Central Bank Access and Flight to Safety*

Lucia Gurrieri [†1], Chase P. Ross [‡1], Ben Schmiedt[§1], Alexandros P. Vardoulakis[¶1], and Vladimir Yankov[‖1]

[1]Federal Reserve Board

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Abstract

We examine whether access to the Federal Reserve's Overnight Reverse Repo Facility (ON RRP) affects government money market fund flows during flight-to-safety episodes. We find that funds with ON RRP access serving sophisticated investors experience about a 1 percentage point increase in net daily flows over total assets during the March 2020 flight-to-safety episode relative to similar funds without access. The effect aligns with theoretical predictions and explains more than half of the inflows in those funds. Our results show that access to central bank deposit facilities amplifies flight-to-safety behavior.

JEL Classification: E58, G01, G21, G23

Keywords: central bank account access, flight-to-safety

1 INTRODUCTION

"Flight to safety" refers to the reallocation of funds from riskier financial assets into safer and more liquid assets during episodes of stress (Vayanos, 2004; Caballero and Krishnamurthy, 2008). There are at least three prominent recent flight-to-safety episodes. In September 2008, prime money market funds (MMF) faced runs as investors fled to safer government MMF, after the Reserve Primary Fund "broke the buck," ultimately forcing government intervention

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[†]lucia.s.gurrieri@frb.gov

[‡]chase.p.ross@frb.gov

[§]benjamin.j.schmiedt@frb.gov

[¶]alexandros.vardoulakis@frb.gov. Corresponding author.

[‖]vladimir.l.yankov@frb.gov

(Kacperczyk and Schnabl, 2013; Schmidt et al., 2016). In March 2020, at the onset of COVID-19, a dash for cash triggered a flight to safety and large outflows from prime MMF until the Federal Reserve stepped in with liquidity backstops (Cipriani and La Spada, 2020; Li et al., 2021). Finally, in March 2023, following the failure of Silicon Valley Bank, depositors fled from riskier banks to safer ones (Cipriani et al., 2024).

A core policy question is whether granting access to a wider range of financial institutions to the central bank's deposit facilities might amplify flight-to-safety dynamics. The financial institutions that typically receive the flows during flight-to-safety episodes are those that are heavily invested in safe assets, such as Treasury securities, that have access to deposit insurance, or that have an implicit or explicit government guarantee. The ability to deposit the incoming inflows directly at the central bank rather than in Treasury securities provides an additional safe investment option and enhances the safe haven status of institutions. Hence, investors' funds could abruptly shift to financial institutions with deposit accounts at the central bank, draining liquidity from all other intermediaries, exacerbating run risk, and impairing credit supply during times of stress.

Theory predicts that central banks' deposit facilities can create a safe-haven effect in countries with reserve currencies, but the effect is hard to test empirically, because flights to safety episodes are infrequent and access to central bank balance sheets is endogenous. We address these challenges by studying incremental take-up in the Fed's deposit facility, the overnight reverse repurchase agreement operations (ON RRP), during COVID-19, which provides a setting where there is sufficiently granular data to reasonably control for confounding factors (Frost et al., 2015; Carapella et al., 2025).[1]

The idea is simple: In times of stress, government MMF receive inflows from banks, prime MMF, or other investment vehicles as a result of a flight to safety. Without access to ON RRP, government MMF would invest these additional funds into government assets, such as Treasury securities, which would put downward pressure on their yields, mitigating, on the margin, the incentives to move funds into government MMF. The ON RRP, however, offers an alternative outlet for these flows. Government MMF can place funds directly with the Fed at a fixed rate, creating a risk-free investment option with fully elastic supply that expands and contracts

[1]Our empirical analysis focuses on *government* money market funds, which invest primarily in Treasury bills and repurchase agreements collateralized by the Treasuries and agency mortgage backed securities. This distinction matters because *prime* money market funds can hold private short-term instruments and experienced runs in March 2020; we therefore use "government MMF" when referring to our sample and "MMF" for statements that apply to both segments. See the Internet Appendix for details on the ON RRP.

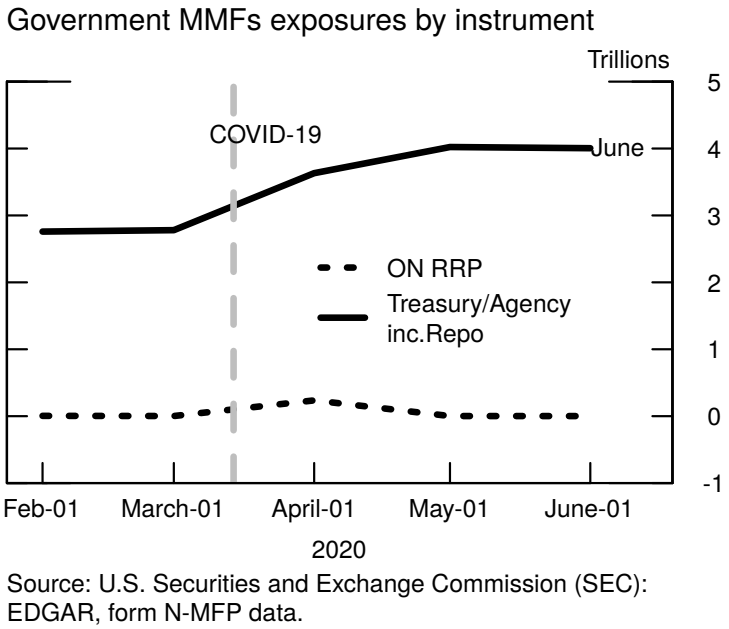

Figure 1: Government MMF investment in ON RRP balances and Treasury and Agency repurchase agreements, in trillions USD

based on demand. Hence, with access to the ON RRP, government MMF could absorb more liquidity without suppressing short-term rates, thereby exacerbating flight-to-safety dynamics. As discussed in Carapella et al. (2025) and also shown in Figure 1, the ON RRP take-up increased in March and April 2020 at the outbreak of the COVID-19 pandemic. However, flows to the ON RRP during that stress episode were limited overall, and take-up quickly normalized to levels close to zero.

The aforementioned analysis focuses on the aggregate ON RRP take-up and ignores important heterogeneity across government MMF with respect to ON RRP access. Moreover, the focus on equilibrium take-up does not address the more fundamental point of whether government MMF with ON RRP access experienced larger inflows than their counterparts without access, all else being equal, even if they did not invest these inflows in the ON RRP.

Our paper contributes to the literature by showing that access to central bank deposit facilities can amplify flight-to-safety dynamics, but only for sophisticated investors who understand the benefits of having an elastic store of value. Indeed, we show that institutional government MMF with access to ON RRP experience statistically and economically significantly higher inflows during flight-to-safety episodes relative to peers without ON RRP access. The incremental effect is quantitatively large, accounting for about half of the inflows in those funds.

2 EMPIRICAL METHODOLOGY

We evaluate whether investors recognize the additional safety of a fund with access to the ON RRP, which then affects the flight-to-safety dynamics. We examine the differences in net flows between government MMF that have access to the ON RRP and those that do not. In a closely related work, Cipriani and La Spada (2020) illustrate behavioral differences between institutional and retail prime MMF investors during the March 2020 run on prime money market funds and find that institutional investors run, while retail investors do not. We employ the same logic that institutional investors are more sophisticated but, instead, study their choice of investing across government MMF with and without ON RRP access, rather than their choice of withdrawing from prime MMF. Our conjecture is that institutional investors are more likely to account for the incremental effect that ON RRP access can have on a fund's ability to absorb inflows without putting pressure on yields. Hence, our hypothesis is that government MMF with institutional investors and ON RRP access would experience higher inflows during a flight-to-safety episode.

Investor type is observed at the *share-class* level in iMoneyNet, and a government MMF may offer both institutional and retail share classes. In our dataset of 158 fund portfolios, 64 consist entirely of institutional share classes and 55 entirely of retail share classes. Because ON RRP eligibility is granted at the fund level, we aggregate share-class information to the fund-day level and define an indicator $Inst_i$ that equals one if institutional-designated share classes account for at least 50% of fund i's total net assets the last day before the COVID stress, and equals zero otherwise. This definition is intended to capture investor sophistication rather than the SEC's retail money market fund regulatory designation. The SEC retail designation is a fund-level compliance status (e.g., limiting beneficial ownership to natural persons) that, among other things, determines whether a prime fund may maintain a stable NAV or must float under the SEC's 2014 MMF reforms (implemented in 2016). Our empirical setting focuses on government funds, which were exempt from the floating-NAV, and thus a clean regulatory distinction between retail and institutional funds does not apply.[2]

[2] As a robustness check, we re-estimate our main regressions after excluding funds with mixed investor types—that is, dropping fund portfolios that are not 100% institutional or 100% retail based on share-class asset composition. The resulting estimates are similar in sign, magnitude, and statistical significance to the baseline results (Table IA.2 in Internet Appendix). We also estimate a specification using a continuous institutional-share measure (rather than the 50% cutoff), with institutional ownership fixed at its value the last day before the stress to avoid post-shock rebalancing, and obtain similar results (Table IA.3). Table IA.4 compares the main sample with the reduced sample that includes funds which are exclusively institutional or retail.

There is heterogeneity with respect to ON RRP access within both groups. In our sample, 24% of the funds are institutional with ON RRP access, 27% are institutional without ON RRP access, 10% are retail with ON RRP access, and 39% are retail without ON RRP access.

We estimate the incremental effect of flight-to-safety dynamics from ON RRP access by regressing the funds' daily net flows over total net assets (TNA) on a fund's ON RRP access and its institutional/retail designation, using the following regression equation

$$\begin{aligned} y_{i,t} = {} & \beta_1(Stress_t \times ONRRP_i) + \beta_2(Stress_t \times Inst_i) \\ & + \beta_3(Stress_t \times Inst_i \times ONRRP_i) + \gamma' X_{i,t} + \alpha_t + \phi_i + \varepsilon_{i,t}, \end{aligned} \tag{1}$$

where $y_{i,t}$ is the net flow over TNA for fund i on day t. $Stress_t$ is a dummy variable that captures the flight-to-safety episode and takes the value of one for trading days between March 6, 2020, and March 24, 2020, when prime MMF experienced runs. $Inst_i$ is a dummy variable that takes the value of one if fund i is designated as institutional. $ONRRP_i$ is a dummy variable that takes the value of one if fund i had access to the ON RRP facility as of January 2, 2020, when our sample begins. α_t and ϕ_i are time and fund fixed effects, respectively. The vector $X_{i,t}$ contains fund-specific controls. We provide details on the data in the Internet Appendix.

3 ESTIMATION RESULTS

Table 1 reports the results from estimating equation (1). Columns (1) and (4) estimate the effect of ON RRP access without distinguishing between institutional- and retail-designated funds. Column (1) uses the January 2–March 24, 2020 sample, while column (4) uses the full January 2–June 30, 2020 sample. Columns (2) and (5) report the coefficient on the triple interaction. Columns (3) and (6) report the same incremental effect while accounting for an important confounding factor, namely the inflows from prime funds belonging to the same fund family as the government funds in our analysis (see Cipriani and La Spada, 2020 for a related discussion and Cipriani and La Spada, 2021 for evidence of why government MMF enjoy a higher money-premium than prime MMF). The concern is that ON RRP access at institutional funds is highly correlated with belonging to a fund family with prime funds; thus, the incremental inflows may be due to the flows from prime funds in the same family rather than the ON RRP access. We control for this confounding factor by including in the regression (1) double and triple interactions of $Stress_t$ and $Inst_i$ with the ratio of total daily prime fund flows over a fund's

family TNA for each fund i, indicated by prime control in the Table.

We derive two results on the incremental effect of ON RRP access on flight-to-safety. First, without differentiating between institutional and retail funds, there is no statistically significant effect of the ON RRP, although the coefficient on $Stress_t \times ONRRP_i$ is positive—columns (1) and (4). Second, when we differentiate between institutional and retail funds in columns (2) and (5), the impact of access to the ON RRP becomes significant for institutional funds, which experience, on average, a 0.9 to 1.0 percentage point increase in the net daily flows over TNA.

The estimated effects are statistically significant and align with the theoretical predictions. The effects are economically large, as the predicted flight-to-safety flows account for more than half of the average daily inflows over TNA in institutional funds with ON RRP access during the period of stress.[3] Our results continue to hold and are quantitatively of the same magnitude when including the prime control in columns (3) and (6).

In the Internet Appendix, we include additional results and robustness checks. Figure IA.1 shows that government MMF with ON RRP access experience visibly larger inflows than non-eligible ones in March 2020, while flows are similar across groups outside the stress window; the ON RRP-eligible funds have also somewhat more volatile flows. Figure IA.2 provides a visual check of pretrends by estimating an event-study version of our triple-difference specification, and Table IA.1 compares the characteristics of money funds that are eligible or not. Table IA.5 introduces in regression (1) additional controls to account for characteristics across which the two categories of funds meaningfully differ.

	1/2/2020–3/24/2020			1/2/2020–6/30/2020		
Dep. Var: Net inflows / TNA	(1)	(2)	(3)	(4)	(5)	(6)
$Stress_t \times ONRRP_i$	0.002	−0.003	−0.006	0.002	−0.005	−0.007*
	(1.08)	(−1.19)	(−1.49)	(0.81)	(−1.54)	(−1.72)
$Stress_t \times Inst_i$		−0.003	−0.003		−0.002	−0.005
		(−0.71)	(−0.63)		(−1.43)	(−1.33)
$Stress_t \times Inst_i$		0.009**	0.011**		0.010**	0.013**
$\times ONRRP_i$		(2.19)	(2.28)		(2.58)	(2.57)
Observations	8,921	8,921	8,921	19,430	19,430	19,430
Within R^2	0.0003	0.0011	0.0033	0.0005	0.0004	0.0025
Prime control	No	No	Yes	No	No	Yes

Table 1: Fund-level regression of daily percentage net flows of government MMF as a function of a family's ON RRP access and institutional/retail status with date and fund fixed effects. Column header denotes regression time sample. All specifications include fund and date fixed effects. We cluster standard errors at the day and fund levels. t-statistics are in parentheses. ***, **, and * respectively represent 1%, 5%, and 10% statistical significance.

[3]The average daily net inflow over TNA in institutional funds with ON RRP access was 1.57% for the period from March 6 to March 24.

4 CONCLUDING REMARKS

In times of stress, investors shift funds from riskier assets toward safer ones, leading to flight-to-safety dynamics that can destabilize markets and pose risks to financial stability. We document that granting access to central bank deposit facilities—specifically the Federal Reserve's Overnight Reverse Repo Facility—amplifies these dynamics for sophisticated investors. Institutional money market funds with access to the facility experienced about a 1 percentage point increase in daily net flows over total net assets during the March 2020 episode relative to similar funds without access. By contrast, we find no incremental effect for retail funds.

We have abstracted from the positive effects of central bank deposit facilities on financial stability. In particular, granting access to these facilities provides an elastic store of value in times of stress, enhances the resilience of safe-haven institutions, and crowds out more runnable private-money assets (Carlson et al., 2016). Moreover, Treasury bill yields exceeded the ON RRP rate in March 2020, so a large share of inflows to government MMF went to T-Bills and ON RRP take-up was modest. If the next flight to safety occurs when safe asset demand is higher or Treasury supply is lower, Treasury yields could fall below the ON RRP rate and further amplify the flight-to-safety flows we document (Stein and Wallen, 2025). Our analysis focuses on the COVID-19 period when banks were well capitalized and had sufficient liquidity buffers. In stress scenarios in which some banks may experience distress, the direction and magnitudes of flight-to-safety flows from banks to MMF may be different, and MMF with ON RRP access may experience an even larger share of the flight-to-safety flows.

Accounting for these considerations would be necessary for a more comprehensive assessment of the financial stability implications of granting access to central bank deposit facilities. Our analysis focuses on the effect of such access on flight-to-safety behavior, and we view the additional considerations as promising avenues for future research.

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Internet Appendix to

Central Bank Access and Flight to Safety

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IA.A Institutional details of the ON RRP

The Federal Reserve introduced ON RRP in 2014 to support its control of short-term interest rates by allowing eligible non-bank participants in short-term funding markets to earn interest on repurchase agreements (repos) with the Federal Reserve. The set of such eligible counterparties is broad and includes money market funds, primary dealers, and government sponsored enterprises. Although the ON RRP is a monetary policy tool, its potential destabilizing effects were highlighted early on. Regulators have long considered such concerns, particularly in the case of Pass-Through Investment Entities ("PTIEs"), a type of "narrow bank." PTIEs invest a significant fraction of, or all, their deposits in reserve balances with the central bank in order to pass through the interest that they earn on reserve balances to their depositors. The Federal Reserve has explored ways to limit flight-to-safety dynamics related to PTIEs. The Board of Governors of the Federal Reserve System issued an Advanced Notice of Proposed Rulemaking to request public comments on whether it should propose changes to Regulation D. See: Federal Register Vol. 84, No. 48 on Tuesday, March 12, 2019 (Federal Register :: Regulation D: Reserve Requirements of Depository Institutions).

IA.B Data

We use iMoneyNet, Inc. data for MMF domiciled in the United States. The data provide daily information on the portfolio assets, share class assets, share class yields, and other characteristics, such as whether the share class is catered to institutional or retail investors.[4] Our focus is on government MMF, because they have been found to receive inflows during flight-to-safety episodes. We drop non-government MMF and also remove observations that are missing relevant identifying information, asset information, or 1-day average simple yield information; about 1.15% of the government MMF sample. Finally, we aggregate all information to the fund level at which ON RRP access is granted. We determine a fund's ability to access the ON RRP using the New York Federal Reserve Bank's list of reverse repo counterparties.[5] We define a fund as an ON RRP counterparty based on its status as of January 2, 2020, before the COVID shock. Our final dataset consists of daily data for 158 fund portfolios from January 2, 2020 to June 30, 2020. Finally, when using prime MMF flows as controls in our regressions, we winsorize the ratio of prime fund flows relative to TNA at the 1st and 99th percentiles to reduce the influence of outliers stemming from likely data errors.

IA.C Additional Results

Figure IA.2 provides a visual check of the identifying assumption by estimating an event-study version of our triple-difference specification. We partition the January 2–March 24, 2020 sample into 21-day event-time bins and estimate coefficients on bin indicators interacted with

[4] MMF often offer multiple share classes, each with a different fee structure, which affects the net return for investors. The number of share classes within a fund portfolio varies from 1 to 18.

[5] https://www.newyorkfed.org/markets/rrp_counterparties.

ON RRP access and institutional status, using the last pre-event bin as the omitted category. The estimated pre-event coefficients are economically small and statistically indistinguishable from zero, providing no evidence of differential pretrends between funds with and without ON RRP access. In contrast, the only positive and statistically significant coefficient corresponds to the bin beginning March 6, 2020, which aligns exactly with our baseline stress window. We use 21-day bins to closely align with the length of the March 6–March 24 post-period in our main difference-in-differences specification.

Table IA.1 compares key pre-period characteristics of government MMF with and without ON RRP access, including fund size, weekly liquid assets (WLA), weighted-average yields, and a proxy for flow-performance sensitivity. This comparison provides context for the diff-in-diff design. Our main regressions include fund fixed effects, so identification comes from within-fund changes over a short window; nonetheless, the table helps verify that funds with and without access are broadly comparable along key observables. However, there is a clear difference in the size of the funds, with ON RRP funds generally being larger; our specifications consider flows over TNA and include fund fixed effects as well as additional controls; so identification comes from within-fund changes over the stress window. Moreover, we have additionally controlled for the level of WLA over TNA and yields to account for the difference between funds with and without ON RRP access and our results continue to hold (Table IA.5).[6]

IA.D Figures and Tables

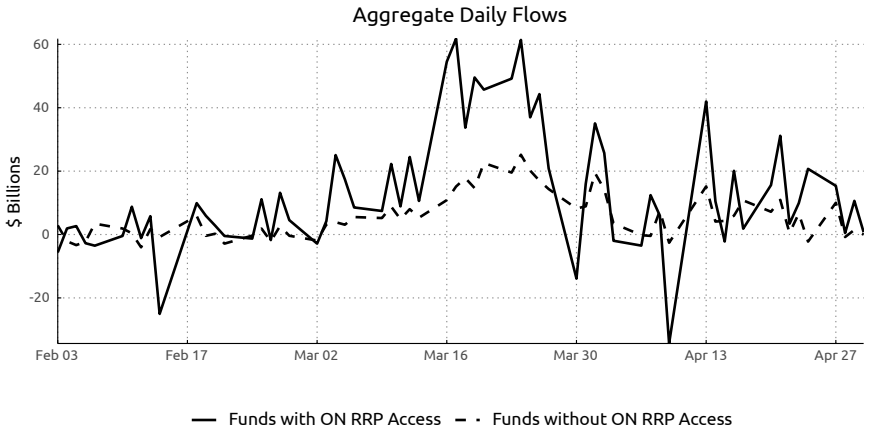

Figure IA.1: Aggregate net flows to government MMFs with and without ON RRP access. Figure plots daily aggregate net flows for government money market funds with ON RRP eligibility and for those without eligibility.

[6]Our results are similar when we include additional controls for confounding factors, such as the total size of government MMF in a fund family interacted with the stress and institutional dummies. Such controls address the concern that larger government fund families may be perceived to be safer and, thus, attract more inflows unrelated to ON RRP access. A complication that arises is that ON RRP access is highly related to size. Hence, we cut the size distribution at a point where there is equal representation of funds with and without ON RRP access within the large size bucket.

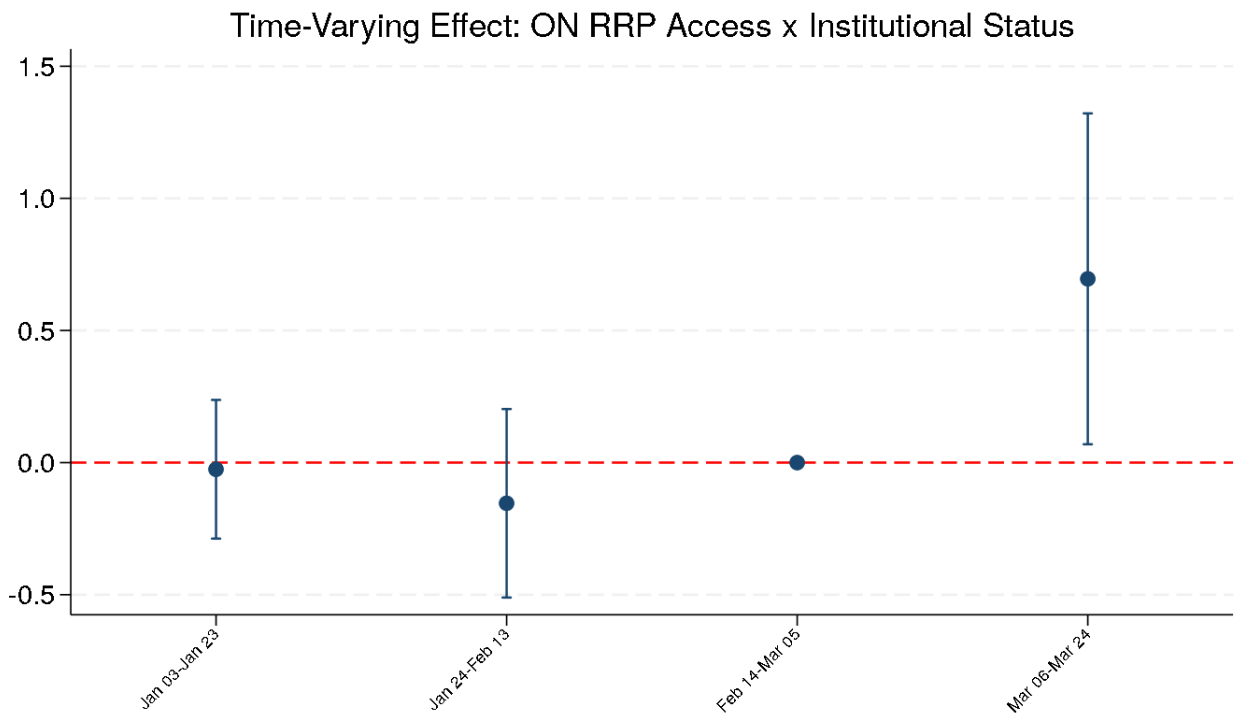

Figure IA.2: Pretrends. Figure plots coefficients β_3 in percentage points from an event-study version of the triple-difference specification in equation (1). We partition the January 1–March 24, 2020 sample into 21-day event-time bins and estimate coefficients on bin indicators interacted with $ONRRP_i$ and $Inst_i$. The use of 21-day bins mirrors the length of the March 6–March 24 post period in the baseline analysis.

Variable	Non-ON RRP Mean	Non-ON RRP SD	ON RRP Mean	ON RRP SD	Std. Difference
Weekly Liquid Assets / Total Assets	0.72	(0.24)	0.65	(0.23)	−0.290***
Flow-Performance Sensitivity	−0.02	(0.75)	−0.12	(0.38)	−0.160
Total Assets ($ Millions)	4196.99	(10808.28)	34058.10	(42392.73)	0.965***
Net Flow ($ Millions)	0.90	(165.51)	18.59	(617.48)	0.039
Ave. Simple Yield (%, annualized)	1.31	(0.29)	1.44	(0.22)	0.517***
Cumulative Flow / Assets	0.28	(1.65)	0.46	(0.29)	0.150

Table IA.1: Comparison of relevant variables for Money Market Funds with and without ON RRP access from January 2, 2020 to March 5, 2020. Counterparty funds are those with ON RRP access; Non-Counterparty funds are those without. Cumulative Flow / Assets is measured as of the last day of the sample (March 5, 2020). Flow-Performance Sensitivity is the OLS coefficient from regressing weekly log changes in total assets on lagged weekly net yield, estimated at the series level; we require each series to have at least 5 weekly observations. Std. Difference denotes Cohen's d (effect size). *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

	1/2/2020–3/24/2020			1/2/2020–6/30/2020		
Dep. Var: Net inflows / TNA	(1)	(2)	(3)	(4)	(5)	(6)
$Stress_t \times ONRRP_i$	0.00169	−0.00385	−0.00696	0.00131	−0.00505	−0.00809*
	(0.55)	(−1.26)	(−1.50)	(0.42)	(−1.58)	(−1.70)
$Stress_t \times Inst_i$		−0.00481	−0.00474		−0.00803*	−0.00792*
		(−1.09)	(−1.07)		(−1.80)	(−1.79)
$Stress_t \times Inst$		0.00948*	0.0125**		0.0118**	0.0148**
$\times ONRRP_i$		(1.96)	(2.05)		(2.45)	(2.41)
Observations	6,698	6,698	6,698	14,555	14,555	14,555
Within R^2	0.000148	0.00143	0.00470	0.00002	0.00068	0.00323
Prime control	No	No	Yes	No	No	Yes

Table IA.2: Fund-level regression of daily percentage net flows of government MMF as a function of a family's ON RRP access and institutional/retail status with date and fund fixed effects, for funds whose share classes are entirely institutional or retail. Column header denotes regression time sample. All specifications include fund and date fixed effects. We cluster standard errors at the day and fund levels. t-statistics are in parentheses. ***, **, and * respectively represent 1%, 5%, and 10% statistical significance.

	1/2/2020–3/24/2020			1/2/2020–6/30/2020		
Dep. Var: Net inflows / TNA	(1)	(2)	(3)	(4)	(5)	(6)
$Stress_t \times ONRRP_i$	0.00244	−0.00384	−0.00632	0.00182	−0.00502	−0.00744*
	(1.08)	(−1.29)	(−1.51)	0.80)	(−1.63)	(−1.74)
$Stress_t \times InstitutionalShare$		−0.00348	−0.00327		−0.00646	−0.00623
		(−0.86)	(−0.79)		(−1.57)	(−1.49)
$Stress_t \times ONRRP_i$		0.00951**	0.0121**		0.0113***	0.0138***
$\times InstitutionalShare$		(2.29)	(2.31)		(2.71)	(2.62)
Observations	8,921	8,834	8,834	19,430	19,343	19,343
Within R^2	0.000309	0.00119	0.00308	0.0000470	0.000517	0.00240
Prime control	No	No	Yes	No	No	Yes

Table IA.3: Fund-level regression of daily percentage net flows of government MMF as a function of a family's ON RRP access and the percent of assets held by institutional or retail share classes with date and fund fixed effects. The specification is identical to Table 1 except it uses a continuous institutional-share measure (rather than the 50% cutoff). The institutional ownership variable is fixed at its March 6, 2020 value to avoid post-shock rebalancing and other dynamics. Column header denotes regression time sample. All specifications include fund and date fixed effects. We cluster standard errors at the day and fund levels. t-statistics are in parentheses. ***, **, and * respectively represent 1%, 5%, and 10% statistical significance.

	All	Reduced (funds are all one type)	Reduced / All
Observations	19,430	14,555	0.75
Funds	158	119	0.75
Counterparty obs.	6,763	4,626	0.68
Non-counterparty obs.	12,667	9,929	0.78
Retail obs.	7,748	6,748	0.87
Institutional obs.	11,682	7,807	0.67

Table IA.4: Reduced-sample coverage. Compares the main sample with the reduced sample that includes funds that are exclusively institutional or retail.

	1/2/2020–3/24/2020			1/2/2020–6/30/2020		
Dep. Var: Net inflows / TNA	(1)	(2)	(3)	(4)	(5)	(6)
$Stress_t \times ONRRP_i$	0.00273	−0.00247	−0.00506	0.00283	−0.00262	−0.00519
	(1.13)	(−0.83)	(−1.23)	(1.23)	(−0.89)	(−1.26)
$Stress_t \times Inst_i$		−0.00177	−0.00145		−0.00427	−0.00394
		(−0.49)	(−0.39)		(−1.16)	(−1.06)
$Stress_t \times Inst_i$		0.00744**	0.0102**		0.00854**	0.0112**
$\times ONRRP_i$		(1.96)	(2.09)		(2.22)	(2.28)
Observations	8,579	8,579	8,579	18,413	18,413	18,413
Within R^2	0.00316	0.00375	0.00615	0.00125	0.00151	0.00360
Prime control	No	No	Yes	No	No	Yes
WLA & yield controls	Yes	Yes	Yes	Yes	Yes	Yes

Table IA.5: Fund-level regression of daily percentage net flows of government MMF as a function of a family's ON RRP access and institutional/retail status with date and fund fixed effects. Column header denotes regression time sample. All specifications include fund and date fixed effects. We cluster standard errors at the day and fund levels. t-statistics are in parentheses. ***, **, and * respectively represent 1%, 5%, and 10% statistical significance.