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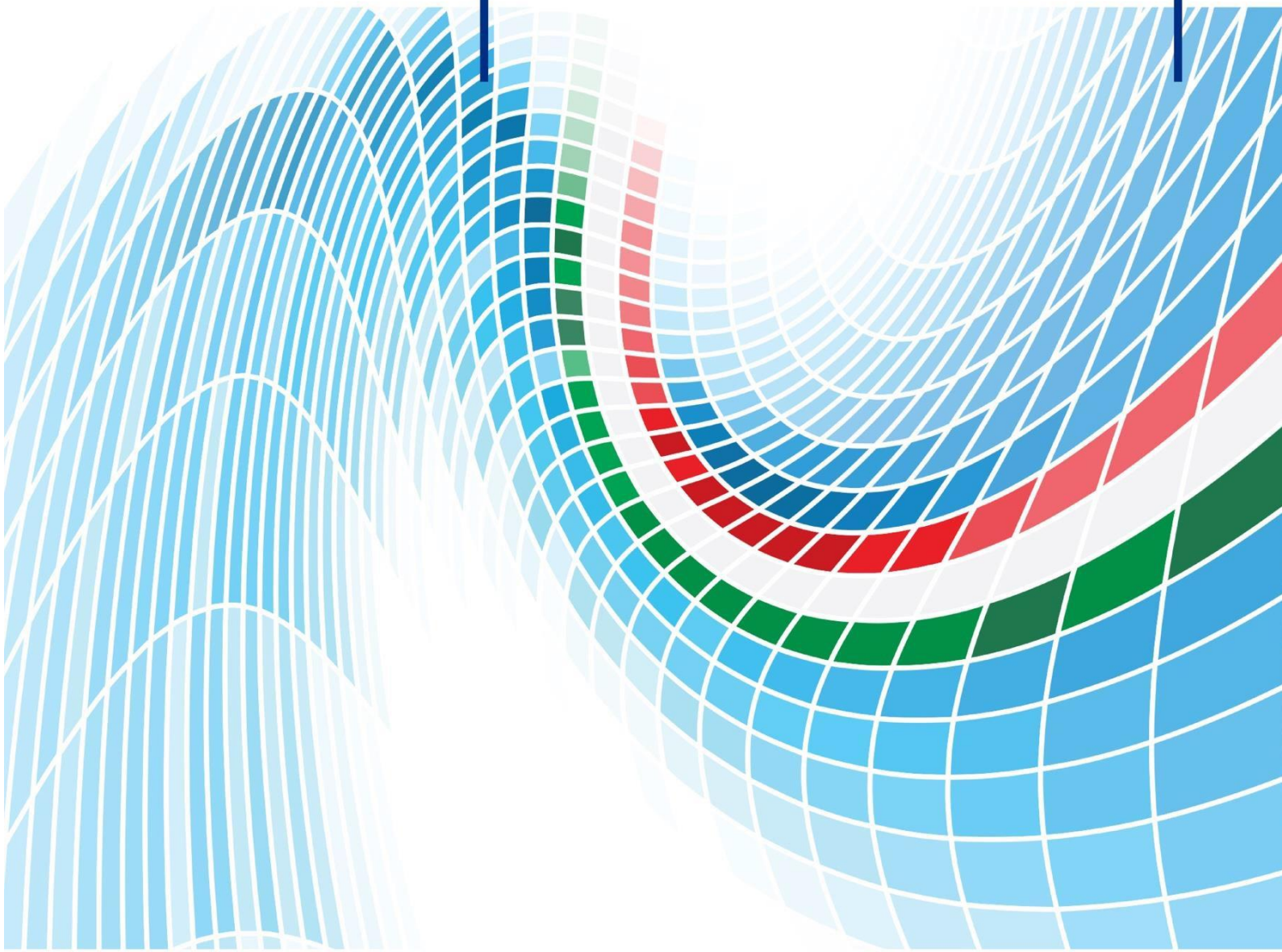
Dipartimento del Tesoro

Treasury Department

Directorate II – Public Debt

Public Debt Report 2022

Annex



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MINISTERO DELL'ECONOMIA E DELLE FINANZE

PUBLIC DEBT REPORT 2022

Annex

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ANNEXES

ANNEX 1

The Treasury's involvement in international discussions on debt management

Please find below a list of the main ways in which the Treasury is involved in international discussions on public debt management issues:

- Regular liaison with European DMOs is ensured as part of the special subcommittee (European Sovereign Debt Markets - ESDM) of the EU Economic and Financial Committee (EFC); the EFC has an advisory role vis-à-vis the European Commission and the Council of the European Union and is appointed to define actions for the coordination of Member States' economic and financial policies.
- Regular participation in the working groups organised by supranational institutions such as the OECD, the IMF and the World Bank. The Treasury is also involved in the OECD's "Working Party on Public Debt Management" (WPDM)[1], which constitutes a stable platform to compare the public debt management policies and techniques of the organisation's member countries, as well as in the "Government Borrowers' Forum" organised annually by the World Bank for the 40 participating countries to share their practical experiences. The Treasury's standing with regard to public debt management is implicitly recognised by the "Public Debt Management Network", a joint initiative promoted by the OECD, the World Bank and the Italian Department of the Treasury (the only government institution alongside these two multilateral institutions), the aim of which is to share knowledge, information and research on public debt management issues.
- Another key opportunity for institutional coordination is the Treasury's participation in Eurostat statistical working groups and its contribution to drawing up the six-monthly notifications as part of the Excessive Deficit Procedure (EDP), especially in relation to entries being correctly recorded that are directly linked to public debt, in accordance with the harmonised European System of Accounts (ESA). By overseeing these accounting aspects, the Treasury is able to keep all relevant profiles under control, also moving beyond general considerations of a purely financial nature and with a direct impact on the state budget.
- Finally, the Treasury attends the annual "International Retail Debt Management Conference", made up of the DMOs of a limited number of countries; this

[1] The WPDM began to meet as an OECD working group of public debt management experts in 1979. Italy's Treasury has continuously contributed to the annual work of the WPDM since 1985 and is part of the Steering Group established in 2003. Currently, the DMOs of all 36 OECD countries contribute to the work of the WPDM, as do the International Monetary Fund, the World Bank and the European Commission, as observers.

conference is specifically dedicated to the operational issues involved with the placement of government securities among non-institutional investors and, every two years, it is supported by the World Bank to include emerging countries in its comparisons.

ANNEX 2

The Department of the Treasury's Public Debt Directorate: organisational structure

The Department of the Treasury's "Second Directorate", dedicated to public debt management, is made up eleven offices. This Directorate carries out its tasks by working closely together with other institutional structures, such as the other directorates within the Department of the Treasury, the State General Accounting Department and the Bank of Italy. The various responsibilities of the Public Debt Directorate are shown in the chart below, grouped according to function.

ORGANISATION OF THE PUBLIC DEBT DIRECTORATE

The Directorate has a front, middle and back office, as is typically the case for financial market operators and other Debt Management Offices (DMOs) managing public debt in advanced countries.

The Front Office covers all activities in direct contact with the market. These primarily involve all issuance activities that define primary market operations, regarding both the domestic and foreign market; said issuance activities take into account funding requirements, from market analysis to the decisions as to which type of securities to offer and the relative placement procedures and time frames.

Front Office activities also include the very short-term management of liquidity and extraordinary debt exchange and repurchase operations, as well as derivative operations.

Front Office activities also entail monitoring the various aspects of the government securities secondary market, as well as selecting and assessing dealers specialising in government securities.

The Middle Office is responsible for risk management[2], carrying out all the necessary analyses, including legal and market analysis activities, to define the cost-risk profile that must drive and/or restrict Front Office operations. The various issuance portfolios identified, with their respective cost and risk combinations, (which, for many years[3], have been based on a specific software that allows for "Cost-at-Risk" analysis based on a probabilistic model), are used by the Front Office to define the most appropriate issuance and hedging strategies. Risk management activities also include the monitoring of counterparty risk, determining the constraints that must be respected in terms of both derivative portfolio management and liquidity investment operations.

Middle Office activities also include multi-annual forecasts on interest expenditure and general government debt to be used for policy documents and institutional reporting purposes[4].

The work carried out by the Back Office includes preparing issuance decrees and the stricter accounting activities relating to procedures to ensure timely payments.

All debt management activities are underpinned by the work to prepare the relative legal documentation for loans and derivatives, as well the drafting of prospectuses, both for international issuance programmes (Global, MTN) and for other securities placed with methods other than auctions. Likewise, since the Public Debt Directorate falls within the administrative context of the Department of the Treasury, it also carries out all the other legal-administrative and accounting tasks common to ministerial organisations.

The Public Debt Directorate also carries out other tasks of crucial importance. These include the very important activities that may be classed under "communications", focusing on real-time information regarding issuances, as well as statistics about the structure, dynamics and composition of debt represented by government securities and the relative market. The main channel for these activities is the public debt website. These activities also include the statistics stemming from the monitoring of the debt and derivatives exposure of local authorities.

[2] For a more detailed assessment of best practices regarding Sovereign Debt Portfolio Risk Management, please refer to the International Monetary Fund's Working Paper "*A Primer on Managing Sovereign Debt-Portfolio Risks*", produced in partnership with dozens of DMOs, including the Italian Treasury.

[3] See the information contained in Annex 3 below.

[4] In particular, the Economic and Financial Document ("DEF") provided for by Italian Law no. 39 of 7 April 2011 (in relation to which Directorate II contributes to Section I "Italy's Stability Programme" and Section II "Analyses and Trends in Public Finances"), the DEF Update, the Draft Budgetary Plan ("DPB") as required by EU Regulation no. 473/2013, the Annex to the so-called "Quarterly Cash Report" (referred to by Art. 14 of Italian Law no. 196/2009 as the "Report on the General Government's Consolidated Cash Account"), the Report to Parliament on the sinking fund for government securities (an annex to the General Financial Statement of the Italian State) as referred to by Art. 44, paragraph 3, of Italian Presidential Decree no. 398/2003, and the half-yearly Report to the Court of Auditors on public debt management pursuant to the Italian Ministerial Decree dated 10/11/1995.

In addition to this monitoring, the Directorate is also responsible for any extraordinary operations relating to local authorities' debt, as governed by specific regulations.

The role of liaising with external institutions, in particular at international level, is also of great importance; this includes: contributing to the coordination of public debt managers in Europe as part of a dedicated subcommittee (European Sovereign Debt Markets - ESDM) of the EU Economic and Financial Committee; taking part in Eurostat statistical working groups and contributing to preparing the six-monthly notifications as part of the Excessive Debt Procedure (EDP); participating in the various working groups of supranational institutions, such as the OECD and the IMF; the network between the Italian Treasury, the OECD and the World Bank regarding public debt management issues; relations with institutional investors and rating agencies[5].

Finally, across-the-board IT services refer to all offices, since almost all the Directorate's work processes are computerised; some are shared by all government departments, with the same applications for the Department of the Treasury or for the entire Ministry, and others are specific to public debt, featuring dedicated tools and applications[6]. The latter are structured on the basis of the Directorate's specific needs[7] and use both internal information and data flows from the Bank of Italy, from Monte Titoli S.p.A. - the company that guarantees the centralised management of government securities - or from the company that manages the electronic government securities market (MTS S.p.A.).

[5] For more detailed information on when and how the Italian Treasury takes part in international discussions in this regard, please refer to Annex 1 of this Report.

[6] Databases and applications are designed and maintained in collaboration with the Department of the Treasury's IT Coordination department and with SOGEI, the supplier of digital architecture and support services. Società Generale d'Informatica S.P.A. ("SOGEI") is an Information Technology company that is 100% owned by the Italian Ministry of Economy and Finance.

[7] For example, please refer to the particularly significant aspects involved with developing and managing "SAPE", the Issuance Portfolio Analysis Software, as illustrated in Annex 3 below.

ANNEX 3

SAPE (Issuance Portfolio Analysis Software)

The mathematical models and corresponding software (SAPE – Issuance Portfolio Analysis Software) used by the Treasury to support its management choices regarding the public debt portfolio are the result of a research project, made possible thanks to the FIRB 2003 funding received from the Italian Ministry of Education, University and Research (D.D. 2186-Ric 12/12/2003), and issued by the Institute for Calculation Applications of the Italian National Research Council (which heads up a group that also includes other academic institutions, such as Bocconi University, the University of Milan and Tor Vergata University of Rome); this funding was granted as part of the strategic programme entitled "Humanities, economics and social sciences", project objective "Public debt management". In the early 2000s, this project launched the modelling and software development work that led the Department of the Treasury to adopt a tool that could support it in making decisions regarding public debt management; by using stochastic simulation techniques, this tool could analyse the cost and risk profile of government securities portfolios.

Over the years, this model underwent various development phases, managed in collaboration with the Department of the Treasury and the various bodies involved, currently made up of the "M. Picone" Institute for Calculation Applications ("IAC") of the Italian National Research Council ("CNR") and the Cambridge Judge Business School at the University of Cambridge, as well as SOGEI, the Italian Treasury's IT solutions provider for the public administration.

The mathematical models and corresponding software are subject to continuous updates in order to take into account ongoing developments of the reference techniques. This allows for the various databases to be integrated in an increasingly comprehensive way, as well as taking into account the various management activities that may affect future scenarios. Since the end of 2017, the outstanding debt database used by SAPE has been made up of domestic securities, derivatives and securities in USD.

The main objective of the portfolio analysis is to measure debt servicing costs on an annual accrual basis, in accordance with ESA 2010 rules. The choice between different possible issuance portfolios must be weighted by taking into account both the cost, in terms of interest expenditure, and the interest rate risk for each individual portfolio compared with a representative sample of how interest rates may evolve.

For each possible issuance portfolio, it is possible to simulate the cost function distribution with respect to all the scenarios regarding how interest rates may evolve. This distribution simulation provides all the necessary information about costs (i.e., where the distribution is positioned) and risks (the scale of the distribution) for the portfolio in question. SAPE calculates different summary cost indicators (average cost, CaR - Cost at Risk-, maximum cost, etc.) and risk indicators (standard cost deviation, relative CaR, ES - Expected Shortfall - etc.), allowing for the possible issuance portfolios to be studied in as much detail as possible.

After choosing the cost and risk functions, a consolidated portfolio selection technique involves building an "efficiency frontier". This "frontier" is identified by

first drawing a Cartesian graph in which each portfolio is represented by a point whose coordinates record its respective risk and cost, thereby providing a summary of their overall dynamic evolution. Portfolios are classed as "efficient" when each fixed risk value corresponds to the lowest cost. Selecting one of the best portfolios, i.e. those that can be classed as efficient, is based on (i) the debt manager's risk aversion or risk appetite, in line with the Public Debt Management Guidelines regarding the strategy for the issuance and management of government securities (these guidelines indicate, inter alia, the approach to be adopted in order to fulfil the Treasury's strategic requirements regarding how to manage the main risks), and (ii) how practical/feasible each individual portfolio is with respect to investors' needs and the evolution of market conditions. The efficiency frontier is normally created by observing the cost and risk variables at the end of the prediction interval.

This model shows how the cost distribution evolves over time for each individual portfolio. This allows for accurate checks into the evolution of the selected costs and risks, making it possible for the decision maker to choose the portfolio whose temporal evolution profile best matches the policy and strategy choices in question.

The model underwent initial significant development when mutual guarantee agreements were introduced for derivative instruments[8]; this development allowed for the estimate of effects in terms of Credit Value Adjustment and, as a result, in terms of the guarantees to be established/received as part of the Credit Support Annexes, to be included in the simulations.

The SAPE software's central element is the module that generates the scenarios regarding how interest rates will evolve. This module interacts with the cost and risk calculation module in a completely transparent way and also offers the possibility to use a range of stochastic models to generate medium/long-term scenarios for interest rates and inflation rates; above all, this is useful in order to assess the expected performance, in terms of cost-risk analysis, of the various strategies relating to public debt issuance policies. More generally speaking, by generating scenarios, expected exposure can be quantified with respect to yield curve volatility. Joint estimate models for the forward interest rate structure include government and break-even inflation (BEI) curves and swap curves (Euro and USD).

A five-year forecast period is generally used for cost-risk analyses on issuance portfolios. The scenarios generated by the model's stochastic simulation are in line with historical data in terms of the statistical properties of the yield curves, particularly in terms of the variance calculated for the different maturities and covariance between nominal rates and BEI and between nominal and swap rates.

[8] For further information in this regard, please refer to Annex 4 below.

ANNEX 4

Derivatives used by the Treasury: role, types, and collateralisation system

Introduction

In principle, the derivatives sector is considerably vast, encompassing operations that have very different structures and purposes, used in almost all areas of finance and the economy. Sovereign issuers such as the Italian Treasury only use a few types of derivatives, for specific risk management objectives underlying its debt portfolio, with particular regard to interest rate and exchange rate risks. Please find below a description of (i) the role played by derivatives in managing Italy's public debt; (ii) the types of operations that are used; and, (iii) the collateralisation system.

The role of derivative operations used by the Treasury

As highlighted at the beginning of this Report[9], the objective of curbing debt costs at the same time as maintaining an acceptable level of risk inherent in the existing debt structure, imposed upon DMOs by international best practices, does not end upon issuance and in relation to the market conditions at the time. This objective is instead achieved in a dynamic way, through ongoing actions that regard the entire portfolio and continue even after issuance.

In addition to debt exchange and repurchase operations, DMOs may also use derivatives to mitigate these risks after issuance.

Any mismatch between the structure of the portfolio resulting from the outcome of capital market placements and the management objectives considered preferable[10] can thus be rectified with the use of derivatives, increasing the DMO's compliance with policy objectives and partly separating the achievement of these objectives from the performance recorded at the time of placement.

Furthermore, while issuance activity is managed with continuity and predictability, in order to create the technical prerequisites of the necessary investment liquidity for potential buyers, derivative operations, on the other hand, do not have a pre-defined timetable. In fact, derivative contracts may be signed at any time, when market conditions allow for DMOs' specific needs to be met; in this way, they contribute to removing a certain degree of rigidity from DMOs' management activities.

In authorising the use of derivatives on an annual basis, the Framework Decree states that they should contribute to achieving the general management objectives

[9] For an indispensable, more in-depth examination of the objectives pursued by public debt managers, also using derivative instruments, please refer to Chap. I.1 above, as well as the documents mentioned therein.

[10] A document drawn up jointly by best practice experts from the OECD, the IMF and the World Bank in 2008 highlighted the practice adopted in this regard by many Sovereign debt managers, emphasising the fact that: "*the implementation of the debt strategy may include the use of derivatives to separate funding decisions from the optimal portfolio composition decision, reduce the cost of borrowing, and manage risks in the portfolio (in particular, interest rate refixing risk and refinancing risk)". - OECD (2008) "Use of Derivatives for Debt Management and Domestic Debt Market Development: Key Conclusions*", available at http://www.oecd.org/fr/finances/dette-publique/39354012.pdf

of curbing overall borrowing costs and protecting against market risks and refinancing risks, based on the information available and market conditions.

From an operational point of view, management of the derivatives portfolio must also take into account two main aspects: (i) the guarantee agreements that assist these operations, and (ii) the existing constraints for certain types.

With regard to the first aspect, please refer to the specific paragraph below on the objectives and characteristics of mutual guarantee agreements (collateralisation).

With regard to the second aspect, in September 2014, Eurostat issued new rules on how to record the market value of derivatives, only applicable to swaps arising from the restructuring of pre-existing swaps or to swaptions being exercised. In fact, for these specific cases, it was established that these operations shall affect debt stock levels from an accounting point of view (despite them not entailing actual recourse to the capital market).

The types of derivative contracts used by the Treasury

The types of derivative contracts used by the Treasury Please find below the functional characteristics of the three types of derivative operations used and/or usable to manage the Treasury's debt portfolio:

- Cross-currency swaps ("CCS") are used to synthetically convert liabilities generated by bond issues denominated in a foreign currency into euro denominated liabilities, with no alterations to the foreign-currency denominated security purchased by the investor. These instruments therefore eliminate the exchange rate risk for the Treasury and make it possible to directly compare the funding costs obtained on international markets with the cost of domestic debt. As outlined in this Report, the international issuance programme allows for the institutional investor base for Italian public debt to be diversified and to obtain competitive cost conditions compared with those for domestic debt.
- Interest rate swaps ("IRS") involve an exchange of flows involving a fixed rate being paid versus a floating rate being received, usually on long-term maturities. With a view to managing the debt portfolio in a comprehensive way, this type of derivative extends the financial duration of debt and acts as a precaution against expected interest rate increases. As already mentioned, this choice is in line with the need to manage the portfolio's cost-risk trade-off and, in particular, with the specific characteristics of Italian public debt management, as described in Chapter I of this Report.
- Finally, receiver swaptions[11] are derivative contracts that act in a similar way to IRS, in that they extend the financial duration of debt and mitigate interest rate risk, but they also provide cash benefits deriving from the sale of an option. Options sold by the Treasury give the counterparty the right to enter into an interest rate swap agreement, at a future date, under pre-defined

[11] A receiver swaption is an option that is sold/purchased to/by a counterparty that entitles the purchaser to enter into a swap contract at a future date, whereby the purchaser will pay a floating rate and receive a fixed rate on a given notional amount.

conditions, as long as a lump sum (premium) is paid to the Treasury when the contract is signed. The IRS generated by sold receiver swaptions being exercised, like those that have not been sold as an option, are generally medium/long-term swaps, whereby the Treasury pays a fixed rate and receives a floating rate starting from a given date if the counterparty exercises its option. Swaptions are exercised if the market conditions are favourable for the Treasury's counterparty as at the date of the option being exercised (i.e., interest rates have fallen below the market expectations at the time the relative contract was signed); any IRS generated by the option being exercised shall nonetheless act as medium/long-term insurance for the Treasury.

Collateralisation agreements - objectives and characteristics

Collateralisation agreements were introduced for the derivative operations carried out by the Italian government with two objectives in mind.

The first objective was to align with standard practices in the derivatives market. In fact, for all financial instruments, the market value of the operation (Mark to Market) may significantly vary in terms of size and whether it is positive or negative, depending on market trends. For government bonds and securities, these variations affect, inter alia, the credit risk borne by the security holder[12], and therefore how they are accounted for and the relative allocations to provisions. For derivatives (for example, interest rate derivatives), on the other hand, changes in the operation value may generate potential credit exposure for the party (the government or counterparty for a derivative) for whom the instrument has a positive value at a given moment in time. This means that, over time, either of the two parties may become, alternatively, the potential creditor/debtor of a sum, which may change significantly in terms of its size and whether it has a positive or negative value; however, said sum shall only become "real" if one of the two counterparties goes bankrupt or if the operation is closed before its natural expiry (by definition, the market value at the operation date is equal to zero).

While the interbank derivatives market has always been a collateralised market, Sovereigns' use of guarantee schemes to manage the credit exposure associated with derivative contracts has only been examined relatively recently. On the one hand, the 2008 crisis revealed the risks involved with governments being exposed vis-à-vis the banking sector without guarantees. On the other hand, the subsequent and consequent tightening of regulatory constraints on banks gradually made it more expensive for the latter to maintain significant, unsecured exposure vis-à-vis governments, and, beyond certain limits, this even became unsustainable without capitalisation measures. Governments therefore also began using the market standard of mutual guarantee mechanisms as part of their ongoing operations.

The second objective regards the regulatory constraints on banks: given these obligations, the creation of a collateralisation system gives the Italian government the possibility to implement new hedges at sustainable costs (for example, hedges

[12] By contrast, the issuer, by definition, is not exposed to any credit risk.

against exchange rate risk in the case of securities denominated in a foreign currency being issued).

It should also be noted that, by freeing up the resources that banking regulations require to be allocated to such exposure, the presence of collateral can indirectly allow the Italian government to strengthen the support of these counterparties for Italy's public debt, on both the primary and secondary market.

Guarantee agreements ("Credit Support Annexes" or "CSA") are regulated by Italian Ministerial Decree no. 103382 of 20 December 2017 ("Guarantee Decree") and, indeed, are annexes to the ISDA Master Agreement ("ISDA MA") in place with each counterparty.

The Public Debt Directorate has drawn up a model governed by Italian law, in line with the regulations governing each ISDA MA signed by the Italian government and all the relative confirmations. When drawing up the contracts to be signed, the Directorate in question based its choices, on the one hand, on public finance constraints, pursuant to Art. 6, paragraph 3, of the "Guarantee Decree", and, on the other, on its own organisational requirements, which led to a bespoke CSA being drafted. The contractual specifications defined in the CSA refer to margining frequency, the minimum amount, and the rounding of margins.

The resources necessary to pay the guarantees are allocated to a specific expenditure item, established by Italy's 2019 Budget Law and called "Expenses deriving from guarantee operations on derivatives exposure"; from this expenditure item, the guarantees are transferred to a special accounting system specifically set up for this purpose. Pursuant to Art. 5 of said Decree, the guarantee must be made up of cash in euro.

CSAs may be distinguished between those connected with previous derivative operations and those relating to new operations. The initial phase focused on pre-existing derivative instruments with a number of counterparties, which resulted in the latter having significant credit exposure vis-à-vis the Italian government, above a threshold originally set at € 4 billion (as per the joint provision of Art. 6, paragraph 1, letter b), of the "Guarantee Decree" and Art. 4, paragraph 4, of the 2018 "Framework Decree"). As of 31 December 2017, there were only very few counterparties that met the requirements to sign a guarantee agreement for derivative positions already in the Italian government's portfolio.

A collateral structure was therefore defined, aimed at limiting the outgoing amounts for the Italian government. For each agreement, full collateralisation is not required upon signing, as the annual guarantee amounts to be paid to the counterparty are defined within a narrow "corridor", which tends to expand as time goes by. According to estimates, the Italian Treasury will have to pay limited and almost constant amounts over a considerable number of years; said amounts will gradually tend to hedge the counterparty's entire credit exposure vis-à-vis the Treasury. The expenditure commitments are therefore not only very limited compared with the overall exposure of the individual portfolios but are also set over a significant period, starting from when the agreement in question is signed. The margin to pay shall only be less than the expected amount, with a subsequent reduction in outgoing cash flows for margining purposes, if there are substantial increases in the interest rate swap curve, leading to a reduction in the overall mark-to-market of the collateralised portfolio. Time frames for the "corridor" to be applied to the cash flows is based on the need to mediate between the sustainability

of the guarantee from the point of view of public finances (which makes it essential, at least in the early years, to limit said time frames) and the need to provide counterparties with a guarantee on their overall exposure vis-à-vis the Italian government within a reasonable number of years.

The work to prepare the guarantee agreement required a significant amount of time, which was necessary in order to carry out the legal analysis and the strictly financial analysis, with the latter aimed at defining, with each counterparty, the appropriate amount of the benefit to be paid to the Treasury, pursuant to Art. 6, paragraph 2, of the Guarantee Decree. All CSAs therefore only became operational in the second half of 2018 and only with regard to pre-existing operations with the banks that met the relative requirements.

The second phase, on the other hand, involved signing CSA agreements with all dealers specialising in government securities, with reference to any new operations[13]. This phase was completed in the second half of 2018, with a residual part being completed at the beginning of 2019. These agreements referred exclusively to derivative operations carried out after the relative agreement was signed. These agreements were signed pursuant to Art. 6, paragraph 1, let. a), of the "Guarantee Decree" with the same format being used for each individual counterparty, thereby meeting uniformity requirements with a view to treating all counterparties equally.

[13] Primarily, derivative contracts aimed at hedging new issuances in a foreign currency.

STATISTICAL ANNEX

SOURCES OF INFORMATION ON PUBLIC DEBT AVAILABLE ON THE TREASURY WEBSITE

The Treasury's website hosts a dedicated area about public Debt (www.dt.mef.gov.it/en/debito_pubblico/) featuring a wide range of both qualitative and quantitative information about each one of the operational issues included in this Report.

Information available in this area provides details about (but is not limited to) issuance timetable and official communications, auction results, securities' features and relevant legal framework, Specialist's assessment and extraordinary operations, available cash as well as documents of a more general nature, as the several releases of this Report or the annual Guidelines for the public Debt management.

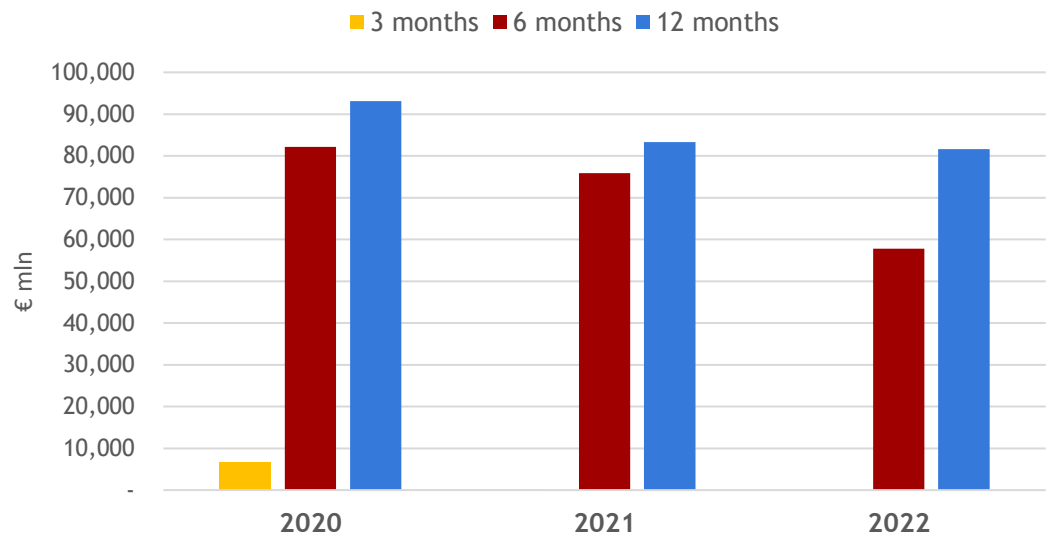
The area also includes a data-rich statistical Section (www.dt.mef.gov.it/en/debito_pubblico/dati_statistici/) providing quantitative information about all public Debt topics, namely featured in the Quarterly Bulletin, including trends recorded in the government securities' portfolio composition, coupons, yields at issuance and average life, risks indicators and derivatives portfolio.

The dataset is constantly updated according to operations, while also keeping past data series available.

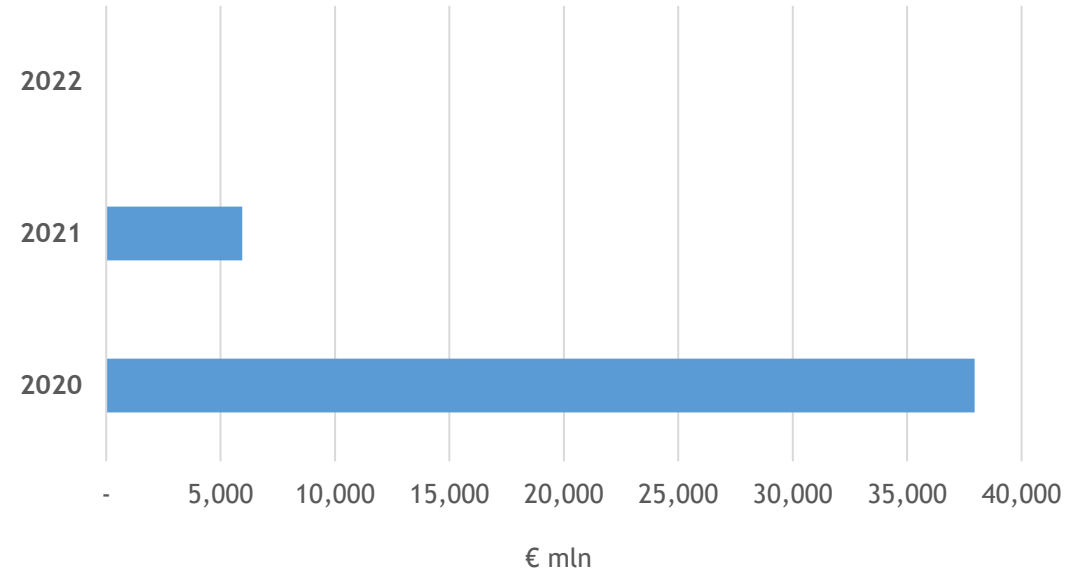
The following pages complete the information already provided in this Report by featuring selected Charts and Tables about some of the information available on the website.

CHARTS

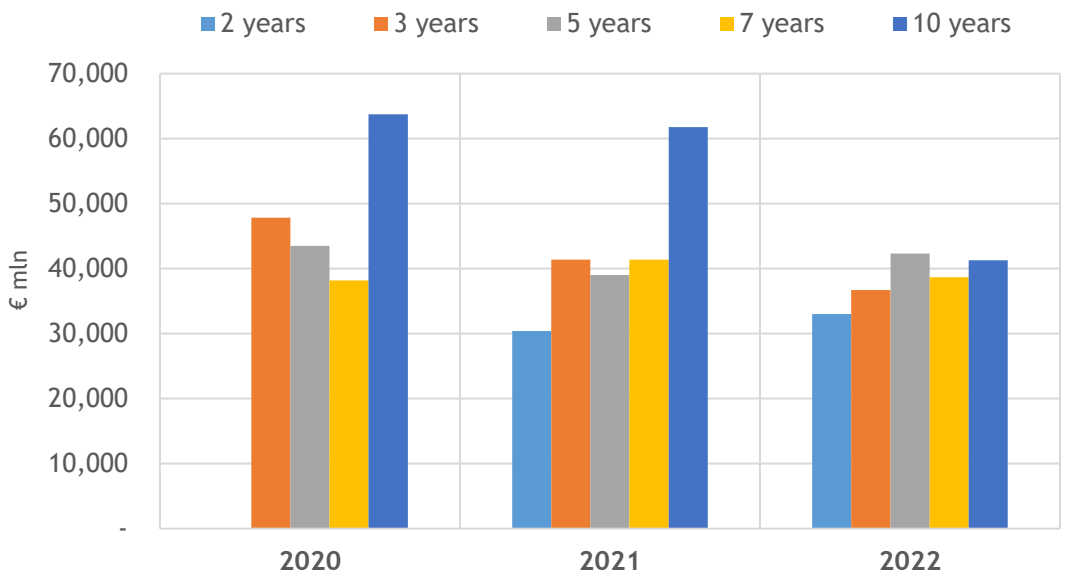
GROSS MARKET ISSUES AT NOMINAL VALUE – BOT (EUR MILLION)



GROSS MARKET ISSUES AT NOMINAL VALUE – CTZ (EUR MILLION)

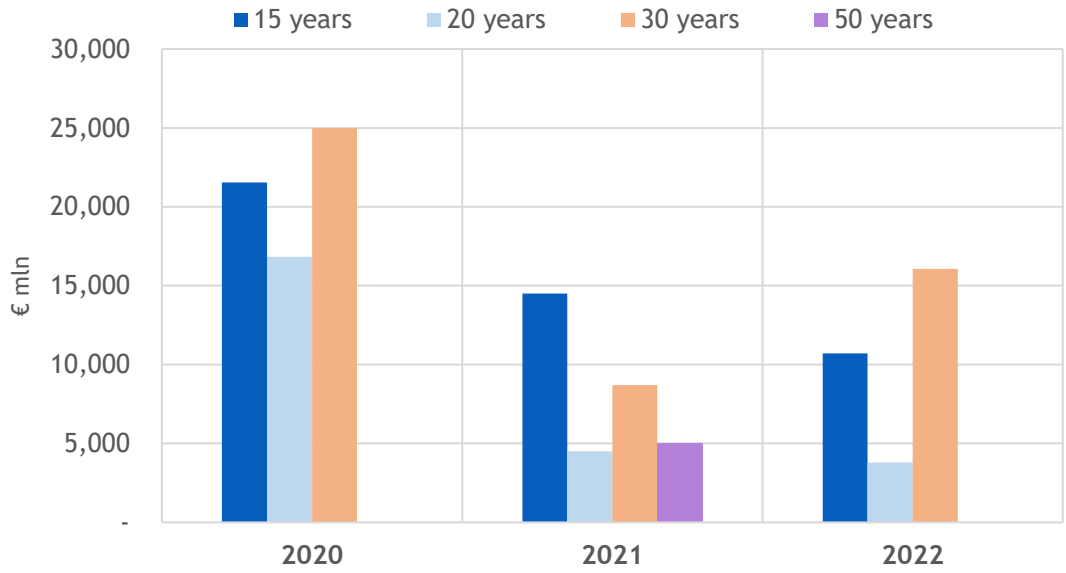


GROSS MARKET ISSUES AT NOMINAL VALUE – BTP WITH MATURITIES UP TO 10 YEARS (EUR MILLION)



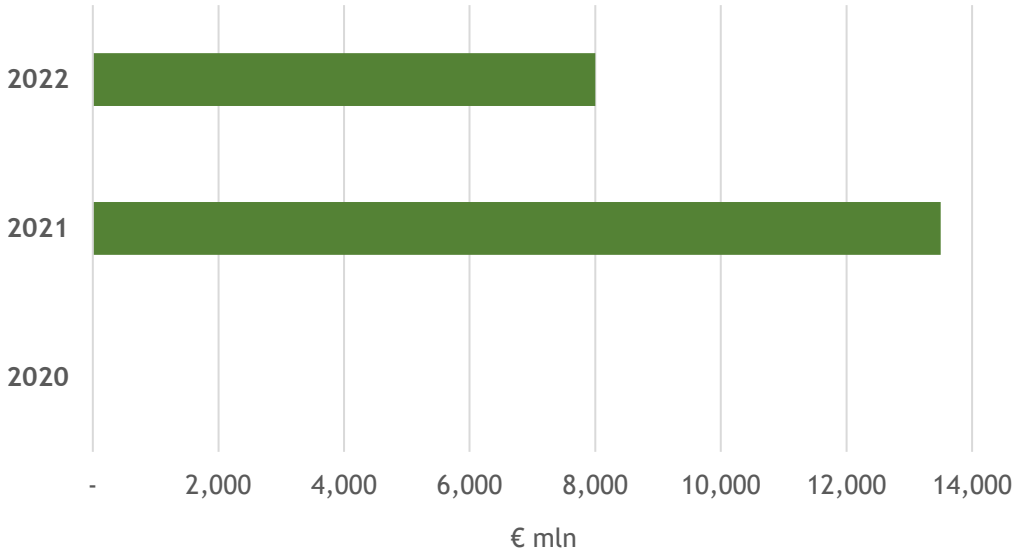
N.B. Off-the-run securities reopenings are not included

GROSS MARKET ISSUES AT NOMINAL VALUE – BTP WITH MATURITIES EXCEEDING 10 YEARS (EUR MILLION)

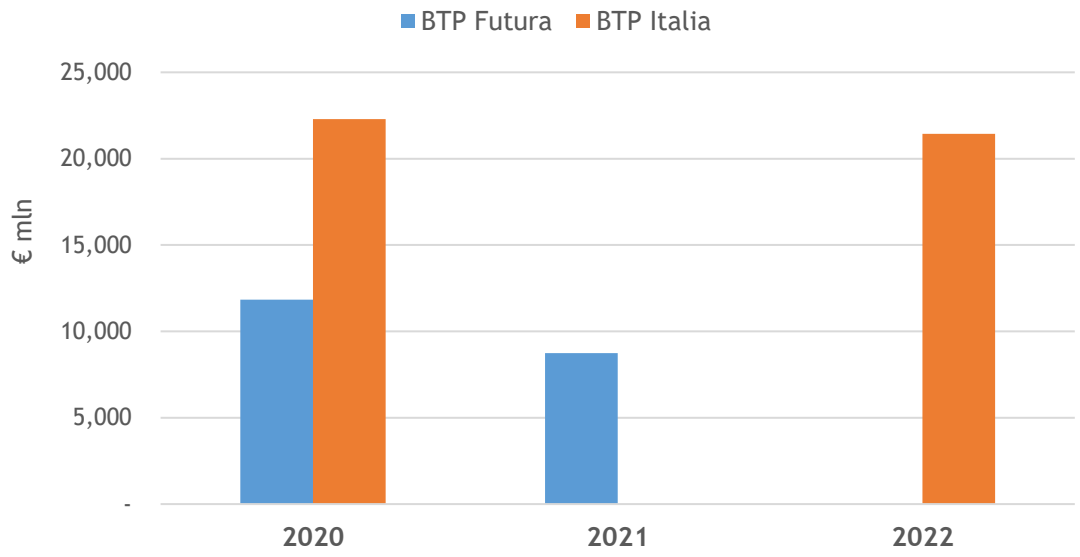


N.B. Off-the-run securities reopenings are not included

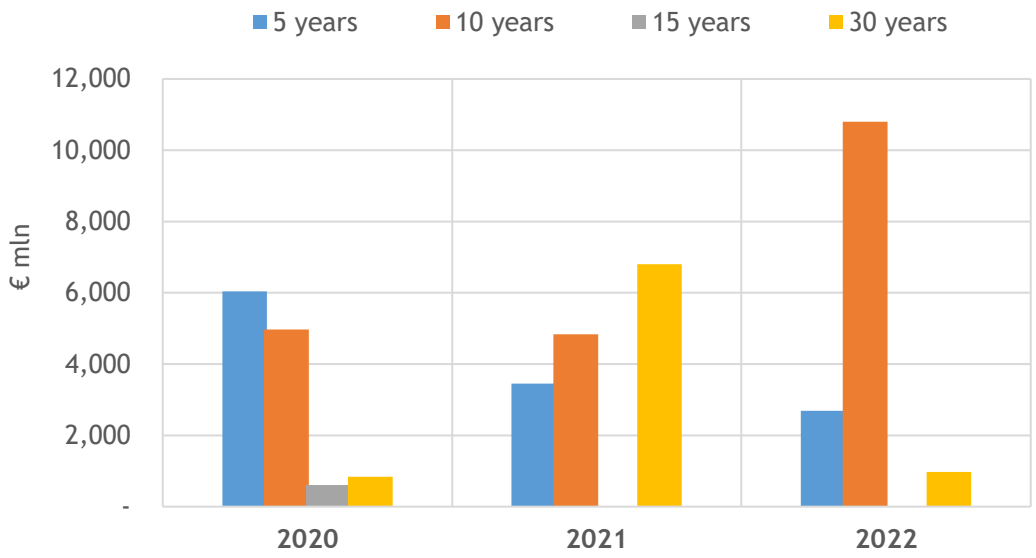
GROSS MARKET ISSUES AT NOMINAL VALUE – BTP GREEN (EUR MILLION)



GROSS MARKET ISSUES AT NOMINAL VALUE –RETAIL BONDS (EUR MILLION)



GROSS MARKET ISSUES AT NOMINAL VALUE – BTP€i (EUR MILLION)



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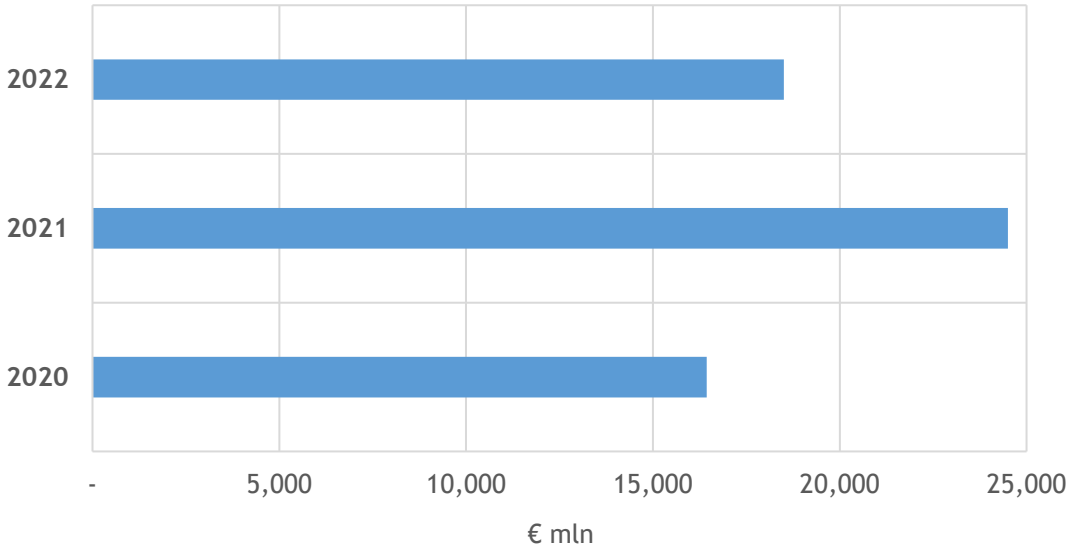
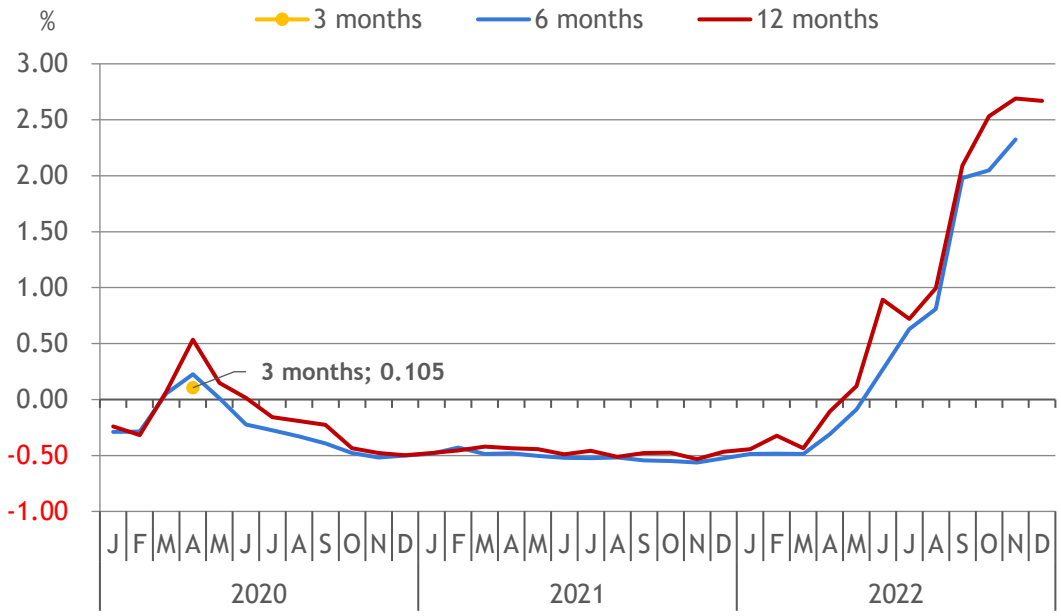
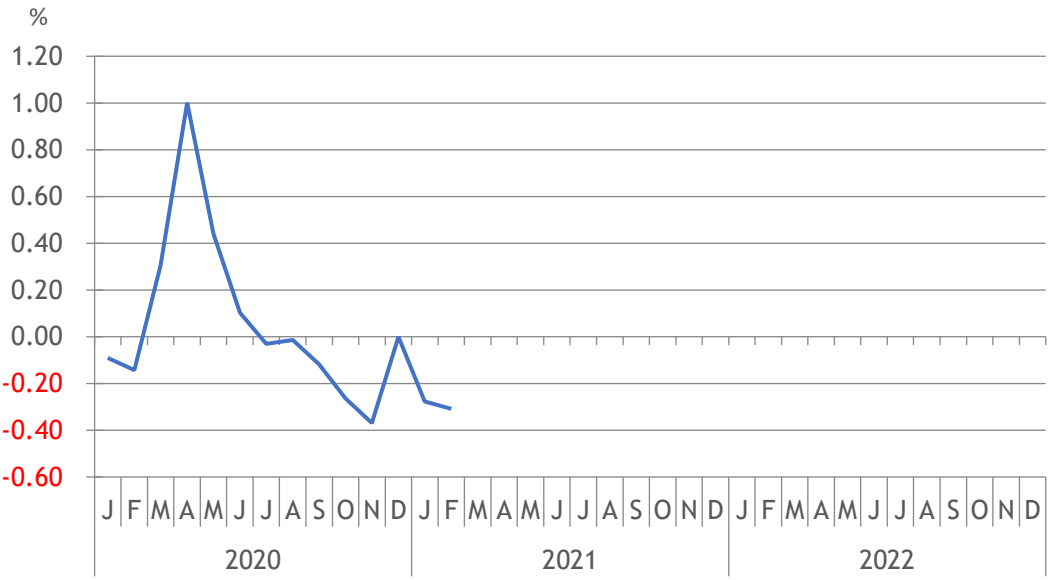


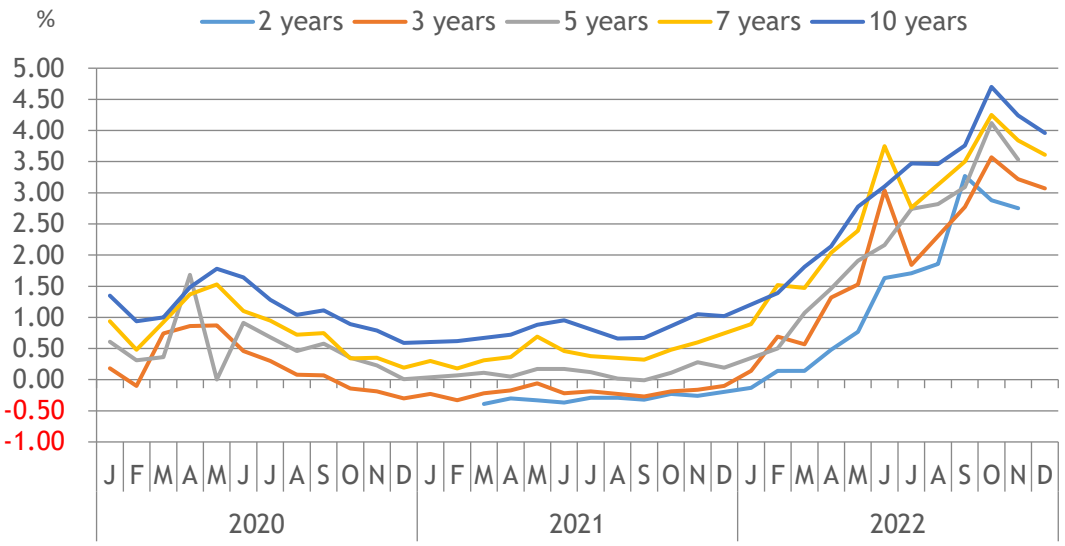
GROSS COMPOUND YIELDS ON GOVERNMENT BOND ISSUES (MONTHLY WEIGHTED AVERAGES) - BOT



GROSS COMPOUND YIELDS ON GOVERNMENT BOND ISSUES (MONTHLY WEIGHTED AVERAGES) – CTZ

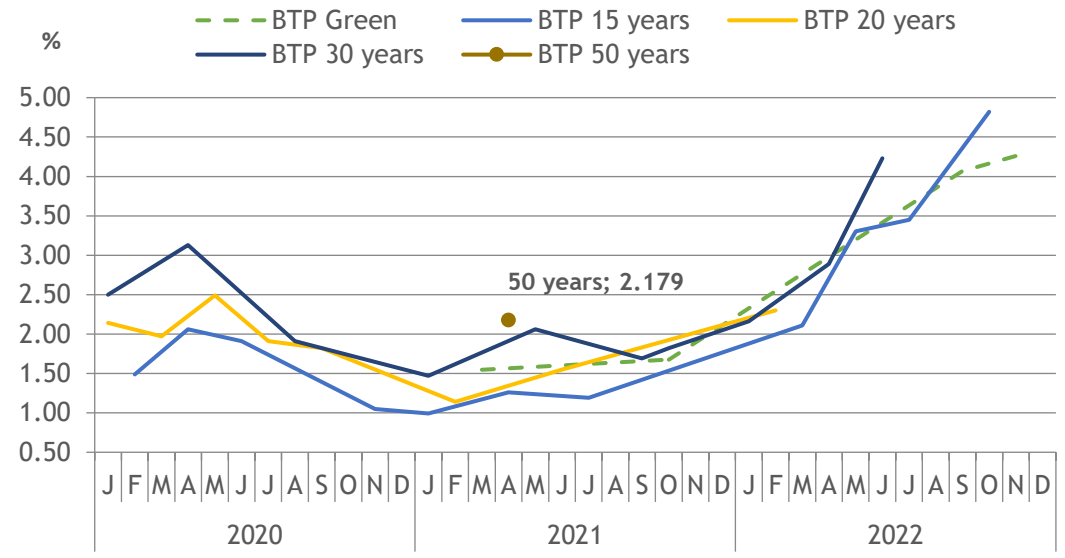


GROSS COMPOUND YIELDS ON GOVERNMENT BOND ISSUES (MONTHLY WEIGHTED AVERAGES) – BTP WITH MATURITIES UP TO 10 YEARS



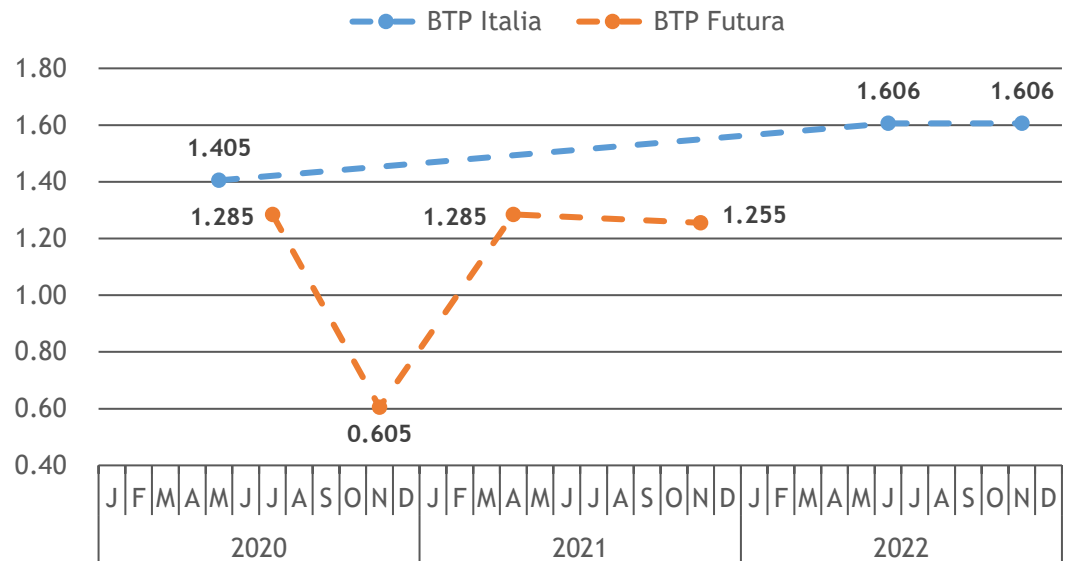
N.B. Off-the-run securities reopenings are not included

GROSS COMPOUND YIELDS ON GOVERNMENT BOND ISSUES (MONTHLY WEIGHTED AVERAGES) – BTP WITH MATURITIES EXCEEDING 10 YEARS

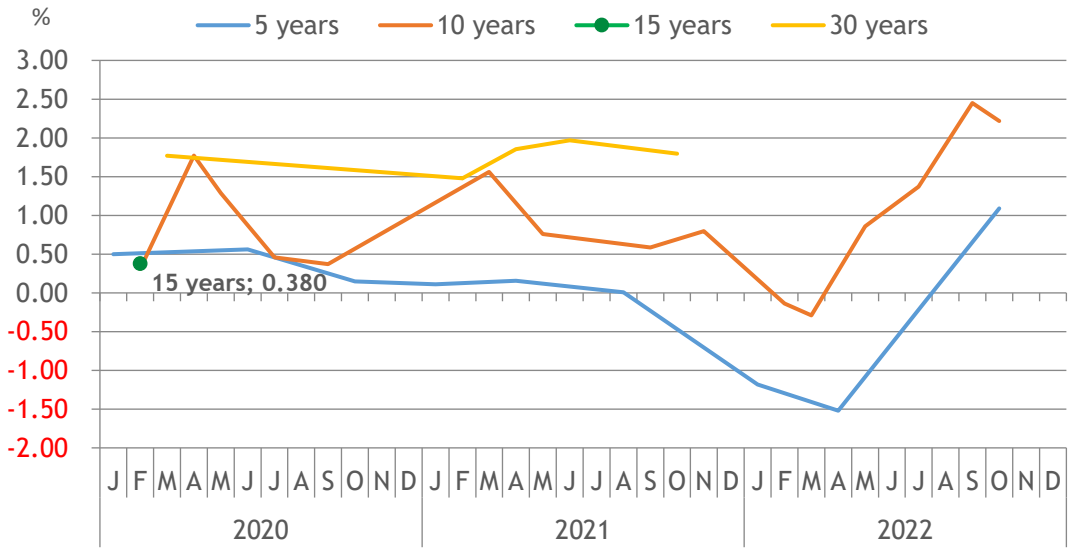


N.B. Off-the-run securities reopenings are not included

GROSS COMPOUND YIELDS ON GOVERNMENT BOND ISSUES (MONTHLY WEIGHTED AVERAGES) – RETAIL BONDS

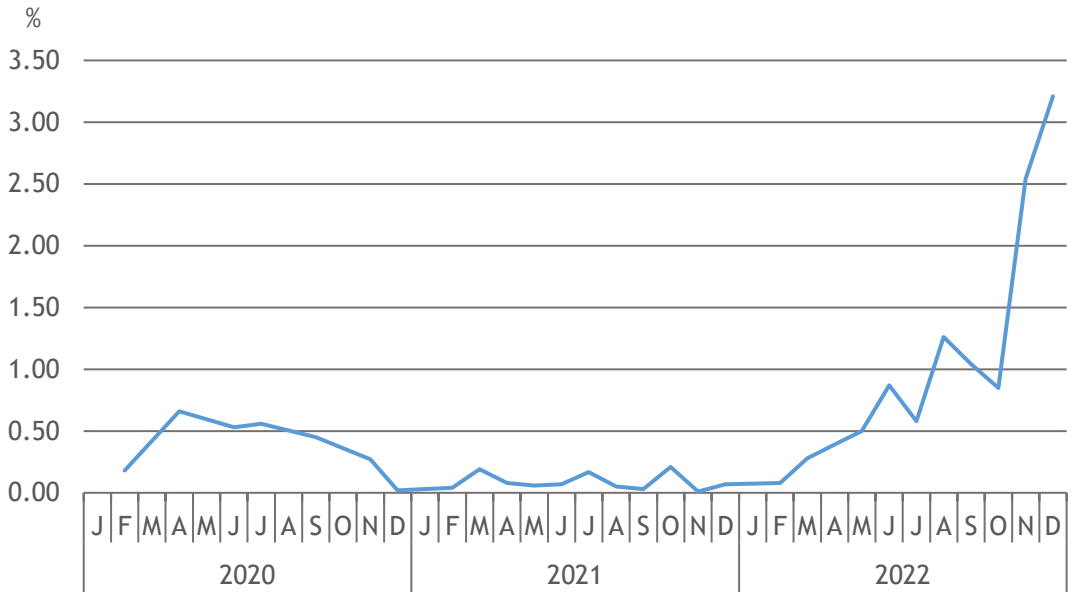


GROSS COMPOUND YIELDS ON GOVERNMENT BOND ISSUES (MONTHLY WEIGHTED AVERAGES) – BTPCi

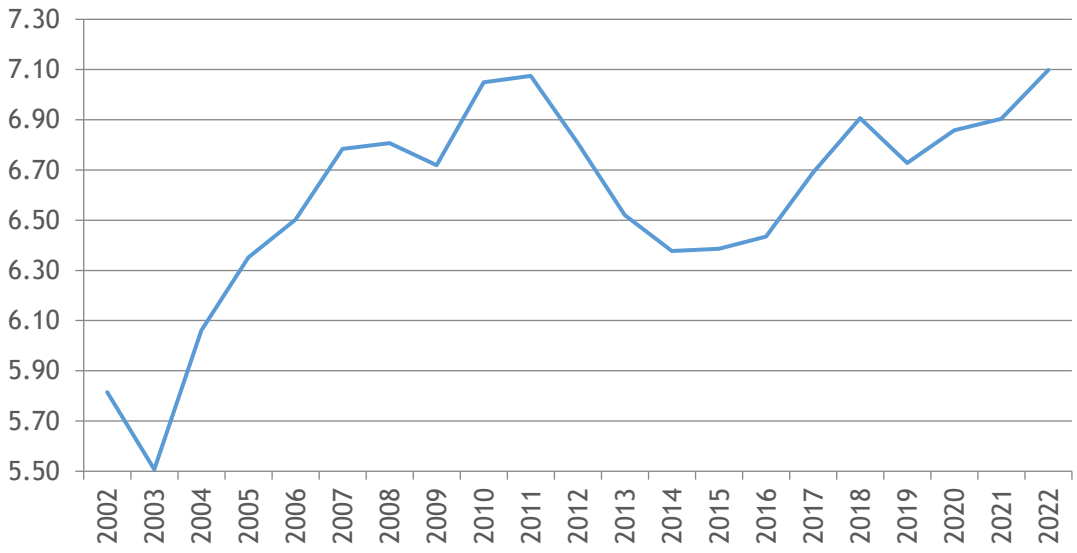


N.B. Off-the-run securities reopenings are not included

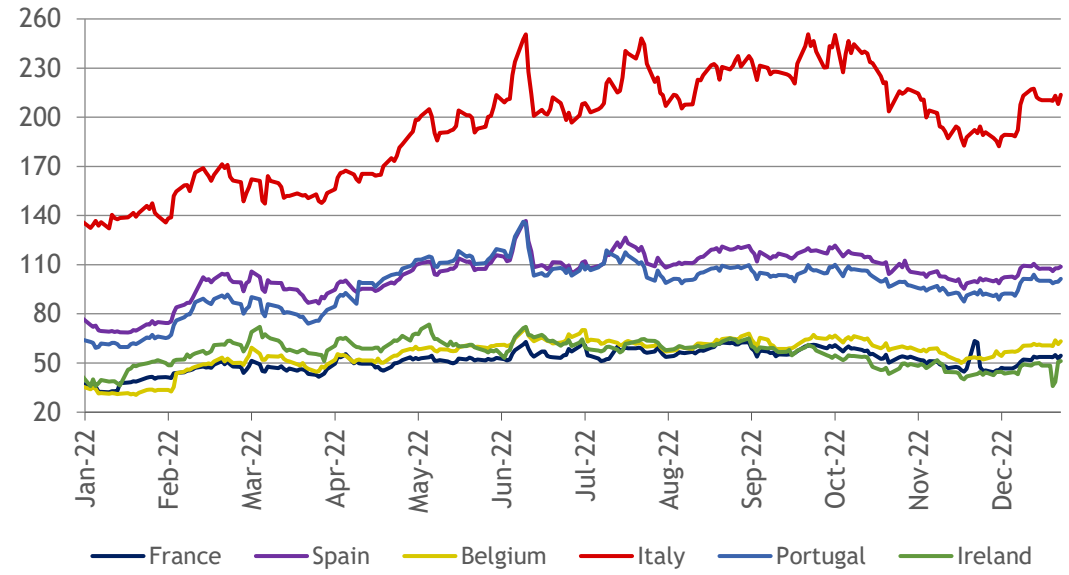
GROSS COMPOUND YIELDS ON GOVERNMENT BOND ISSUES (MONTHLY WEIGHTED AVERAGES) – CCTEU



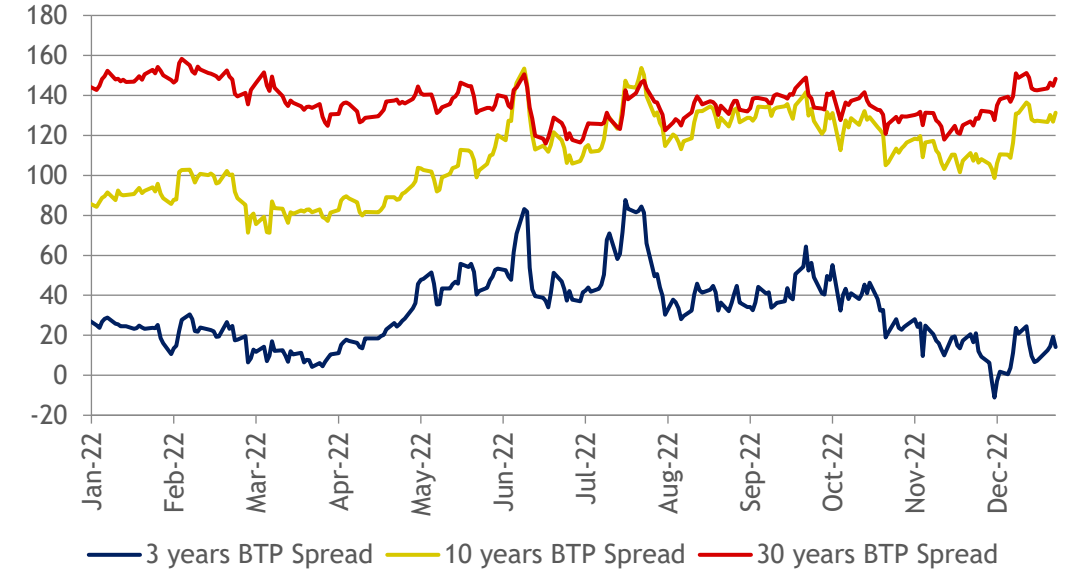
WEIGHTED AVERAGE RESIDUAL MATURITY OF GOVERNMENT BOND (YEARS)



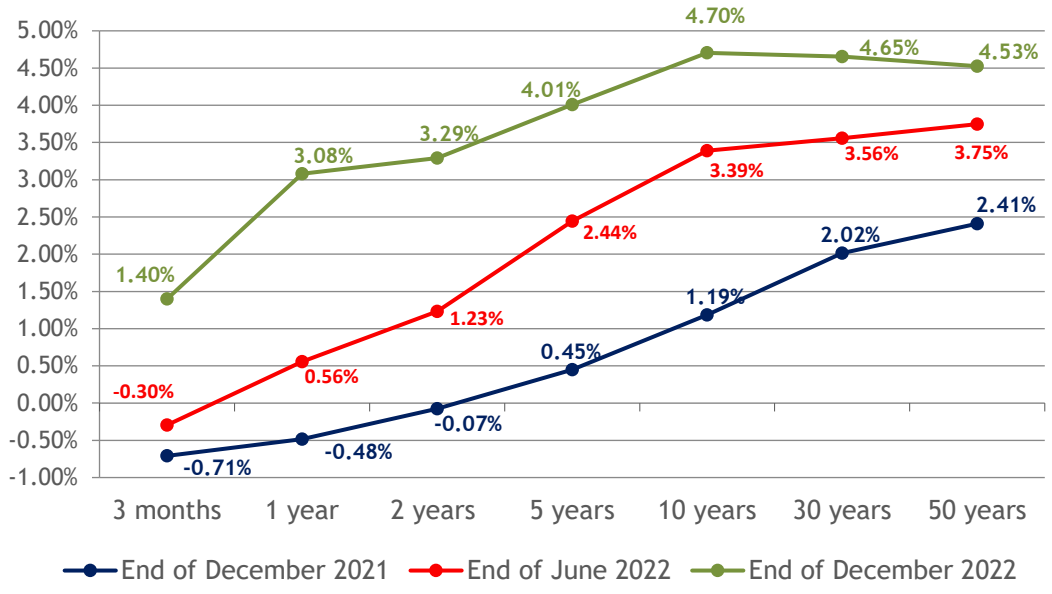
EURO AREA 10-YEAR BENCHMARK SPREADS OVER BUND (BASIS POINTS)



ASSET *SWAP* SPREAD (BASIS POINT)



SECONDARY MARKET YIELD CURVE



MINISTERO DELL'ECONOMIA E DELLE FINANZE