Replication programs/data for "Runs on Money Market Mutual Funds"

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The attached code enables direct replication of all of the tables and figures in the published version and online appendix of the paper. All of the outputs from the paper may be directly calculated from the attached code and data, with the exception of Table 5, which requires a subscription to the CRSP mutual fund database. We will discuss how to replicate Table 5 below. For additional information and/or clarifications, please contact Lawrence Schmidt at ldwschmidt@uchicago.edu.

The codes for the project are split between STATA and MATLAB. Stata code also uses the user-written packages: ***estout***, ***fsum***, and ***egenmore***, which can be installed by typing ***'ssc install [name]'*** In order to generate the outputs from the paper, please run the code in the following sequence:

- ***Stata_code/1 prep_shareclass_panel.do***: includes some basic sample selection and calculates several variables from the iMoneyNet data
- ***Matlab_code/1 Import and prep data.m***: reads fund-level panel data into MATLAB, calculates real-time liquid asset share variable
- ***Matlab_code/2 Fig1_2015.m***: Produces figure 1 from the main text
- ***Stata_code/2 prep regression variables.do***: Additional construction of variables for regression analysis
- ***Stata_code/3 cross_sectional_reg_tables.do***: Produces figure 2 and tables 1-4 from the main text and tables A1-B3 from the appendix
- ***Stata_code/4 table6_dynamics.do***: Produces table 6 from main text and table B4 from the appendix
- ***Matlab_code/3 Fig3and4.m***: Produces figures 3-4 from the main text
- ***Matlab_code/4 Quantile regressions main.m***: Produces table 7 from the main text, table C1 from the appendix, and figure C1 from the appendix
- ***Matlab_code/5 Quantile regressions 205080.m***: Produces table C2 from the appendix

Note that each of the program files includes several lines at the top which point the code to the relevant folder locations on the user's hard drive. Please modify these path files in order to point to the relevant directories on your machine. The codes will create several intermediate datasets in the Intermediate_data folder and produce TEX tables and PDF figures in the Output_files subfolder.

The primary source of the underlying data is from iMoneyNet, who kindly agreed to make available the daily panel data for Prime and Government money market mutual funds for September 2008. We augmented the raw daily panel data with several of our own calculations:

- ***Imn_fund_code***: unique shareclass id (***fund_code***) variable from iMoneyNet
- ***Fundno***: internally constructed id variable which is unique at the portfolio-category level
- ***Fundid***: internally constructed id variable for the each portfolio (fund)
- ***Complex***: internally constructed complex id variable (from the text complex name in iMoneyNet

- ***Pc_avg_gross_yield***: the average value of the 7-day gross yield for each fund, calculated using overlapping daily data from March–August 2008
- ***Pc_std_logflow***: the standard deviation of daily prime institutional log flows, calculated using daily data from March–August 2008. Daily flows are calculated from the raw shareclass panel in exactly the same manner as is demonstrated in the file ***"Stata_code/1 prep_shareclass_panel.do".***
- ***Fund_business_ks***: total complex prime institutional assets under management / total complex mutual fund assets (from the Investment Company Institute), measured as of 8/31/2008.
- ***Liq_assets***: Sum of most recently available portfolio weights (in percentage points) in US treasuries (***treas***), US other agencies (***usother***), and repos (***repos***) from iMoneyNet
- ***Expr***: annualized expense ratio
- ***Wam***: weighted-average maturity of the portfolio
- ***Tna***: total net assets in each shareclass, in millions of USD.
- ***Category***: numeric variable indicating the category assigned to each shareclass (prime/govt and institutional/retail)
- ***Gross_yield_weekly***: backward-looking 7-day, discretely-compounded gross yield, expressed as an annualized percentage (***GDCY7***)
- ***Gross_yield_daily***: backward-looking 1-day, discretely-compounded gross yield, expressed as an annualized percentage (***GDSY1***)
- ***Min_investment***: minimum investment level, when one is available
- ***Complex_tna***: total complex assets under management in MMMFs, in millions of USD.

The additional CSV files provide several aggregate summary statistics which appear in figures and are calculated from iMoneyNet and CRSP microdata. These aggregate calculations are described in the text, and code to reproduce these calculations is available upon request.

Replicating Table 5: Table 5 is constructed using proprietary data from the CRSP mutual fund database. While we are unable to share the underlying micro data, these are readily downloadable from the WRDS website. Ultrashort funds are identified by a ***Lipper_class*** code of "USO". In addition, we manually reviewed fund marketing materials in order to identify ultra-short funds which invest exclusively in government debt. Money market funds are identified by ***lipper_class*** of "IMM" or "MM". For convenience, we have included an excel file which identifies the subset of ***crsp_permno*** and ***crsp_permco*** pairs which we classify as short-term bond funds. The column ***ultrashort_govt_flag*** identifies which funds which are government only. We merged this information onto the CRSP header file.

The remaining fields which are used in the analysis come directly from various tables within the CRSP dataset. In addition to the header file, we use CRSP data on monthly assets and returns, expenses, and dividends, as well as daily returns. We provide the code which combines these elements to produce table 5 and the aggregate flows in Figure 3 in ***"stata_code/5 short_term_bond_funds (requires CRSP data).do".***