

New Realities in Managing Liquidity

A Case Study

City and County of San Francisco

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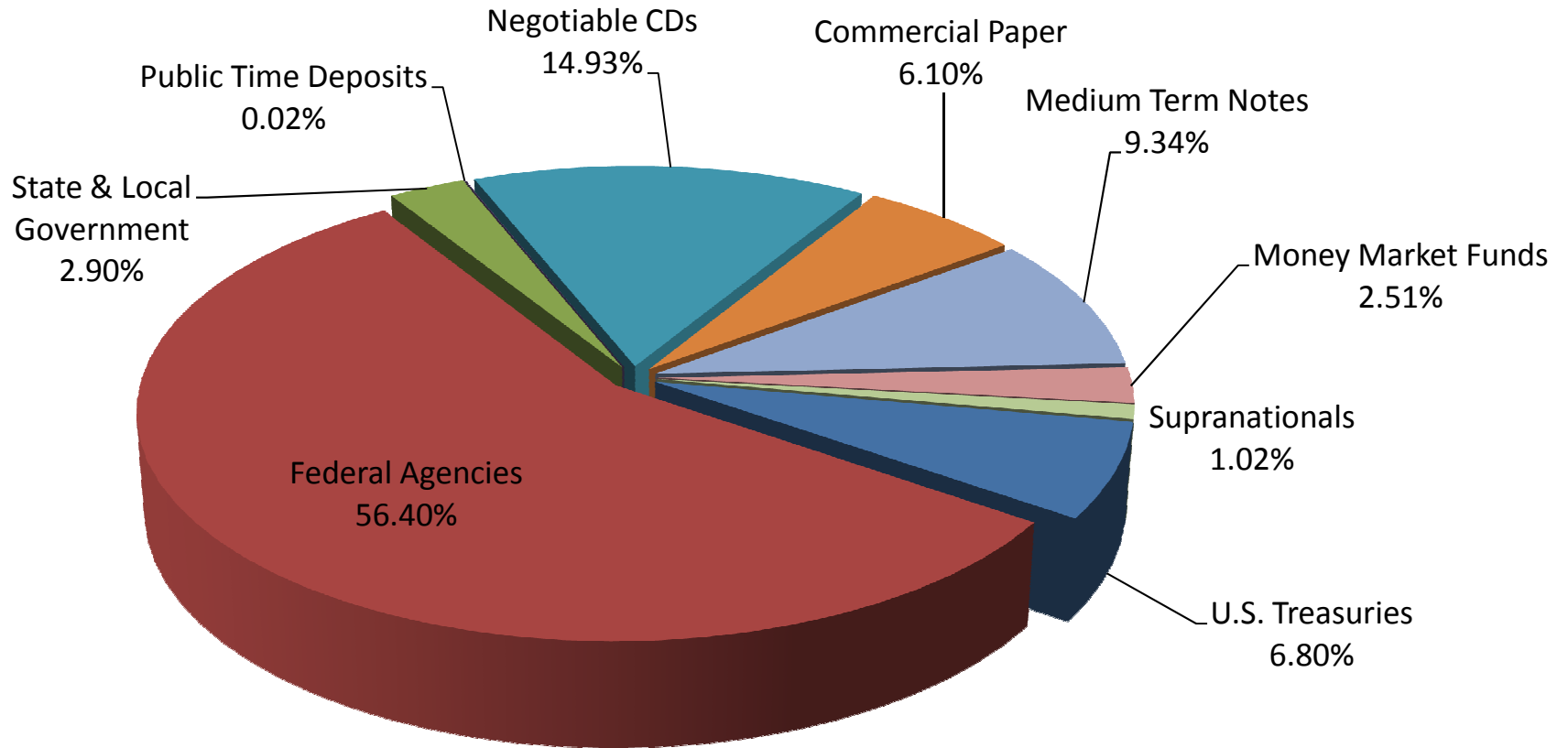
Investment Officer

City and County of San Francisco

City and County of San Francisco: Pool Overview

- **Portfolio Size: ~\$7.3 Billion (As Of January 31, 2016)**
- **Actively Managed To Participants' Cash Flow Needs**
- **Investment Policy More Conservative Than California State Investment Code**
- **Must Have Sufficient Liquidity To Meet Six Months Of Cash Flow Needs**
- **4-5% Of Portfolio O/N, Roughly 55% Invested < 1 Year**
- **Rigorous Credit Review And Assessment Process**
- **Working from a short term and long term cash forecast**

San Francisco: Portfolio Statistics



**Asset Allocation by Market Value
For the month ended January 31, 2016**

Average Daily Balance	\$7,389,504,231.20	Earned Income Yield	0.669%
3 Net Earnings	\$4,201,358	Weighted Average Maturity	425 days

San Francisco: Challenges in Managing Liquidity – Bottom Line

- **Increased demand for high quality short-term Securities coupled with a shrinking supply due to:**
 - Changes in 2(a)-7 and migration of Prime Money Market Funds into Treasury and Agency Money Market Funds
 - Changes in bank regulations causing an increased demand for high quality securities along with increased balance sheet requirements
 - Changes in debt issuance preferences

San Francisco: Investment Policy Changes

- **Agency Fund Limitation: 70% ----> 85% ----> 100%**
- **Removed Issuer Limitation (65-70% Average)**
- **Maximum Duration, When Appropriate**
- **Adopt Specific Limits On Other Permitted Investments**
- **Educate And Utilize Different Security Types**
 - Step-ups, floating rate structures
- **Add More Resources , When Possible**
- **Reassign And Reorganize Investment Priorities**

San Francisco: Short-Term Fixed Income Market Liquidity Alternatives

- **US Agency Discount Notes**
- **Commercial Paper**
- **Government Money Market Funds**
- **Repurchase Agreements**

US Agency Discount Notes

Overview

- **US Dollar-denominated unsecured general obligation with a maturity less than 365 days**
- **Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corp (Freddie Mac), Federal Farm Credit Bank (Farm Credit), Federal Home Loan Bank (FHLB), Federal Agricultural Mortgage Corp (Farmer Mac), Tennessee Valley Authority (TVA), International Bank for Reconstruction and Development (IBRD), International Finance Corporation (IFC), Inter-American Development Bank (IADB)**
- **Not a mortgage-backed security – no collateral backing issuance**
- **Quoted in discount price (Same as T-Bills)**
- **Date flexibility – maturity date can usually be issued for any business day**

US Agency Discount Notes

Credit

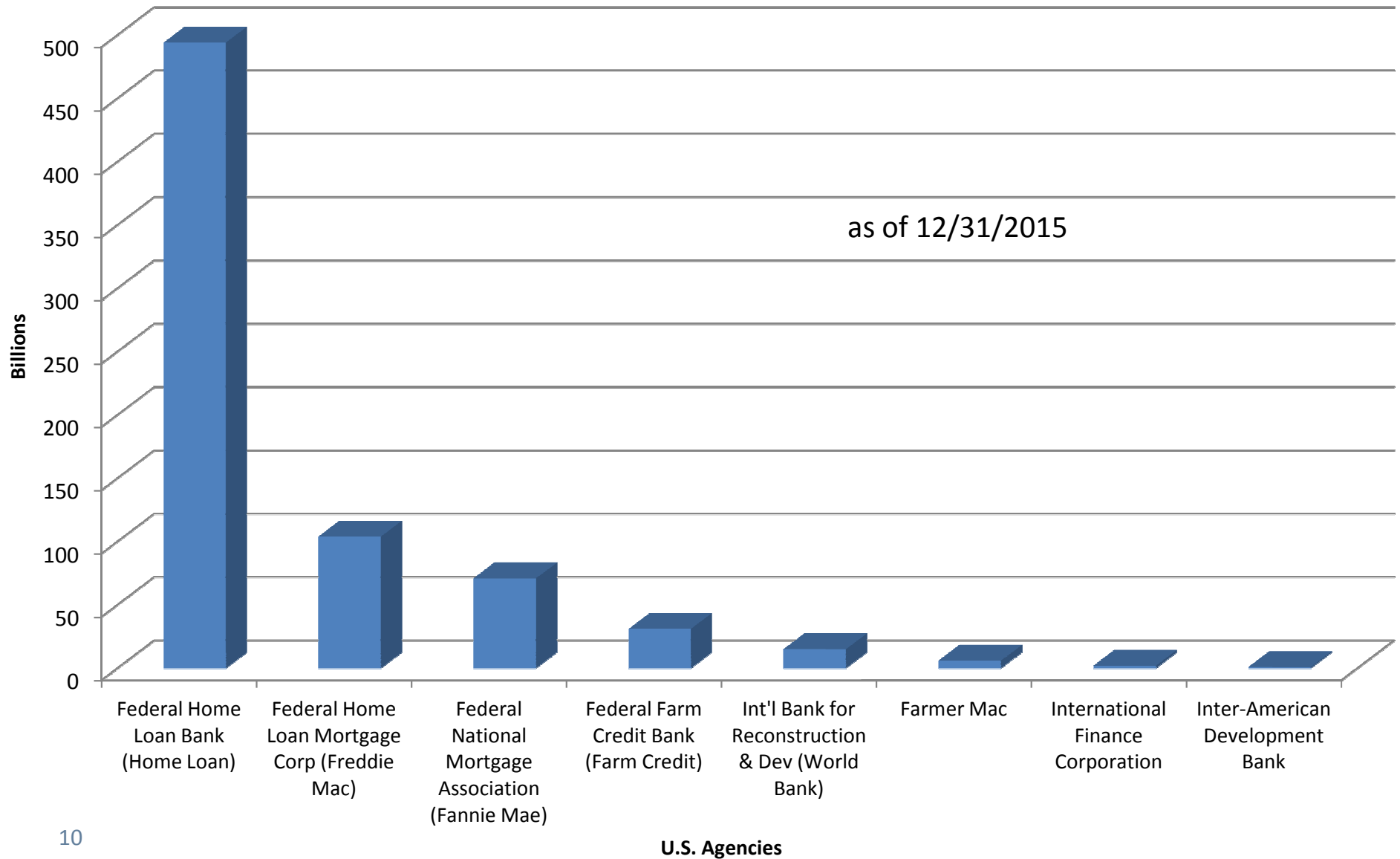
- **Agency and GSE debt = “effective guarantee”**
- **Agency debt almost = treasury risk**
- **Low default risk**
- **Direct line of credit into the Treasury**

US Agency Discount Notes

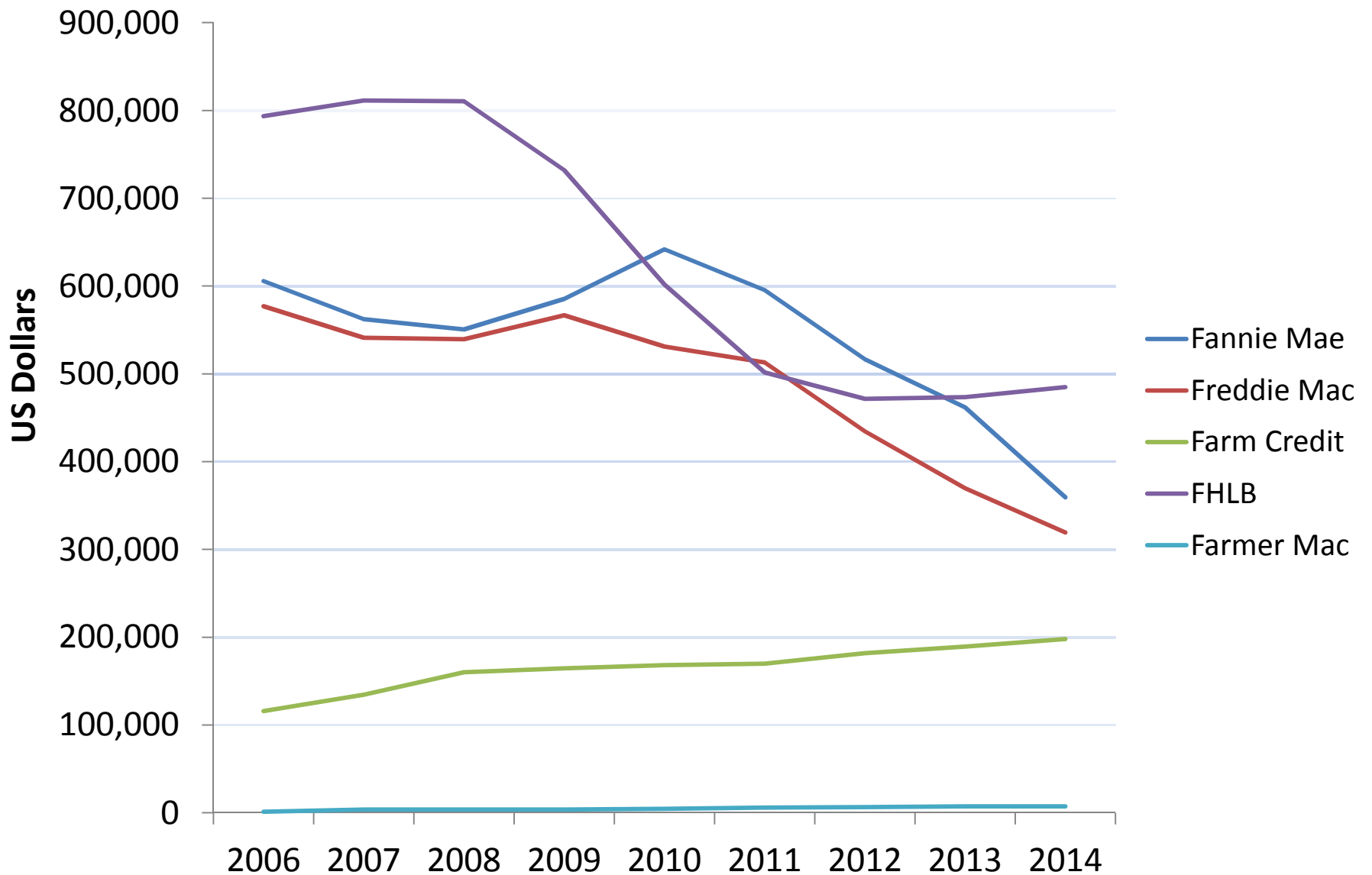
Liquidity

- **High Degree of Liquidity**
- **Size of program**
- **How they trade – yield comparison**

Discount Note Outstanding in Billions



U.S. Agency Debt Outstanding



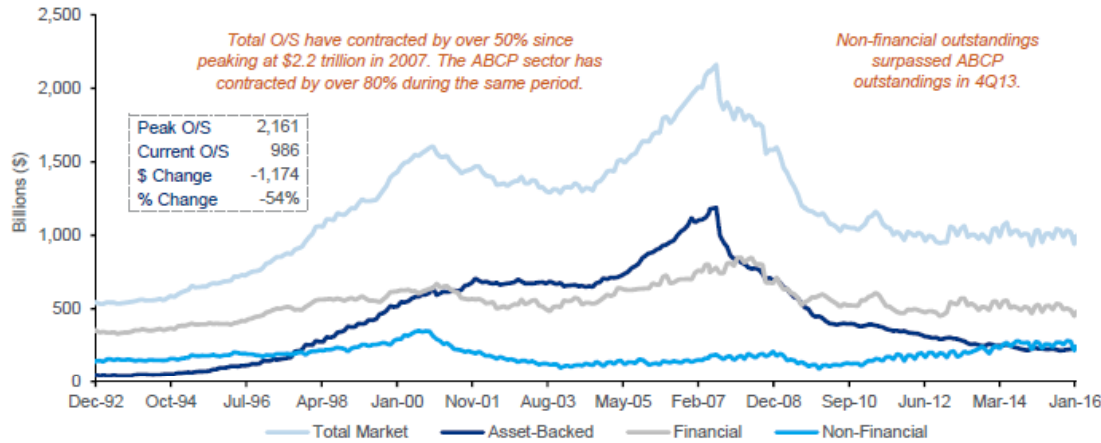
Commercial Paper

- **Short-Term Unsecured promissory note**
- **Maturities range from 1 Day to 270 Days**
- **Minimum credit rating must be P1/A-1/F-1 (from at least two of the NRSROs)**
- **Independent credit analysis performed**
- **Approved Issuer list**
- **Asset-backed Commercial Paper**

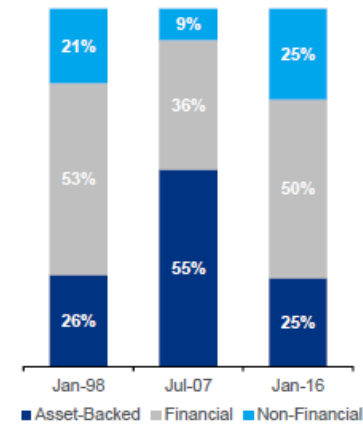
Commercial Paper

Historical USCP Market Outstandings

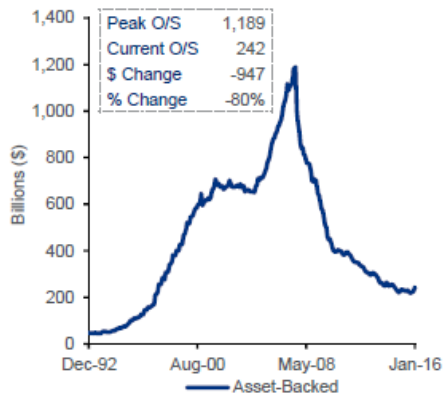
Commercial Paper Outstandings



Market Breakdown



Outstandings by Sector



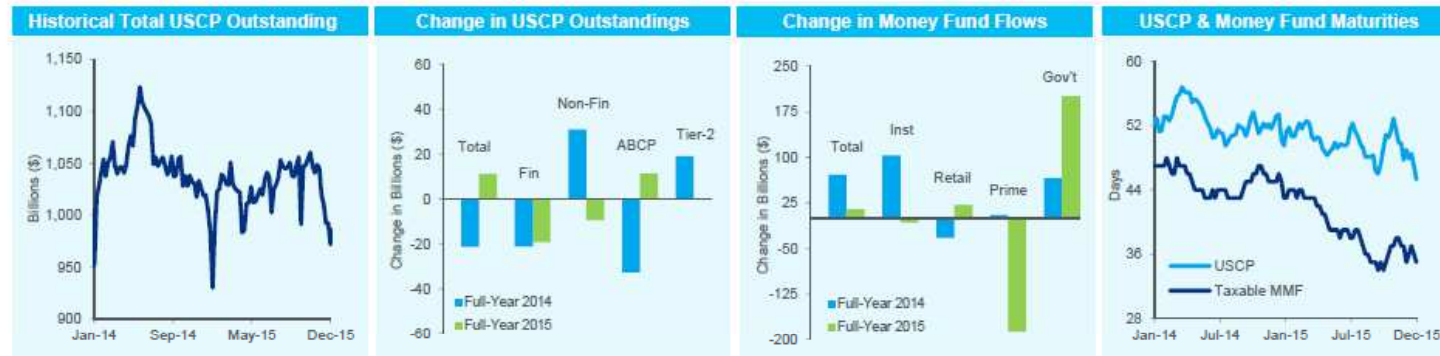
Source: Federal Reserve, as of 1/8/16

Commercial Paper

2015 U.S. Commercial Paper Market Recap

2015 U.S. Commercial Paper & Money Fund Recap

U.S. money markets weathered a number of headwinds in 2015 as supply remained relatively stable throughout the year. Total market outstandings contracted by \$11.1 bn (-1%) year-over-year. Due to upcoming reform implementation, money fund flows affected buying behavior across various segments of the short-term investor base.



Commercial Paper Yields (All-in)

Money market rates started 2015 firmly anchored by expectations around timing for rate normalization. The money market curve began to steepen and spreads became increasingly volatile as the September FOMC meeting approached. This trend continued into the Dec hike.

Tenor / Sector	2014 YE	2015 YE	Change in 2015	2015 High	2015 Low
1-Week					
Financial	0.15	0.28	▲ 0.13	0.40	0.10
Non-Financial	0.12	0.41	▲ 0.29	0.41	0.06
Asset-Backed	0.19	0.46	▲ 0.27	0.47	0.15
1-Month					
Financial	0.15	0.45	▲ 0.30	0.45	0.06
Non-Financial	0.13	0.39	▲ 0.26	0.46	0.07
Asset-Backed	0.21	0.52	▲ 0.31	0.55	0.18
3-Month					
Financial	0.23	0.59	▲ 0.36	0.69	0.11
Non-Financial	0.22	0.47	▲ 0.25	0.49	0.13
Asset-Backed	0.27	0.65	▲ 0.38	0.72	0.24

Source: Federal Reserve, iMoneyNet

Hot Topics for 2016

2016 is expected to be a year of transition as money markets contend with a policy tightening cycle and the conclusion of major reforms.

2016 Hot Topics

- Interest Rate Environment
- Money Fund Reform
- Supply

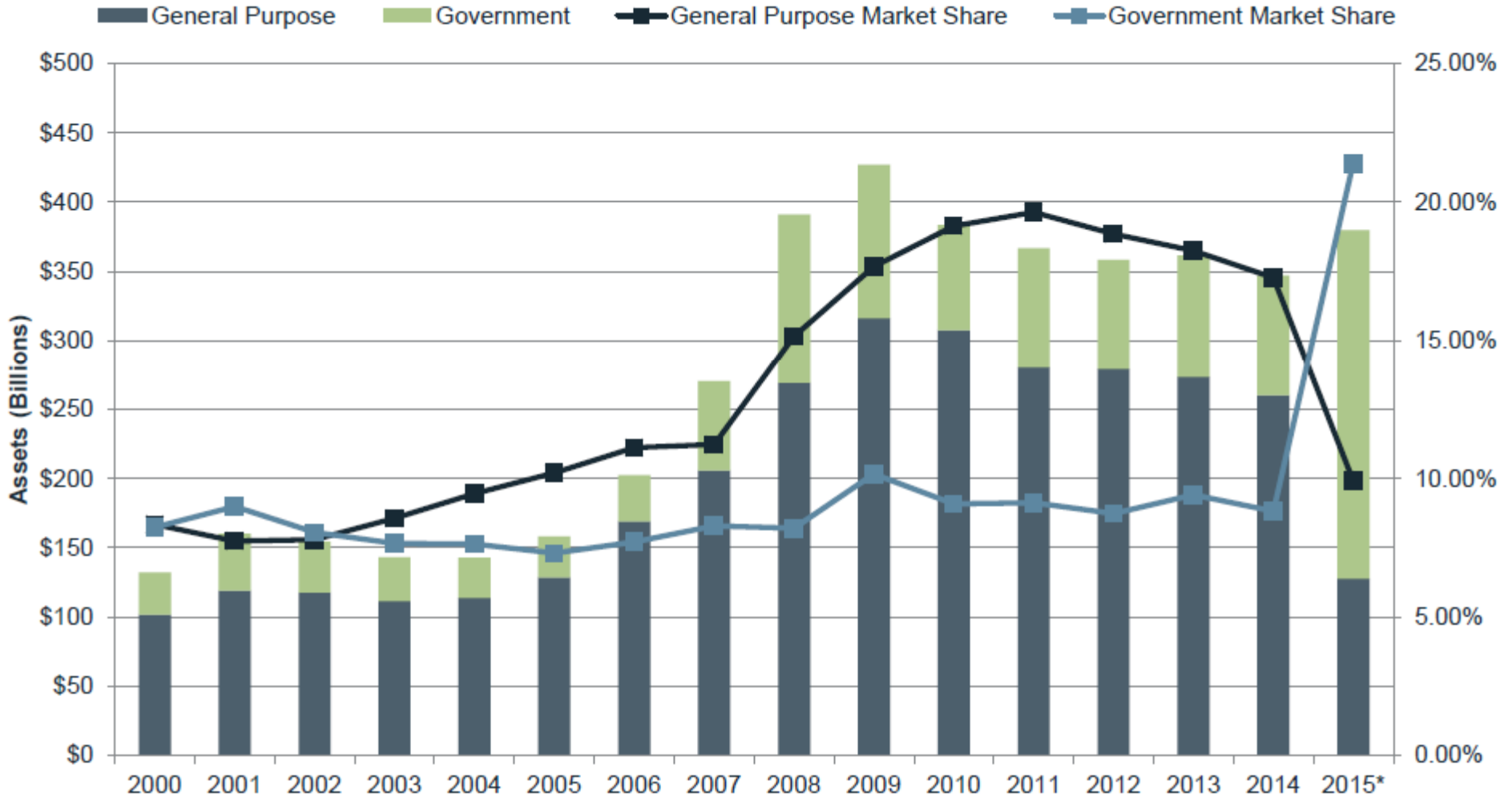
2016 Expectations / Predictions

- As rate normalization continues, investors will be focused on the pace of tightening; breakeven rates will drive investing decisions
- MMF investors will remain focused on maintaining liquidity to protect against potential large portfolio outflows prior to full implementation of new rules in October 2016
- Higher money market rates could counter-balance potential outflows from prime funds
- Total CP supply is expected to be flat/down
- Bank issuance could remain under pressure as regulatory considerations persist
- Episodic financing needs should support elevated non-financial CP outstandings even if the credit curve flattens

Government Money Market Funds

- **US Treasury and Government Money Market Funds are not subject to Floating NAVs, Liquidity Fees, or Redemption Gates**
- **Institutional Class Shares**
- **Three different Funds**
- **Actively monitor Fund portfolios**

Government Money Market Funds



*Data is preliminary and is subject to change.
Source: iMoneyNet as of 12/31/2015.

Government Money Market Funds

Overview of Final SEC Rules on Money Market Mutual Funds

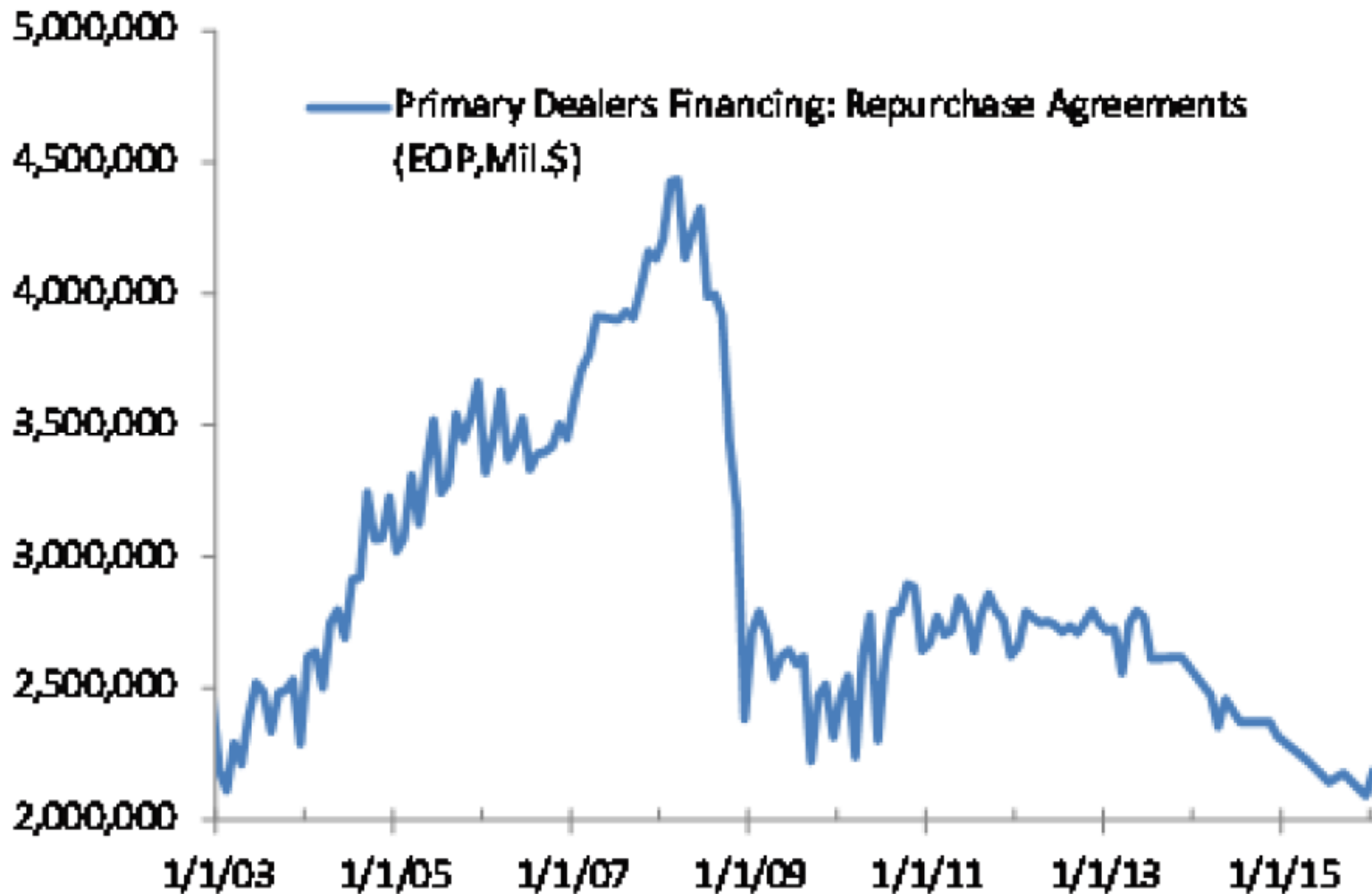
Fund Type	Net Asset Value (NAV)	Liquidity Fee	Redemption Gate
U.S. Treasury	Stable	No	No
Government	Stable	No	No
Retail Municipal/Tax-Exempt	Stable	Yes	Yes
Retail Prime/General Purpose	Stable	Yes	Yes
Institutional Municipal/Tax-Exempt	Floating	Yes	Yes
Institutional Prime/General Purpose	Floating	Yes	Yes

MMF Reform	Final Rule	Implementation Date
Floating NAV	Applicable funds will price and transact at a net asset value per share that can change or "float," based on pricing the underlying fund holdings out to four decimal places (\$1.0000)	October 14, 2016
Liquidity Fee	If a fund's weekly liquid assets were to fall below 30%, fund's board may impose a 2% fee on redemptions If a fund's weekly liquid assets were to fall below 10%, redemptions will be subject to a 1% fee, unless the fund's board determines otherwise	October 14, 2016
Redemption Gate	If a fund's weekly liquid assets were to fall below 30%, fund's board may suspend redemptions for up to 10 days	October 14, 2016
Retail Fund Definition	Retail funds limit shareholders to beneficial ownership by "natural persons" (individuals) Institutional funds are open to any shareholders, including individuals, small businesses, and large corporations	October 14, 2016

Repurchase Agreements

- **Secured loan with collateral with an approved counterparty**
- **Credit Analysis performed on potential counterparty**
- **Deliverable versus Tri-Party**
- **Customized to fit needs – Collateral, Term**
- **Involves signing a Master Repurchase Agreement and Custodial Undertaking**

Repurchase Agreements



Additional Strategies

- **Established Due Diligence Process To Monitor Collateral And Holdings**
- **Increase Approved Names And Ongoing Credit Monitoring Process**
- **Look to Short-term Taxable Muni Market for Opportunities**