Flows of eurozone investors into USTs: another factor keeping UST real yields low

by Chiara Cremonesi, FI Strategist (UniCredit Bank London)

- The ECB's asset purchase program has triggered an increase in outflows of eurozone investors to debt securities of other countries, USTs in particular.
- While outflows have slowed down in the last few months, so far there has been no evidence of a reversal. This is the case despite the fact that the advantage for a EUR-based investor to invest in USTs has been eroding for some time.
- We share the view of the ECB's Benoît Cœuré that the scarcity of safe assets denominated in EUR, which was further exacerbated by the ECB's quantitative easing (QE), may be behind the flows. We therefore think that we will not see a reversal of outflows of eurozone investors into USTs in the near term.
- We show that scarcity of safe assets denominated in EUR does, indeed, have an impact on UST real yields. If, as we expect, eurozone investors' flows to USTs will continue, as scarcity of safe asset denominated in EUR will most probably persist, this will likely be another factor keeping UST real yields low in the coming months.

1. The ECB's QE boosted international capital flows

Asset purchase programs from central banks can trigger changes in international capital flows, and in this respect the ECB's QE represents an excellent case study. From mid-2014, the portfolio balance of the eurozone shows a sharp increase in the outflows of euro area investors to bonds in other jurisdictions and (although to a much lesser extent) a decline in inflows of non-euro area investors into euro area bonds.

While this could be interpreted as a typical effect of QE, the pattern of portfolio flows in debt securities and equities in the eurozone has been different compared to what happened during QE in Japan or in the US. For instance, in Japan, QE triggered strong inflows into Japanese equities, but not net outflows in debt securities of other jurisdictions; in the US, foreigners' inflows into USTs increased during QE, while the contrary happened in the eurozone. ECB's Benoit Cœuré, who has investigated this topic extensively in his speeches over the last few years,[1] identifies a few reasons for the different pattern of flows in the eurozone during QE.

1. Holding composition of the bond market in the eurozone: Euro area bonds are mainly held by non-euro area investors, at least this is the case for core EGBs. This meant that the ECB's QE buying was directed at these investors, causing them to register net outflows from euro area bonds. Given that the outstanding of core EGBs did not increase during QE (differently from the US, core EMU countries registered very little or no deficit during QE), non-euro area investors could not increase or even maintain their exposure to EGBs unchanged during QE.
2. The risk-adjusted return of switching between EGBs and foreign bonds: Since the beginning of the ECB's QE, the yield differential between bonds from other jurisdictions and EGBs has been mostly positive and in some cases, like USTs, very high. This is different from what happened in the US while the Fed was implementing QE. The very low yield on core eurozone bonds can also be explained by the scarcity effect and the fact that the depo rate was negative when the ECB began QE (in contrast to the fed fund, which was not in negative territory). This pushed euro-area investors to look for yield pickup in debt securities markets outside of the eurozone.

In this piece, we expand on the work of Mr. Cœuré and the ECB. First, we look at the latest developments in the euro area portfolio flows, in particular in outflows from eurozone investors to debt securities in other jurisdictions, which represented the main component of net outflows in eurozone debt securities during QE.

We note that they have declined in the last few months, though they have not reversed; focusing on eurozone investors' outflows to USTs, they have remained positive despite the fact that the cost of hedging made it progressively unappealing for a EUR based investor to invest in USTs.

In line with the view of Mr. Cœuré we suggest that scarcity of safe assets, especially denominated in EUR, may be the reason behind the outflows. This leads us to conclude that we will not likely see a reversal of the past inflows from eurozone investors into USTs any time soon.

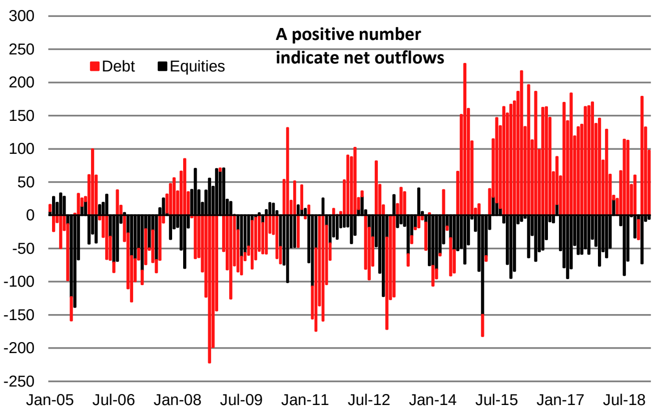
Finally, we find that scarcity of safe assets denominated in EUR does, indeed, have an impact on UST real yields. If, as we expect, eurozone investors' flows to USTs will continue, as scarcity of safe asset denominated in EUR will most probably persist, this will likely be another factor keeping UST real yields low in the coming months.

[1] See "The international dimension of the ECB's asset purchase programme" and "The international dimension of the ECB's asset purchase programme: an update"

2. So far, there has not been a reversal of international capital flows following the end of the ECB's QE, only a moderate change in their composition

Charts 1, 2 and 3 represent well what happened during the ECB's QE, and they also show how flows evolved once markets started to anticipate the end of QE (the latest data available is February 2019).

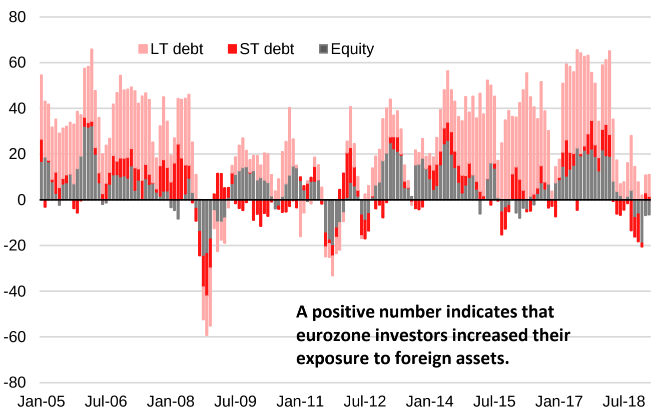
CHART 1: NET PORTFOLIO INVESTMENT FLOWS IN THE EUROZONE



This chart shows the 3M moving average of net portfolio investment in eurozone debt securities and equities. A positive number indicates net outflow

Source: Bloomberg, UniCredit Research

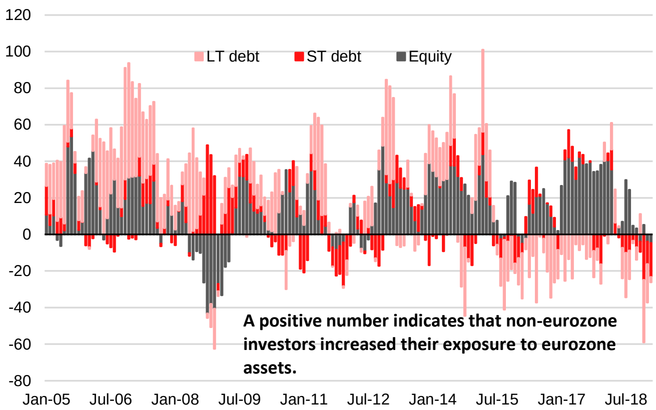
CHART 2:
EUROZONE PORTFOLIO INVESTMENT ASSETS (EUR BN)



This chart shows the 3M moving average of eurozone portfolio investment assets divided into equities, long-term securities and short-term securities. A positive number indicates that eurozone investors increased their exposure to foreign assets.

Source: Bloomberg, UniCredit Research

CHART 3: EUROZONE PORTFOLIO INVESTMENT LIABILITIES (EUR BN)



The chart shows the 3M moving average of eurozone portfolio investment liabilities divided into equities, long-term securities and short-term securities. A positive number indicates that non-eurozone investors increased their exposure to eurozone assets.

Source: Bloomberg, UniCredit Research

The charts highlight that:

1. Net outflows from the eurozone accelerated dramatically and reached new peaks once the ECB started buying EGBs as part of its QE in 1Q15. Net outflows were mainly observed in debt securities[2], while net inflows were registered in equities. Net outflows in debt securities seemed to decelerate somewhat in 2H18, though they have accelerated again since December 2018. Inflows in equities have leveled off in the last few months.
2. The increase in net outflows in debt securities during the ECB's QE was mainly due to eurozone investors' increased exposure to foreign debt securities (Chart 2), although we have also observed a decline in the exposure of non-eurozone investors to eurozone debt securities (Chart 3). What has happened over the last few months? In 2H18, flows of eurozone investors into foreign debt securities have decelerated sizably, but they have not reversed. At the same time, non-eurozone investors have accelerated the reduction in their exposure to eurozone debt securities, keeping net flows in debt securities negative.
3. During the ECB's QE, eurozone investors also increased their exposure to non-eurozone equities, though to a much lesser extent compared to their exposure to debt securities. At the same time, non-eurozone investors increased their exposure to eurozone equities by a much bigger proportion, which led to net inflows into eurozone equities. Net flows into equities have become almost neutral in the last six months.

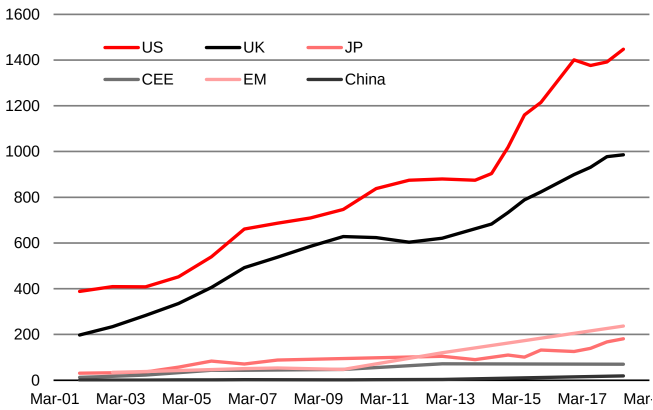
[2] Debt securities here refer to all debt securities, regardless of the issuing institution

3. Flows of eurozone investors to non-eurozone debt securities were mainly directed to the US

We used the IMF's CPIS (Coordinated Portfolio Investment Survey) data to investigate which countries' debt securities eurozone investors directed their flows to during the ECB's QE. We took the biggest four eurozone countries (Germany, France, Italy and Spain), as well as Ireland and Luxembourg, to account for subsidiaries of other countries' institutions whose residence is there for tax purposes. The IMF CPIS data we selected for this analysis refer to the total of debt securities without distinguishing between issuers[3]. Moreover, they report the stock (not the flow) of portfolio assets of a country towards the rest of the world. The latest available data is 2Q18; data are usually bi-annual, but for some countries only the yearly data is available.

Charts 4 and 5 show that, in terms of volumes, the most sizeable flows of investors out of the eurozone were directed towards US debt securities and that until 2Q18 these flows continued to increase. Chart 5 also reports how much of the holdings at the end of 2012 these flows represent (we have to take this date due to the availability of data for certain jurisdictions). According to this metric, in the period from Dec 2012 to Jun 2015, eurozone investors primarily boosted their holdings of Chinese, EM and Japanese debt securities (for Japan the boost was in debt securities other than those issued by the general government). Of course, there are differences in the behavior of investors from different eurozone countries. For instance, the IMF CPIS data show that while Italian and Spanish investors have increased their exposure to US debt securities in a linear way from mid-2014 to mid-2018, in the period 2H16-1H18, Germany and France have left their exposure unchanged.

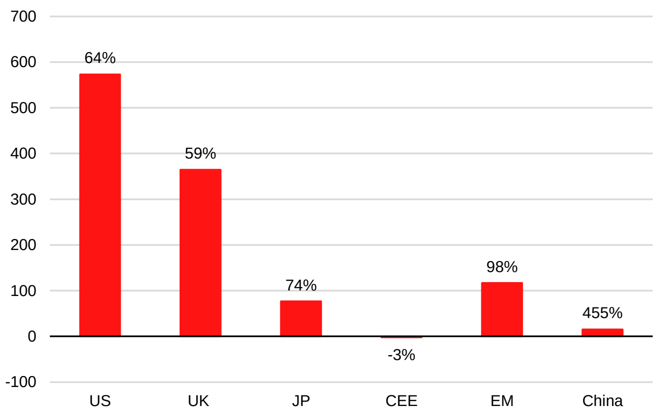
CHART 4: PORTFOLIO INVESTMENT ASSETS OF MAJOR EUROZONE COUNTRIES IN DEBT SECURITIES OF SELECTED COUNTRIES (EUR BN)



This chart shows portfolio investment assets of Germany, France, Italy, Spain, Luxembourg and Ireland in debt securities of selected countries. In CEE, we include Poland, Czechia, Romania and Hungary. In EM we include Turkey, Russia, Mexico, Argentina, Brazil, South Africa, India and Indonesia.

Source: IMF, UniCredit Research

CHART 5: INCREASE IN PORTFOLIO INVESTMENT ASSETS OF MAJOR EUROZONE COUNTRIES IN DEBT SECURITIES OF SELECTED COUNTRIES BETWEEN END 2012 AND 2018 (EUR BN)



This chart shows the change in portfolio investment assets of Germany, France, Italy, Spain, Luxembourg and Ireland in debt securities of selected countries between December 2012 and June 2018. We selected December 2012 due to data availability issues in certain countries. In CEE, we include Poland, Czechia, Romania Hungary. In EM we include Turkey, Russia, Mexico, Argentina, Brazil, South Africa, India and Indonesia.

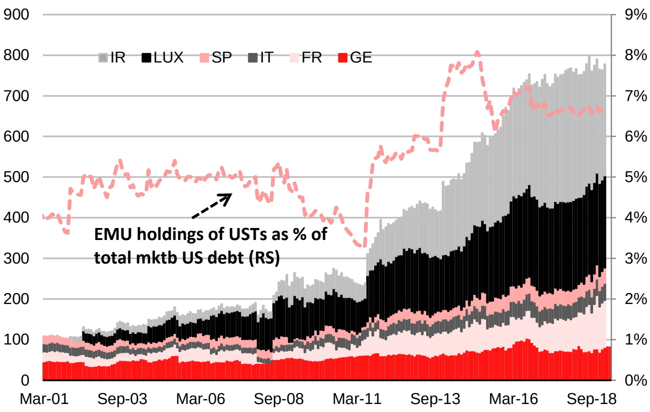
Source: IMF, UniCredit Research

The IMF's CPIS data show that, in terms of volumes, US debt securities were the preferred destination for flows of eurozone investors during the ECB's QE (as well as before). US TIC data are useful in this respect for singling out the flows that went directly into USTs. Moreover, TIC data are available on a monthly basis until February 2019, so they are very useful in shading light on what happened to eurozone investors' flows once markets started to get ready for the end of the ECB's QE. Chart 6 shows that the stock of USTs held by eurozone investors remains at its record-highs.

[3] For certain countries, the IMF's CPIS also report the breakdown of debt securities issued by general governments, but for some countries this series is not available, so for the sake of consistency, we look at total debt securities.

To put this into context, eurozone investors hold 6.6% of the total stock of USTs, slightly less than China (7.2%) and Japan (6.8%). This makes the eurozone the third biggest investor in USTs (this result could be slightly distorted by the fact that countries outside of the eurozone might make their investments in USTs through funds located in Luxembourg, Ireland or Belgium).

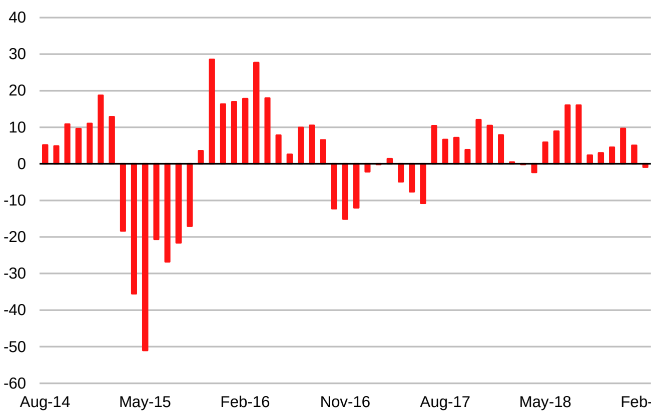
CHART 6: UST HOLDINGS BY SELECTED EUROZONE COUNTRIES (USD BN)



Source: Bloomberg, UniCredit Research

Analyzing the 3M rolling average of eurozone investors' flows into USTs (Chart 7), evidence suggests that flows have been declining in recent months, though they have generally remained positive or flat (last three months). Here as well, however, there is no evidence of a reversal of eurozone investors' flows into USTs as markets have adjusted to the end of ECB's QE.

CHART 7: EUROZONE INVESTORS' FLOWS INTO USTS (3M AVERAGE, USD BN)



Source: Bloomberg, UniCredit Research

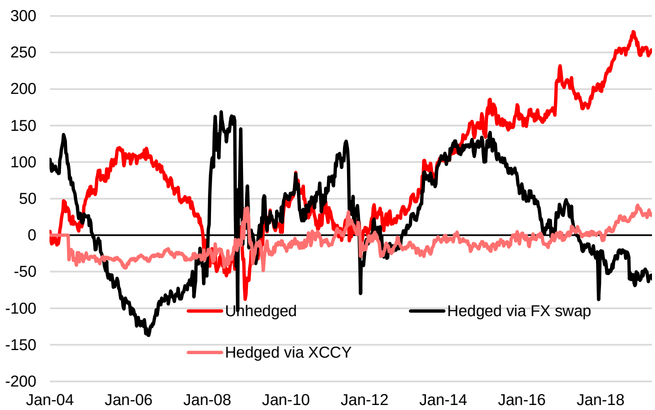
In his speeches on the topic, Mr. Cœuré of the ECB has shown that, according to the ECB's internal models[4], the main drivers of eurozone net portfolio debt outflows during QE were yield differentials, followed (at a distance) by risk aversion. In the next section, we take a closer look at whether investing in USTs would have made sense for EUR-based investors over the last few years.

4. Flows of EUR investors to USTs did not reverse even when the UST/Bund yield differentials hedged for the currency exposure became negative

A EUR-based investor investing in USTs can choose to do it in three ways: **1.** without hedging the currency exposure, for instance if she/he has a strong view that USD will appreciate **2.** while hedging the currency exposure via FX swaps **3.** while hedging the currency and the rates exposure via cross-currency swaps[5].

Chart 8 shows the yield differential between 10Y USTs and 10Y Bunds in the three cases listed above.

CHART 8: 10Y UST/BUND YIELD DIFFERENTIALS FROM THE POINT OF VIEW OF A EUR INVESTOR: HEDGED OR UNHEDGED



Source: Bloomberg, UniCredit Research

While the unhedged UST/Bund yield differential has consistently been positive since the beginning of 2012, and is still positive now, hedged exposure to USTs for a EUR investor gives a mixed picture. Hedging through FX swaps would have resulted in a positive UST/Bund yield differential until May 2017, when the differential would have become negative. On the other hand, hedging through cross currency would only have made the UST/Bund yield differential positive beginning in mid-2017, while before that it would have resulted in a negative 10Y UST/Bund differential.

[4]See ""The international dimension of the ECB's asset purchase programme" and "Analysing euro area net portfolio investment outflows"
[5]See Rates Perspective - Investing in USTs: to hedge or not to hedge?

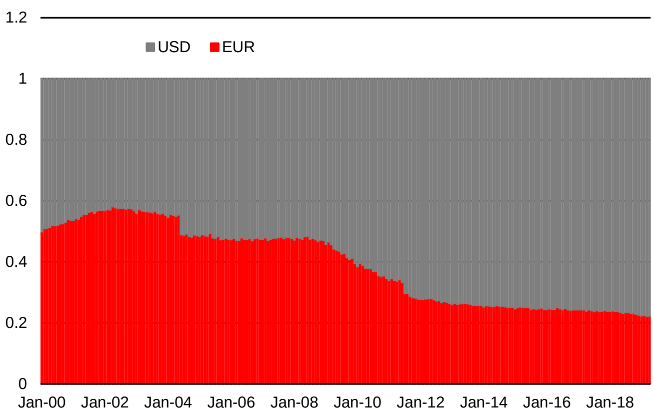
Evidence from the previous sections shows that eurozone investors have continued to invest in USTs even at times when hedging this investment would have resulted in a negative return compared to holding Bunds.

Why did they do this?

Mr. Cœuré suggests that this could have been due in part to the traditional stock effect of asset purchases. We like to call it simply the scarcity of safe-assets, and in particular of safe-assets denominated in EUR.

Chart 9 shows the proportion of safe government bonds (and agencies) denominated in EUR and USD and its evolution in time. We define as safe assets government bonds (and agencies) denominated in EUR and USD, with fixed coupon and rated between AAA and AA by S&P. The chart highlights that the proportion of safe assets in EUR has been declining since 2004; the exit of Italy, Portugal, Ireland and Spain from “safe” paper rating and the balanced or surplus budget in the eurozone core countries in the last few years have very likely played a significant role. Moreover, consider that over the last few years, US debt has increased, boosting the proportion of safe assets denominated in USD. Considering that the ECB embarked on QE in mid-2014 and that one of the main assets they bought was bonds from eurozone core countries, scarcity could indeed be behind the flows of EUR-based investors to USTs.

CHART 9: PROPORTION OF SAFE GOVERNMENT BONDS DENOMINATED IN EUR AND USD



Source: Bloomberg, UniCredit Research

Taking this conclusion into account, we think that flows into USTs from eurozone investors will probably remain positive. Although they may be more modest than in the past, we do not expect them to reverse.

Is there a link between the scarcity of safe assets in EUR and the performance of UST yields? We investigate this topic in the next section.

5. Testing spill-over from the scarcity of EUR-denominated safe assets to UST yields

We tested the role of scarcity of safe assets denominated in EUR by using our framework to determine the fair value of 10Y UST real yields[6] (but with monthly data instead of quarterly data). The model we used regresses the 10Y UST real yields (as taken from TIPs) on:

1. yoy potential growth as reported by the Congressional Budget Office;
2. the stock of USTs on the Fed’s balance sheet as a percentage of US total marketable debt;
3. the holdings of USTs by foreigners outside of the eurozone, reported by the TIC data, as a percentage of US total marketable debt.
4. an index for scarcity of safe assets denominated in EUR: we calculate the proportion of safe (rated between AAA and AA by S&P) government bonds denominated in EUR as a portion of the total amount of safe government bonds denominated in EUR and USD, as we did in section 4.

We ran our regression on monthly data from January 2000 until present.

Tables 1 and Chart 10 show the results of our analysis

TABLE 1: RESULTS OF OUR REGRESSION WITH SCARCITY OF EUR GOVIES INDEX

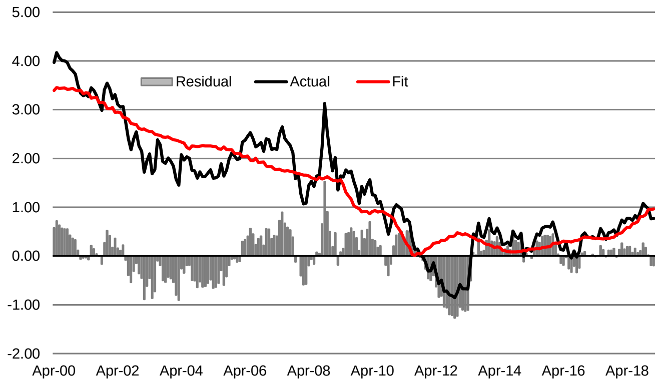
	EUR govies scarcity index	Fed b/s	Foreign holds ex eurozone	Y* (potential growth)	C
Coeff.	0.015	-0.107	-0.019	0.6	1.6
	**	***	**	***	***
R-sq	84%				

***significant at least at the 5% level; **significant at least at the 10% level

Source: Bloomberg, UniCredit Research

[6] For more details in the model, please see Rates Perspective - US real yields are in line with our fair-value model

CHART 10: OUR FAIR VALUE MODEL FOR 10Y REAL UST YIELDS "REVISITED"



Source: Bloomberg, UniCredit Research

The scarcity index has the right sign and indicates that, as the proportion of holdings in EUR-denominated safe govies diminishes, downward pressure on real UST yields builds. In particular, a 1pp decline in the proportion of safe assets denominated in EUR leads to a 1.5bp decline in 10Y UST real yields.

A 1pp increase in the stock of USTs on the Fed's balance sheet as a percentage of US total marketable debt leads to more than 10bp decline in 10Y UST real yields.

A 1pp increase in the holdings of USTs by foreigners outside of the eurozone as a percentage of US total marketable debt leads to a decline of almost 2bp in 10Y UST real yields.

Finally, a 1pp increase in yoy potential growth leads to a 60bp increase in 10Y UST real yields.

Table 2 shows what happened during ECB's QE. 10Y UST real yields increased by around 50bp, and our model would have predicted a 85bp increase. The decline in foreign holdings outside the eurozone and the shrinking of the Fed's balance sheet contributed to an increase in the 10Y UST real yields. On the other hand, the decline in potential growth and EUR assets becoming more scarce partially offset the increase in real yields.

TABLE 2: SENSITIVITY ANALYSIS DURING ECB'S QE (JUN14-PRESENT)

%	10Y UST real yield	Y* (potential growth)	Foreign holds ex eurozone	Fed b/s	EUR govies scarcity index	Fit
Change in the variable	0.52	-0.12	-8.07	-5.45	-3.20	0.86
Contribution to change in the fit		-0.07	0.15	0.58	-0.05	

Source: Bloomberg, UniCredit Research

Note also that if we consider the period June08- Present (June08 represents the start of the big decline in the proportion of safe assets denominated in EUR compared to those in USD), we find that a more than 25% decline in the proportion of safe government bonds denominated in EUR on total safe USD and EUR govies point to a decline in 10Y UST real yields of almost 40bp according to our model.

With the US increasing their marketable government debt in the next few years, our EUR scarcity index will probably continue point south. This will likely be another factor keeping UST real yields low.

Author

Chiara Cremonesi, FI Strategist
(UniCredit Bank, London)
+44 207 826-1771
chiara.cremonesi@unicredit.eu

Editor
Dr. Luca Cazzulani, Deputy Head of FI Strategy
(UniCredit Bank, Milan)
+39 02 8862-0640
luca.cazzulani@unicredit.eu

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f) UniCredit Bulbank, Sveta Nedelya Sq. 7, BG-1000 Sofia, Bulgaria. Regulatory authority: Financial Supervision Commission (FSC), 16 Budapeshta str., 1000 Sofia, Bulgaria

g) Zagrebačka banka d.d., Trg bana Josipa Jelačića 10, HR-10000 Zagreb, Croatia. Regulatory authority: Croatian Agency for Supervision of Financial Services, Franje Račkoga 6, 10000 Zagreb, Croatia

h) UniCredit Bank Czech Republic and Slovakia, Želetavská 1525/1, 140 92 Praga 4, Czech Republic. Regulatory authority: CNB Czech National Bank, Na Příkopě 28, 115 03 Praga 1, Czech Republic

i) ZAO UniCredit Bank Russia (UniCredit Russia), Prechistenskaya nab. 9, RF-119034 Moscow, Russia. Regulatory authority: Federal Service on Financial Markets, 9 Leninsky prospekt, Moscow 119991, Russia

j) UniCredit Bank Czech Republic and Slovakia, Slovakia Branch, Šancova 1/A, SK-813 33 Bratislava, Slovakia. Regulatory authority: CNB Czech National Bank, Na Příkopě 28, 115 03 Praha 1, Czech Republic and subject to limited regulation by the National Bank of Slovakia, Imricha Karvaša 1, 813 25 Bratislava, Slovakia. Regulatory authority: National Bank of Slovakia, Imricha Karvaša 1, 813 25 Bratislava, Slovakia

k) UniCredit Bank Romania, Bucharest 1F Expozitiei Boulevard, 012101 Bucharest 1, Romania. Regulatory authority: National Bank of Romania, 25 Lipscani Street, 030031, 3rd District, Bucharest, Romania

l) UniCredit Bank AG New York Branch (UniCredit Bank, New York), 150 East 42nd Street, New York, NY 10017. Regulatory authority: “BaFin“ – Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany and New York State Department of Financial Services, One State Street, New York, NY 10004-1511

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UniCredit Research*

Strategy Research

Erik F. Nielsen
Group Chief Economist
Global Head of CIB Research
+44 207 826-1765
erik.nielsen@unicredit.eu

Dr. Ingo Heimig
Head of Research Operations
& Regulatory Controls
+49 89 378-13952
ingo.heimig@unicredit.de

Head of Strategy Research

Dr. Philip Gisdakis
Head of Strategy Research
+49 89 378-13228
philip.gisdakis@unicredit.de

FI Strategy Research

Michael Rottmann
Head
+49 89 378-15121
michael.rottmann1@unicredit.de

Dr. Luca Cazzulani
Deputy Head
+39 02 8862-0640
luca.cazzulani@unicredit.eu

Francesco Maria Di Bella
FI Strategist
+39 02 8862-0850
francescomaria.dibella@unicredit.eu

Chiara Cremonesi
FI Strategist
+44 207 826-1771
chiara.cremonesi@unicredit.eu

Kornelius Purps
FI Strategist
+49 89 378-12753
kornelius.purps@unicredit.de

FX Strategy Research

Kathrin Goretzki, CFA
FX Strategist
+44 207 826-6076
kathrin.goretzki@unicredit.eu

Kiran Kowshik
EM FX Strategist
+44 207 826-6080
kiran.kowshik@unicredit.eu

Roberto Mialich
FX Strategist
+39 02 8862-0658
roberto.mialich@unicredit.eu

Credit Strategy Research

Dr. Philip Gisdakis
Head
+49 89 378-13228
philip.gisdakis@unicredit.de

Dr. Stefan Kolek
EEMEA Corporate Credits & Strategy
+49 89 378-12495
stefan.kolek@unicredit.de

Equity Strategy Research

Christian Stocker, CEFA
Lead Equity Sector Strategist
+49 89 378-18603
christian.stocker@unicredit.de

Cross Asset Strategy Research

Elia Lattuga
Deputy Head of Strategy Research
Cross Asset Strategist
+44 207 826-1642
elia.lattuga@unicredit.eu

UniCredit Research, Corporate & Investment Banking, UniCredit Bank AG, Am Eisbach 4, D-80538 Munich, globalresearch@unicredit.de
Bloomberg: UCCR, Internet: www.unicreditresearch.eu

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