healthy banks that have a low probability of default (e.g., in Kenya, this refers to high-rated banks). Alternatively, the regulator may impose prior approval of the banks chosen by each EMI (e.g., Myanmar).

Even with diversification of e-float holdings, there could still be concentration risks for the banks and the EMIs. Depending on which of these the regulator focuses on, two types of limits have been specified in regulation.

i. Limit based on the size of the e-float placed at any single bank

Regulations may set a limit on the size of the e-float that an EMI can place with a single bank. The limit could be set as an absolute value and/or a percentage of total e-float of an EMI.

Examples: India, Kenya

According to Kenya's e-money regulations, if the total e-money issued is less than KES 100 million (about US$1 million), the e-float must be placed at a single strong-rated bank. When the e-money exceeds KES 100 million, the EMI shall not place more than 25 percent of the e-float at any single bank. It must spread the e-float across four or more banks and at least two of them must be strong-rated. India's payments banks are subject to similar rules.

Pros

- Limits based on the size of the e-float to be placed at individual banks are clear and objective, which makes them relatively easy to implement for the EMI, and straightforward for EMI supervisors to assess their compliance.

Cons

- Relying solely on this type of limit does not eliminate the concentration risk to which a single bank can be exposed. For instance, 25 percent of the e-float of one or various EMIs could be a significant amount for a bank, depending on its size (e.g., in terms of capital or total deposits). A bank could become highly dependent on a large EMI or on this particular type of deposit (from the e-money industry).
- It might be challenging for the EMI to find enough banks in the country that are able and willing to hold the e-float, particularly when banks must meet minimum conditions (e.g., rating).

- If the requirement applies only to e-float holdings in excess of a certain amount (absolute value), smaller EMIs are still subject to the risk of losing funds if the bank becomes insolvent.

ii. Limit based on the size of a single bank holding the e-float

Regulators may limit the growth of float accounts held by individual banks, thereby reducing the bank's exposure to a single large depositor. The relevant measure is not the absolute size of the float account, but its size relative to the size (e.g., net worth, total deposits) of the bank where the e-float is placed.

Examples: Ghana, Liberia

In Liberia, regulation requires an EMI to spread the e-float across several banks if the total e-float held by a single bank exceeds 40 percent of the bank's net worth. Whenever the threshold is exceeded on average for three consecutive months, the EMI must place any excess e-float in another bank. Ghana has a similar rule except that the threshold is 25 percent. In addition, Ghana has an aggregate limit on a bank's total exposure to the e-money industry. According to this, a single bank cannot hold e-float from all EMIs exceeding 40 percent of its net worth. A bank holding the e-float in excess of either of these limits would be fined by the Bank of Ghana. Also, the bank is required to invest the funds in excess of these limits in 91-day Treasury Bills within one week after the breach.

Pros

- This approach may help limit a single bank's exposure to a single large depositor (EMI). If there is also a limit on the exposure of a single bank to the EMI industry as a whole (as in the case of Ghana), this addresses any potential sectoral risk originating from the EMI industry.
- If the limit is strict enough, it can be effectively equivalent to the requirement to diversify e-float holdings across several banks, with their pros and cons discussed above.[9]

Cons

- The implementation of this limit should be imposed on the bank holding the e-float and not on the EMI. If it is imposed on the EMI, the EMI would need up-to-date information on the net worth (or other reference measure determined in regulation) of each bank holding e-float, which would have to be provided by the bank or a third-party (e.g., supervisor). In the case of an industry-wide limit, the EMI would need to know about the e-float holding of all other EMIs using the same bank, something that is clearly not easy to achieve in practice. Furthermore, if the EMI does not have

[9] This is, indeed, the case in Ghana where all EMIs had to diversify their e-float holdings across several banks. It would be less so in the case in Liberia, where a high limit (40 percent) for banks e-float holdings has been set.

up-to-date information on the bank's size, it may become noncompliant and unable to properly manage the float accounts.

- It can be argued that it is the responsibility of the bank holding the e-float to manage its exposure to EMIs' e-float as it does in the case of other large depositors. The bank supervisor may be best positioned to impose the e-float diversification requirement on the bank.[10] When set in EMI regulations, this limit makes EMIs unduly responsible for the banks' concentration risk and increases compliance costs for EMIs.
- In countries that have a limit based on the size of a single bank holding the e-float, an EMI with a small e-money portfolio might end up placing all its e-float in a single bank (since the total e-float would not exceed the limit).

3. Option of investing funds in other liquid assets

Many jurisdictions allow EMIs to invest e-float in low-risk securities, such as government securities or other liquid assets, as an alternative or complement to holding the e-float in bank deposits.

Examples: Bangladesh, India, Malaysia,[11] the Philippines, Rwanda, WAEMU[12]

The eligibility of assets to invest in varies by country. In WAEMU countries, for example, an EMI can place up to 25 percent of its e-float in treasury bills and/or corporate securities of listed companies.[13] In India, the central bank mandates payments banks to invest a minimum of 75 percent of the e-float in government securities/treasury bills and to hold a maximum of 25 percent in current and time/fixed bank deposits. Also, an EMI in Bangladesh must invest a minimum of 25 percent of the e-float in government securities, and the rest should be maintained in bank accounts. In Rwanda, an EMI can invest up to 20 percent of the e-float in short-term government securities with the approval of the Central Bank of Rwanda.

In some countries, such as Ghana, Myanmar, Rwanda, and the Philippines, regulations allow the central bank to determine/approve eligible assets in which the e-float can be invested, in addition to bank accounts and/or government securities.

Pros

- In countries where the risk of loss of customer funds due to bank insolvency is high, regulators may prefer EMIs to invest in government securities or other safe liquid assets.

[10] In Ghana, the limits have been prescribed in a letter sent by the Payment Systems Department of the Bank of Ghana to the banks holding e-float.

[11] There are two types of e-money schemes, small EMIs and large EMIs, in Malaysia as per the regulation. Large EMIs can invest in securities and/or other assets determined by the Bank Negara Malaysia in addition to holding e-float in deposits with a bank, while small EMIs could only place the funds in a bank account.

[12] West African Economic and Monetary Union (WAEMU) countries are Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo.

[13] An EMI in WAEMU countries must place at least 75 percent of the value of all its e-money in circulation in sight/demand deposits, beyond this threshold, funds may alternatively be placed in time deposits, T-bills, and corporate securities (of listed companies).

- Government bonds can be highly liquid where there is a well-functioning interbank market.
- Investing in government securities is safe in countries where the risk of the government going bankrupt or declaring sovereign default is low.

Cons

- Securities may not always be as liquid as balances in bank accounts and are subject to market risks that EMIs may not be well prepared to manage.
- Less interest may be earned compared to the interest earned in bank deposits.
- Investing in government securities instead of bank deposits may decrease the aggregate level of e-float brought into the banking sector that could be extended as loans to the real sector.
- Investing in corporate securities such as bonds could be attractive because they could offer a higher yield than the treasury bills and government bonds, but they usually have a higher risk.

4. Combining several options

In addition to the options mentioned above, countries may prefer to use a variety of different options to safeguard the e-float and allow it to produce some income.

Examples: Brazil, Colombia, India, Indonesia, Rwanda, Tanzania

- In Colombia, EMIs must hold the e-float in the Central Bank of Colombia or in a bank.
- In Brazil, the funds are deposited in a noninterest-bearing reserve account at the central bank, but EMIs can invest in government bonds by negotiating interbank instruments.
- Indonesia requires EMIs to deposit at least 30 percent of the e-float in commercial banks with the highest required level of capital and the rest can be invested in securities or financial instruments issued by the Central Bank of Indonesia or the government or may be maintained in an account at Central Bank of Indonesia.
- In India, payments banks must maintain part of their e-float with the Reserve Bank of India (to satisfy the cash reserve requirement) in addition to investing the e-float in government securities and holding them as bank deposits.
- Tanzania set limits on both the size of the e-float that an individual EMI can hold with a bank and the size of a bank holding the e-float. An EMI cannot place more than 25 percent of its e-float in a single bank, unless the total e-float is less than TZS 100 million (about US$45,000).[14] If the e-float exceeds TZS 100 million, the EMI must

[14] This limit appears to be very low. One explanation is that it was copied from the Kenya regulations, where the same amount in Kenyan shillings has been prescribed.

place the e-float in at least four banks. Also, each float account cannot have a balance greater than TZS 500 million (about US$225,000). In addition, a single bank cannot hold e-floats (from all EMIs) exceeding 50 percent of its core capital.

- Rwanda sets two different limits. An EMI cannot place more than 25 percent of its e-float with a single bank, and an EMI cannot place e-float that exceeds 25 percent of the core capital of a single bank. Also, the bank should promptly inform the EMI when the threshold is exceeded. Unlike in Tanzania, these requirements apply irrespective of the size of the e-float.

Pros

- A mix of different options may bring better protection for the e-float. A single measure does not fully mitigate against all possible scenarios of distress or failure of either the EMI or the bank.
- It may bring flexibility to EMIs of different sizes while limiting their concentration risk.

Cons

- Mixing several requirements could increase the compliance cost for EMIs, in particular if several diversification rules apply irrespective of the size of an EMI's e-float.
- An EMI may end up having to manage several float accounts and invest in different financial instruments, increasing complexity and requiring greater operational and financial risk capacity.
- Monitoring compliance of an array of intertwined diversification requirements across all EMIs and banks holding e-floats could create undue burden on scarce supervisory resources.

Conclusion

In most countries the primary protection against the risk of loss of customer funds is safeguarding requirements that ensure enough funds are set aside to meet customer demands. The most common approach to fund safeguarding is to require EMIs to pool all individual customer's e-money holdings and deposit them in a single bank account. In some countries, placing the e-float across several banks is at the discretion of the EMIs. Although the most common approach is to place the e-float in banks, EMIs may also invest part of or all of the e-float in liquid assets such as government bonds. In addition, some regulators aim to reduce the EMIs' concentration risk by requiring them to spread the e-float across several banks according to clearly defined rules.

Policy makers' concerns about concentration risks at the EMI or the bank holding the e-float create a need for imposing diversification requirements and not leaving this at the dis-

cretion of EMIs. These requirements can help mitigate the impact on an EMI of a potential bank insolvency and/or mitigate the risk of a single bank's exposure to large amounts of e-float from one or more EMIs. There are two types of concentration limits: (i) limits to the size of the e-float that an EMI can place in any single bank and (ii) limits to the size of the e-float of an EMI relative to the size of a bank. Combining both types of limits might better address concentration risks for both EMIs and banks. Limits to banks' exposures to e-floats would be best done in bank regulation because banks, rather than EMIs, are responsible for managing exposure. In addition, an effective approach to banks' exposures to EMIs could include an aggregate limit for banks' total exposure to e-floats (i.e., the sum of all EMIs' e-floats placed at a bank). This limit can be a ratio of total e-float deposited by all EMIs in a bank to an appropriate measure of that bank, such as total deposits, net worth, or total liabilities.

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