

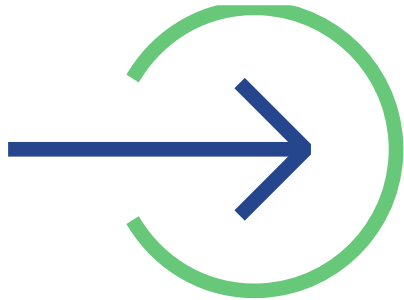


Operational deposits: a model for estimation of the excess balance

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Goals of the presentation



Operational deposits in the LCR framework

A quantitative framework for identification of the operational/non-operational balance of deposits

Impacts on liquidity metrics

Operational deposits and excess balance

Operational deposits in the LCR framework



OPERATIONAL DEPOSITS

- deposits that are held for the purpose of accessing payment and settlement systems
- are «by-product» of clearing, custody, cash management services provided by the bank



Given this «service» nature, these deposits are recognized as more stable in case of a liquidity stress, and thus **receive a preferential treatment for the purposes of LCR** calculation



EXCESS BALANCE



However, **only the portion of the deposit balance necessary to fulfill the operational needs** of the customer can be treated as «operational»: the **excess balance** should be considered as non-operational

Definitions in the Basel III LCR



BANK FOR INTERNATIONAL SETTLEMENTS

BCBS Basel III LCR (par.93-104)

- The deposits are by-products of the underlying services provided by the bank
- The deposits are held in specifically designated accounts and priced without giving an economic incentive to the customer to leave any excess funds on these accounts
- Any **excess balances** that could be withdrawn and would still leave enough funds to fulfil these clearing, custody and cash management activities do not qualify [as operational].
- If banks are unable to determine the amount of the excess balance, then the entire deposit should be assumed to be excess to requirements and, therefore, considered non-operational



Banks must determine the methodology for identifying excess deposits that are excluded from this treatment.

This assessment should be conducted at a sufficiently granular level to adequately assess the risk of withdrawal in an idiosyncratic stress.

Definitions in the EU regulation



EU Regulation (CRR) and Delegated Act (art.27)

- Deposits maintained by the depositor in the context of an “established operational relationship”
- In order to obtain clearing, custody, cash management or other comparable services or other services than these
- The deposit is held in specifically designated accounts and priced without creating economic incentives for the depositor to maintain funds in the deposit in excess of what is needed for the operational relationship
- **Funds in excess** of those required for the provision of operational services shall be treated as non-operational deposits.



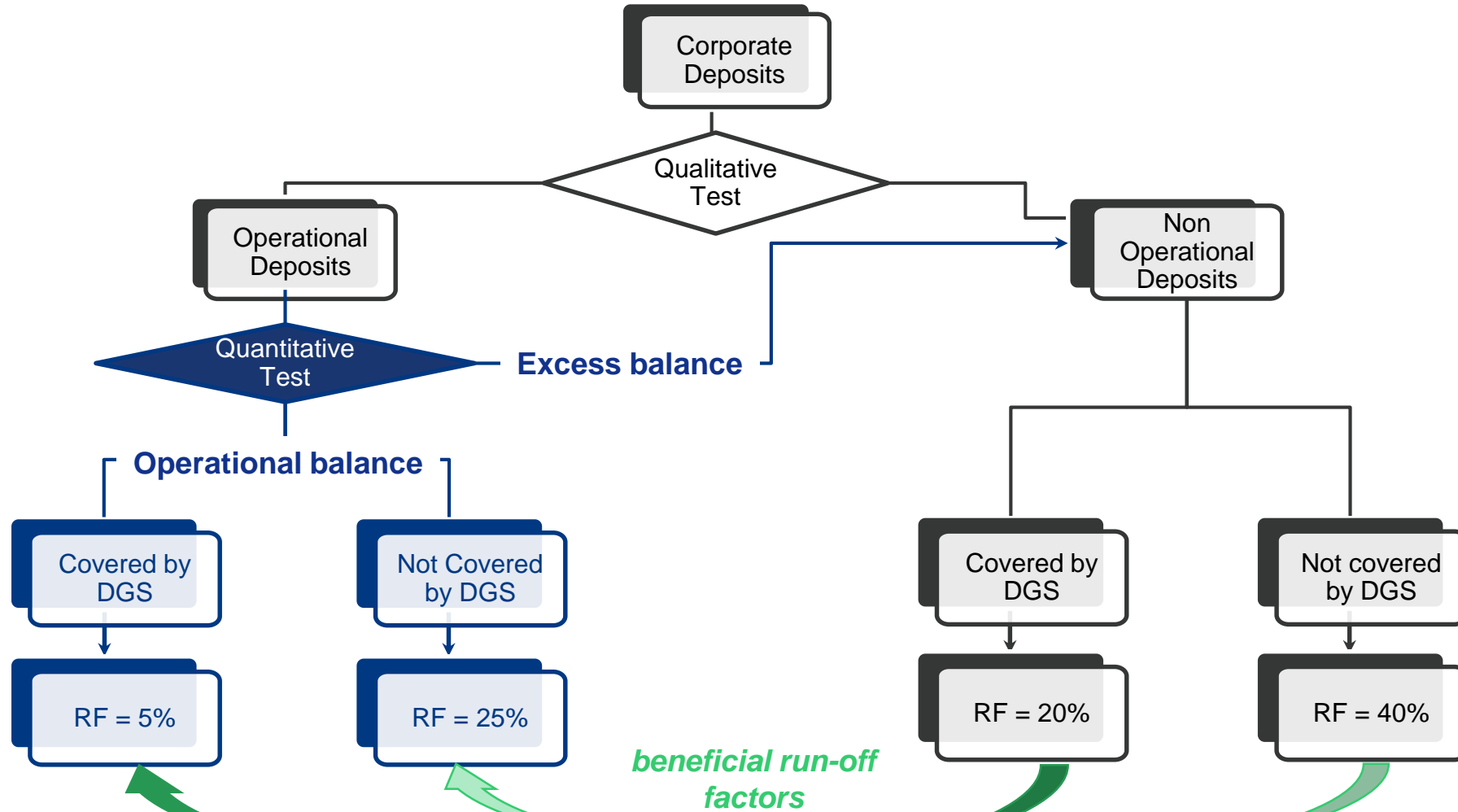
*EBA’s intention is to provide some principles-based guidance which [...] can ensure a minimum level of harmonisation [...] for the **identification of excess amount of operational deposits**, which would not be able to benefit from the preferential rates of operational deposits [...]. **The impact of this leeway is high in the LCR outcome** and with quite divergent methods employed in practice (*)*

*EBA is proposing **amending LCR reporting** in order **to separately captures the part of operational deposits in excess** of the amount necessary for the provision of operational services [...] to be treated as non-operational (**)*

(*) EBA BSG 2018 052

(**) EBA/CP/2018/12

LCR run off factors



beneficial run-off factors



A framework for operational / non-operational balance analysis

Definition of operational vs excess balance



OPERATIONAL BALANCE

→ the part of the balance subject to frequent inflows/outflows due to operational activities (payments)



- the most **VOLATILE** part of the deposit
- subject **SEASONALITY / CYCLICITY**



EXCESS BALANCE

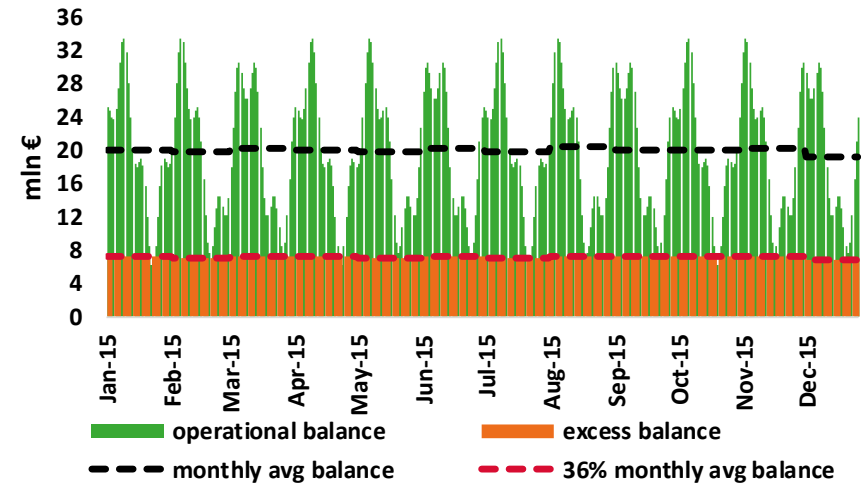
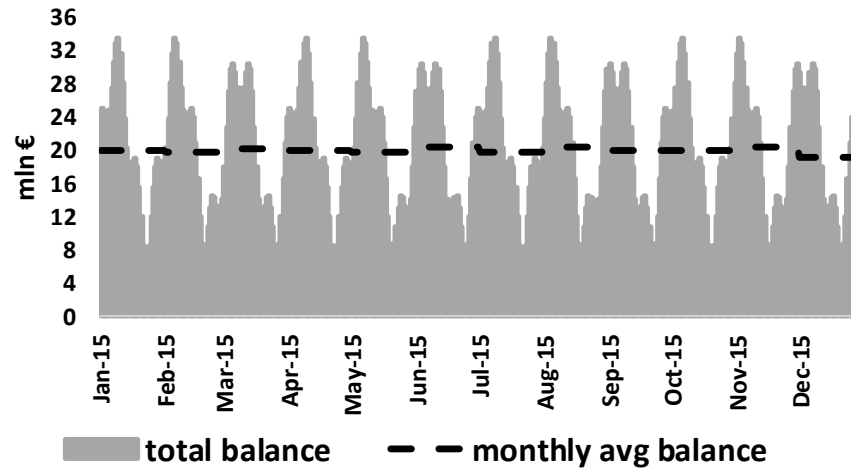
→ the part in excess, that could be withdrawn in case of a liquidity stress



- the most **STABLE** part of the deposit
- not subject to **SEASONALITY / CYCLICITY**

Excess balance estimation: seasonality

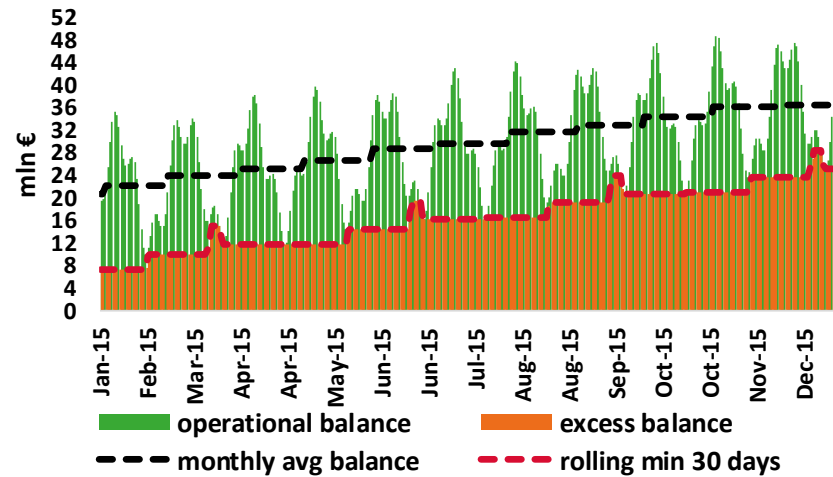
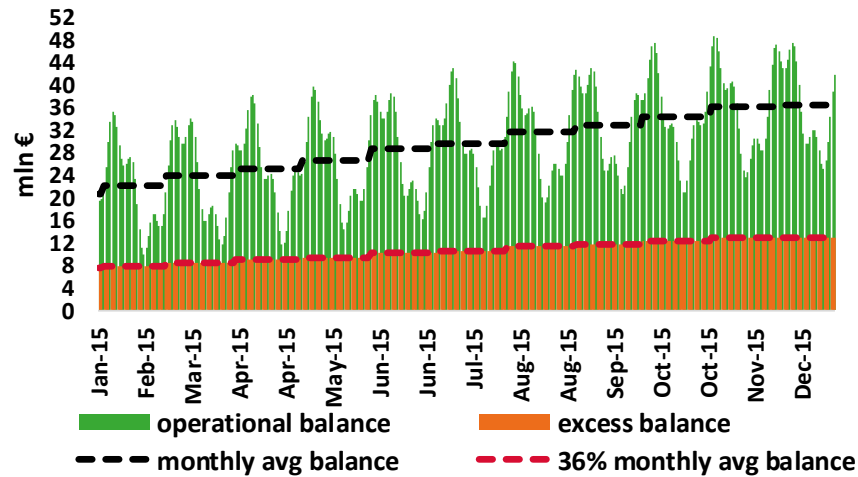
An example



- The excess balance estimation starts with an analysis of historical average and minimum balances in the deposit account
- In this example the historical evolution of the account balance shows a clear 1 month cyclical component
 - the excess balance could be calculated easily as the rolling minimum over 1 month
 - since the monthly average balance is quite stable, the result wouldn't be much different if we defined the excess balance as a percentage (here 36%) of the average monthly balance
 - on the contrary, the result would be incorrect if we calculate the excess balance as a percentage of the total account balance

Excess balance estimation with trends

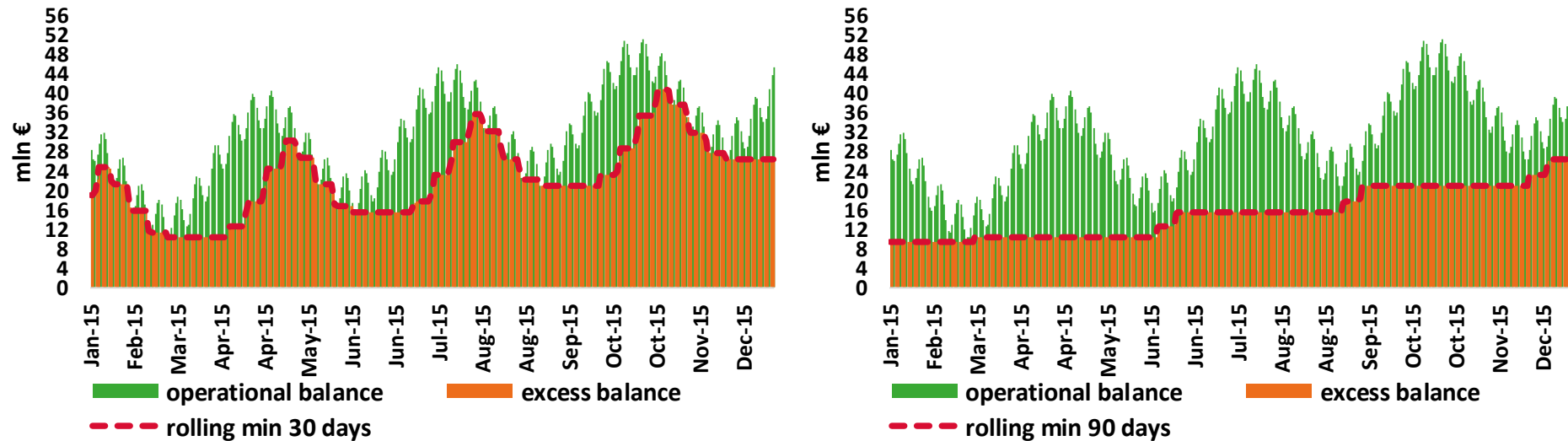
An example



- The account balance may exhibit a positive (negative) trend
- in that case the constant percentage of the average balance would underestimate (overestimate) the excess balance (left panel)
 - while the minimum rolling over the account cycle would still be correct (right panel)

Excess balance estimation with trends

An example with a different cycle



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- the account balance may exhibit a cyclical component of length different than 1 months
- In this example the account balance shows a quarterly cycle
 - calculating the minimum rolling over one month would lead to an incorrect estimation of the excess balance (in this case overestimation)

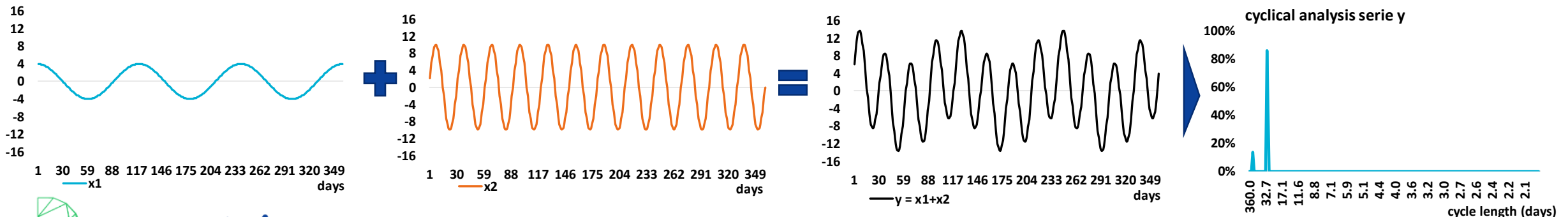
Excess balance estimation: methodology overview



- The goal of the analysis is to determine, **for each single operational deposit**:
- the main cycle length of the operational deposits
 - the excess balance as the rolling minimum over the identified main cycle length



- The estimation, carried out at deposit level, is based on the spectral analysis framework
- broadly speaking, spectral analysis helps decomposing a time series in a sequence of cyclical functions (sines and cosines)
 - for each cyclical functions, the analysis determines the contribution to the explanation of the overall variability and, consequently, the main cycle length of the operational deposit

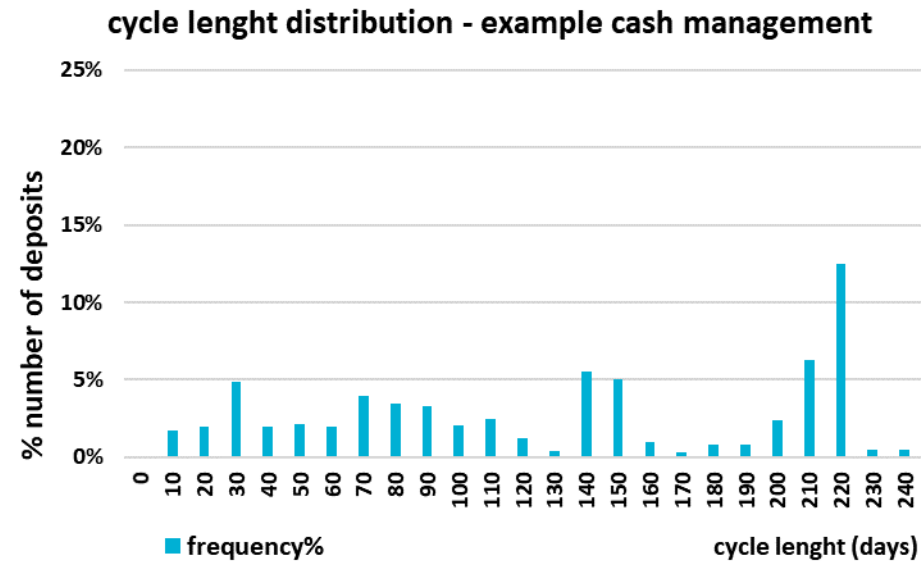


A real life case study

An operational analysis application

- Time series of daily balances for each single deposits, \approx 400 observations
- Cash management accounts: \approx 4.000 accounts, 10,6 bn total amount
- Custody accounts: \approx 44.000 accounts, 4,3 bn total amount

Spectral analysis (cycle lengths):



Results - operational balance and run-off savings

Type of operational account	Balance (mln €)	Operational balance (mln €)	Run-off savings (mln €)	Impact on LCR
Cash management	10.593	4.849	727	6,5%
Custody	4.303	1.925	289	2,5%
tot. Operational deposits	14.896	6.774	1.016	9,3%

- The impact on LCR is calculated considering the application of more favorable run-off coefficients to the operational part of the deposits, instead of considering all deposits as non-operational

Conclusions and managerial implication

Summing up:

- the nature of operational deposits make them a more stable source of funding as compared to other commercial deposits
- nonetheless, the “excess balance” could be more readily withdrawn in case of a liquidity stress
- as a consequence, LCR regulation requires a specific analysis to identify the effective operational part of these deposits
- a model based on spectral analysis has been effectively developed in order to identify the operational/non-operational balances and obtain material benefits in terms of LCR
- the same methodology can be also usefully applied to enhance managerial analysis, such as stress testing of liquidity risk, or even extended in order to assess the stability of deposits which do not qualify for operational deposits for regulatory purposes (because of qualitative requirements)

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