

WILL: Hello everyone, welcome to State Street Global Advisors third quarter podcast. My name is Will Goldthwait, I'm a portfolio strategist here at State Street and on today's call I'll be joined by two of our portfolio managers. Sean Lussier, based in Boston, is a member of the team that manages our US dollar Treasury and Prime money funds and Nick Pidgeon, based in London, manages our Sterling and Euro Prime money funds. We are going to be talking about European money market reform but specifically the markets and portfolio positioning in light of reform. Sean, Nick, Thanks for being here. So Sean, let's start with you. You lived through US Money Market Fund reform back in 2016. We understand all European domiciled money market funds will be impacted by the European reforms. But how is this reform, how is this European reform different from what happened in the US?

SEAN: Hi Will, thanks, it's good to be here. European Money Fund reform is currently not stirring up the same reaction that US money fund reform received prior to the US deadline of Oct 2016. Let me remind our listeners of two key reasons why that is the case. First in the US, all institutional prime money market funds had to convert to a variable Net Asset Value pricing model or VNAV. Only Retail Prime funds had the option to value assets using amortized cost accounting or Constant Net Asset Value pricing or CNAV. Secondly, US Government and US Treasury funds had the option to decline the use of liquidity gates and redemption fees. It was up to each of the fund's management boards to decide if they wanted to apply this requirement to those strategies. Almost all of the fund's management boards decided to decline the use of gates and fees for those funds. Both of these factors weighed heavily in clients choosing government funds as their preference. Thus, US funds saw more than \$1 trillion in assets move out of prime funds and into government funds.

So as for European reform: first, the regulators have listened to investor and investment manager feedback and are allowing a new pricing structure for prime funds: the Low Volatility NAV. This structure will support a Constant NAV price valued at \$1 dollar, as long as the "shadow price" or mark to market price of the fund, remains within a 20 basis point range, called a "collar". Should the fund's shadow price fall outside of the collar, then the fund will have to convert to variable NAV. There is a potential exception to this for Eurodollar liquidity funds and Nick will speak to that further on. Secondly, European reform did not give Sovereign or Government funds and or their providers the option to decline the use of liquidity gates and redemption fees for these funds. So all CNAV and LVNAV strategies will be subject to the same rule; removing the bifurcation that was created in the US. Regardless, the feedback we have received is that European clients are pleased with the rule changes and that their preference is to remain in the strategies they are currently invested in. Now, of course, significant regulatory change such as this will create some market volatility and uncertainty, but the short end credit markets have proven that they are dynamic and flexible enough to accommodate telegraphed regulatory changes.

WILL: Thanks Sean, very interesting, so how will you be positioning the funds as we get closer to the deadline of 21st Jan 2019?

SEAN: Yeah, well that's probably the point most of our listeners are interested in. So, given the positive US economic backdrop of strong growth, steady labor gains, increasing wage pressure

and a firming inflation outlook, the FOMC has continued to normalize rates with hikes in March and June in the books already. In addition, the Fed's recently released dot plot and market sentiment are pricing in 2 additional hikes this year, most likely at their September and December meetings. It has made sense to naturally position the funds during this hiking cycle with a shorter duration and concentrated maturities around FOMC meeting dates in order to reinvest into higher rates. This natural market positioning will also coincide with the regulatory deadline of January 2019, and should provide the funds with increased liquidity and Net Asset values at or near par as we get closer to the fund specific regulatory transition date. Given the increase in US treasury bills and repurchase agreement collateral that market has experienced, in combination with attractive short date credit offerings, the supply available to the market should accommodate this cautious positioning ahead of the reform. Post reform, as the new European money fund landscape evolves, we will be able to deploy investments efficiently given the new landscape. The yield spread between Libor and Overnight Index Swaps remains at the wider end of its historic range, and coupled with increased treasury yields, has made US cash a very attractive asset class.

WILL: Thanks Sean, that's good color on the US markets. Nick, you know, now let's turn to you, the sense I get from Sterling investors is that it's very much business as usual regarding money fund reform. In other words, it feels like sterling clients will remain in their current fund as that fund converts to a LVNAV fund construct. Does that cause you any concern? How are you going to be positioning the fund with reform on the horizon and a potential for rate hikes in the UK?

NICK: Hi Will, yes, I agree it seems to be business as usual regarding money fund reform from a Sterling perspective and like Sean mentioned there will be some exceptions but I don't think enough to see significant sterling flows. In fact our sterling fund has seen some robust growth over the past year and we would hope this remains on track. In terms of the bank of England and their policy rate, you could say it has been rather choppy over the past months, since the hike in November really. Markets were quite bullish leading up to the November hike, meaning they were pricing in several more increases before the end of 2018. But that hike came with some dovish rhetoric so yields six months out actually fell, as expectations of additional hikes were taken off the table.

We then had a change of sentiment in February by the Bank of England, who were now bullish targeting inflation. Market rate expectations jumped and again priced more than one hike in 2018, with almost 100% probability for the first of those hikes at the May meeting. It didn't last though, when they changed tact again in April. Following the dovish comments from Bank of England's governor Mark Carney, to quote, he said: "that there are other meetings beside May to hike rates." That, along with weaker UK economic data, yields fell again. By the time we got to the May meeting a rate hike was just 10% priced. And subsequently there was no hike, with probability initially pushed back to August. Following the weak CPI print in May the probability was pushed to November and then further out to Q1 2019 after further Dovish Brexit comments from Bank of England's governor.

In the week leading up to the recording of this podcast though, the saw-saw ride has continued. Following a pick-up in UK data prints, expectations moved again to now favour a hike in 2018, with November looking the best option at present. So we remain active to these developments and having navigated through all the past rate hike scenarios and market moves while being competitively positioned. We are confident that we will stay on top of any market rate hike changes whilst also negotiating the upcoming reform changes.

WILL: Thanks Nick, that's very interesting. So how will you position the funds for reform?

NICK: The biggest adjustment will be to liquidity ratios with some minor tweaks elsewhere as most of the rules are pretty much in line. We already run the fund to a minimum 10% overnight and 30% one week liquidity, which is in line with the new regulations. But the new rules are more stringent however around processes and the chain of events that could be affected if liquidity falls below these limits. So the tighter regulation will require an up-lift in liquidity provisioning to ensure ratios are maintained. This aligns with use of amortized accounting within the context of pricing for an LVNAV fund.

Although we will still aim to create a robust maturity ladder on investments, only securities that are less than 75 days to maturity can use amortized accounting. Therefore you should expect a higher ratio of 75 day or less to maturity securities which both assist in stable fund pricing and assist in higher liquidity ratios in a laddered portfolio. I still wouldn't expect a huge difference in the Weighted Average Maturity & Weighted Average Life over time of the fund though against the daily average of the current CNAV offering.

WILL: Yea, that's good to hear Nick, and I'm sure reassuring for our listeners. But what about year end? Do year ends cause you concern? I think specifically we hear about the lack of liquidity caused by banks pulling out of the money markets to trim their balance sheets for financial reporting? What are your thoughts there?

NICK: Well Year End '17 was better than Year End 2016; so, perhaps Year End '18 will be better. Better meaning it was more liquid, there was more to invest in and yields were not as low and or as negative. Year end planning never stops though with a series of mini year ends, meaning quarter ends, to contend with at three other points during the year. As you move through your positioning for one quarter you are already working on positioning for the next one.

Sterling Repo investments can be tricky at quarter ends and year ends. We have seen huge swings in yields offered over these periods and generally yields have turned negative. You could see less reliance on repo this yearend though and more reliance on UK sovereign debt. The market technicals around the last quarter end saw some very rare cross currency opportunities that increased sovereign issuance into sterling markets. This was a big help and one we will watch closely for again at the end of this year. This offers a better option, than losing investments and trading negative, as banks trim their balance sheets going into the year end. It locks in the liquidity, high credit and yield early on.

SEAN: Well, I'd also like to add, that the cross currency opportunities around year end have increased each year for the last years for the dollar funds. Our Dublin based money fund, because of their Regulation S accessibility, can and does participate in European Issued

Commercial paper. This paper offers very attractive yields for high quality credits over their respective US financial commercial paper counterparts. This opportunity exists because European banks can fund cheaper by raising US dollars and swapping them back to their base foreign currency, than accessing those money markets directly in their base currency due to regulatory constraints at month end and quarter end.

WILL: Hm, yea, it's interesting. So the regulatory deadline for funds to be compliant with the new rules is 21st Jan as we mentioned, but what about each fund's conversion date? You know many fund providers have indicated that they will be converting before year end. You know, Sean, have we discussed conversion dates at SSGA?

SEAN: Yes, we have heard from some fund companies that they will be converting in the 4th Quarter. Only one company has announced the exact date. We continue to discuss the date that we will be converting our funds. It's possible we transition all 4 of our funds at once or stagger the transitions over a series of dates. Regardless, you can be sure the transition dates will be fully vetted with our internal and external partners to ensure a smooth and seamless conversion.

If what is expected actually occurs, very little AUM movement, then the conversion date should not mean much to the shareholders of the funds. Although we know the final rules or end state of Euro funds has not been determined due to the negative interest rates in that currency. Those clients in European funds could be forced to choose a variable NAV instead of the constant NAV if ESMA's decision on Reverse Distribution Mechanism or RDM, is not appealed.

WILL: Sean that's a good segue – what about European money market funds and RDM – Reverse Distribution Mechanism, as Sean said. Let me just pause briefly and mention that the European Securities and Markets Authority also known as ESMA is right now is not allowing RDM for funds that are negative yielding, so that would be our Euro funds. In other words the fund provider may not remove client shares to account for negative returns. You know, Nick, you're closest to this – what are your thoughts here?

NICK: Yea Will, the door for Reverse Distribution Mechanism funds is still slightly open with options for the RDM still being discussed by competent authorities to see if they are able to agree a possible way forward. As it stands however ESMA has directed that the RDM will not be allowed for CNAV and LVNAV funds because those funds are negative yielding, as you said. Therefore current Euro CNAV MMF investors could have fewer options open to them, whilst we remain in a negative rate environment in the Eurozone. Euro fund investors may have to decide if Short Term Variable NAV or Standard Variable NAV meets their needs, their internal policies, along with adapting their internal accounting and record systems. Of the two, most clients have indicated they probably prefer the Short Term Variable NAV fund which is the next step along the ladder so to speak. Although the Short Term Variable NAV fund will still come with the same constraints as the Low Volatility NAV in terms of Weighted Average Maturity and Weighted Average Life, eligible investments, etc. it can carry lower ratios of liquidity and also has no gates and fees, which will be appealing to many clients. The Standard Variable fund, again,

carries many features of the Short Term Variable NAV but is longer in duration with a 6 month Weighted Average Maturity and 12 month Weighted Average Life.

At this stage the responses we have received from clients state that they are generally acceptable to Short Term VNAV. SSGA will be offering a full range of funds across all currencies, but not Euro land, the Public Debt and LVNAV offerings may be on the shelf until such time a solution can be found for the RDM or Euro yields turn positive. So at present the Short Term VNAV fund appears to be the lead candidate.

WILL: Yea, that's a great explanation Nick; I want to remind listeners to that if they would like a glossary of terms or further explanation on fund attributes they should log onto our website at www.ssga.com/cash and click on trends and insights label at the top of the page. There is lots of good info in there that can help you further understand the complexities of reform and also keep you up on where we are on this latest ESMA ruling. So, Nick, will you be managing the EUR fund any differently than the dollars or sterling funds?

NICK: Well, the outlook in Euroland is different from the US and UK. Interest rates are likely to remain in negative until the earliest Q4 2019 with a first hike not priced until mid-2019 and the deposit rate returning to positive territory until some-time after that. The ECB are still working through managing down their Asset Purchase Program and excess liquidity at the ECB is not far short of two trillion euros. So this has given us a different dynamic in terms of managing the euro fund in relation to the outlook for US\$ and sterling and will continue to do so in the future.

We do know the rules changes around RDM and conversion to VNAV is more significant for some investors, but others feel comforted by the lack of liquidity gates and fees. We do have a robust process to identify what each client of the fund will do with their balances and while liquidity requirements for the STVNAV funds are slightly lower than what is required for LVNAV, I suspect the main change we will see in managing the fund will be liquidity. This is likely to be elevated going into the conversion date and until we get more comfortable with the client positioning under new reforms. That aside, we will look to continue managing a well laddered liquid portfolio in line with current ECB outlook for markets.

WILL: Yea, thanks Nick. Sean, Nick – thank you for your time today. I hope listeners have found this helpful and learned from our discussion. I know I learned quite a few things. If anyone has any questions or needs clarification on what was said on this podcast, please don't hesitate to reach out to your State Street representative or contact us via the website. Thank you very much for listening.

Glossary

3 month libor: The 3 month US Dollar (USD) LIBOR interest rate is the average interest rate at which a selection of banks in London are prepared to lend to one another in American dollars with a maturity of 3 months.

Amortized cost accounting: Amortization is an accounting technique used to incrementally lower the cost value of a finite life or intangible asset through scheduled charges to income.

Cost accounting is an accounting method that aims to capture a company's costs of production by assessing the input costs of each step of production as well as fixed costs.

Constant Net Asset Value: CNAV, or Constant Net Asset Value, refers to funds which use amortized cost accounting to value all of their assets. They aim to maintain a Net Asset Value (NAV), or value of a share of the fund, at €1 / £1 / \$1 and calculate their price to 2 decimal places known as 'penny rounding'.

Collar: Collar option strategies are a protective strategy that is implemented on a long stock position. An investor can create a collar position by purchasing an out-of-the-money put option while simultaneously writing an out-of-the-money call option.

ESMA: The European Securities and Markets Authority (ESMA) is a European Union financial regulatory institution and European Supervisory Authority, located in Paris. ESMA replaced the Committee of European Securities Regulators (CESR) on 1 January 2011. It is one of the three new European Supervisory Authorities set up within the European System of Financial Supervisors.

FOMC: The Federal Open Market Committee (FOMC) is the branch of the Federal Reserve Board that determines the direction of monetary policy.

Inflation: Inflation is a sustained increase in the general price level of goods and services in an economy over a period of time.

Liquidity gates: Fund managers have a fiduciary responsibility to treat all the investors in a mutual fund fairly and equally. Redemption gates and/or a liquidity fee are methods by which a fund manager, if experiencing difficulty due to extreme market circumstances, can control redemptions in order to ensure that all investors are treated fairly and that no 'first-mover' advantage exists.

Mark to Market: Denoting or relating to a system of valuing assets by the most recent market price.

Net Asset Value: Net asset value (NAV) is the value of an entity's assets minus the value of its liabilities, often in relation to open-end or mutual funds, since shares of such funds registered with the U.S. Securities and Exchange Commission are redeemed at their net asset value. This may also be the same as the book value or the equity value of a business.

OIS: An overnight indexed swap (OIS) is an interest rate swap where the periodic floating payment is generally based on a return calculated from a daily compound interest investment. The reference for a daily compounded rate is an overnight rate (or overnight index rate) and the exact averaging formula depends on the type of such rate.

Par: The face value of a stock or other security, as distinct from its market value.

Regulation S: Regulation S is a "safe harbor" that defines when an offering of securities is deemed to be executed in another country and therefore not be subject to the registration requirement under section 5 of the 1933 Act. The **regulation** includes two safe harbor provisions: an issuer safe harbor and a resale safe harbor.

Reverse Distribution Mechanism: Share cancellation, often requiring a shareholder vote, that some money market funds have used to deal with negative interest rates applicable for

certain currencies.

Retail Prime Funds: Prime funds are money market funds that primarily invest in corporate debt securities. Municipal money market funds are money market funds that primarily invest in municipal debt securities.

Repurchase agreement collateral: A repurchase agreement (repo) is a form of short-term borrowing for dealers in government securities. The dealer sells the government securities to investors, usually on an overnight basis, and buys them back the following day. For the party selling the security and agreeing to repurchase it in the future, it is a repo; for the party on the other end of the transaction, buying the security and agreeing to sell in the future, it is a reverse repurchase agreement. Repos are typically used to raise short-term capital.

Repo investments: A repurchase investment (repo) is a form of short-term borrowing for dealers in government securities. The dealer sells the government securities to investors, usually on an overnight basis, and buys them back the following day.

Shadow price: In constrained optimization in economics, the shadow price is the change, per infinitesimal unit of the constraint, in the optimal value of the objective function of an optimization problem obtained by relaxing the constraint.

Short date: A forward exchange contract involving two parties that agree upon a set price to sell/buy an asset at a dated time in the future. A short date forward involves trading a currency at a specified spot date that is before the normal spot date.

Sterling: British currency.

Weighted Average Maturity: Weighted average maturity (WAM) is the weighted average amount of time until the maturities on mortgages in a mortgage-backed security (MBS). This term is used more broadly to describe maturities in a portfolio of debt securities, including corporate debt and municipal bonds.

Weighted Average Life: In finance, the weighted-average life (WAL) of an amortizing loan or amortizing bond, also called average life, is the weighted average of the times of the principal repayments: it's the average time until a dollar of principal is repaid.

Yield spread: In finance, the yield spread or credit spread is the difference between the quoted rates of return on two different investments, usually of different credit qualities but similar maturities. It is often an indication of the risk premium for one investment product over another.

Yield spread between LIBOR and Overnight Index Swaps: The **OIS** is a **swap** derived from the **overnight** rate, which is generally fixed by the local central bank. The **OIS** allows **LIBOR**-based banks to borrow at a fixed rate of interest over the same period. In the United States, the **spread** is based on the **LIBOR** Eurodollar rate and the Federal Reserve's Fed Funds rate.

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