



February 2020 Senior Financial Officer Survey

Summary

In February 2020, the Federal Reserve conducted a Senior Financial Officer Survey to gather views systematically from a number of banks concerning their reserve balance management strategies and practices. Respondents were asked to comment on their strategies and practices employed in January 2020. Since that time, the Federal Reserve has taken a variety of actions to support market functioning and the flow of credit to businesses and households in response to volatility and market strains caused by the COVID-19 (coronavirus disease 2019) pandemic. These actions have notably increased the size of the Federal Reserve's balance sheet and the amount of reserves in the banking system. Reserve management practices may have changed as a result.

Questions in the February survey focused on gaining updated information on banks' demand for reserves and additional information on banks' engagement in money market activity under different conditions (specifically, the volatility episode that occurred in September 2019).¹ First, the survey asked respondents to quantify three different reserve demand measures. As in previous versions, the survey asked respondents to identify the lowest level of reserve balances that they would be comfortable holding before they began taking active steps to maintain or increase their position (their lowest comfortable level of reserves, or LCLoR).^{2,3} Second, it asked whether respondents preferred to hold a minimum end-of-day reserve level in January 2020 that was different from their LCLoR. Third, it asked respondents to indicate a level of reserves above which the risk-adjusted returns of other high-quality liquid assets (HQLA) relative to the interest on excess reserves (IOER) rate would be the primary factor in their willingness to convert additional reserves into other HQLA.^{4,5}

The next part of the survey explored respondents' ability and willingness to lend in overnight wholesale markets (both secured and unsecured). It also asked respondents to elaborate on the factors behind these decisions, the kinds of instruments they used, and the expected risk-adjusted returns relative to the IOER rate at which they were willing to engage in such activity.

The survey was distributed to senior financial officers at 80 banks on January 31, 2020, with replies due by February 14, 2020.⁶ Responses were received from 78 banks, which in aggregate held roughly three-fourths of total reserve balances in the banking system at the time of the survey. As in previous surveys, the banks sampled in the survey represented a wide range of

¹ The February 2020 survey was conducted by the Board of Governors of the Federal Reserve System, in collaboration with the Federal Reserve Bank of New York.

² A summary of aggregated results from the August 2019 Senior Financial Officer Survey is available at <https://www.federalreserve.gov/data/sfos/files/senior-financial-officer-survey-201908.pdf>.

³ Examples of "active steps" include bidding more aggressively in the federal funds market or other wholesale unsecured funding markets, reducing holdings of other liquid assets, or raising deposit rates.

⁴ Level 1 HQLA and Level 2 HQLA are defined in §249.20 of Regulation WW (Liquidity Risk Measurements Standards).

⁵ The prevailing IOER rate during most of January 2020 was 1.55 percent (the period to which the survey questions refer), and the rate was 1.60 percent during the two-week period in which respondents completed the survey (January 31 to February 14, 2020).

⁶ Respondents were asked to specify the reserve holding entities that were covered in their survey responses.

asset sizes and business models. Responses were collected from senior financial officers at 45 domestic banks and 33 U.S. branches and agencies of foreign banking organizations.⁷

Key takeaways from the survey included the following:

- Survey respondents indicated that their LCLoR, given the constellation of short-term interest rates prevailing at the time of the survey, was approximately \$650 billion, roughly unchanged relative to the previous survey.⁸ By comparison, these banks' total average reserve balance holdings in January 2020 were roughly \$1.25 trillion.
- Almost half—44 percent—of respondents rated covering routine intraday timing mismatches between payment outflows and inflows as a “very important” consideration in determining their LCLoR.⁹ Forty percent characterized protecting against the risk of not receiving scheduled payment inflows that could result in a negative end-of-day Fed account as “very important.”
- A slight majority, 45 respondents, indicated that their reserve management strategy included a level—greater than their LCLoR—above which they would be willing to redeploy reserves into other HQLA.¹⁰ For those states of the world in which their reserve balances are equal to or above this level, over four-fifths of respondents (60 of 71) indicated 0–15 basis points as the lowest spread relative to the IOER rate at which they would be willing to redeploy reserve balances into other Level 1 HQLA.
- Most respondents, 86 percent, indicated that they had not altered their reserve management strategy following the money market volatility in mid-September 2019.
- More than 80 percent of respondents indicated that their redeployment of reserve balances into wholesale funding markets in mid-September, compared with the first week in September 2019, had remained unchanged or decreased. For those who increased their redeployment during this period, most—10 of 13 respondents—rated the attractiveness of expected risk-adjusted returns on overnight secured assets relative to the IOER rate as a “very important” factor driving these decisions.

The remainder of this summary is organized into two parts that mirror the structure of the survey, and the summary is followed by a detailed tabular presentation of responses.¹¹

⁷ The 45 domestic banks included U.S. commercial banks, federal savings banks, state-chartered savings banks, and savings and loan associations with U.S. assets greater than \$2 billion. No credit unions were included in the survey. The 33 foreign banks included U.S. branches and agencies of foreign banks, as well as one U.S. commercial bank that exhibited reserve management behavior more akin to this group than similarly sized domestic banks; all of the institutions included in foreign banks had U.S. assets greater than \$2 billion.

⁸ Respondents were asked to assume that the “constellation of short-term rates” referred to the rates on federal funds, Eurodollars, repurchase agreements (repo), and short-dated U.S. Treasury bills that prevailed in January 2020.

⁹ Response share statistics are calculated using a denominator of respondents who provided a non-N/A (not applicable) response to the question (75 in this case). This convention is used throughout the summary.

¹⁰ When describing responses, “remained unchanged” covers percentages from 0 to 5 percent; “modest” refers to percentages greater than 5 and less than or equal to 10 percent; “moderate” refers to percentages greater than 10 and less than or equal to 20 percent; “significant” refers to percentages greater than 20 and less than 50 percent; and “majority” refers to percentages greater than or equal to 50 percent.

¹¹ For the most part, the instructions and survey questions presented in each table mirror the ones distributed to the respondents, with minor adjustments to enhance clarity. As not all respondents answered every question, the number of respondents answering each question is reported in the accompanying data tables.

Part I: Current Reserve Balance Management Strategies and Practices

(Questions 1–4)

Questions on current and prospective demand for reserve balances. The first three questions in Part I asked respondents about reserve demand.

The first question was repeated from previous surveys. It asked respondents to indicate the approximate lowest dollar level of reserve balances their bank would be comfortable holding before they would begin taking active steps to maintain or increase their reserve balance position. In aggregate, the lowest comfortable levels of reserve balances reported by all respondents summed to about \$650 billion, roughly unchanged from the previous survey.

The second question asked respondents whether they preferred to hold a minimum end-of-day reserve level in January 2020 that was different from the level indicated in the previous question. Approximately 40 percent, or 30 respondents, answered “yes.” Those who responded “yes” were asked to rate the importance of various explanations for the difference between this “preferred minimum” and their LCLoR. Slightly under half, 11 respondents, characterized keeping a cushion of balances above an internally approved level so as not to trigger internal governance or reporting processes as “very important.”

The third question asked respondents about their reserve demand in terms of the opportunity cost of holding reserves in comparison to other investment opportunities.¹² This question asked about the level of reserves at which the risk-adjusted returns of other HQLA relative to the IOER rate would be the primary factor in their willingness to convert additional reserves into other HQLA. Approximately one-third of respondents indicated that this concept was synonymous with their LCLoR estimate, while roughly two-thirds responded that this level was higher than the LCLoR in their reserve management framework.

Question on drivers of demand for reserve balances. The survey’s fourth question asked respondents to rate the importance of various considerations in determining their institution’s LCLoR. Almost half of those respondents who answered this question, 33 of 75, characterized covering routine intraday timing mismatches between payment outflows and inflows as “very important.” Thirty respondents (40 percent) indicated protecting against the risk of not receiving scheduled payment inflows (including due to operational risks) as “very important.” A much smaller 15 percent of respondents rated meeting estimated stressed outflows determined by their firm over a longer time horizon as “very important.”

Part II. Overnight Wholesale Funding Market Activity

(Questions 5–11)

Questions on lending capacity and activity. The first part of the fifth survey question asked respondents whether they had the operational capacity to lend in overnight wholesale funding markets at the time of the survey. The vast majority—71 of 78 respondents—answered that they had the operational capacity to lend. Of the respondents who indicated that they did not

¹² Other investment opportunities might include, for example, overnight Treasury general collateral repo or short-term U.S. Treasury bills.

have the operational capacity to lend in these markets, five respondents explained that this kind of activity was not in their business's mandate or investment strategy.

The second part of the fifth question asked respondents whether their bank was an active lender in overnight unsecured markets, such as federal funds or Eurodollars, and to explain the factors behind their decision to lend (or not).

Fifty-five respondents indicated that they did not lend in these markets (despite having the operational capacity to do so). Of this group, more than half responded that the unattractive risk-adjusted returns available at the time of the survey were a factor in their decision not to lend.

Questions on HQLA in the reserve management context. The survey's sixth question asked respondents to indicate the lowest spread relative to the IOER rate at which their bank would be willing to invest reserve balances into other HQLA. For investments in other Level 1 HQLA, a large majority of respondents (85 percent) provided 0–15 basis points as their minimum spread over the IOER rate. A smaller share (56 percent) indicated this range as the minimum spread over IOER rate necessary for reallocation to Level 2 HQLA.

The survey's seventh question asked respondents about the types of Level 1 HQLA in which they would invest surplus reserves at the stated spreads. A large majority, 85 percent, indicated that U.S. Treasury securities would be a likely investment vehicle, and more than two-thirds (49 respondents) also cited uncleared bilateral reverse repurchase agreements (repo).¹³

Questions on reserve management during and since September 2019. The survey's eighth question asked respondents whether they had altered their reserve management strategy following the money market volatility in mid-September 2019. Most, 67 of 78, responded "No."

The survey's ninth question asked respondents to describe their bank's redeployment of reserve balances into wholesale funding markets in mid-September 2019, compared with the first week in September 2019. Roughly three-fourths of respondents characterized their redeployment during this period as largely unchanged. Seventeen percent answered that their allocations out of reserves had increased, and less than eight percent said that their reallocations had decreased during this period.

The survey's tenth question asked respondents to rate various factors in explaining the changes (or absence thereof) in their reserve redeployment choices in mid-September 2019. Of those who increased their redeployment during this period, the attractiveness of expected risk-adjusted returns on overnight secured assets relative to the IOER rate was most often cited as "very important" (by ten of 13 respondents). A material share of respondents—15 of 65—who maintained or decreased their redeployment did not provide specific factors for doing so; the factor most frequently assigned a "very important" rating (by 11 respondents) was insufficient comfort with their projected end-of-day reserve balance position relative to their LCLoR.

¹³ Response shares are calculated by restricting the ratio to those respondents who provided a non-N/A response to both question 6 and to question 6.i. This means that the statistics quoted in this paragraph may differ slightly from those percentage shares reflected in the "Results" tables later in the summary.

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Results

The following results include the instructions provided to the survey respondents. Please note that percentages are based on the number of respondents who gave responses other than “not applicable.” Components may not sum to totals because of rounding. Themes or observations highlighted in written commentary may only be summarized when they are (1) not duplicative of answer options provided elsewhere in the question and (2) voiced by three or more respondents.

Part I: Current Reserve Balance Management Strategies and Practices

The following questions ask about your bank’s current and prospective demand for reserve balances, conditional on the opportunity cost of holding those balances relative to other liquid assets. Unless otherwise specified, please consider your bank’s end-of-day reserve balances when answering the questions. Question 1 asks for the approximate lowest level of reserve balances that your bank is currently comfortable holding, and questions 2 through 4 in this section inquire about considerations related to that determination.

1. Given the constellation of short-term interest rates relative to the interest on excess reserves (IOER) rate over the past month, what is the approximate lowest dollar level of reserve balances that your bank would be comfortable holding before it began taking active steps to maintain or increase its reserve balance position?¹⁴

A.

Totals	All respondents	Domestic	Foreign
	(billions of dollars)		
Reported lowest comfortable level of reserve balances	650.9	405.1	245.9
Average reserve balances in January 2020*	1261.8	748.3	513.5

* Federal Reserve data.

- B. If you responded to the August 2019 Senior Financial Officer Survey and your lowest comfortable level of reserve balances reported in question 1.A has changed significantly from the previous survey, please explain the factors leading to this change.

Six respondents (roughly one-fourth of those who provided written feedback on this question) cited management of their broader HQLA portfolio as a driver of changes to their LCLoR since the last survey. This factor was often in the context of their liquidity coverage ratio (LCR) or resolution planning obligations. Five respondents cited changes in intraday payment and deposit flow activity, and four wrote that a resizing of their overall balance sheet had affected their LCLoR estimate.

¹⁴ For the purposes of this survey, please assume that the “constellation of short-term rates” refers to the rates on federal funds, Eurodollars, repo, and short-dated U.S. Treasury bills that prevailed in January 2020. Examples of “active steps” include bidding more aggressively in the federal funds market or other wholesale unsecured funding markets, reducing holdings of other liquid assets, or raising deposit rates.

2.

- A. Did your bank prefer to hold a minimum end-of-day reserve level in January 2020 that was in excess of the level indicated in 1.A? [Yes/No] If “No”, please skip to the next question.

	All respondents	Domestic	Foreign
Yes	30	15	15
No	47	29	18
Total	77	44	33

Note: 0 respondents provided an answer of N/A and 1 left it blank.

- B. If “Yes”, indicate the minimum level your bank preferred to hold in January 2020: _____ (\$ millions). Please also rate the importance of the following considerations on a scale of 1 (not important), 2 (somewhat important), 3 (important), or 4 (very important) in explaining the difference between the two amounts provided in question 1.A and question 2.A. If the consideration is not applicable to your bank’s decision, please select “N/A.”

Dollar amount above question 1.A	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
\$0 to \$0.5 billion	8	26.7	7	46.7	1	6.7
\$0.5 to \$1 billion	2	6.7	1	6.7	1	6.7
\$1 to \$5 billion	11	36.7	4	26.7	7	46.7
\$5 to \$10 billion	7	23.3	2	13.3	5	33.3
Over \$10 billion	2	6.7	1	6.7	1	6.7
Total	30	100.0	15	100.0	15	100.0

- i. Keeping a cushion of balances above an internally approved level so as not to trigger internal governance or reporting processes

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	4	15.4	3	23.1	1	7.7
Somewhat important	5	19.2	2	15.4	3	23.1
Important	6	23.1	3	23.1	3	23.1
Very important	11	42.3	5	38.5	6	46.2
Total	26	100.0	13	100.0	13	100.0

Note: 2 respondents provided an answer of N/A and 2 left it blank.

- ii. Demonstrating strong liquidity management to external audiences (for example credit ratings agencies, domestic and international supervisors, and investors)

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	7	25.9	2	14.3	5	38.5
Somewhat important	5	18.5	2	14.3	3	23.1
Important	8	29.6	4	28.6	4	30.8
Very important	7	25.9	6	42.9	1	7.7
Total	27	100.0	14	100.0	13	100.0

Note: 1 respondent provided an answer of N/A and 2 left it blank.

- iii. Holding additional balances temporarily as the bank considered redeploying reserves into other assets and/or reducing liability levels

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	9	37.5	4	33.3	5	41.7
Somewhat important	5	20.8	3	25.0	2	16.7
Important	9	37.5	5	41.7	4	33.3
Very important	1	4.2	0	0.0	1	8.3
Total	24	100.0	12	100.0	12	100.0

Note: 4 respondents provided an answer of N/A and 2 left it blank.

3. Above what level of reserves would your bank be willing to redeploy reserves into other HQLA? In other words, please indicate the level of your bank's reserve balances at which the risk-adjusted returns of other HQLA relative into the IOER rate would be the primary factor of your willingness to convert additional reserves to other HQLA: _____ (\$ millions). (This level presumably would be greater than or equal to the answer from question 1.A and may be greater than or equal to the answer from question 2.A.)

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Level equal to LCLoR	25	35.7	15	37.5	10	33.3
Level above LCLoR	45	64.3	25	62.5	20	66.7
Total	70	100.0	40	100.0	30	100.0

Note: 5 respondents provided an answer of N/A, 0 left it blank, and 2 responded less than LCLoR.

4. Please rate the importance of the following considerations in determining the amount you indicated in question 1.A on a scale of 1 (not important), 2 (somewhat important), 3 (important), or 4 (very important), or, if the consideration is not applicable to your bank's decision, please select, "N/A."

- i. Cover routine intraday timing mismatches between payment outflows and inflows that could result in intraday overdrafts, but that are expected to be resolved by the end of the day

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	12	16.0	6	14.3	6	18.2
Somewhat important	11	14.7	7	16.7	4	12.1
Important	19	25.3	14	33.3	5	15.2
Very important	33	44.0	15	35.7	18	54.5
Total	75	100.0	42	100.0	33	100.0

Note: 3 respondents provided an answer of N/A and 0 left it blank.

- ii. Protect against the risk of not receiving scheduled payment inflows (including due to operational risks) that could result in a negative end-of-day Fed account balance

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	12	16.0	5	11.4	7	22.6
Somewhat important	13	17.3	8	18.2	5	16.1
Important	20	26.7	9	20.5	11	35.5
Very important	30	40.0	22	50.0	8	25.8
Total	75	100.0	44	100.0	31	100.0

Note: 3 respondents provided an answer of N/A and 0 left it blank.

- iii. Meeting estimated stressed outflows determined by your firm on "day one" of a stress scenario

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	6	8.0	4	9.1	2	6.5
Somewhat important	18	24.0	11	25.0	7	22.6
Important	26	34.7	16	36.4	10	32.3
Very important	25	33.3	13	29.5	12	38.7
Total	75	100.0	44	100.0	31	100.0

Note: 3 respondents provided an answer of N/A and 0 left it blank.

- iv. Meeting estimated stressed outflows determined by your firm over a longer time horizon

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	20	26.7	13	29.5	7	22.6
Somewhat important	21	28.0	13	29.5	8	25.8
Important	23	30.7	13	29.5	10	32.3
Very important	11	14.7	5	11.4	6	19.4
Total	75	100.0	44	100.0	31	100.0

Note: 3 respondents provided an answer of N/A and 0 left it blank.

Part II: Overnight Wholesale Funding Market Activity

The questions in Part II of the survey ask you to explain the considerations that motivate your bank's activity in overnight wholesale funding markets such as federal funds, Eurodollars, and repo. If your bank is affiliated with a broker-dealer, do not include the normal financing activity of your broker-dealer for the purposes of these questions.

5. Does your firm currently have the operational capacity to lend?

	All respondents	Domestic	Foreign
Yes	71	40	31
No	7	5	2
Total	78	45	33

If you answered "Yes," please answer question 5.B. If you answered "No," please describe your decision and skip question 5.B.

- A. The majority of those respondents who indicated that they did not have the operational capacity to lend in overnight wholesale markets (five of seven respondents) explained that this kind of activity was not in their business's mandate or investment strategy. Three also mentioned that operational burdens or constraints had affected their ability to take part in this market at the time of the survey, but suggested that they might have interest in being involved in the future.
- B. Is your bank an active lender in overnight unsecured markets such as federal funds or Eurodollars? For the purposes of this question, consider an active investor as a bank that invests for non-test purposes at least once a month.

	All respondents	Domestic	Foreign
Yes	16	10	6
No	55	30	25
Total	71	40	31

If you answered "Yes" to question 5.B, please answer 5.B.i. If you answered "No," please answer question 5.B.ii.

- i. Please describe the factors that drive your decision to lend.

Written responses to this question were concentrated around two themes in roughly equal numbers. Nine respondents pointed to the support and facilitation of client relationships as the driving rationale behind their unsecured overnight lending. Eight respondents considered return maximization, in comparison to the IOER rate earned on their reserve balances, as the important factor.

ii. Please describe why you do not lend.

More than half of the respondents who did not lend in this market, despite having the operational capacity to do so (30 of 55), highlighted the unattractive risk-adjusted returns available at the time of the survey. Additional factors cited included balance sheet costs associated with lending. Approximately one-fifth of those who responded cited insufficient risk appetite as constraining them from lending unsecured, and a similar number explained that they did not have a business need to lend.

6. Generally speaking, and excluding the effects of month-end activity, when your reserve balance level is equal to or above the amount indicated in question 3, what is the lowest spread relative to the IOER rate at which your bank would be willing to invest reserve balances into other HQLA?

i. Spread to invest in other Level 1 HQLA, such as short-dated U.S. Treasuries or Treasury reverse repos (in basis points)

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
0-15 bps	60	84.5	33	80.5	27	90.0
16-25 bps	5	7.0	4	9.8	1	3.3
26-50 bps	5	7.0	3	7.3	2	6.7
51-100 bps	1	1.4	1	2.4	0	0.0
Total	71	100.0	41	100.0	30	100.0

Note: 7 respondents provided an answer of N/A and 0 left it blank.

- ii. Spread to invest in Level 2 HQLA, such as short-dated U.S. agency securities, short-dated mortgage-backed securities (MBS) or MBS reverse repos (in basis points)

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
0-15 bps	29	55.8	20	54.1	9	60.0
16-25 bps	11	21.2	10	27.0	1	6.7
26-50 bps	8	15.4	4	10.8	4	26.7
51-100 bps	4	7.7	3	8.1	1	6.7
Total	52	100.0	37	100.0	15	100.0

Note: 21 respondents provided an answer of N/A and 5 left it blank.

7. In the scenario described in question 6, what types of Level 1 HQLA would your bank actively consider investing surplus reserves into (please check all that apply)?

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Centrally cleared reverse repo (including sponsored reverse repo); receiving Level 1 HQLA collateral	44	59.5	25	59.5	19	59.4
Lending dollars and receiving foreign currency in the FX swap market, where the foreign currency proceeds are invested in foreign-currency-denominated HQLA	26	35.1	9	21.4	17	53.1
Tri-party reverse repo; receiving Level 1 HQLA collateral	38	51.4	20	47.6	18	56.3
U.S. Treasury securities	62	83.8	36	85.7	26	81.3
Uncleared bilateral reverse repo; receiving Level 1 HQLA collateral	51	68.9	26	61.9	25	78.1

Note: A total of 74 respondents provided an answer, with 42 domestic and 32 foreign.

Three respondents indicated non-GSE (government-sponsored entity) agency securities (for example, Ginnie Mae) in their written responses.

8. Has your bank altered its reserve management strategy following the money market volatility in mid-September 2019? [Yes/No] If “Yes”, please describe how in the comment box below.

	All respondents	Domestic	Foreign
Yes	11	9	2
No	67	36	31
Total	78	45	33

A majority (seven) of the respondents who provided written feedback on this question indicated that they had begun taking more initiative to opportunistically lend when market rates were elevated, while a smaller number (three) said that they had changed the size of the reserve balance buffer they hold.

9. Please indicate which statement describes your bank's redeployment of reserve balances into wholesale funding markets in mid-September, compared with the first week in September 2019.

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Increased redeployment of reserve balances in mid-September relative to the first week of September	13	16.7	7	15.6	6	18.2
Largely unchanged redeployment of reserve balances in mid-September relative to the first week of September	59	75.6	36	80.0	23	69.7
Decreased redeployment of reserve balances in mid-September relative to the first week of September	6	7.7	2	4.4	4	12.1
Total	78	100.0	45	100.0	33	100.0

If you answered "increased" to question 9, please answer question 10.A If you answered "largely unchanged" or "decreased" to question 9, please answer question 10.B

10. Please rate the importance of the following considerations in explaining your response to question 9 on a scale of 1 (not important), 2 (somewhat important), 3 (important), or 4 (very important), or, if the consideration is not applicable to your bank decisions, please select "N/A."

A. Potential factors responsible for increased redeployment of reserve balances:

- i. Expected risk-adjusted return on overnight secured assets relative to the IOER rate was attractive

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	1	7.7	1	14.3	0	0.0
Somewhat important	0	0.0	0	0.0	0	0.0
Important	2	15.4	0	0.0	2	33.3
Very important	10	76.9	6	85.7	4	66.7
Total	13	100.0	7	100.0	6	100.0

- ii. Expected risk-adjusted return on overnight unsecured assets relative to the IOER rate was attractive

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	8	72.7	4	66.7	4	80.0
Somewhat important	1	9.1	1	16.7	0	0.0
Important	0	0.0	0	0.0	0	0.0
Very important	2	18.2	1	16.7	1	20.0
Total	11	100.0	6	100.0	5	100.0

Note: 2 respondents provided an answer of N/A and 0 left it blank.

- iii. Comfort with your projected end-of-day reserve balance position relative to the amount you indicated in question 1.A

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	1	7.7	1	14.3	0	0.0
Somewhat important	0	0.0	0	0.0	0	0.0
Important	3	23.1	2	28.6	1	16.7
Very important	9	69.2	4	57.1	5	83.3
Total	13	100.0	7	100.0	6	100.0

- iv. Capacity (such as counterparty, credit limits, or other balance sheet limits) to invest in overnight secured assets

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	3	23.1	1	14.3	2	33.3
Somewhat important	0	0.0	0	0.0	0	0.0
Important	1	7.7	1	14.3	0	0.0
Very important	9	69.2	5	71.4	4	66.7
Total	13	100.0	7	100.0	6	100.0

- v. Capacity (such as counterparty, credit limits, or other balance sheet limits) to invest in overnight unsecured assets

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	8	66.7	4	66.7	4	66.7
Somewhat important	1	8.3	1	16.7	0	0.0
Important	0	0.0	0	0.0	0	0.0
Very important	3	25.0	1	16.7	2	33.3
Total	12	100.0	6	100.0	6	100.0

Note: 1 respondent provided an answer of N/A and 0 left it blank.

B. Potential factors responsible for largely unchanged or decreased redeployment of reserve balances

i. Expected risk-adjusted return on overnight secured assets relative to the IOER rate was not sufficiently attractive

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	20	55.6	11	57.9	9	52.9
Somewhat important	8	22.2	3	15.8	5	29.4
Important	5	13.9	3	15.8	2	11.8
Very important	3	8.3	2	10.5	1	5.9
Total	36	100.0	19	100.0	17	100.0

Note: 20 respondents provided an answer of N/A and 9 left it blank.

ii. Expected risk-adjusted return on overnight unsecured assets relative to the IOER rate was not sufficiently attractive

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	18	60.0	10	62.5	8	57.1
Somewhat important	4	13.3	2	12.5	2	14.3
Important	5	16.7	3	18.8	2	14.3
Very important	3	10.0	1	6.3	2	14.3
Total	30	100.0	16	100.0	14	100.0

Note: 28 respondents provided an answer of N/A and 7 left it blank.

iii. Insufficient comfort with your projected end-of-day reserve balance position relative to the amount you indicated in question 1.A

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	13	31.0	10	41.7	3	16.7
Somewhat important	7	16.7	2	8.3	5	27.8
Important	11	26.2	5	20.8	6	33.3
Very important	11	26.2	7	29.2	4	22.2
Total	42	100.0	24	100.0	18	100.0

Note: 16 respondents provided an answer of N/A and 7 left it blank.

iv. Extreme volatility in money markets changed our risk tolerance for lending

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	18	48.6	10	50.0	8	47.1
Somewhat important	10	27.0	7	35.0	3	17.6
Important	6	16.2	3	15.0	3	17.6
Very important	3	8.1	0	0.0	3	17.6
Total	37	100.0	20	100.0	17	100.0

Note: 20 respondents provided an answer of N/A and 8 left it blank.

v. Insufficient capacity (such as counterparty credit lines, credit limits, or other balance sheet limits) to invest in overnight secured assets

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	19	48.7	9	40.9	10	58.8
Somewhat important	12	30.8	8	36.4	4	23.5
Important	4	10.3	3	13.6	1	5.9
Very important	4	10.3	2	9.1	2	11.8
Total	39	100.0	22	100.0	17	100.0

Note: 20 respondents provided an answer of N/A and 6 left it blank.

vi. Insufficient capacity (such as counterparty credit lines, credit limits, or other balance sheet limits) to invest in overnight unsecured assets

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	16	43.2	9	45.0	7	41.2
Somewhat important	5	13.5	3	15.0	2	11.8
Important	9	24.3	5	25.0	4	23.5
Very important	7	18.9	3	15.0	4	23.5
Total	37	100.0	20	100	17	100.0

Note: 22 respondents provided an answer of N/A and 6 left it blank.

- vii. Duration of elevated money market rates was too brief relative to time needed to increase lending due to internal controls (for example, time required to obtain approvals for lending above daily limits)

	All respondents		Domestic		Foreign	
	Banks	Percent	Banks	Percent	Banks	Percent
Not important	15	36.6	5	20.8	10	58.8
Somewhat important	9	22.0	4	16.7	5	29.4
Important	11	26.8	10	41.7	1	5.9
Very important	6	14.6	5	20.8	1	5.9
Total	41	100.0	24	100.0	17	100.0

Note: 17 respondents provided an answer of N/A and 7 left it blank.

11. If there is any other information relevant to your bank's management of reserve balances that you would like to provide at this time, including lessons for the Federal Reserve from the money market rate volatility that emerged in mid-September 2019 and the efficacy of the Federal Reserve's response, please do so below.

Two themes emerged from respondents' written answers. One was that operational and capacity constraints (such as counterparty credit lines, credit limits, or other balance sheet limits) had prevented them from providing liquidity support to the market in mid-September 2019. The other was that the creation of a standing repo facility could be beneficial for preventing funding market volatility in the future.

A smaller number of respondents (one or two each) touched on a variety of other issues. These issues included the timeliness of the Federal Reserve's response to the mid-September market disruption, preferences for greater clarity from the Federal Reserve on its forward-looking plans to support money markets, and the relative attractiveness of the Federal Reserve's repo operation pricing in the context of prevailing market rates at the time of the survey.

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