FEDERAL RESERVE BANK *of* NEW YORK

Liberty Street Economics

Methodology for calculating "day 1" outflows from public LCR disclosures

In our analysis, we used publicly disclosed Liquidity Coverage Ratio (LCR) data to estimate outflows that could arise on the first business day of a stress period. These data represent cumulative thirty-day cash flows that are assumed to occur in the LCR scenario. To translate these amounts into outflows that could occur on the first day of stress, we multiply the thirty-day LCR outflows by factors that represent the relative sophistication of the counterparty or the likelihood that certain non-contractual outflows would coincide with the first day of a liquidity stress. The following table summarizes the categories included in the analysis, and the corresponding intuition for our "day 1" outflow assumption.

Outflow Category	**Intuition for "Day 1" Outflow Assumption**
Deposit outflow from retail customers and counterparties	Retail depositors are likely to be less sophisticated and have practical needs for maintaining deposit balances. We assume outflows would occur linearly over the 30-day period.
Operational deposit outflow	While wholesale depositors are likely to be sophisticated and fast to react to a deterioration in a firm's financial condition, these balances support their day-to-day operations and may be more difficult to withdraw. We assume that some large counterparties will act quickly and manage down these balances on day 1, but the majority of outflows would occur later in the stress horizon.
Non-operational funding outflow	These balances are placed by wholesale entities and are unnecessary to sustain the entities' ongoing operations. Given the degree of sophistication, we assume the majority (or a near majority) of outflows would occur on day 1.
Unsecured debt outflow	We assume firms would be unable to access capital markets and would realize outflows for all debt that contractually matures. However, the LCR disclosure data does not have this contractual granularity, and therefore we assume a moderate concentration of debt matures on day 1.
Outflow related to derivative exposures and other collateral requirements	We assume a market shock precipitates the liquidity run, and therefore the majority of outflows related to derivative collateral calls would occur on day 1.

Outflow related to credit and liquidity facilities including unconsolidated structured transactions and mortgage commitments	The pace of draws on commitments would likely be determined by the nature of the facility and the sophistication of the counterparty. Given limited distinction in the LCR public disclosures regarding the type of facility, we assume a significant proportion, but no more than half of the outflows, would occur on day 1.
Other contingent funding obligations outflow	These contingent obligations should include outflows related to actions a firm might take to defend its reputation or market standing, such as buying back its own debt. We assume as much as half of these outflows would occur on day 1.

We implemented this approach through three scenarios, recognizing that the level of aggregation limits our ability to discern between key risk dimensions, such as type of wholesale counterparty or product classification, and therefore our assumptions are imprecise by necessity. The baseline scenario represents our best estimate of the distribution of outflows across these risk dimensions, while the reduced outflows and enhanced outflows scenarios assume lower and higher concentrations of outflows in riskier categories, respectively.

	Day 1 Outflow Rate by Scenario		
	Baseline	**Reduced Outflows**	**Enhanced Outflows**
Deposit outflow from retail customers and counterparties	5%	5%	5%
Operational deposit outflow	25%	25%	25%
Non-operational funding outflow	60%	40%	70%
Unsecured debt outflow	10%	10%	10%
Outflow related to derivative exposures and other collateral requirements	70%	50%	100%
Outflow related to credit and liquidity facilities including unconsolidated structured transactions and mortgage commitments	40%	30%	50%
Other contingent funding obligations outflow	50%	50%	50%

Additionally, given data limitations, we made simplifying assumptions that will impact the precision of the analysis. Note these specific assumptions and caveats:

- We excluded secured funding (for example, repo) and asset exchange outflows, since they tend to reflect matched borrowing and lending or market making activity and could in many cases be offset with inflows. This will underestimate short-term net outflows that could occur to the extent a firm chooses to support its secured lending to clients for franchise reasons even as it loses access to wholesale funding markets.
- We excluded all other inflows, under the presumption that they may not materialize on the first day of stress due to contractual, operational, or franchise reasons. This assumption will generally result in an overstatement of net outflows; however, contrary to certain high-quality liquid assets (HQLA) such as reserves or Treasury securities, there is credit risk inherent in these inflows.

Lastly, although this analysis is conducted in the context of Federal Reserve balances, the public outflow data is not differentiated by currency. In concept, a firm that has a significant proportion of its exposures in non-USD might prefer to hold central bank balances in those currencies to mitigate its monetization risk. In this case, our analysis would overstate the day 1 USD liquidity needs by the amount of outflows in that currency that are offset by central bank balances in that same currency, particularly for firms with extensive global operations. However, a U.S. firm may prefer to maintain its most liquid HQLA in USD, given historical experience of the currency as a "flight to quality" asset during a global market stress and the correspondingly favorable liquidity when converting USD to other currencies through the foreign exchange market.

Ryan Bush, Adam Kirk, Antoine Martin, Phil Weed, and Patricia Zobel, "Stressed Outflows and the Supply of Central Bank Reserves," Federal Reserve Bank of New York *Liberty Street Economics* (blog), February 20, 2019, https://libertystreeteconomics.newyorkfed.org/2019/02/stressed-outflows-and-the-supply-of-central-bank-reserves.html.