

**Meeting Between Staff of the Federal Reserve Board, the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), and Northern Trust
May 14, 2014**

Participants: David Emmel, Kevin Littler, Adam Trost, April Snyder, Dafina Stewart, and Jahad Atieh (Federal Reserve Board)

Tiffany Eng, Tena Alexander, Jill Cetina, David Stankiewicz, and James Weinberger (OCC)

Kyle Hadley, Eric Schatten, Greg Feder, and Sue Dawley (FDIC)

David Tentinger, Haskell David Charney, Kelly Dibble (Northern Trust)

Summary: Staff of the Federal Reserve Board, the OCC, and the FDIC met with representatives of Northern Trust to discuss the proposed Liquidity Coverage Ratio rule, which would implement the Basel III liquidity standards in the United States. Meeting participants discussed the proposed rule's treatment of operational deposits as well as the company's operational deposit study and its identification of non-operational deposits.

Attachments

**Meeting Between Staff of the Federal Reserve Board and Representatives of Northern Trust
May 14, 2014**

Participants: David Emmel (Federal Reserve Board)
Kyle Hadley (Federal Deposit Insurance Corporation)
Patrick Tierney (Office of the Comptroller of the Currency)

David Tentinger, Treasurer, Northern Trust
David Charney, Liquidity Risk Manager, Northern Trust
Kelly Dibble, Director of Government Relations, Northern Trust

Purpose of the meeting is to discuss the methodologies, findings and application of Northern Trust's recent operational deposit study. Discussions will focus on the study's insight into operational deposit treatment under the recent Liquidity Coverage Ratio NPR.

- I. Key operational deposit issues**
- II. Northern Trust operational deposit study's methodology, findings and application**
- III. Identification of excess (non-operational) deposits**
- IV. Discussion of how different types of custody clients manage their cash**

NORTHERN TRUST



Operational Deposits

Integration into
Liquidity Risk Management

David Charney
Senior Vice President
Treasury Department

Marcus Evans
9th Annual Liquidity Management Conference
March 26, 2014





Operational Deposits Overview

What are Operational Deposits and why are they important?

- Certain “demand” deposits support services provided by banks to corporate and institutional clients:
 - ◆ Treasury Cash Management
 - ◆ Clearing Services
 - ◆ Foreign Exchange Settlement
 - ◆ Custody and Asset Management

- These deposits are “stickier” than other wholesale funds since clients are dependent on the underlying service

- Internal liquidity risk frameworks (e.g. stress tests & CLPs) should incorporate these unique behaviors
 - ◆ Optimize liquidity costs, collateral maintenance and internal cross-charges
 - ◆ Impacts mandated liquidity buffer under new Enhanced Prudential Standards

- Regulators recognize these behaviors and allow favorable treatment under new liquidity measures
 - ◆ LCR – 25% run-off rate
 - ◆ NSFR – 50% ASF factor

Any views expressed are solely Mr. Charney's and do not necessarily represent those of Northern Trust



Basel III Requires Proof to Receive Favorable Treatment

US and international regulators require the following:

- Operational deposits must result from certain types of client services and meet additional requirements imposed on the deposit accounts themselves
- International Basel Committee (Final Rules, January 2013):
 - ◆ ... only that part of the deposit balance with the service provider that is proven to serve a customer's operational needs can qualify as stable. Excess balances should be treated in the appropriate category for non-operational deposits.
 - ◆ Banks must determine the methodology for identifying excess [non-operational] deposits ... The methodology should take into account relevant factors such as the likelihood that wholesale customers have above average balances in advance of specific payment needs, and consider appropriate indicators (eg ratios of account balances to payment or settlement volumes or to assets under custody) to identify those customers that are not actively managing account balances efficiently.
- Proposed US rules for the LCR (Interagency NPR, October 2013):
 - ◆ The bank must demonstrate that the deposit is empirically linked to the operational services and that it has a methodology for identifying any excess amount, which must be excluded from the operational deposit amount
- Note that an operational deposit study differs from a core deposit analysis performed for interest rate risk management
 - ◆ Core deposit studies analyze business-as-usual balance variations across different interest rate environments
 - ◆ Operational deposit studies analyze whether deposits would be sticky during a liquidity stress





Summary of Proposed US LCR Rules

Operational Deposits are unsecured wholesale funding that are required for the bank to provide operational services to the wholesale customer or counterparty

- Operational Services include the following performed as part of cash management, clearing or custody services:
 1. Payment remittance
 2. Payroll administration and fund disbursement
 3. Transmission, reconciliation, and confirmation of payment orders
 4. Daylight overdraft
 5. Determination of intra-day and final settlement positions
 6. Settlement of securities transactions
 7. Transfer of recurring contractual payments
 8. Client subscriptions and redemptions
 9. Scheduled distribution of client funds
 10. Escrow, funds transfer, stock transfer, and agency services
 11. Collection and aggregation of funds.
- To be recognized as operational, the deposit must meet the following:
 1. Held pursuant to a legally binding agreement subject to a 30-day notice period
 2. No significant volatility in the average balance
 3. Account designated as operational
 4. Primary purpose is to obtain the Operational Service
 5. Cannot create an economic incentive to hold excess funds
 6. Empirically linked to the operational service with a methodology for identifying excess balances
 7. Not provided to an investment company, non-regulated fund or investment advisor
 8. Not provided for correspondent banking arrangements

*Notes: 1. US regulators are taking a strict view of operational deposits
2. These requirements are subject to change in the final rules*





Northern's Approach

In order to demonstrate the operational nature of our custody-related deposits, we determined to do the following:

- Document strong statistical relationships between deposit balances and the underlying custody services
 - ◆ Sound statistical measures were applied to support findings

- Show that these statistical relationships hold across time, client type and currency
 - ◆ Demonstrates the validity of the relationships and their applicability to other jurisdictions

- Explain the business rationale for the existence of these relationships
 - ◆ Data relationships should be consistent with known product and client characteristics

- Determine a methodology for applying these findings on a regular basis when calculating the liquidity coverage ratio
 - ◆ Specifically, be able to segregate operational and non-operational deposits every day



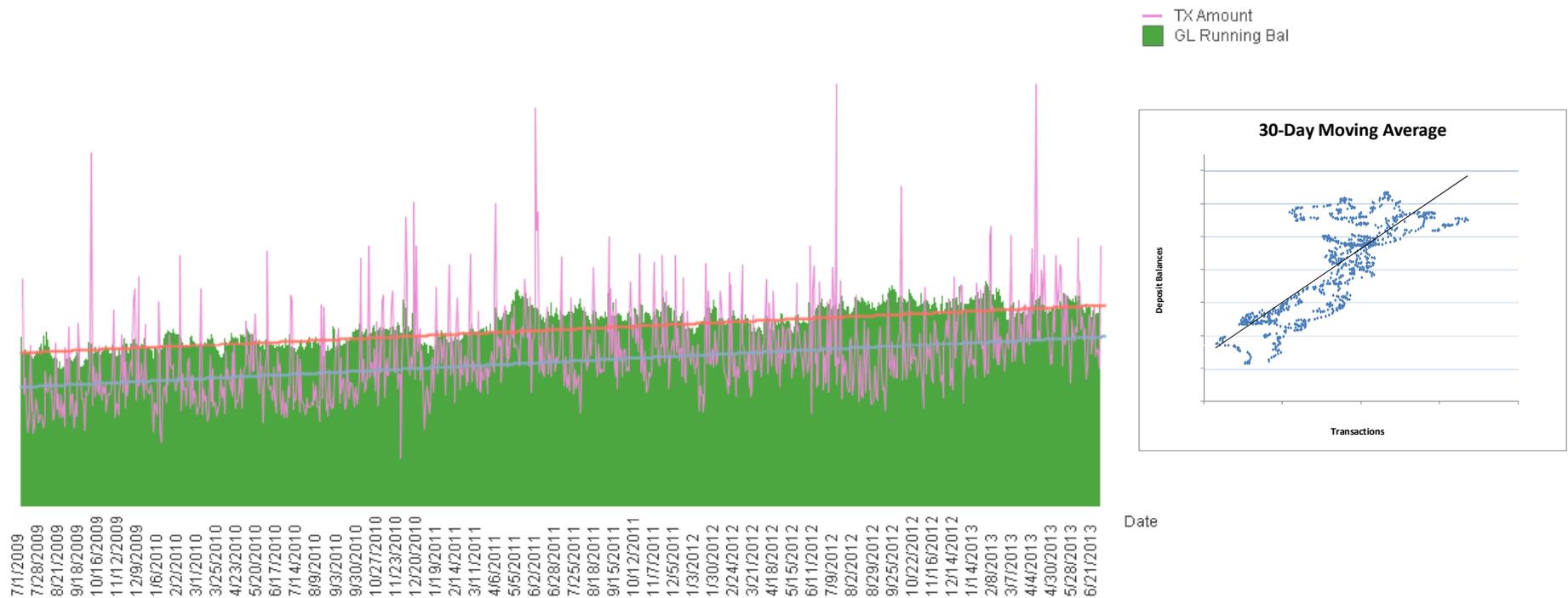
Data is (Almost) Everything

Northern developed a large, internal data base to house and analyze operational deposit information

- Northern collected four years of daily custody deposit data, as follows:
 - ◆ Account-level deposit balances
 - ▶ Intra-month balances were imputed using stored month-end amounts and daily transaction data
 - ◆ Cash transactions including asset purchases, sales, contributions, withdrawals, payments, interest received, principal maturities and foreign exchange activity
 - ◆ Custody holdings by investment type
 - ◆ Demographic and dimensional data (e.g. branch, relationship code, client type, etc) to support required analysis
 - ◆ Other data on client account activity to support business rationale
- Data collected in transactional currency and USD equivalent
- Deposit balances were reconciled to general ledger
- Documented adjustments to raw data
 - ◆ Only “uses of cash” transactions were considered (e.g. purchases and investments) to eliminate double counting.
 - ◆ Foreign exchange transactions were also excluded as they are cash transformations, not uses of cash
 - ◆ Weekends and major holidays were removed as transactions do not occur normally on these days



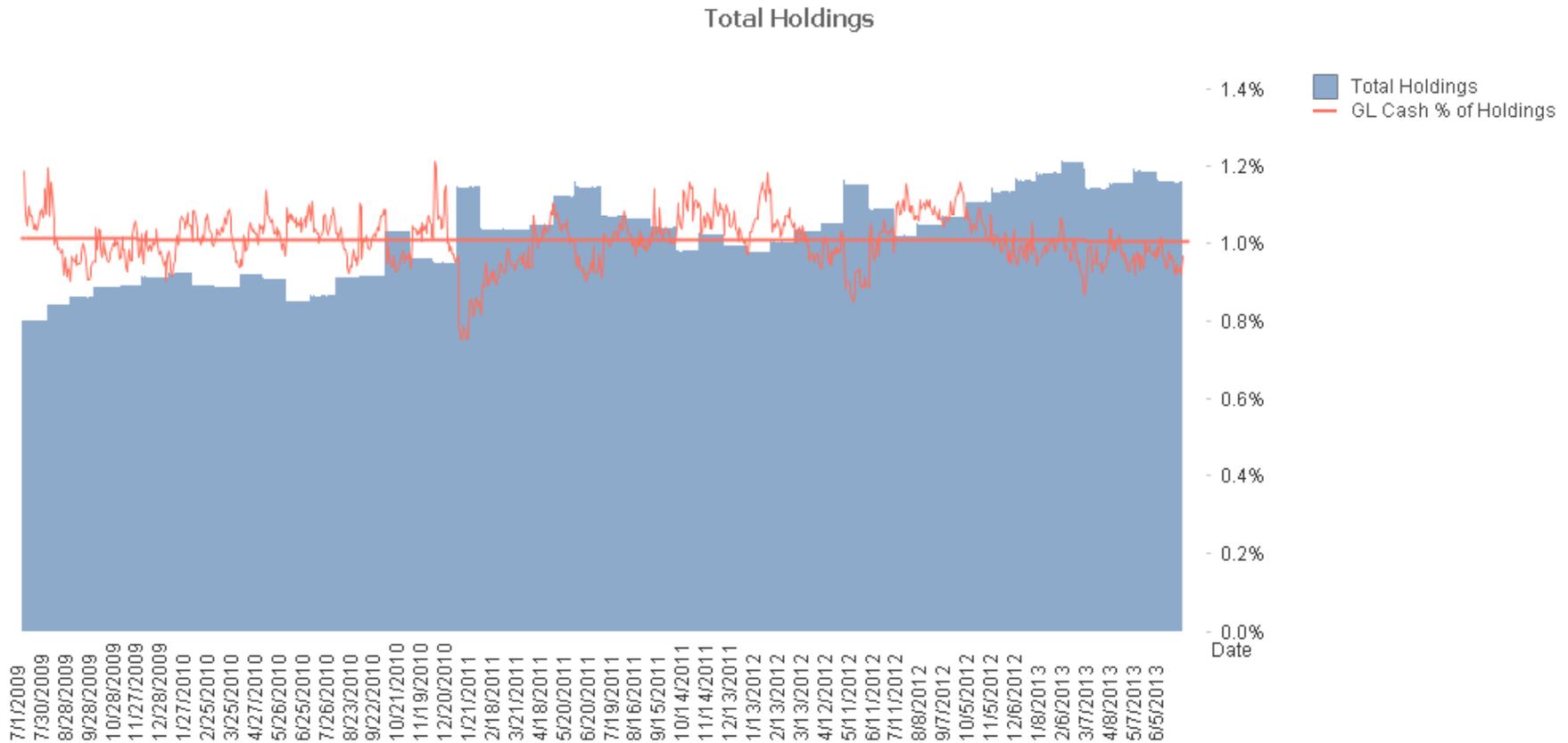
Finding #1: Strong Relationship Between Balance & Volume



- Daily deposit balances increased over the study period along with daily transaction volumes
- Slopes of deposit and transaction trend lines were almost identical. The slope represents an average one-day increase
- A 30 day moving average shows this same relationship even more clearly, with a correlation between Deposits and Transactions of 0.78
- This overall data relationship holds across different client types, currencies and time periods



Finding #2: Deposits are Small and Constant Relative to Holdings



- Overall, deposits average 1% of total holdings with very little variance
 - ◆ Slope of trend line is zero across the four year period
- Again, this data relationship holds across various client types, currencies and time periods
- Additionally, Northern found no material relationships between deposit balances and GDP, interest rates, equity values or VIX



Do These Data Relationships Make Sense?

Statistical correlations are not enough, there must also be valid business rationale underlying these data relationships.

At Northern:

- Custody clients are incented to maintain only those deposit balances that are required to manage their custody activity
 - ◆ Clients do not hold additional deposit balances because:
 - ▶ Clients' main focus is to manage their holdings and successfully execute their investment strategies, which requires full investment of idle cash
 - ▶ Better returns are available for uninvested, excess and other types of temporary funds
 - ◆ Clients do not hold fewer deposit balances because:
 - ▶ Again, management of holdings are the clients' main focus
 - ▶ A small percentage of cash holdings is required to settle trades and make this possible
 - ▶ While other short-term investments provide better returns for excess cash, these funds may not be available in time to support current activity

The two data relationships uncovered by our operational deposit study support our long held understanding of custody deposit behavior



Application and Advice

Applying these results to LCR and internal stress tests:

- Operational deposits reflect longer-term considerations, and so are not subject to accurate daily calculations
 - ◆ On any given day, a client may use all or some of its operational balance
- Therefore, Northern used the statistical relationships to calculate a conservative, core amount of operational deposits
 - ◆ Excess deposits over this amount are considered non-operational
 - ◆ Our study will be repeated regularly to update the operational deposit amount
 - ◆ We are currently developing the capability for monthly updates
- LCR calculations apply a 25% run-off only the core amount
- Internal stress tests apply different behaviors to core operational and non-operational balances under each stress scenario

Advice for doing your own study

- Get senior management input, support, and approval of results
- Leverage existing data warehouse, profitability, account analysis, ALM, client reporting, management accounting, or other similar systems
 - ◆ Use available data that is already consistent with existing financial reporting
 - ◆ Understand the advantages/limitations of primary data source
 - ◆ Expect to repeat and enhance study going forward
- Collect lowest level of detail available and roll up
 - ◆ Additional studies will be required for various deposit types, legal entities, currencies, etc.
- Use a visual data aggregation tool such as PowerPivot or Qlikview
 - ◆ Very helpful in uncovering and refining data relationships
- Document everything, including assumptions, data limitations and planned future enhancements
- If you haven't done so already: **Start Now!**





Thank You

Questions & Discussion