

Who holds the BTPs? Dissecting Italian public debt investor base

by Dr. Luca Cazzulani, Deputy Head of FI Strategy (UniCredit Bank, Milan)

- Who are the BTP investors? How much debt is held domestically? These are two frequently asked questions. In this note we look at these issues, and how demand by the different investor categories has evolved over time.
- In a nutshell, Italy's market debt is held mainly by institutional domestic investors. Non-residents account for 36%. This share includes the Eurosystem (around 3% including the SMP and the PSPP) and the BTPs held by foreign branches of Italian funds (approx. 7/8%), hence the amount of government debt held by non-Italian investors is even lower.

Who holds Italy's debt? The big picture

One of the most important metrics investors look at in a country is the level of public debt. However, the next most important characteristic of a country public debt is its holders' composition and how demand has evolved over time.

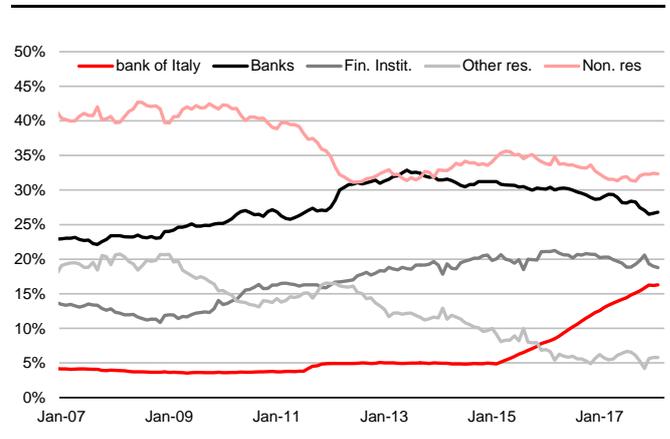
The last few weeks of volatility in Italy's credit spread have revamped investor interest in a number of Italian statistics. Two frequently asked questions have been: Who are the BTP investors? and How much debt is held domestically? In this note we look at these issues, and how demand from the different investor categories has evolved over time.

In a nutshell, Italy's market debt is held mainly by institutional domestic investors (around 20% by the Bank of Italy, 20% by banks and 22% by other financial institutions). Non-residents account for 36%. This share includes the Eurosystem (approx. 3% including the SMP and the PSPP) and the stock held by foreign branches of Italian funds (around 7/8%) and, hence, is an overestimate of the debt held by non-Italian investors.

Data on debt and the main investor categories are published by the bank of Italy. The data is updated around mid-month and the data have a lag of three months.

The most recent month for which the breakdown is available is February 2018, when total public debt (market securities and other instruments, such as bank loans) was EUR 2.28tn. Chart 1 shows the breakdown of total debt (including non-market instruments) by the main investor categories.

CHART 1: BREAKDOWN BY INVESTORS (TOTAL DEBT)



Source: Bank of Italy, UniCredit Research

The following table shows the amounts held by the various types of investor broken down into securities and other instruments.

TABLE 1: ITALY'S DEBT BY INVESTOR TYPE

	Total	Bank of Italy	Banks	Fin. Instit.	Other res.	Non. res.
EUR bn	Securities	1932	368	342	422	111
	Other	354	5	270	8	22
	Total	2286	372	612	430	133
%	Securities		19%	18%	22%	6%
	Other		1%	76%	2%	6%
	Total		16%	27%	19%	6%

Source: Bank of Italy, UniCredit Research

85% of total debt consists of securities (BTPs, BOTs, CCTeus) and 15% is in non-market instruments. Not surprisingly, the latter is mostly held domestically and in particular by banks. The investor breakdown of non-market debt has been pretty stable over the last ten years.

Market securities have a more diversified investor base, with more lively dynamics, which we will discuss in the following sections.

We use Bank of Italy data to calculate a breakdown by different investor types across BTPs, CCTs and BOTs. CCTs are mainly held by domestic banks, with foreign investors representing just 20% of the market. BOTs are mostly held abroad, demand from foreign investors has increased significantly since the start of QE. Finally, BTPs are held by all types of investor, insurance companies (InCo), banks and the Bank of Italy are the larger domestic players.

TABLE 2: BREAKDOWN BY ASSET AND INVESTOR

	BTPs	CCTs	BOTs
CB	19%	16%	0%
Banks	16%	44%	12%
Fin. Institutions	6%	6%	8%
InCo	17%	13%	1%
Households & Corp	10%	1%	1%
Non residents	33%	20%	77%

Data refer to 3Q17

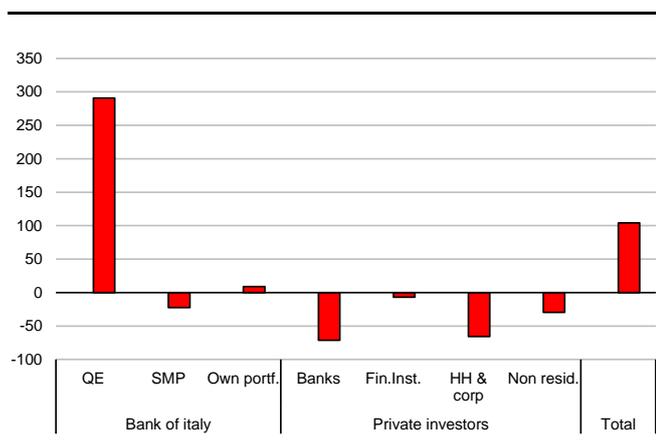
Source: Bank of Italy, UniCredit Research

Changes in demand since the start of QE

The first issue we want to analyze is how the investor base has changed in recent years in response to the ECB’s quantitative easing program (QE). Since the start of the program in March 2015, Italy’s debt securities have risen by EUR 100bn. The Bank of Italy (surprise!) has been the main buyer; the main sellers have been banks and households, while non-residents have kept their exposure broadly stable. However, if we focus on the portion of debt held by non-residents excluding holdings by foreign branches of Italian funds, then selling by foreign investors appears to have been relevant.

Starting from next year, we expect QE to be terminated, so net issuance will have to be purchased by private investors. In earlier publications we pointed out that this is not a cause for concern as we expect only a moderate amount of net issuance. In the light of recent developments in Italian politics, it will be important to monitor the fiscal policy decisions closely.

CHART 2: WHO SOLD BTPS INTO QE?



Source: Bank of Italy, UniCredit Research

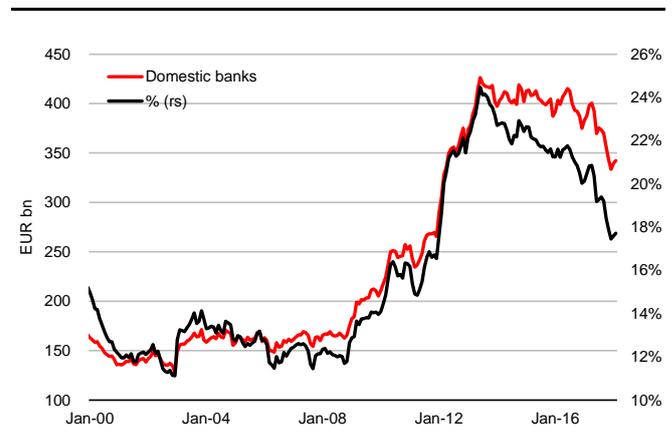
In the following sections we will look at the different investor groups in more depth.

Banks

Banks were important buyers during the early stage of the sovereign debt crisis, increasing their portfolio to EUR 430bn. Since the start of QE, and in particular over the past year, banks have started to reduce their holdings of

domestic government bonds. The reduction since the start of QE in March 2015 has amounted to EUR 70bn in absolute terms (around 6pp as a share of total debt).

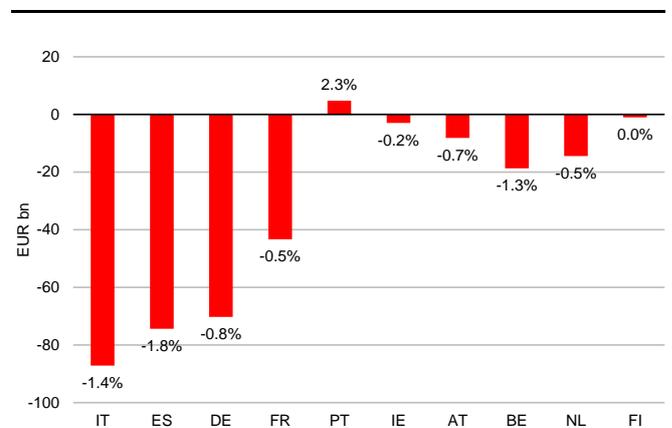
CHART 3: ITALIAN BANKS HAVE REDUCED THEIR EXPOSURE TO BTPs



Source: Bank of Italy, UniCredit Research

Interestingly, the latest stability report by the Bank of Italy shows in an ad hoc study that the reduction in government bonds has been more relevant for larger banks, while the smaller ones have kept their portfolios comparatively more stable. Chart 4 shows that banks in all eurozone countries have been sellers of domestic government bonds, with Italy and Spain being the most active (numbers below the bars denote the change in the ratio government bonds to total assets). In the medium, our bias is that banks in the periphery will progressively reduce their exposure to domestic government bonds to become more in line with core countries. From a short-term perspective, banks should remain a source of demand in case a market shock occurs.

CHART 4: CHANGE IN THE STOCK OF DOMESTIC GOVERNMENT BONDS SINCE THE START OF QE



Numbers below the bars indicate the change in domestic government bonds / total assets

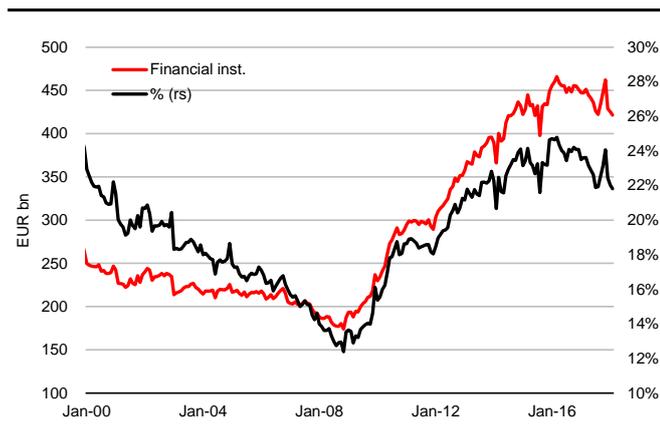
Source: ECB, UniCredit Research

Finally, a breakdown of Italian banks' portfolios by instrument is available with monthly update. At the end of March, Italian banks were holding 15% of the BTP market (EUR 245bn), 40% of the CCT market (EUR 55bn) 30% of the CTZ market (EUR 12bn) and 10% of the BOT market (EUR 10bn).

Financial institutions

Financial institutions have also been important buyers of Italian sovereign debt in 2012. Unlike banks, financial institutions have not been selling BTPs in any meaningful way during the period of QE, and currently hold about EUR 420bn or 22% of the market. Financial institutions can be broadly divided into insurance companies (InCo), pension funds and asset managers. Pension funds in Italy are still fairly small and amount to EUR 20bn. Insurance companies account for EUR 300bn, while other financial institutions, including asset managers, account for roughly EUR 100bn.

CHART 5: INSURANCE COMPANIES, PENSION FUNDS AND OTHER FINANCIAL INSTITUTIONS



Source: Bank of Italy, UniCredit Research

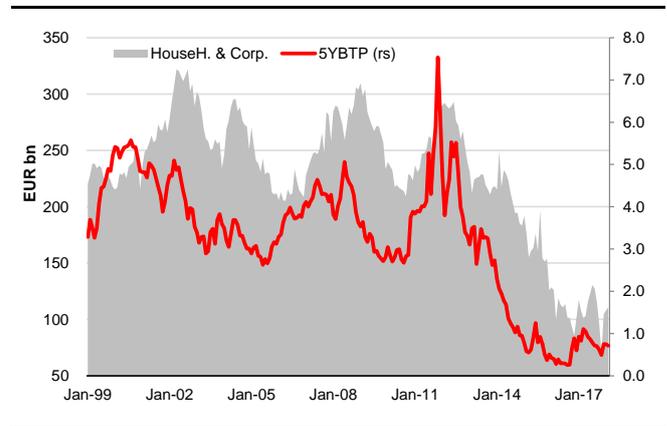
Insurance companies and pension funds are mainly invested in BTPs, with CCTs and BOTs accounting for only a tiny fraction of their portfolios. The most recent indication concerning the maturity composition of their BTP portfolio covers June 2017, when Insurance companies were holding around EUR 200bn of Italian government securities with maturity longer than 5-years, EUR 80bn of BTPs in the 2-5Y area and EUR 30bn of Italian government bonds shorter than 2-years. In the last five years, the maturity breakdown has been rather stable, with a 55/60% allocation in maturities beyond 5Y and about 20% in the 2-5Y bucket.

Individual investors and non-financial companies

Individual investors accounted for as much as EUR 300bn in June 2012. Since then, individual investors have progressively reduced their portfolios and currently account for around 100bn. The reduction has been significant, but this trend needs to be put into context. As chart 5 shows, the decline in government bond holdings has followed the strong reduction in BTP yields. Unsurprisingly, given the negative

rates, households now hold just EUR 1.5bn of BOTs (1% of the stock), down from EUR 32bn in 1Q12, when BOT rates were around 6%.

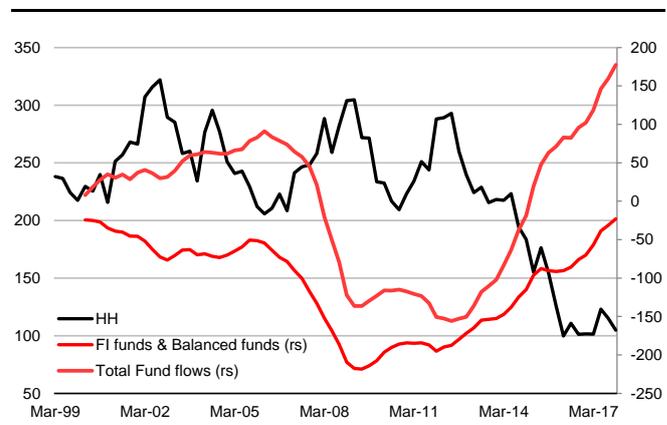
CHART 6: LOW YIELDS DRIVE INDIVIDUAL INVESTORS AWAY



Source: bank of Italy, Bloomberg, UniCredit Research

With yields declining, households have found it increasingly less attractive to directly buy government bonds and have turned progressively to asset managers. Chart 7 shows the stock of government securities held by households along with a measure of fund flows published by Assogestioni (the association of Italian money managers). This chart highlights that the reduction by the former went along with inflows in the latter. Since mid-2012, households reduced their portfolios of government bonds by EUR 200bn and inflows into fixed income and balanced funds amounted to EUR 150bn. While the two series cannot be mathematically summed, the message is clear: **1.** the exposure of Italian households to domestic government bonds has fallen by less than would be inferred from direct holdings and **2.** it has indeed decline somewhat due to asset managers likely having more diversified portfolios.

CHART 7: FROM "DO-IT-YOURSELF" TO PROFESSIONAL INVESTMENT



The chart shows cumulated flows since Q1'00

Source: Bank of Italy, Assogestioni, UniCredit Research

Bank of Italy and QE

The bank bulletin reports that the Bank of Italy holds EUR 368bn in Italian government bonds as of February 2018. There are two reasons why the Bank of Italy buys BTPs: for its own investment portfolio and in relation to monetary policy programs (the SMP and QE).

The portfolio of government bonds related to its own investments has been rather stable in the last few years; we estimate it amounts to EUR 80/90bn.

The portfolio related to monetary policy programs (SMP and QE) has been growing steadily since March 2015 and we estimate it amounted to EUR 280bn in February 2018.

In terms of instrument breakdown, the Bank of Italy does not hold bills and holds around EUR 22bn in CCTs. The remaining is in BTPs (with various residual maturities).

Non-residents

The bank of Italy bulletin reports that EUR 690bn are held by non-resident investors. It is important to consider that **1.** this sum includes the share of PSPP and SMP purchases held by the Eurosystem and **2.** the definition of “non-resident” refers to whether or not an investor is located in Italy.

With respect to what is held by the Eurosystem, we estimate that the SMP and QE account for EUR 60bn.

The second point is also very important. The definition of non-residents used in these figures may not be the most appropriate to evaluate who holds the ultimate risk of Italian bonds. Indeed, part of the Italian government debt is held by foreign subsidiaries of Italian funds. If one wants to answer the question of how much Italian debt is held by non-Italian investors, this component should be removed. The bank of Italy provides an estimate of the share of debt held by foreign branches of Italian funds, which amounted to around 7pp of the total market debt in 1Q16. We estimate that such share has remained fairly stable in the last years. This means that the share of Italian debt held by foreign investors (in the strict sense of the word) is around 25%.

Author

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

Previous editions of Rates Perspectives

- » Italy funding, progress, cost and outlook: as good as it gets - 17 May 2018
- » A model for POLGB yields - 3 May 2018
- » 10Y BTP-SPGB spread: wide compared to fundamentals but convergence to fair value is tricky - 19 April 2018
- » T-LTRO II early repayments: why we are not concerned - 5 April 2018
- » US 10Y fair value model part II: breakeven inflation - 22 March 2018
- » Upside risks to the US term premium - 8 March 2018
- » US real yields are in line with our fair-value model - 26 February 2018
- » Foreign ownership of EM local currency debt: trends, indices and effects on FX and yields - 8 February 2018
- » EUR-USD cross currency: no normalization in sight - 25 January 2018
- » Italy's 2018 funding: how to trade it - 11 January 2018
- » We prefer credit to duration risk, especially at the longer maturities - 7 December 2017
- » CEE rates are unlikely to spike in 2018 - 23 November 2017
- » UST market: will foreign investors come to the rescue? - 9 November 2017
- » Utilizing typical Bund futures trading patterns around major events - 25 October 2017
- » Real natural rate (r^*) estimates suggest that 10Y real Bund yields and swap rates trade at 'absurdly' low levels - 12 October 2017
- » The empirical trade-off between rating and credit spreads - 28 September 2017
- » PSPP reinvestment will pick up next year, partly offsetting tapering - 14 September 2017
- » European bond markets: macro revision trend remains a key ingredient for timing purposes - 1 September 2017
- » The 'T-word': lessons from the US experience - 20 July 2017
- » 10/30Y spreads the two sides of the Atlantic: play it tactically - 7 July 2017
- » Inflation-linked bonds: striking the right balance between inflation projections and current ILB valuations - 23 June 2017
- » A hit-and-run bond-market approach that is based on economic-surprise indices - 13 June 2017
- » Even with tapering, QE will buy most of next year net supply - 26 May 2017
- » ECB's QE: Is scarcity of German paper for real? - 16 May 2017
- » The best way to track ECB rate-hike expectations - 27 April 2017
- » Don't panic: the wide gap between economic policy uncertainty and implied equity volatility is an opportunity rather than a nightmare - 6 April 2017
- » EUR-USD cross currency swap: why we expect a return to more negative levels - 23 March 2017
- » Why we expect the Schatz to remain rich - 9 March 2017
- » The high-low-coupon spread widening: don't fight the trend - 23 February 2017
- » The many hurdles of shrinking the Fed's balance sheet - 9 February 2017
- » Sentiment highlights the risk for a more pronounced consolidation in the short term after overly crowded "reflation trade" hype - 26 January 2017
- » Italy: funding & QE in 2017 - 12 January 2017

Legal Notices

Glossary

A comprehensive glossary for many of the terms used in the report is available on our website: [link](#)

Disclaimer

Our recommendations are based on information obtained from, or are based upon public information sources that we consider to be reliable but for the completeness and accuracy of which we assume no liability. All estimates and opinions and projections and forecasts included in the report represent the independent judgment of the analysts as of the date of the issue unless stated otherwise. This report may contain links to websites of third parties, the content of which is not controlled by UniCredit Bank. No liability is assumed for the content of these third-party websites. We reserve the right to modify the views expressed herein at any time without notice. Moreover, we reserve the right not to update this information or to discontinue it altogether without notice. This analysis is for information purposes only and (i) does not constitute or form part of any offer for sale or subscription of or solicitation of any offer to buy or subscribe for any financial, money market or investment instrument or any security, (ii) is neither intended as such an offer for sale or subscription of or solicitation of an offer to buy or subscribe for any financial, money market or investment instrument or any security nor (iii) as an advertisement thereof. The investment possibilities discussed in this report may not be suitable for certain investors depending on their specific investment objectives and time horizon or in the context of their overall financial situation. The investments discussed may fluctuate in price or value. Investors may get back less than they invested. Changes in rates of exchange may have an adverse effect on the value of investments. Furthermore, past performance is not necessarily indicative of future results. In particular, the risks associated with an investment in the financial, money market or investment instrument or security under discussion are not explained in their entirety.

This information is given without any warranty on an "as is" basis and should not be regarded as a substitute for obtaining individual advice. Investors must make their own determination of the appropriateness of an investment in any instruments referred to herein based on the merits and risks involved, their own investment strategy and their legal, fiscal and financial position. As this document does not qualify as an investment recommendation or as a direct investment recommendation, neither this document nor any part of it shall form the basis of, or be relied on in connection with or act as an inducement to enter into, any contract or commitment whatsoever. Investors are urged to contact their bank's investment advisor for individual explanations and advice.

Neither UniCredit Bank AG, UniCredit Bank AG London Branch, UniCredit Bank AG Milan Branch, UniCredit Bank AG Vienna Branch, UniCredit Bank Austria AG, UniCredit Bulbank, Zagrebačka banka d.d., UniCredit Bank Czech Republic and Slovakia, ZAO UniCredit Bank Russia, UniCredit Bank Czech Republic and Slovakia Slovakia Branch, UniCredit Bank Romania, UniCredit Bank AG New York Branch nor any of their respective directors, officers or employees nor any other person accepts any liability whatsoever (in negligence or otherwise) for any loss howsoever arising from any use of this document or its contents or otherwise arising in connection therewith.

This analysis is being distributed by electronic and ordinary mail to investors, who are expected to make their own investment decisions without undue reliance on this publication, and may not be redistributed, reproduced or published in whole or in part for any purpose.

Responsibility for the content of this publication lies with:

UniCredit Group and its subsidiaries are subject to regulation by the European Central Bank

a) UniCredit Bank AG (UniCredit Bank, Munich or Frankfurt), Arabellastraße 12, 81925 Munich, Germany, (also responsible for the distribution pursuant to §34b WpHG). The company belongs to UniCredit Group.

Regulatory authority: "BaFin" – Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany.

b) UniCredit Bank AG London Branch (UniCredit Bank, London), Moor House, 120 London Wall, London EC2Y 5ET, United Kingdom.

Regulatory authority: "BaFin" – Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany and subject to limited regulation by the Financial Conduct Authority, 25 The North Colonnade, Canary Wharf, London E14 5HS, United Kingdom and Prudential Regulation Authority 20 Moorgate, London, EC2R 6DA, United Kingdom. Further details regarding our regulatory status are available on request.

c) UniCredit Bank AG Milan Branch (UniCredit Bank, Milan), Piazza Gae Aulenti, 4 - Torre C, 20154 Milan, Italy, duly authorized by the Bank of Italy to provide investment services.

Regulatory authority: "Bank of Italy", Via Nazionale 91, 00184 Roma, Italy and Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany.

d) UniCredit Bank AG Vienna Branch (UniCredit Bank, Vienna), Julius-Tandler-Platz 3, 1090 Vienna, Austria

Regulatory authority: Finanzmarktaufsichtsbehörde (FMA), Otto-Wagner-Platz 5, 1090 Vienna, Austria and subject to limited regulation by the "BaFin" – Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany. Details about the extent of our regulation by the Bundesanstalt für Finanzdienstleistungsaufsicht are available from us on request.

e) UniCredit Bank Austria AG (Bank Austria), Schottengasse 6-8, 1010 Vienna, Austria

Regulatory authority: Finanzmarktaufsichtsbehörde (FMA), Otto-Wagner-Platz 5, 1090 Vienna, Austria

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 Jelačića 10, HR-10000 Zagreb, Croatia

Regulatory authority: Croatian Agency for Supervision of Financial Services, Miramarska 24B, 10000 Zagreb, Croatia

h) UniCredit Bank Czech Republic and Slovakia, Želetavská 1525/1, 140 92 Praha 4, Czech Republic

Regulatory authority: CNB Czech National Bank, Na Příkopě 28, 115 03 Praha 1, Czech Republic

i) ZAO UniCredit Bank Russia (UniCredit Russia), Prechistsenskaya emb. 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, RO-012101 Bucharest 1, Romania

Regulatory authority: National Bank of Romania, 25 Lipscani Street, RO-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

POTENTIAL CONFLICTS OF INTEREST

UniCredit S.p.A. acts as a Specialist or a Primary Dealer in government bonds issued by the Italian or Greek Treasury, and as market maker in government bonds issued by the Spain or Portuguese Treasury. Main tasks of the Specialist are to participate with continuity and efficiency to the governments' securities auctions, to contribute to the efficiency of the secondary market through market making activity and quoting requirements and to contribute to the management of public debt and to the debt issuance policy choices, also through advisory and UniCredit Bank AG research activities. UniCredit S.p.A. Registered Office in Rome: Via Alessandro Specchi, 16 - 00186 Roma Head Office in Milan: Piazza Gae Aulenti 3 - Tower A - 20154 Milano, Registered in the Register of Banking Groups and Parent Company of the UniCredit Banking Group, with. cod. 02008.1; Cod. ABI 02008.1 - Competent Authority: Commissione Nazionale per le Società e la Borsa (CONSOB).

UniCredit Bank AG acts as a Specialist or Primary Dealer in government bonds issued by the German or Austrian Treasury. Main tasks of the Specialist are to participate with continuity and efficiency to the governments' securities auctions, to contribute to the efficiency of the secondary market through market making activity and quoting requirements and to contribute to the management of public debt and to the debt issuance policy choices, also through advisory and research activities.

ANALYST DECLARATION

The author's remuneration has not been, and will not be, geared to the recommendations or views expressed in this study, neither directly nor indirectly.

ORGANIZATIONAL AND ADMINISTRATIVE ARRANGEMENTS TO AVOID AND PREVENT CONFLICTS OF INTEREST

To prevent or remedy conflicts of interest, UniCredit Bank AG, UniCredit Bank AG London Branch, UniCredit Bank AG Milan Branch, UniCredit Bank AG Vienna Branch, UniCredit Bank Austria AG, UniCredit Bulbank, Zagrebačka banka d.d., UniCredit Bank Czech Republic and Slovakia, ZAO UniCredit Bank Russia, UniCredit Bank Czech Republic and Slovakia Slovakia Branch, UniCredit Bank Romania, UniCredit Bank AG New York Branch have established the organizational arrangements required from a legal and supervisory aspect, adherence to which is monitored by its compliance department. Conflicts of interest arising are managed by legal and physical and non-physical barriers (collectively referred to as "Chinese Walls") designed to restrict the flow of information between one area/department of UniCredit Bank AG, UniCredit Bank AG London Branch, UniCredit Bank AG Milan Branch, UniCredit Bank AG Vienna Branch, UniCredit Bank Austria AG, UniCredit Bulbank, Zagrebačka banka d.d., UniCredit Bank Czech Republic

and Slovakia, ZAO UniCredit Bank Russia, UniCredit Bank Czech Republic and Slovakia Slovakia Branch, UniCredit Bank Romania, UniCredit Bank AG New York Branch, and another. In particular, Investment Banking units, including corporate finance, capital market activities, financial advisory and other capital raising activities, are segregated by physical and non-physical boundaries from Markets Units, as well as the research department. In the case of equities execution by UniCredit Bank AG Milan Branch, other than as a matter of client facilitation or delta hedging of OTC and listed derivative positions, there is no proprietary trading. Disclosure of publicly available conflicts of interest and other material interests is made in the research. Analysts are supervised and managed on a day-to-day basis by line managers who do not have responsibility for Investment Banking activities, including corporate finance activities, or other activities other than the sale of securities to clients.

ADDITIONAL REQUIRED DISCLOSURES UNDER THE LAWS AND REGULATIONS OF JURISDICTIONS INDICATED

You will find a list of further additional required disclosures under the laws and regulations of the jurisdictions indicated on our website <http://www.cib-unicredit.com/research-disclaimer>.

Notice to Austrian investors: This analysis is only for distribution to professional clients (Professionelle Kunden) as defined in article 58 of the Securities Supervision Act.

Notice to investors in Bosnia and Herzegovina: This report is intended only for clients of UniCredit in Bosnia and Herzegovina who are institutional investors (Institucionalni investitori) in accordance with Article 2 of the Law on Securities Market of the Federation of Bosnia and Herzegovina and Article 2 of the Law on Securities Markets of the Republic of Srpska, respectively, and may not be used by or distributed to any other person. This document does not constitute or form part of any offer for sale or subscription for or solicitation of any offer to buy or subscribe for any securities and neither this document nor any part of it shall form the basis of, or be relied on in connection with or act as an inducement to enter into, any contract or commitment whatsoever.

Notice to Brazilian investors: The individual analyst(s) responsible for issuing this report represent(s) that: (a) the recommendations herein reflect exclusively the personal views of the analysts and have been prepared in an independent manner, including in relation to UniCredit Group; and (b) except for the potential conflicts of interest listed under the heading "Potential Conflicts of Interest" above, the analysts are not in a position that may impact on the impartiality of this report or that may constitute a conflict of interest, including but not limited to the following: (i) the analysts do not have a relationship of any nature with any person who works for any of the companies that are the object of this report; (ii) the analysts and their respective spouses or partners do not hold, either directly or indirectly, on their behalf or for the account of third parties, securities issued by any of the companies that are the object of this report; (iii) the analysts and their respective spouses or partners are not involved, directly or indirectly, in the acquisition, sale and/or trading in the market of the securities issued by any of the companies that are the object of this report; (iv) the analysts and their respective spouses or partners do not have any financial interest in the companies that are the object of this report; and (v) the compensation of the analysts is not, directly or indirectly, affected by UniCredit's revenues arising out of its businesses and financial transactions. UniCredit represents that: except for the potential conflicts of interest listed under the heading "Potential Conflicts of Interest" above, UniCredit, its controlled companies, controlling companies or companies under common control (the "UniCredit Group") are not in a condition that may impact on the impartiality of this report or that may constitute a conflict of interest, including but not limited to the following: (i) the UniCredit Group does not hold material equity interests in the companies that are the object of this report; (ii) the companies that are the object of this report do not hold material equity interests in the UniCredit Group; (iii) the UniCredit Group does not have material financial or commercial interests in the companies or the securities that are the object of this report; (iv) the UniCredit Group is not involved in the acquisition, sale and/or trading of the securities that are the object of this report; and (v) the UniCredit Group does not receive compensation for services rendered to the companies that are the object of this report or to any related parties of such companies.

Notice to Canadian investors: This communication has been prepared by UniCredit Bank AG, which does not have a registered business presence in Canada. This communication is a general discussion of the merits and risks of a security or securities only, and is not in any way meant to be tailored to the needs and circumstances of any recipient. The contents of this communication are for information purposes only, therefore should not be construed as advice and do not constitute an offer to sell, nor a solicitation to buy any securities.

Notice to Cyprus investors: This document is directed only at clients of UniCredit Bank who are persons falling within the Second Appendix (Section 2, Professional Clients) of the law for the Provision of Investment Services, the Exercise of Investment Activities, the Operation of Regulated Markets and other Related Matters, Law 144(I)/2007 and persons to whom it may otherwise lawfully be communicated who possess the experience, knowledge and expertise to make their own investment decisions and properly assess the risks that they incur (all such persons together being referred to as "relevant persons"). This document must not be acted on or relied on by persons who are not relevant persons or relevant persons who have requested to be treated as retail clients. Any investment or investment activity to which this communication related is available only to relevant persons and will be engaged in only with relevant persons. This document does not constitute an offer or solicitation to any person to whom it is unlawful to make such an offer or solicitation.

Notice to Hong Kong investors: This report is for distribution only to "professional investors" within the meaning of Schedule 1 to the Securities and Futures Ordinance (Chapter 571, Laws of Hong Kong) and any rules made thereunder, and may not be reproduced, or used by or further distributed to any other person, in whole or in part, for any purpose. This report does not constitute or form part of an offer or solicitation of any offer to buy or sell any securities, nor should it or any part of it form the basis of, or be relied upon in connection with, any contract or commitment whatsoever. By accepting this report, the recipient represents and warrants that it is entitled to receive such report in accordance with, and on the basis of, the restrictions set out in this "Disclaimer" section, and agrees to be bound by those restrictions.

Notice to investors in Ivory Coast: The information contained in the present report have been obtained by Unicredit Bank AG from sources believed to be reliable, however, no express or implied representation or warranty is made by Unicredit Bank AG or any other person as to the completeness or accuracy of such information. All opinions and estimates contained in the present report constitute a judgement of Unicredit Bank AG as of the date of the present report and are subject to change without notice. They are provided in good faith but without assuming legal responsibility. This report is not an offer to sell or solicitation of an offer to buy or invest in securities. Past performance is not an indicator of future performance and future returns cannot be guaranteed, and there is a risk of loss of the initial capital invested. No matter contained in this document may be reproduced or copied by any means without the prior consent of Unicredit Bank AG.

Notice to New Zealand investors: This report is intended for distribution only to persons who are "wholesale clients" within the meaning of the Financial Advisers Act 2008 ("FAA") and by receiving this report you represent and agree that (i) you are a "wholesale client" under the FAA (ii) you will not distribute this report to any other person, including (in particular) any person who is not a "wholesale client" under the FAA. This report does not constitute or form part of, in relation to any of the securities or products covered by this report, either (i) an offer of securities for subscription or sale under the Securities Act 1978 or (ii) an offer of financial products for issue or sale under the Financial Markets Conduct Act 2013.

Notice to Omani investors: This communication has been prepared by UniCredit Bank AG. UniCredit Bank AG does not have a registered business presence in Oman and does not undertake banking business or provide financial services in Oman and no advice in relation to, or subscription for, any securities, products or financial services may or will be consummated within Oman. The contents of this communication are for the information purposes of sophisticated clients, who are aware of the risks associated with investments in foreign securities and neither constitutes an offer of securities in Oman as contemplated by the Commercial Companies Law of Oman (Royal Decree 4/74) or the Capital Market Law of Oman (Royal Decree 80/98), nor does it constitute an offer to sell, or the solicitation of any offer to buy non-Omani securities in Oman as contemplated by Article 139 of the Executive Regulations to the Capital Market Law (issued vide CMA Decision 1/2009). This communication has not been approved by and UniCredit Bank AG is not regulated by either the Central Bank of Oman or Oman's Capital Market Authority.

Notice to Pakistani investors: Investment information, comments and recommendations stated herein are not within the scope of investment advisory activities as defined in sub-section 1, Section 2 of the Securities and Exchange Ordinance, 1969 of Pakistan. Investment advisory services are provided in accordance with a contract of engagement on investment advisory services concluded with brokerage houses, portfolio management companies, non-deposit banks and the clients. The distribution of this report is intended only for informational purposes for the use of professional investors and the information and opinions contained herein, or any part of it shall not form the basis of, or be relied on in connection with or act as an inducement to enter into, any contract or commitment whatsoever.

Notice to Polish Investors: This document is intended solely for professional clients as defined in Art. 3.39b of the Trading in Financial Instruments Act of 29 July 2005 (as amended). The publisher and distributor of the document certifies that it has acted with due care and diligence in preparing it, however, assumes no liability for its completeness and accuracy. This document is not an advertisement. It should not be used in substitution for the exercise of independent judgment.

Notice to Serbian investors: This analysis is only for distribution to professional clients (profesionalni klijenti) as defined in article 172 of the Law on Capital Markets.

Notice to UK investors: This communication is directed only at clients of UniCredit Bank who (i) have professional experience in matters relating to investments or (ii) are persons falling within Article 49(2)(a) to (d) ("high net worth companies, unincorporated associations, etc.") of the United Kingdom Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 or (iii) to whom it may otherwise lawfully be communicated (all such persons together being referred to as "relevant persons"). This communication must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this communication relates is available only to relevant persons and will be engaged in only with relevant persons.

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 Control
+49 89 378-13952
ingo.heimig@unicredit.de

Heads of Strategy Research



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



Dr. Vasileios Gkionakis
Co-Head of Strategy Research
+44 207 826-7951
vasileios.gkionakis@unicredit.eu

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



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



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

FX Strategy Research



Dr. Vasileios Gkionakis
Head
+44 207 826-7951
vasileios.gkionakis@unicredit.eu



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



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



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

Credit Strategy Research



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



Dr. Christian Weber, CFA
Deputy Head
+49 89 378-12250
christian.weber@unicredit.de



Holger Kapitzka
Credit Strategy
+49 89 378-28745
holger.kapitzka@unicredit.de



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



Manuel Trojovsky
Credit Strategy
+49 89 378-14145
manuel.trojovsky@unicredit.de

Equity Strategy Research



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



Elia Lattuga
Cross Asset Strategy
+44 207 826-1642
elia.lattuga@unicredit.eu

Cross Asset Strategy Research

*UniCredit Research is the joint research department of UniCredit Bank AG (UniCredit Bank, Munich or Frankfurt), UniCredit Bank AG London Branch (UniCredit Bank, London), UniCredit Bank AG Milan Branch (UniCredit Bank, Milan), UniCredit Bank New York (UniCredit Bank, New York), UniCredit Bank AG Vienna Branch (UniCredit Bank, Vienna), UniCredit Bank Austria AG (Bank Austria), UniCredit Bulbank, Zagrebačka banka d.d., UniCredit Bank Czech Republic and Slovakia, ZAO UniCredit Bank Russia (UniCredit Russia), UniCredit Bank Romania.