



BELGIAN
DEBT
AGENCY

Annual report 2022

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FOREWORD

BY MR. VINCENT VAN PETEGHEM

DEPUTY PRIME MINISTER AND MINISTER OF FINANCE



I am delighted to present the annual report of the Belgian Debt Agency for the year 2022. In 2022, for the first time since many years, war broke out again in Europe, causing a great deal of uncertainty and unrest. Inflation, which was already increasing at the end of the year 2021, has risen sharply under the influence of soaring energy prices, and both the federal and regional governments have stepped in to support households and businesses.

The Federal State budget deficit has nevertheless improved by 1.6 percentage point compared with 2021, to 3.9% of the GDP. The economic growth was almost halved, but still reached 3.2%, with employment stable throughout the year. This growth, with a high inflation, allowed the Belgian debt ratio to fall for the second year running, by 4.0 percentage points to 105.1%.

Due to the high inflation, the European Central Bank (ECB) raised its interest rates for the first time since July 2011. Besides, at the end of the year 2022, the ECB announced a gradual reduction in its portfolio of financial assets, including government bonds, for the start of the year 2023. The result was a sharp rise in short and long-term interest rates on the market.

This 36th report on the federal state's debt examines the financial transactions carried out by the Agency in this difficult context. The Agency issued long-term loans, among which OLO, for a total amount of EUR 44.24 billion. The issue of State notes for EUR 109 million made up the final part of the issues.

The duration of these issues was 16.51 years, which is again particularly high. Admittedly, the Agency had to accept higher interest rates given the market context, but with an average interest rate of just 1.696%, it was still possible to carry out the issues on very attractive terms. The interest costs on the federal debt reached a new all-time low of EUR 6.86 billion, that is to say 1.24% of the GDP.

It is also worth highlighting in this report the resumption of the State notes issues, the flexibility and transparency of the financing plan, the first report on organisational management (internal control) and the end of the quantitative easing of the European Central Bank.

I would therefore like to conclude this foreword by expressing my sincere appreciation and congratulations to the Federal Debt Agency. Once again, it has demonstrated very great expertise and has brilliantly fulfilled its debt management mission in difficult circumstances.

A handwritten signature in black ink, appearing to read 'Vincent Van Peteghem', written in a cursive style.

*The Deputy Prime Minister and Minister of Finance,
Vincent VAN PETEGHEM*

THE PUBLIC DEBT IN FIGURES

(in EUR billion or in % at the end of December)

I. AMOUNTS OUTSTANDING OF THE MAIN FEDERAL STATE DEBT INSTRUMENTS	2021	2022
1. Gross federal debt outstanding	453.25	470.61
• Granting of Treasury credits to entities of the public sector	2.20	2.13
• Treasury's management transactions	0.54	1.04
• Portfolio securities (Management transaction)	4.75	3.53
• Portfolio securities (SACA securities ¹)	0.00	0.00
• Short term investments SACA	0.02	0.02
• Reserve for investments (NBB)	5.43	3.57
Net federal debt outstanding	440.31	460.32
2. Debt instruments		
A. Instruments in EUR (after swaps):	453.25	470.61
• Linear Bonds (OLO)	390.08	403.88
• Treasury Certificates	30.10	33.74
• Euro Medium Term Notes (EMTN) in EUR	5.57	5.38
• <i>Schuldscheine</i>	1.93	1.93
• State notes	0.08	0.17
• <i>Euro Commercial Paper</i> (ECP)	0.00	2.06
• Private, interbank and miscellaneous loans	21.55	19.74
• EMTN issued in currencies	3.14	3.17
• Debt of certain organisations, for which the federal State helps to service the debt	0.77	0.54
As % of the debt in EUR		
• Linear Bonds (OLO)	86.06 %	85.82 %
• Treasury Certificates	6.64 %	7.17 %
• EMTN (EUR + currencies)	1.93 %	1.82 %
• <i>Schuldscheine</i>	0.43 %	0.41 %
• State notes	0.02 %	0.04 %
• Others	4.92 %	4.74 %
B. Instruments in foreign currencies (not swapped in EUR)	0.00	0.00
• Medium- and long-term debt	0.00	0.00
• <i>Euro Commercial Paper</i> (ECP)	0.00	0.00
II. CHANGES IN NET FEDERAL GOVERNMENT DEBT OUTSTANDING OVER THE YEAR	2021	2022
1. Changes in EUR billion	22.69	20.01
• Net balance to be financed	22.48	20.08
• Exchange gain/loss	0.00	0.00
• Interest capitalisation	0.00	0.00

¹ SACA: Administrative departments with autonomous accountancy

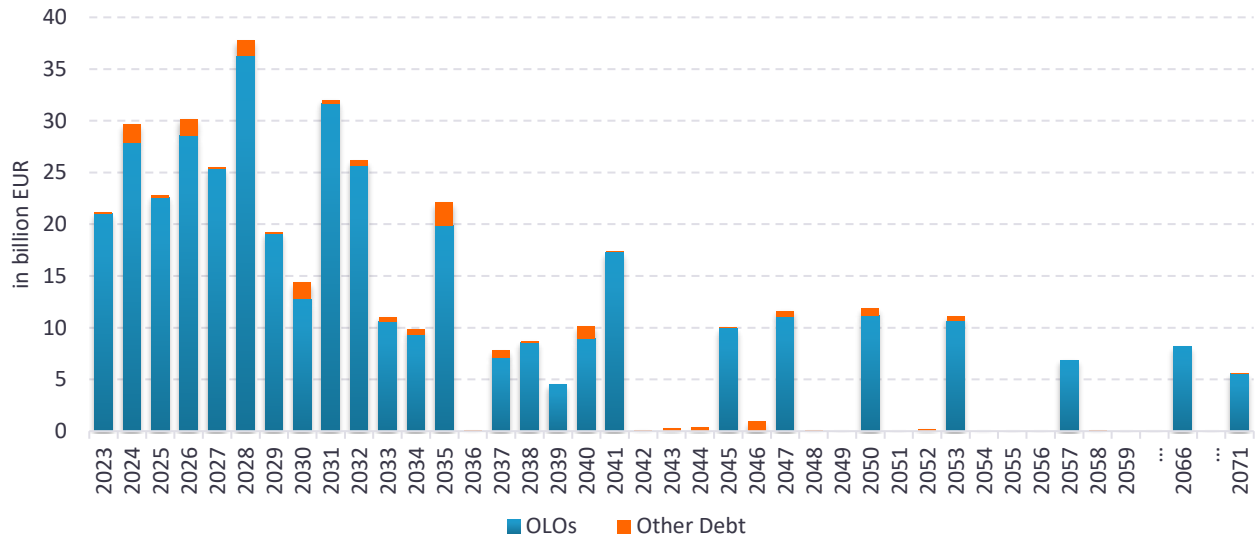
• Debt of certain organisations	0.58	-0.24
• Debt and assets resumption	0.00	0.00
• Granting credits to entities of the public administrations sector	-0.40	0.07
• Miscellaneous	0.03	0.10
2. Change in %	5.43 %	4.54 %
III. CHARACTERISTICS OF THE FEDERAL GOVERNMENT DEBT	2021	2022
1. Rating issued by rating agencies (long term)		
• S&P	AA	AA
• Moody's	Aa3	Aa3
• Fitch	AA	AA
• DBRS	AA (high)	AA
2. Breakdown by currency (after swaps)		
• Debt in EUR	100.00 %	100.00 %
• Foreign currency debt	0.00 %	0.00 %
3. Breakdown by maturity		
• Long and medium term (> 1 year)	90.31 %	89.82 %
• Short term	9.69 %	10.18 %
4. Breakdown by rate		
• Fixed rate	89.85 %	89.35 %
• Variable rate	10.15 %	10.65 %
5. Effective duration of the debt in EUR (in years)	9.90	8.23
6. Weighted average duration of the debt in EUR (in years)	10.08	10.32
7. Federal State interest costs (in EUR billion)		
8. Average weighted interest rate²	1.43 %	1.43 %
IV. TRANSITION FROM FEDERAL DEBT TO GENERAL GOVERNMENT DEBT	2021	2022
1. Federal debt outstanding	453.25	470.61
2. Outstanding debt of other federal entities ³	16.11	18.08
3. Debt of Communities and Regions, local authorities and Social Security	112.42	123.02
4. Consolidation adjustment	-35.18	-36.23
5. Other corrections	1.84	2.16
Consolidated general government debt (1+2+3+4+5)	548.45	577.64
6. Gross Domestic Product (GDP)	502.52	549.46
General⁴ government debt ratio (1+2+3+4+5)/6	109.1 %	105.1 %

² Weighted average interest rate for debt instruments in EUR at the end of the year.

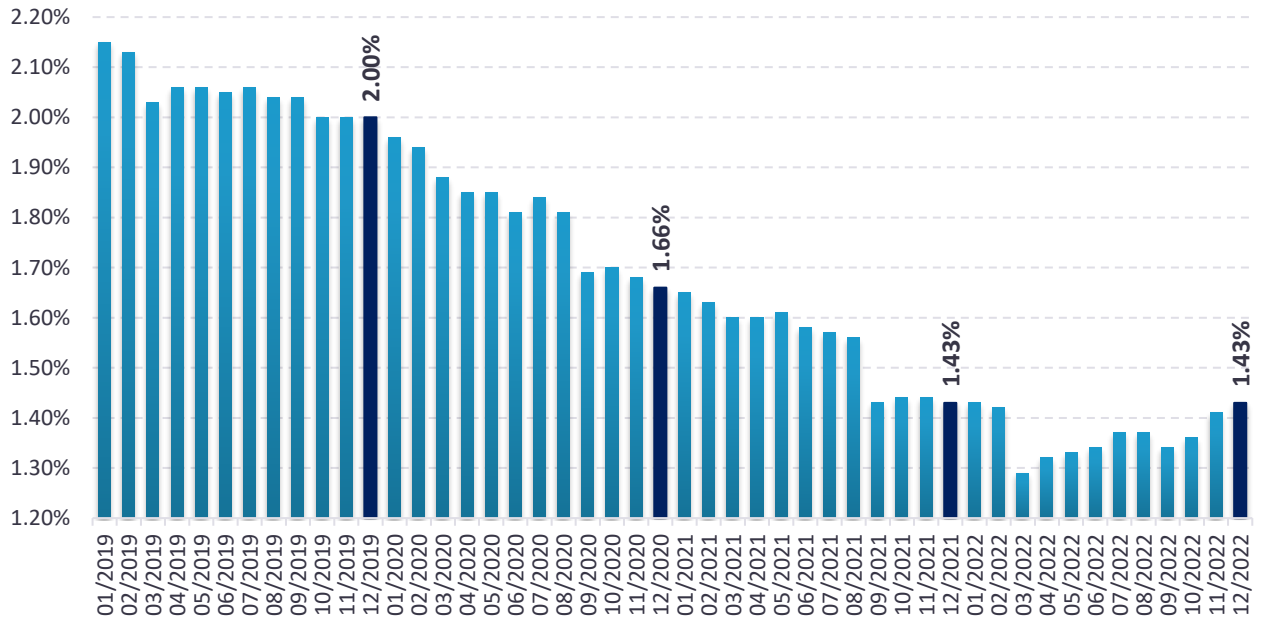
³ Debt represented by financial instruments within the meaning of the Maastricht Treaty.

⁴ The debt ratio is defined as the ratio of gross consolidated public debt to gross domestic product, expressed in percentage points.

Maturity schedule for federal government long-term debt on 31/12/2022



Weighted average actuarial rate of the debt in euro





1. ECONOMIC DEVELOPMENTS AND PUBLIC FINANCES

1.1. ECONOMIC DEVELOPMENTS AND INTEREST RATES

1.1.1. Economic developments

In 2022, we have seen a very high inflation, mainly as a result of the economic recovery following the COVID-19 pandemic and Russia's invasion of Ukraine, which led to a rise in energy costs in general and gas costs in particular.

At the global level, the inflation resulting from several factors according to the countries concerned led to a sharp fall of the economic growth which had been robust in the early months of 2022. Indeed, the inflation has had an impact on both demand (household consumption and private investment) and supply (higher costs, which had a negative impact on the production of certain energy-intensive companies).

However, the global slowdown has been limited, with differences between regions and countries concerned. The global growth has indeed been calculated to +3.4% in 2022, lower than in 2021 (+6%).

United States of America has been the first country to experience an economic recovery after the COVID-19 pandemic, fuelled in part by government measures to support demand, which in turn fuelled inflation. United States of America has also been the first country to experience a slowdown in growth as a result of persistent inflation.

China suffered from the continuation of health measures against the coronavirus while the Russian economy was hit by economic and financial sanctions after Ukraine's invasion.

In the euro area, the economic recovery was supported in the first half of 2022 by an increase in demand and a normalisation of production lines

on the supply side. Subsequently, inflation resulting from the energy price crisis since Russia's invasion of Ukraine slowed down the growth in the euro area, unlike United States of America which was less hit by energy costs given their energy independence. Inflation in the euro area amounted to 8.4% for 2022. The euro area's economy hit by inflation which was eroding household purchasing power and private consumption did not, however, fall into recession; The GDP growth is estimated at + 3.4% in 2022 compared to +5.2% in 2021.

It should be noted that, despite inflation, the global economic slowdown remains limited thanks to the strong performance of labour markets in the advanced economies and the results of household consumption, even if it is declining in some regions.

Adapting the monetary policy in order to fight against inflation without putting too much pressure on demand has led to a revaluation of the price of bonds while sparing the real economy. The American monetary policy tackled inflation more quickly, which was the result of domestic demand factors, while the European Central Bank faced with inflation resulting primarily from a supply shock, took longer to tighten its monetary policy.

With an inflation estimated at 10.3 % Belgium was also affected by rising costs, but without this leading to a recession. The lifting of health measures linked to the COVID-19 crisis in 2021 has in fact generated a clear recovery in 2022, mainly supported by market services. However, this upturn slowed in the second half of the year because of Russia's invasion of Ukraine and financial as well as economic sanctions against Russia, without forgetting higher energy and input costs.

After a slight recovery at the end of the year, Belgian economic growth finally amounted to 3.2 %.

The Belgian economy was supported by household consumption, which benefited from the wage indexation mechanism, and by the labour market, which had a positive effect on household purchasing power. Employment growth is therefore estimated at 100,000 new jobs

1. ECONOMIC DEVELOPMENTS AND PUBLIC FINANCES

in 2022, while the unemployment rate has risen slightly to 5.8% in 2022 compared to 5.7% in 2021.

Private investment, on the other hand, fell due to rising costs, which had the effect of postponing companies' investment projects.

Although positive, the net contribution of exports to GDP growth in 2022 was very small (0.3 %).

As far as public finances are concerned, the budget deficit in Belgium continued to fall in 2022 following the lifting of health measures linked to the COVID-19 crisis. It could have fallen further had it not been for the Russian invasion of Ukraine, which forced the public authorities to support households and businesses in response to the resulting energy crisis. The Belgian budget deficit has therefore decreased from 5.5% to 3.9% of GDP between 2021 and 2022. The debt ratio of Belgium has decreased from 109.1% to 105.1 % of the GDP during the same period.

1.1.2. Evolution of interest rates

After years of accommodating monetary policy aimed at supporting economies by ensuring favourable financing conditions, central banks decided in 2021 to tighten their monetary policies with a view to combating widespread inflation while taking care not to weigh too heavily on demand.

The Federal Reserve in the United States started the process of normalising its monetary policy by reducing its asset purchases in November 2021 and then cancelling them. In March 2022, the Federal Reserve started to increase the range of its key interest rate which, after successive increases, has risen from 0.00-0.25% to 4.25-4.50% at the end of December 2022.

The European Central Bank started this process of normalising its monetary policy a little later by announcing at the end of 2021 that it would

progressively cancel the asset purchases it had been making as part of its quantitative easing policy. As for its key interest rates, the ECB started to increase them again in July 2022. After several successive increases, the deposit facility rate has increased to -0.5% in July to 2% at the end of December 2022.

These rate increases carried out within the framework of the monetary policy have generated yield rises on sovereign bonds. These yields were characterised by a certain degree of volatility throughout the year, due to uncertainties over inflation and the economy in general. Long-term interest rates rose sharply throughout the year, in anticipation of central bank rate rises. Fears of recession caused them to fall temporarily in July and November.

In the United States, the 10-year yields increased in 2022 from 1.52% in January to 3.90% in December.

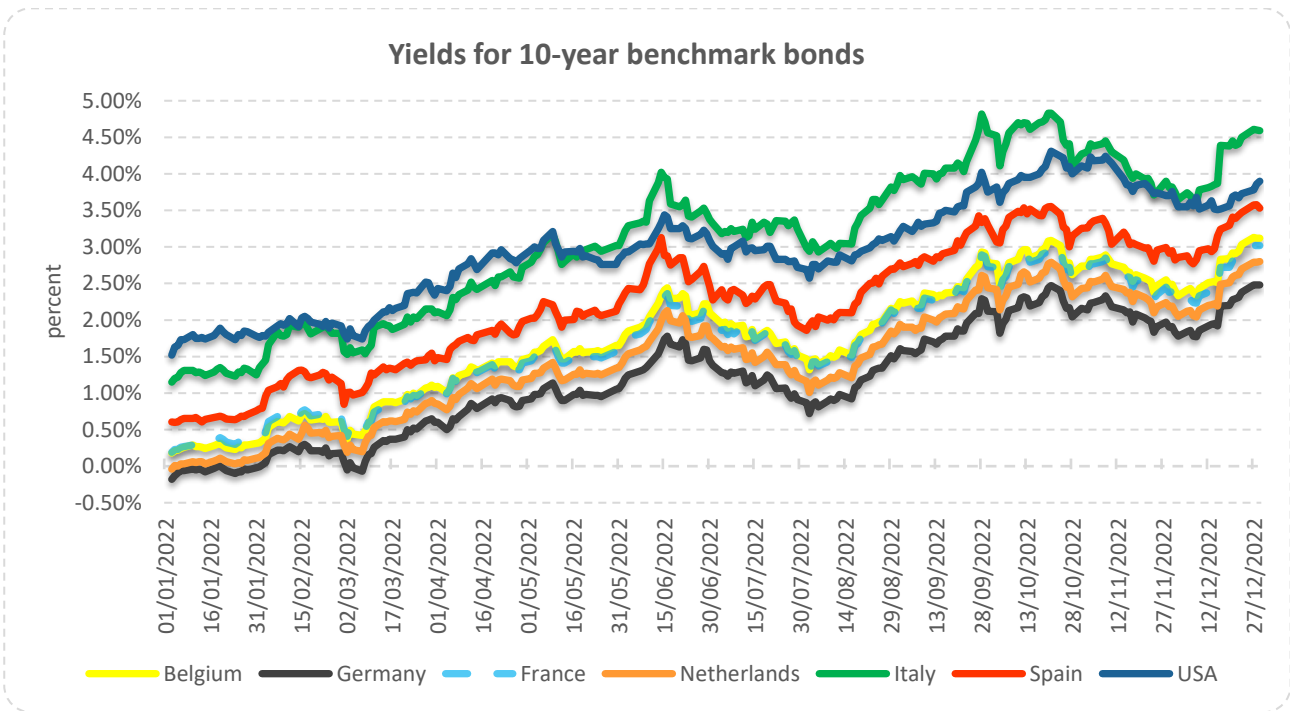
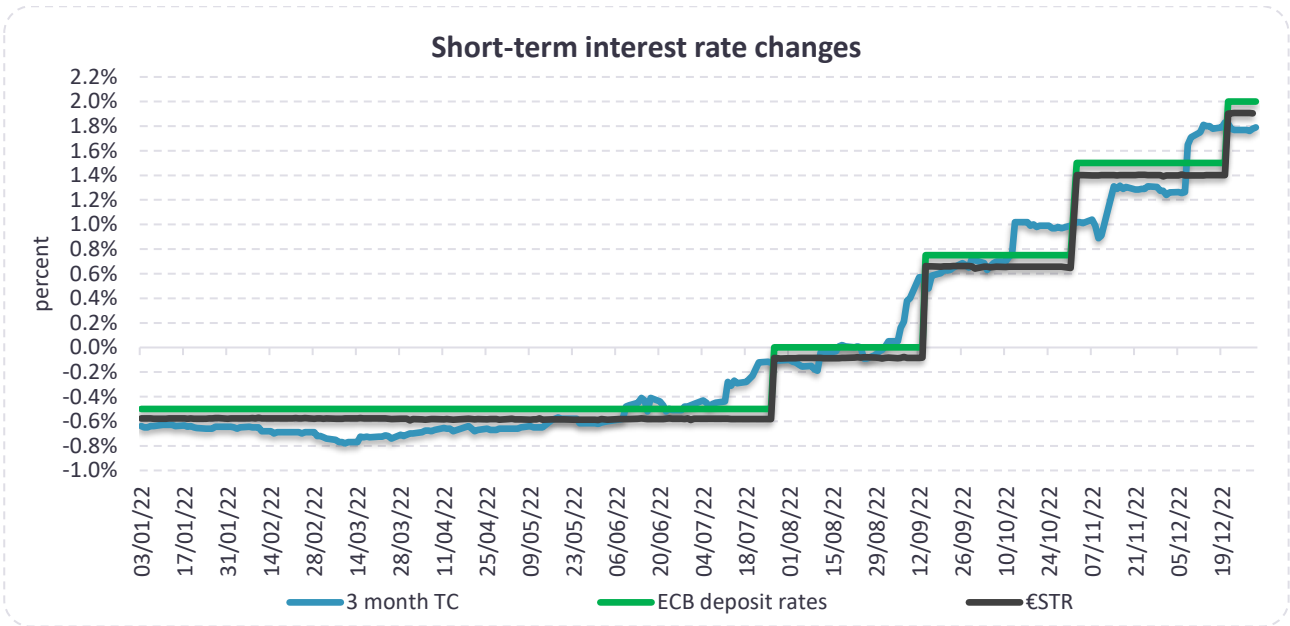
In the euro area, the general development of interest rates of the State notes followed the same upward trend than in the United States, while the vast majority of countries remain at lower levels.

In Belgium, short-term rates remained negative till the middle of the third quarter. The 3-month Treasury certificate rates therefore fell from -0.640% in January to -0.020% at the end of August. It keeps on increasing to 1.79% at the end of December 2022.

Long-term sovereign Belgian rates showed a trend similar to the euro area in 2022. The rate of the 10-year OLO benchmark rose from 0.18 % at the start of January to 0.61 % at the end of February. As from March, it rose sharply to 2.10% at the end of June. It then fell in July before rising again at the end of the year, from 1.47% at the end of August to 3.12% at the end of December 2022.

The spread between German and Belgian 10-year benchmark bonds increased from 36 basis points at the start of the year to 64 basis points at the end of 2022.

1. ECONOMIC DEVELOPMENTS AND PUBLIC FINANCES



1. ECONOMIC DEVELOPMENTS AND PUBLIC FINANCES

1.2. DEVELOPMENTS IN PUBLIC FINANCES

According to the figures published by the National Accounts Institute (NAI) on April 20th 2023, the financing deficit of the Belgian public authorities as a whole increased to 3.9% of GDP in 2022, that is to say EUR 21.3 billion. The net financing balance improved compared to the previous year, when a deficit of 5.5 % of GDP had been recorded. In absolute terms, the improvement amounts to EUR 6.2 billion.

Revenue rose by EUR 22.0 billion while expenditure increased by EUR 15.8 billion. Compared to the nominal evolution of GDP, the increase in revenue and expenditure is smaller, so that their ratios as a percentage of GDP have fallen (respectively 0.3 and 1.9 percentage point of GDP).

The improvement in the financing balance is due to the continued recovery in economic activity following the recession of 2020 and despite the energy crisis. According to the first estimate of the annual accounts published on April 20th 2023, nominal GDP increased by 9.3% in 2022 compared to 2021. Besides the various levels of authorities have started to gradually reduce the discretionary support measures in the fight against the pandemic. The favourable budgetary impact of the latter (EUR 9.4 billion) was greater than the impact of the support measures introduced within the context of the energy crisis (- EUR 5.9 billion).

At the time of the publication of stability programmes 2021-2024 and 2022-2025, the outlook for economic recovery was less optimistic and surrounded by considerable uncertainty, while inflation forecasts proved to be lower than actual. The financing deficit in 2022 was lower than expected in both versions of the stability programme (respectively 4.5 and 5.2% of GDP).

The general escape clause, which was activated at European level in March 2020 and is in force till 2023, allows Member States to temporarily deviate from the requirements of the European budgetary framework. The structural balance established as budgetary adjustment indicator in

the preventive part of the European Stability and Growth Pact was not considered as appropriate in these circumstances, and the expenditure criterion was adapted and supplemented to estimate the budgetary orientation. Temporary measures linked to the pandemic have therefore been excluded and significant transfers from the EU budget have been included in the expenditure aggregate concerned. Besides, changes in current primary expenditure and investment financed at national level have been taken into account.

The Council recommendation issued to Belgium for 2022 consists of preserving nationally financed investment, using the Recovery and Resilience Facility and leading a cautious fiscal policy, among others by limiting the growth on net current expenditure as soon as macroeconomic conditions allow, while boosting investment.

Within this context, the stability programme 2022 provided for an indicative trajectory including an additional structural effort (with a fixed and variable part for Entity I of respectively 0.2 and 0.3 percentage point of GDP) to be carried out in 2022, pursuant to the federal government agreement of October 2020 and the draft budget plan for 2022 of October 2021.

1.2.1. Evolution per entity

According to the data of the NAI drawn up on the basis of ESA 2010, the deficit of 3.9% of GDP in 2022 breaks down into a deficit of 2.9% of GDP for Entity I (Federal authorities and Social Security) and a deficit of 0.9% for Entity II (Communities, Regions and Local Authorities).

The balances of local administrations and social security, which showed a surplus in 2021, will show respectively in 2022 a balance and a deficit of 0.3% of GDP. The federal authorities as well as the Communities and Regions have recorded a deficit lower than in 2021, amounting respectively to 2.7% and 0.9% of GDP.

The generation of a financing deficit of social security administrations is mainly due to the

1. ECONOMIC DEVELOPMENTS AND PUBLIC FINANCES

transfers adjustment from the federal authorities (balancing allocations), in particular to recover overpayments from previous years.

In 2022, the financing balance has showed a deficit in all federated entities considered on an individual basis. In terms of GDP and in absolute figures, the balance has however improved for all federated entities, except for the German-speaking Community and the Community Commissions in Brussels. The deterioration in absolute figures as regards the financing deficit of the French Community has been more than compensated by the denominator effect of GDP.

Unlike Entity I and local authorities, the Communities and Regions constitute the only sub-sector for which the revenue ratio has not decreased in 2022 while expenditure ratio has decreased in all sub-sectors.

FINANCING BALANCE REALISATIONS (as % of the GDP) ⁵			
	2021	2022	
	Realisations (ESA)	Estimates (ESA)	Stability programme 2021-2024
Entity I	-3.8	-2.9	-3.8
- Federal authorities	-4.1	-2.7	-
- Social Security	0.3	-0.3	-
Entity II	-1.7	-0.9	-1.3
- Communities and Regions	-1.7	-0.9	-
- Local authorities	0.0	-0.0	-
All public authorities	-5.5	-3.9	-5.2

1.2.2. Revenue and expenditure

Revenue

Total amount of revenue of the public authorities decreased by 0.3 percentage point of GDP to 49.7% of GDP. In absolute figures, revenue increased by EUR 22.0 billion (+8.8 %), but as it

⁵ Figures in accordance with ESA 2010. The figures do not take account of federal prepayments in the context of additional regional percentages, but are based on the actual enlisted percentages.

increased less than GDP, revenue decreased in relative terms compared to GDP.

The decrease is partly due to a decrease in the fiscal and parafiscal revenue ratio (-0.3 percentage point of GDP) while the ratio of other revenue is almost steady.

The decrease in the fiscal and parafiscal revenues results from the decrease in the direct taxes ratio (-0.8 percentage point of GDP). This is due in particular to the measures to reduce VAT rates and excise duties on natural gas, electricity, fuel and diesel used as fuel, which were adopted within the framework of the energy crisis. Conversely, revenues from direct taxes rose by 0.6 percentage point of GDP, mainly due to the direct household taxation thanks to the good performance of the labour market and the late indexation of the tax scales compared with the indexation of the wages. Revenue from the direct taxes on companies have again slightly increased (+ 0.1 percentage point of GDP).

Among other revenue, current transfers and capital transfers received due to European Recovery and Resilience Facility have been charged, pursuant to Eurostat recommendations, in order to cover 76% of eligible expenditure recorded in 2022, either EUR 617.8 million. This partial cover is due to the downward revision of the total budget in June 2022 allocated to Belgium for the period 2021-2026 (from EUR 5.9 to 4.5 billion).

Expenditure

Primary expenditure declined in 2022 (-1.7 point of GDP) to 52.0 % of GDP. The decrease in primary expenditure is mainly the result of the revival of economic activity and the reduction in discretionary measures taken by the various governments in order to deal with the COVID-19 crisis. In total, these measures fell by 1.9 percentage point of GDP to 0.5% of GDP in 2022.

Expenditure on social benefits fell by 0.5 percentage points of GDP. Social benefits in cash

1. ECONOMIC DEVELOPMENTS AND PUBLIC FINANCES

declined (-0.7 percentage point of GDP) as a result of the decrease in expenditure from furlough scheme for wage earners and the bridging right for the self-employed. Social benefits in kind increased as a result of the standard and extended social tariffs granted to certain households for electricity and natural gas.

Subsidies to companies (particularly hospitals and the medical professions) and current transfers to the self-employed and companies (compensatory payments and compensations for nuisance) also decreased. At the same time, transfers to households have increased due to the introduction of "energy" vouchers and the basic flat rate for electricity and natural gas. In total, subsidies and current transfers have decreased by 0.9 percentage point of GDP.

The capital transfers have decreased compared to 2021 (-0.3 percentage point of GDP), the year during the allocations granted by the Walloon Region to compensate the victims of the floods in July 2021 have been charged (around EUR 1.0 billion).

Together with interest costs amounting to 1.5% of GDP in 2022, total expenditure amounts to 53.5% of GDP.

The combination of primary expenditure and revenue as a percentage of GDP resulted in a primary deficit of 2.4% of GDP in 2022 against 3.8% of GDP in 2021. In combination with interest costs, the budget deficit amounts to 3.9 % of GDP in 2022.

REVENUES AND EXPENDITURE OF THE GENERAL GOVERNMENT (AS % of GDP)		
	Realisations 2021	Estimations 2022
Total amount of revenues	49.9	49.7
(Of which fiscal and parafiscal revenues)	43.1	42.8
Others	6.9	6.9
Total amount of expenditure	55.4	53.5
Primary expenditure	53.7	52.0
Interest costs	1.7	1.5
<i>p.m. Covid crisis measures</i>	2.4	0.5

<i>p.m. Energy crisis measures</i>	0.1	1.1
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The **interest costs** still declined by 0.2 percentage point of GDP to 1.5 % of GDP in 2022. In addition to the denominator effect (nominal GDP growth) contributing to the fall in the interest costs ratio, a decline in absolute value of almost EUR 0.1 billion was recorded. The latter results from a decrease in the implicit interest rate that more than compensates the effect of the increase in outstanding debt. The market interest rate on 10-year Belgian government bonds increased to 1.7% as annual average on 2022, after historically negative rates in 2020-2021. However, the rise of the implicit interest rate took place with a time lag, as the long-term securities were still refinanced in 2022 at a lower market rate than the one at which they were issued.

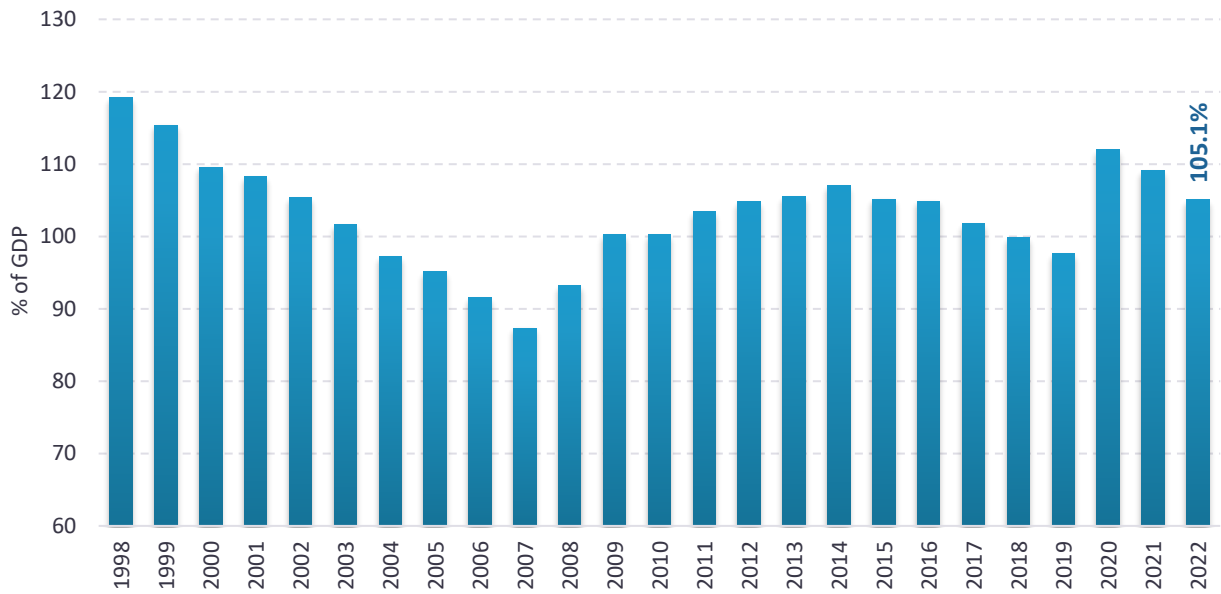
1.2.3. Debt

The debt ratio of the public authorities (Maastricht definition), whose 80% is located in Entity I, decreased by 4.0 percentage points of GDP to 105.1% of GDP at the end of the year 2022. This is the second year in a row that it has fallen back, following an exceptional rise of 14.4 percentage points of GDP in 2020.

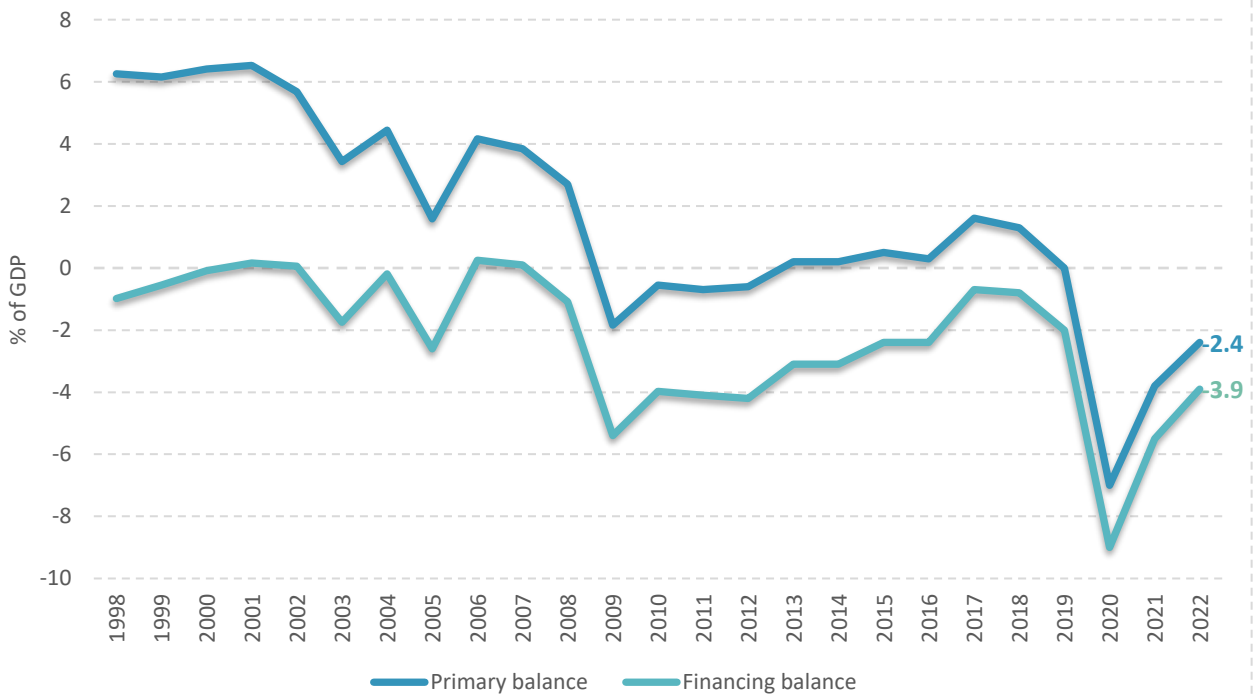
Since the outstanding consolidated public debt increased by EUR 29.2 billion (+5.3 %), the decline in the debt ratio is entirely due to the denominator effect (nominal GDP growth). Endogenous factors had a downward impact on the debt ratio. The impact of the primary financing requirement as a percentage of GDP (+2.4 % of GDP) was thus more than compensated by the effect of the favourable autonomous debt dynamics (-7.8 % of GDP). The interest-growth dynamics turned very negative in 2022 driven by relatively sustained real GDP growth, high inflation and a further fall in the implicit interest rate on outstanding debt. Exogenous factors (stock-flow adjustments) had an increasing effect on the debt ratio (+ 1.5% of GDP). These include the net acquisition of financial assets and positive adjustments that were somewhat moderated by negative statistical differences.

1. ECONOMIC DEVELOPMENTS AND PUBLIC FINANCES

Trend in general government debt ratio



Trend in general government primary balance and financing balance



1. ECONOMIC DEVELOPMENTS AND PUBLIC FINANCES

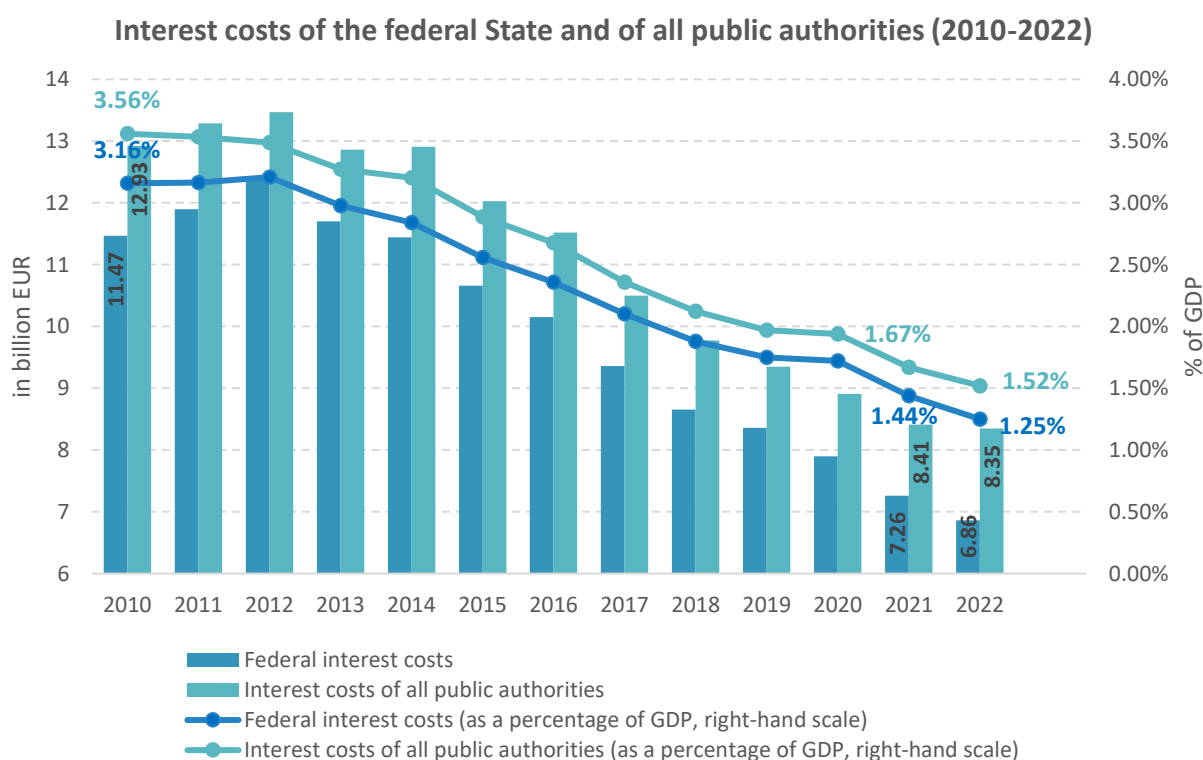
1.2.4. Evolution of interest costs on public debt

In 2022, the fall in interest costs on public consolidated debt amounted to 0.15 percentage point of GDP. In nominal terms, the interest costs amount to EUR 8.35 billion, that is to say a decline of some EUR 60 million.

At the federal level, the interest costs have also decreased to 1.25% of GDP. Therefore, they decreased by 0.19% of GDP, which corresponds to a nominal decrease of some EUR 400 million, to EUR 6.86 billion.

The fall in interest costs was slightly less marked than in 2021, but the interest costs of the federal government and the federal authorities reached a new record low. It is remarkable that both the federal and regional governments have maintained the average maturity of their debt at a very high level. For instance, the average period of the debt of the federal government is now of 10.32 years. Therefore, the very long-term and long-term debt issue has in no way slowed the decline in interest costs.

The Belgian Debt Agency issued in 2022 loans for an average period of 16.51 years, which is historically the third highest result. The average interest rate obtained on these loans was 1.695%. In relative terms, that's a lot more than in previous years, but it's still very low by historical standards.



1. ECONOMIC DEVELOPMENTS AND PUBLIC FINANCES



2. FINANCING POLICY

2.1. FINANCING REQUIREMENTS AND RESOURCES

The Belgian Debt Agency had estimated gross financing requirements for 2022 at EUR 48.28 billion. In the end, they were EUR 1.35 billion higher, at EUR 49.63 billion, mainly because the cash shortage of the federal government amounted to EUR 20.08 billion, that is to say EUR 1.74 billion more than forecast. However, this cash deficit is some EUR 2.40 billion lower than the 2021 figure of EUR 22.48 billion.

The reimbursement of medium- and long-term debt maturing in 2022 is the largest component of financing requirements, with an amount of EUR 27.96 billion. This was almost in line with the expected value of EUR 27.59 billion (as slightly less debt was bought back in the second half of December 2021 than expected, the amount to be repaid in 2022 had to be increased accordingly). In

2022, less debt (maturing in 2023) was also bought back than expected: the amount was EUR 1.59 billion, compared with the expected EUR 1.84 billion.

Other financing requirements, estimated at EUR 0.50 billion and consisting of options to be exercised by investors, did not arise.

The Agency kept to its initial plan in terms of total medium- and long-term issues. In fact, with an issue amount of EUR 44.24 billion, the planned amount was only exceeded by EUR 0.04 billion. The linear bonds (OLO) played an even more important role than expected, as they were the Agency's cheapest source of financing throughout the year. Indeed, the Agency only issued Euro Medium Term Notes (EMTN) or Schuldscheine if their cost is less than or at least equal to that of the OLO having similar characteristics. Therefore, EUR 44.13 billion OLO have been issued and the counter remained at zero for EMTN and Schuldscheine. However, the Agency re-issued State notes in 2022 for an issued amount of EUR 0.11 billion, after a three-year break.

TREASURY FINANCING IN 2022 (IN EUR BILLION)		
	2022 Funding plan	Realisation as of 31.12.2022
I. Gross financing requirements	48.28	49.63
■ Federal State budget deficit	18.34	20.08
■ Debt maturing in 2022	27.59	27.96
■ Prefinancing of securities maturing in 2023 and later	1.84	1.59
■ Other financing requirements	0.50	0.00
II. Financing means (long and medium-term)	44.20	44.24
■ OLOs	41.20	44.13
■ Euro Medium Term Notes & Schuldscheine	3.00	0.00
■ State notes	0.00	0.11
■ Other	0.00	0.00
III. Net change in short-term foreign currency debt	0.00	0.00
IV. Change in outstanding Treasury Certificates stock	2.00	3.65
V. Net change in other short-term debt and financial assets	2.08	1.74

N.B. : The total amount may not correspond to the sum of the components, due to rounding up.

2. FINANCING POLICY

2.2. GENERAL GUIDELINES AND CONTROL OF RISKS

2.2.1. Refinancing and rate refixing risks - Average period

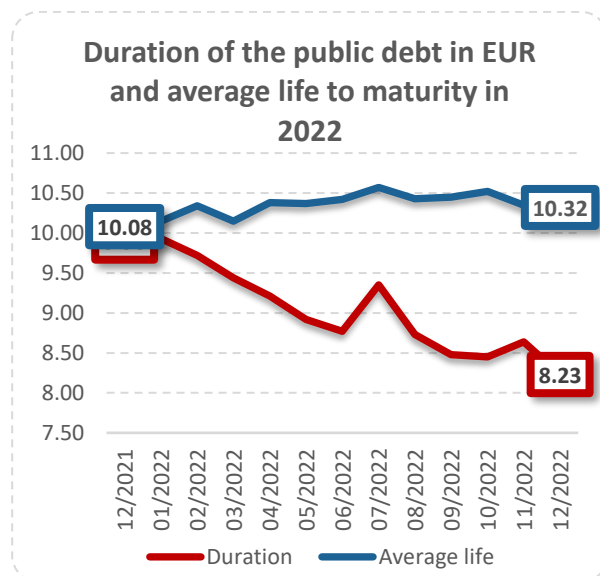
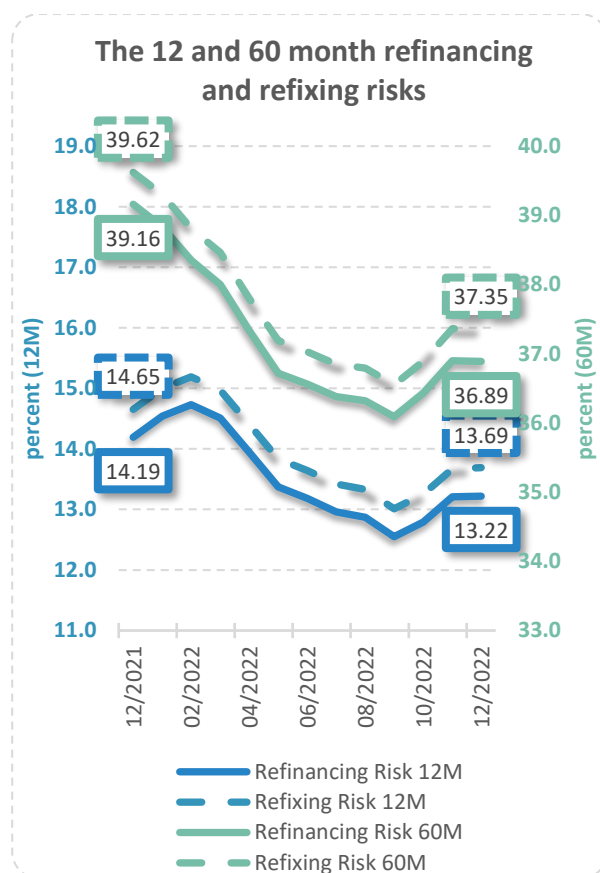
The Minister of Finance had left the risk limits in the 2022 General Guidelines unchanged compared with 2021.

The 12-month refinancing risk must be again limited to 17.50%. A similar limit applied to the 12-month refixing risk. Besides, the 60-month refinancing and refixing risks must be limited to 42.50%. And a minimal value of 9.25 years has again been set for the average period of the debt portfolio (in 2021, 9.25 years meant an additional increase of 0.25 years compared to 2020).

At the start of 2022, refinancing and refixing risks were already well lower than these limits. For instance, the refinancing risk in December 2021 amounted to 14.19%. The refixing risk amounted to 14.65% for this month. Besides, the 60-month refinancing and refixing risks were respectively recorded at 39.16% and 39.62%. Besides, during 2022, all risks still decreased. At the end of the year, the two 12-month risks were 13.22% and 13.69%. The 12-month risks therefore fell by around one percentage point. The 60-month risks even fell by more than two percentage points, to 36.89% and 37.35% respectively.

The average period, which at 10.08 years at the end of 2021 was already well above the minimum value of 9.25 years, increased again during 2022 to reach 10.32 years, the highest period ever achieved at the end of the year. The all-time record of 10.57 years was set in July 2022.

Therefore, at the end of 2022, the debt portfolio had a structure that was significantly less risky than that permitted by the general guidelines.



2. FINANCING POLICY

2.2.2. Credit risk

Credit risk is determined by the potential loss that the State would endure if one or more of its counterparts fail to fulfil their contractual payment obligations.

As for the derivative products or the repos, the Treasury calculates as previously the net positive market value⁶ on the credit line. If a CSA (*Credit Support Annex*) has been concluded with the counterpart in the case of derivative products or if a EMA (*European Master Agreement*)⁷ contract has been concluded in the case of repos, the Agency takes then into account the collateral possibly provided by the counterpart. For the investments (deposits), the Agency also calculates their market value on the credit line.

This year, the Agency carried on replacing the unilateral CSA with bilateral ones. As well as offering better prices and potentially longer maturities, these new contracts reduce credit risk by using a daily frequency of margin calls instead of a weekly frequency used in former unilateral agreements. As the Agency is now on an equal footing when it comes to provide collateral, thresholds below which the parties must not provide collateral are no longer necessary, and this also improves risk coverage.

The Agency also diversified its credit risk in 2022 by granting 9 credit lines to new banks and governments.

Within the framework of the liquidities management of the Treasury, the Agency concludes transactions on the monetary market. Cash surpluses are invested in financial counterparts or other European countries. The average amount placed daily with these counterparts has tripled between 2021 and 2022.

⁶ It is the positive market value after *netting* for the counterparts with which the Treasury concluded a CSA or an EMA contract. For the counterparts without CSA or EMA, the Agency does not apply *netting* and does not take into account negative market values.

⁷ See Annual Report on the Federal Government Debt 2007, Part III, point 3 for more information about the EMA framework agreement.

In 2022, the Agency used two types of investments, either with the National Bank of Belgium or with financial institutions and other sovereigns. The National Bank of Belgium offered a slightly lower yield than the one of investments with financial institutions and other sovereigns, but does not present any credit risk. As a result, the Agency has favoured investments with the National Bank of Belgium, by investing two-thirds (65%) of its daily surpluses over the past year. There is a third investment option, called *reverse repos*, but no transactions have taken place since mid-2015.

Indeed, the market interest rates for *reverse repos* had become less attractive than the interest rate on the deposit facility⁸, making this market inefficient. However, this situation should change in May 2023, when the commission on European sovereign surplus at central banks will be revised downwards at €STR⁹ minus 20 basis points, which will allow reverse repos to once again become a valid investment method.

As monthly average, investments with banks and government bodies have only fallen below EUR 2 billion a day for 3 months this year, with a decrease in the second quarter of 2022, a period during which this type of investment was limited following the invasion of Ukraine.

On December 31st 2017, the total exposure in derivative products entailing a credit risk amounted to EUR 556 million, either a decrease by 6% in comparison with the end of the previous year (EUR 594 million). The Credit Support Annex (CSA) contracts that the Agency concluded with all of its primary dealers and with some other counterparts enabled the Agency to mostly cover itself against this credit risk. At the end of 2022, it had received collateral amounting to 534 million EUR, as a result of which the real credit risk in derivative products only amounted to 27 million EUR, either a decrease by 48% in comparison with the end of the previous year (53 million EUR). This

⁸ Deposit facility rate: this is one of the key interest rates set by the ECB. It represents the interest that banks receive when they deposit cash with the central bank for 24 hours.

⁹ Euro short-term rate

2. FINANCING POLICY

decline is essentially due to the decrease in value of uncollateralised agreements.

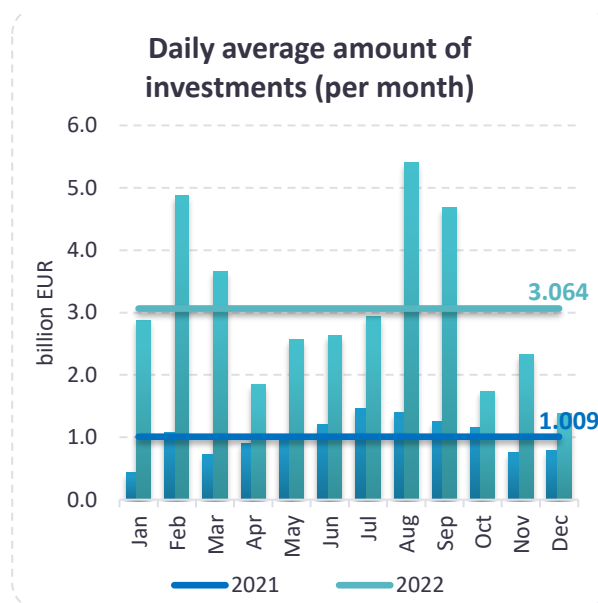
All the risk was with counterparts in the A rating category¹⁰. The portion of this risk associated with counterparts with a rating below A has now completely disappeared with the maturity in 2022 of the last contract with a counterpart with a lower rating. At the end of the year reviewed, the total credit risk in derivative products of counterparts in the A-rating category was covered by collateral for 96% (versus 92% at the end of 2021).

On average¹¹ the total credit risk in derivative products amounted to EUR 722 million in 2022, which represents an increase by 39% in comparison with 2021 (EUR 518 million). If the amount obtained as collateral is taken into account, the real credit risk in derivative products only reached on average in 2022 EUR 57 million, which represents a decrease by 40% in comparison with the average amount of 2021 (EUR 96 million).

The decrease in the market value of derivative products by EUR 38 million between the end of 2021 and the end of 2022 was caused by the strong decrease in the value of currency swaps (-EUR 240 million) compensated by the value increase of currency swaps (+ EUR 108 million) and forward operations as regards currency (+ EUR 94 million). Following these changes, the credit risk before collateral in derivative products on December 31st 2022 consisted largely of currency swaps (39%) and the “other derivative products” category (39%) while rate swaps only represent 22% of the total amount. The main cause of these trends is the weakness of the euro against the dollar, and to a lesser extent against other portfolio currencies, as well as the rise in short-term interest rates.

At the end of 2022, the credit risk in derivative products before collateral by maturity showed very different profiles: for rate swaps, the vast majority of the risk was beyond 10 years, with 82.5% of the valuation on long-term transactions. The currency swaps showed a more balanced

profile, with 55% of valuation between 1 and 5 years and 31% beyond 10 years, while operations of the category “other derivative products” had maturities entirely under 5 years, with 22.5% in the range below one year and 77.5% between 1 and 5 years.



¹⁰ The Agency only accepts counterparts with a minimum A rating for new transactions in derivative products.

¹¹ The average is not a continuous average but represents the average end-of-month situation.

2. FINANCING POLICY

CREDIT RISKS OF DERIVATIVE PRODUCTS BY RATING LEVEL AS OF 31/12/2022							
Rating ¹²	#	%	Total risk before collateral	%	Collateral	Total risk	%
AAA		0.0%	-	0.0%	-	-	0.0%
AA		0.0%	-	0.0%	-	-	0.0%
A	50	100.0%	556 434 135	100.0%	534 430 000	27 451 865	100.0%
< A		0.0%	-	0.0%	-	-	0.0%
Total	50	100.0%	556 434 135	100.0%	534 430 000	27 451 865	100.0%

CREDIT RISK OF DERIVATIVES BY RATING LEVEL AND BY PRODUCT AS OF 31/12/2022							
Rating	Interest rate swaps	%	Currency swaps	%	Other derivative products	%	
AAA	-	0.0%	-	0.0%	-	0.0%	
AA	-	0.0%	-	0.0%	-	0.0%	
A	121 351 790	100.0%	220 224 553	100.0%	214 857 793	100.0%	
< A	0	0.0%	-	0.0%	-	0.0%	
Total	121 351 790	100.0%	220 224 553	100.0%	214 857 793	100.0%	

CREDIT RISK OF DERIVATIVE BY REMAINING MATURITY AS OF 31/12/2022					
	Total amount	Interest rate swaps	Currency swaps	Other derivative products	
< 1 year	8.6%	-0.5%	0.0%	22.5%	
1 to 5 years	55.7%	18.0%	55.2%	77.5%	
6 to 10 years	5.3%	0.1%	13.4%	0.0%	
≥ 10 years	30.4%	82.5%	31.4%	0.0%	
Total	100.0%	100.0%	100.0%	100.0%	

¹² Rating of the counterpart or the parent company

2. FINANCING POLICY

2.3. CONSOLIDATION OF FEDERAL GOVERNMENT FINANCIAL ASSETS

The Federal government has taken a series of measures in order to decrease the debt ratio of the Kingdom of Belgium.

In order to achieve this objective, the law¹³ provides for a range of measures intended to consolidate public administrations' financial assets.

This law stipulates that institutions which at the federal level come under the authority of sub-sectors S.1311 and S.1314, according to the European system of national and regional Accounts (ESA2010):

- must deposit their cash assets (the funds that the organisation needs for its day-to-day management) on an account opened at bpost.
- must invest their other liquid assets directly with the Treasury and/or in financial instruments issued by the Federal State.

Depending on the specific needs of an organisation, the Minister of Finance may determine other terms and conditions for the investment of its liquid assets. The granting of other terms and conditions therefore authorises an organisation to hold unconsolidated financial assets.

In addition, organisations may deposit available funds strictly necessary for their day-to-day management with a banking institution other than bpost, if it does not offer the banking services they need for this management; However, these available funds must be consolidated at the end of each quarter by bank transfer to an account

¹³ Law of December 21st 2013 laying down various fiscal and financial provisions (Articles 113 to 121).

opened with bpost or to an account with the Federal Debt Agency.

This quarterly consolidation obligation is not applicable in the following cases:

- rental guarantees;
- accounts denominated in foreign currencies;
- accounts abroad.

Nevertheless, organisations are required to ask the Minister of Finance to grant other terms and conditions for investments in financial instruments other than those issued by the federal state.

On December 31st 2022, the consolidated and unconsolidated financial assets of the entities which come under the sub-sectors of the central administration and social security amounted to 27.69 billion EUR. They were to a large extent in the hands of the social security organisations.

As for the total consolidated amount, it was EUR 25.76 billion. This amount was broken down as follows:

- For the state organisations classified under S.1311 (institutional units without legal personality), the consolidated amount was EUR 4.42 billion, broken down as follows:
 - EUR 4.30 billion invested with bpost;
 - EUR 17.49 million invested in short-term deposits with the Debt Agency;
 - EUR 99.90 million invested in long-term OLOs;
- For the non-state organisations classified under S.1311 (institutional units with legal personality), the consolidated amount was EUR 6.52 billion, broken down as follows:
 - EUR 3.74 billion invested with bpost;
 - EUR 1.98 billion invested in short-term deposits with the Debt Agency;
 - EUR 803.56 million invested in long-term OLOs;

- For the institutions classified under S.1314 (social security institutions), the consolidated amount was EUR 14.82 billion, broken down as follows:
 - EUR 2.45 billion invested with bpost;
 - EUR 3.29 billion in short-term deposits with the Debt Agency;
 - EUR 9.08 million invested in long-term OLOs;

Compared with 2021, a significant decrease in deposits with bpost has been recorded and this is mainly due to short-term deposit profits with the Belgian Debt Agency by social security institutions (S.1314).

Besides, in 2022, two new non-state organisations classified under S.1311 have been taken into consideration for the consolidation.

- MYRRHA
- Relaunch for the Future (SFPIM Relaunch)

CONSOLIDATED AND NON-CONSOLIDATED FINANCIAL ASSETS OF FEDERAL INSTITUTIONS BELONGING TO SUBSECTORS S1311 AND S1314 (IN EURO)

	Situation on 31/12/2021	Situation on 31/12/2022	Difference
I. CASH ASSETS AT			
Bpost (consolidated)	14,818,560,656	10,486,507,580	-4 332 053 076
Other institutions (non-consolidated)	99,35, 610	75,089,199	-24 262 411
II. SHORT TERM INVESTMENTS AT			
Treasury (consolidated)	2,294,378,760	5,284,879,886	2 990 501 126
Other institutions (unconsolidated)	124,604,350	97,394,693	-27,209,657
III. LONG TERM INVESTMENTS IN			
Instruments issued by the State (consolidated)	9,490,623,340	9,983,917,422	493,294,082
Instruments issued by the communities and regions (non-consolidated)	112,000,000	1,255,000,000	1,143,000,000
Financial instruments of other institutions (non-consolidated)	471,318,445	511,645,799	40,327,354
TOTAL AMOUNT	27,410,837,161	27,694,434,579	283,597,418
Consolidated	26,603,562,756	25,755,304,888	-848,257,868
Non-consolidated	807,274,405	1,939,129,691	1,131,855,286

2. FINANCING POLICY



3. A RANGE OF DIVERSE PRODUCTS

The Agency issues two types of products:

- **Liquid and standardised products:** linear bonds (OLO), Treasury certificates and State notes;
- **Tailor-made products:** Euro Medium Term Notes (EMTN), Euro Commercial Paper (ECP) and *Schuldscheine* contracts (SSD).

OLO are the Agency's most important financing instrument in terms of issued volumes.

It is to be noticed however that the Agency also offers flexible financing instruments such as the EMTN and the *Schuldscheine* contracts. These two products are issued at the request of investors with a view of achieving a greater diversification of the investor base. As these are flexible instruments, tailor-made for the investor, they can only be issued if they are shown to be cost effective. This means that the issue price must be lower than or equal to that of an OLO with the same maturity. These two instruments must therefore be considered as a supplement to the standard programme and must not in any way compromise the liquidity of the OLOs.

The State note is a fixed income security with an annual coupon, with a maturity ranging from 3 to a maximum of 10 years and which is aimed at private investors. This product, which had not been issued for several years due to low interest rates, was successfully relaunched in 2022 (see last chapter of this report dealing with State notes in the strategic focus points)

In the short-term segment, the instruments issued by the Agency are the Treasury certificates and the *Euro Commercial Paper* (ECP). Treasury certificates are issued by auction and in €, while ECPs are issued on tap, in € or in foreign currency swapped to euro.

	Medium and long term	Short term
Standard (only euro)	OLO State notes (private investors)	Treasury certificates
Flexible (also foreign currency)	EMTN <i>Schuldscheine</i>	Euro-Commercial Paper (ECP)

3. A RANGE OF DIVERSE PRODUCTS

3.1. LINEAR BONDS (OLO)

In 2022, the Belgian Debt Agency issued OLOs for a total amount of EUR 44.13 billion (versus an amount of EUR 39.23 billion in 2021). This amount included issues by syndication (EUR 14.5 billion) and amounts by auction (EUR 29.63 billion). For this last amount, the regular auctions concerned EUR 25.95 billion and the OLO issued within the framework of *Optional Reverse Inquiries (ORI)*, EUR 3.68 billion.

Also in 2022, the whole amount of OLO issues (syndications as well as all types of auctions combined) was characterised by a very high average maturity. The average weighted maturity of OLO issued in 2022 amounted to 16.53 years, the third highest maturity ever achieved. In particular, strong demand in the 30-year-old segment contributed to this high average last year. This led to a further increase in the average maturity of the total debt portfolio, from 10.08 years at the end of 2021 to 10.32 years at the end of 2022.

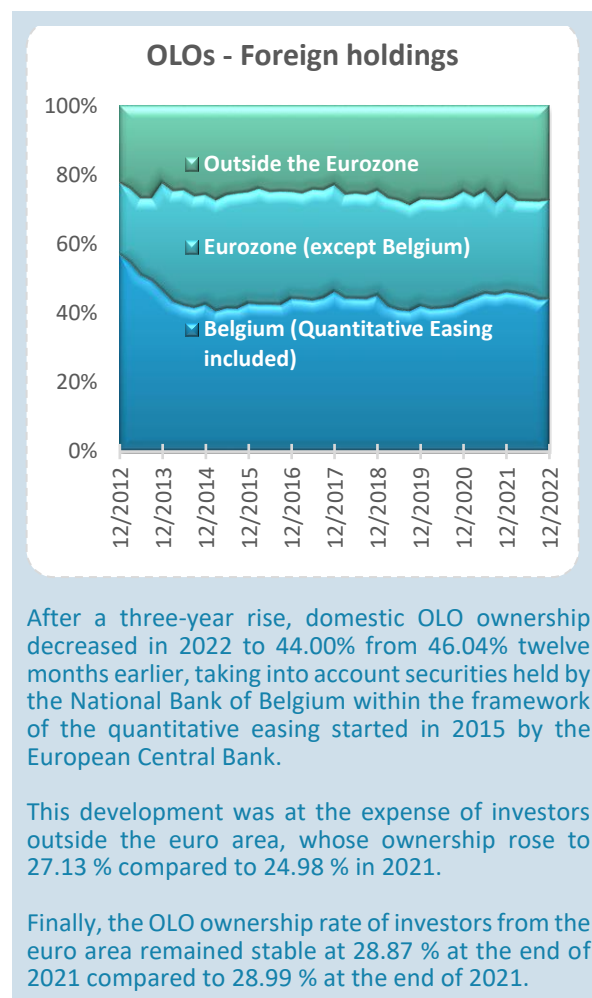
2022 has become the year of a particularly brutal reversal in financing conditions, due to a necessary adjustment in the monetary policy of the world's central banks in order to curb inflation, which has suddenly spiralled out of control.

In order to be convinced thereof, the yields of the 10-year benchmark OLO rate only need to be looked at in order to notice that they averaged 1.80% in 2022, compared with just 0.09% the previous year. OLO 94, sold in January within the framework of a syndicated operation at the rate of 0.363%, was then invested at rates ranging from 0.880% during the March auction to 2.935% in October.

Consequently, the average weighted yield on the total OLO financing was only 1.696 % last year on a total amount of EUR 44.13 billion. This is the highest average interest rate since 2014. The average financing cost of new issues rose by more than one and a half percentage point compared with the previous year. In 2021, the average

weighted yield of OLO financing was still of 0.161%.

Due to the incoming maturity of high-cost debts (OLO 48 with a coupon of 4% and OLO 65 with a coupon of 4.25%) the average implicit interest rate of the debt portfolio remained stable despite the sharp rise in financing costs throughout the year (see page 7). The downward trend in average financing cost ended in 2022.



3.1.1. Primary market - Syndications

In December 2021, the Belgian Debt Agency had communicated its financing plan and

3. A RANGE OF DIVERSE PRODUCTS

requirements needs planned for the year 2022. Due to higher reimbursements than during the previous year, the Agency intended to issue larger OLO volumes. The financing plan also forecast three syndications: a 10-year benchmark loan, 30-year benchmark and a new green OLO.

The first syndication of the year, in January, concerned, as usual, a 10-year benchmark. The amount collected on this OLO 94 with a coupon of 0.35% amounted to EUR 5 billion.

The second syndication on the new OLO 95 took place in February and concerned a new 30-year benchmark for an amount of EUR 5 billion and a coupon of 1.40 %.

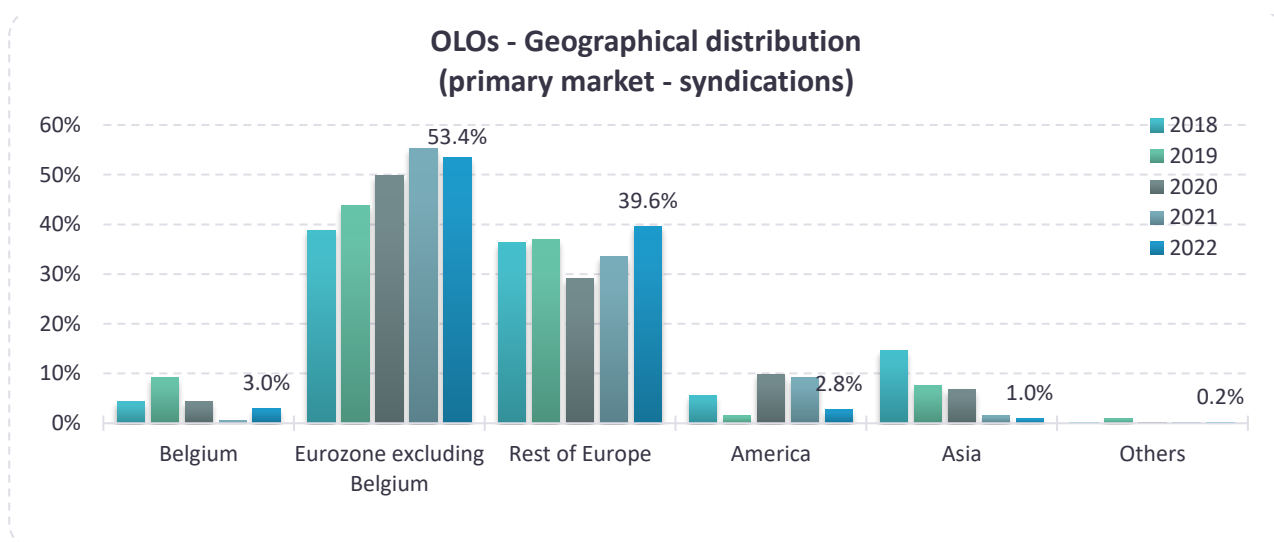
The third and last syndication of the year concerned a green OLO, the second one issued by

the Agency since the issue of February 2018. OLO 96 amounted to EUR 4.5 billion with a coupon of 2.75% and a maturity of more than 15 years.

As regards the geographical distribution of these three syndications, it will be mainly noted that in comparison with 2021 the return of the Belgian investors, the increase of European investors (outside the euro area) as well as the strong decrease in American investors.

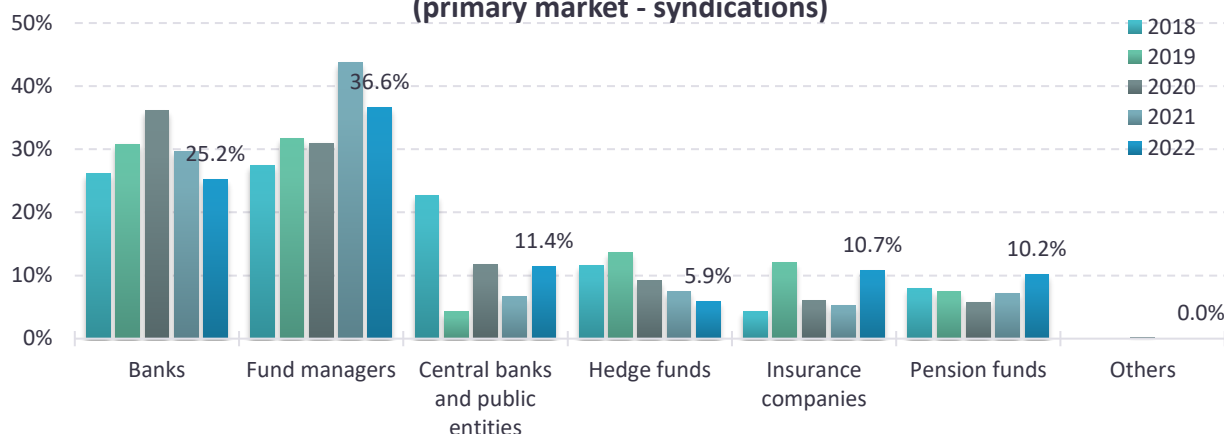
Per investor type, the strongest trends are the increase in holdings by central banks and public entities, insurance companies and pension funds, to the detriment of fund managers, banks and *hedge funds*.

RESULTS OF THE SYNDICATIONS IN 2022 (in EUR million)							
Issue date	OLO	Final maturity date	Coupon	ISIN Code	Amount	Price	Yield (%)
18/01/2022	OLO94	22/06/2032	0.35%	BE0000354630	5,000	99.868	0.363
15/02/2022	OLO95	22/06/2053	1.40%	BE0000355645	5,000	99.399	1.424
14/09/2022	OLO96	22/04/2039	2.75%	BE0000356650	4,500	99.956	2.754
TOTAL					14,500		



3. A RANGE OF DIVERSE PRODUCTS

OLOs - Distribution by type of investor (primary market - syndications)



NEW 10-YEAR BENCHMARK BOND (OLO 94) IN JANUARY...

This is in mid-January 2022, in a relatively low interest rate environment, that the Belgian Debt Agency announced its first syndication of the year, that is to say a 10-year benchmark OLO with which it traditionally starts its syndication programme.

For this syndication, the Agency chose the following primary dealers as *joint-lead managers*: BNP Paribas Fortis, Citigroup Global Markets, J.P. Morgan, Natixis and Nomura. The other primary dealers took part in the investment as *co-lead managers*.

The operation was well received by investors and participation was strong from the outset, so that the *orderbook* has been closed with a total amount of EUR 21 billion orders from more than 150 investors. The quality of orders and the keen interest shown by banks and fund managers have encouraged the Belgian Debt Agency to set the amount of the new issuance to EUR 5 billion.

The yield of the issuance is set at 0.363%, either a mid-swap rate of -6 basis points. The coupon was set at 0.350 %.

Since the *fair value* was estimated at a mid-swap rate of -7 to -8 basis points based on extrapolation and interpolation of the closest OLOs, the final

pricing at mid-swaps -6 basis points represented a small premium of 1 to 2 basis point in comparison with the *fair value*.

The Agency once again used the *mixed pot* system for the *book-building* process and allocation of orders (see page 31). This system allows to improve the efficiency, transparency and objectivity of the *book-building* and allocation processes.

As regards the geographical distribution, participation was balanced across Europe, United Kingdom taking the biggest share of the allocation (28.9%), followed by the Netherlands (16.8%), France (15.5%), Belgium (5.3%) and Germany (5.1%). Investors from 10 other European countries accounted for 19.2%. The USA and other non-European regions accounted for 6.2% and 3.0% respectively.

By investor type, banks and fund managers took 37.1% and 22.1% of the operation, closely followed by central banks and public entities with 18.6%. Pension funds and insurance companies respectively took 8.8% and 5.8% of this operation. Hedge funds received the remaining 7.6% of the syndicated operation.

3. A RANGE OF DIVERSE PRODUCTS

... FOLLOWED BY A 30-YEAR NEW OLO (OLO 95) IN FEBRUARY

By issuing via syndication a new benchmark OLO in the 30-year segment of maturities, the Belgian Debt Agency carried on implementing its aforementioned financing plan.

Doing so, the Belgian Debt Agency was also able to exploit an attractive execution opportunity in a highly volatile interest-rate environment. It was able to lock in historically low financing rates in a rising interest rate environment. With a yield of 1.424%, the Agency has indeed set a new record lowest rate for a thirty-year OLO syndication while offering an additional liquid reference point in the long part of the OLO curve. Besides, the yield thus obtained allowed the Agency to decrease even more the implicit yield of its debt portfolio.

For this syndication, the following five primary dealers were chosen in order to act as *joint-lead managers*: Barclays, BNP Paribas Fortis, Deutsche Bank, Morgan Stanley and Nomura.

As from the opening of the book, orders for the new 30-year OLO 95 poured in and the *orderbook* closed on more than EUR 36 billion from more than 230 investors, the major part of whom being investors in *real money* of great quality. This allowed the Agency to issue an OLO benchmark of EUR 5 billion.

For the new OLO pricing, the former 30-year OLO was used as benchmark, rather than the mid-swaps which were too volatile over the long term at the time of issue.

The operation price was set at OLO 88 (june/2050) + 12 basis points, which implies a yield of 1.424% and a coupon rate of 1.40%. At the time prices were set, the *fair value* has been assessed between + 8 and + 8.5 basis points in comparison with OLO 88. Prices of + 12 basis points represented a concession from +3.5 to +4 basis points for the new issue.

The Agency once again used the *mixed pot* system for the allocation of orders (see page 31).

As for the geographical distribution, the vast majority of investors were European, with over a quarter coming from the UK (27.7%).

Real money accounts were also strongly represented in the operation. Fund managers dominated with 49.4% of allocations, followed by insurance companies (18.0%).

The participation of central banks and public entities (9.7%) and banks (11.4%) was also significant.

Pension funds followed with 6.4% of the deal. *Hedge funds* accounted for 5.1% of the total amount.

AND A NEW SECOND GREEN OLO (OLO 96) IN SEPTEMBER

It will be reminded that the Belgian Debt Agency issued its first green OLO in February 2018 within the framework of the government's commitment to a more environmentally-friendly economy on the basis of a *Green OLO Framework* pursuant to *Green Bond Principles*, 2017. The Agency carried on with this commitment by issuing a second green OLO at mid-September 2022 on the basis of a new *Green OLO Framework* with the help of BNP Paribas Fortis and Crédit Agricole CIB.

Since September, the Belgian Debt Agency has organised a roadshow in Europe in order to inform investors on environmental policy in Belgium and this new green OLO framework. The new framework is now aligned with *ICMA Green Bond Principles* of 2021, but also takes into consideration the EU taxonomy and its delegated acts as well as the standard put forward for EU green bonds. The Kingdom of Belgium pledges to do its best to follow best practice. A *Second Party Opinion* has been obtained from Moody's ESG solutions.

These green OLOs are issued by following a similar approach to the one of traditional OLOs, mainly as regards the initial amount (syndication), the liquidity, the stripping and the reopening of lines by auction.

This second green OLO, the OLO 96, was successfully issued in a market environment characterized by high volatility due in part to high

3. A RANGE OF DIVERSE PRODUCTS

inflation and quickly rising interest rates. This success was the result of the government's firm commitment to strengthen its green activity, a commitment that was very well understood by the market.

The total demand, at the closing of the *orderbook*, was higher than EUR 31 billion, from more than 200 investors. The strong participation of real money accounts, in particular from investors focused on ESG (Environment, social and governance) allowed the Agency to obtain EUR 4.5 billion, either the maximum possible issue size for green eligible expenditure within the framework of this operation in the Kingdom of Belgium. Thanks to the incoming maturity of this new OLO in 2039, the Belgian Debt Agency allowed the investors to have a new maturity in order to invest in a green sovereign bond.

The price of OLO 96 was set at a spread of 6 basis points above the OLO 76 (June/2038), giving thus a yield of 2.754%. This represents a concession of about 2.5 basis points in comparison with the interpolation of the yield of the closest Belgian

OLOs (2038 and 2040) at the time the operation was launched. This shows the extent of the great interest shown by investors for this new green OLO. The coupon of the OLO 92 was set at 2.75 %.

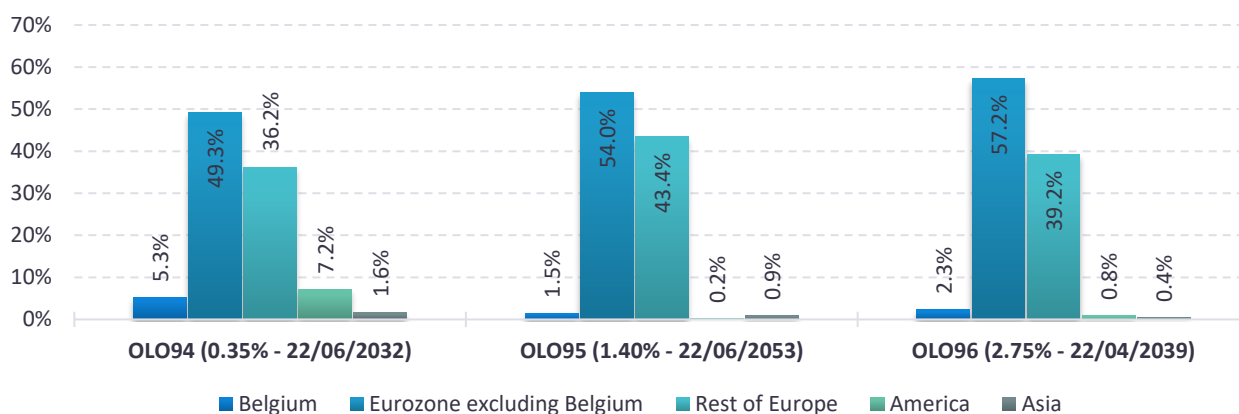
The Agency once again used the *mixed pot* system for the allocation of orders (see page 31).

The geographical distribution was clearly dominated by European participation, with the UK accounting for the largest share (27.3%), followed by the Netherlands (15.7%) and France (12.2%).

By investor type, fund managers accounted for 38.6% of the allocation, followed by banks (27.4%), pension funds (15.9%) and insurance companies (8.1%). Central banks and other public entities (5.2%) and *hedge funds* (4.8%) took up the remainder of this green OLO's allocation.

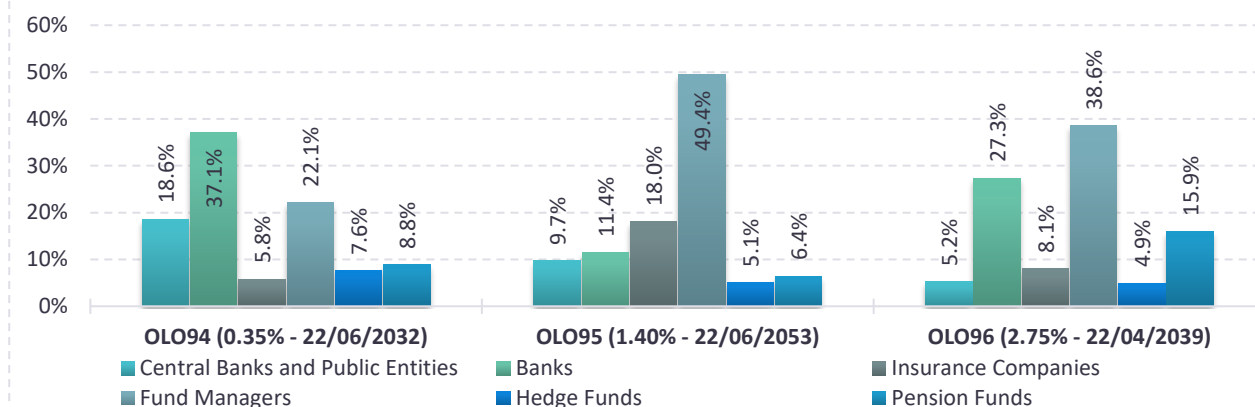
The four primary dealers chosen in order to act as *joint-lead managers* in this syndication were BNP Paribas Fortis, Crédit Agricole CIB, HSBC and J.P.Morgan. -

OLOs - Geographical distribution in 2022 - Syndications



3. A RANGE OF DIVERSE PRODUCTS

OLOs - Distribution by investor type in 2022 - Syndications



SYNDICATION

Syndication is an issuing technique via which the Agency makes use of a syndicate of primary dealers to issue and invest its securities. The syndicate is a temporary association of banks, whose common objective is the collective investment of the bonds. There are three levels within the syndicate:

1. **Lead manager:** this is the bank that receives a mandate from the issuer in order to lead the syndicate. The lead manager guarantees the investment of most of the bonds and is responsible for overall coordination and organisation of the issue. In agreement with the issuer, it determines the structure, volume, spread and timing of the operation. Where several *lead managers* are in charge of the issue, they are called *joint-lead managers*.
2. **Co-lead manager:** works one level below the *lead manager*. Guarantees a small share of the investment. The *co-lead managers* consist of primary dealers, who are not *joint-lead managers*.

MIXED POT SYNDICATION

In the case of a *mixed pot syndication* as in the normal pot syndication, the Agency benefits from a total transparency regarding the identity of the buyer. However, there are two main differences in comparison with normal pot syndication:

1. A **blind retention** is reserved for the *co-lead managers*. They are guaranteed this share of the OLO allocation without the need to divulge the

identity of the buyer to the *joint-lead managers*. The *blind retention* is granted to them by the Agency in return for their efforts in investing the OLO and Treasury certificates over the course of the previous year;

2. There is a **strategic reserve**. A fraction of the loan amount is reserved for the allocation of certain purchase orders presented by the *co-lead managers*. In allocating the *strategic reserve*, the Agency strives to allocate the orders placed by the *co-lead managers* on the basis of the following criteria:
 - a. The purchase order comes from an investor who is not yet registered in the book of *lead managers*;
 - b. The purchase order is of excellent quality and/or represents true diversification.

DURATION MANAGER

The Agency generally appoints a *duration manager* for each syndication. The duration manager's function is to stabilise the market when the issue price of the new OLO is set, by acting as the counterpart for all *switch orders* put by the investors in the book.

Switch orders are purchase orders for the new OLO provided that another security is sold simultaneously at a pre-determined minimum price. This orderly and efficient organisation of purchase orders of investors should limit erratic movements in the market when the new OLO price is set.

3. A RANGE OF DIVERSE PRODUCTS

3.1.2. Primary market - Auctions

In addition to EUR 14.5 billion financed by syndication, EUR 29.63 billion have been issued in OLO during the auctions organised during the whole year. In the indicative auction calendar, 11 regular OLO auctions have been pre-programmed as well as 8 opportunities for *Optional Reverse Inquiries* (ORI auctions). These two frequencies were higher than in previous years because financing needs were high in a context of potentially more volatile markets due to the end of the quantitative easing of the ECB.

As usual, it has been decided to cancel the auctions during the months when a syndication occurred. Finally, in order to carry out a reasonable financing, no regular auction is organised in November.

The indicative calendar of OLO issues only mentions the adjudication dates and not the OLO lines which will be auctioned throughout the coming year. The week before the auction, the OLO lines to be auctioned will be determined after consultation of the primary dealers. During this consultation, investors demand and market conditions are analysed in detail, and in combination with the strategy of the Agency, a decision is taken on which lines will be auctioned. This decision is announced on the same evening. The working day before the auction, the range is also published, it concerns minimum and maximum indicative nominal amounts that the Agency wishes to issue.

As regards the ORI auctions, after bilateral contacts with the primary dealers, the Agency announces the day before a possible ORI if the auction will occur and if need be, on which lines.

A nominal amount of EUR 25.95 billion has been gathered during the 7 regular auctions of 2022, among which EUR 22.33 billion through competitive bids and EUR 3.62 billion through non-competitive bids. The average amount spent within the framework of OLO auctions remained identical to the amount of the previous year, that is to say EUR 3.19 billion. With an average of EUR

517 million, non-competitive rounds represented 16.2 % of the total amount of auctions, either a slight increase in comparison with 2021 (15.3%) and a bit more than the half of the absolute maximum of 30%.

The *bid-to-cover* ratio of 7 OLO regular auctions varied within a narrower range than in 2021, between 1.69 for the October auction and 2.39 for the March auction. The *bid-to-cover* ratio for the total amount of auctions has been of 1.88 in 2022, an increase in comparison with 2021 when the indicator amounted to 1.69. This higher value, revealing important bids during the auctions, reflects healthy market demand for the OLO. This strong demand allowed the Agency, during each regular auction, to issue the maximum amount set within the indicative range.

For ORI auctions, which are more of a liquidity facility for primary dealers, this ratio is not considered a relevant indicator and is therefore not published.

At the end of the regular competitive auctions, the primary dealers have the right to submit non-competitive subscriptions. This right is given to primary dealers in return for their active participation in the auctions and their ratings on the secondary market as market makers. It gives them a purchase option on securities at the weighted average auction price for a predetermined percentage of bids which had been allocated to them in the two latest auctions. These ordinary and special offers take place three and five working days respectively after each competitive tender.

The total right to these non-competitive subscriptions amounted to EUR 7.08 billion for all the primary dealers. Of this amount, EUR 3.62 billion was actually exercised, or 51.1% of total rights, exactly the same percentage as in 2021.

Exercising the non-competitive subscriptions is determined by market conditions at the time of the subscription. If the weighted average price at which the primary dealers can purchase the OLOs is lower than the market price at this time, the rights are said to be *in the money* and will be exercised. Despite the upward trend in interest rates in 2022 and the resulting fall in bond prices,

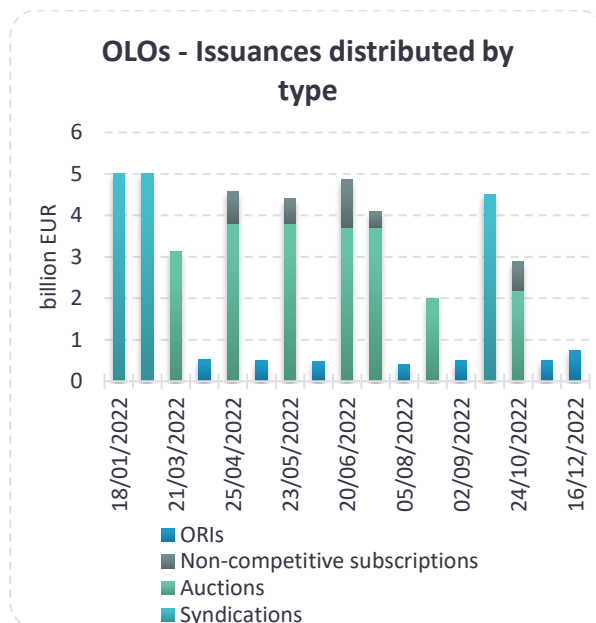
3. A RANGE OF DIVERSE PRODUCTS

rights were exercised in the non-competitive round in 5 of the 7 auctions in 2022. In three auctions, primary dealers partially exercised their rights, and in the June and October auctions, all rights were even exercised in both rounds. However, no rights were exercised at the March and August auctions.

Besides the regular auctions, the Agency also organises *Optional Reverse Inquiries*. It concerns auctions during which primary dealers can ask the Agency for a limited amount and number of lines, i.e. in principle a maximum of EUR 500 million for a maximum of 2 lines, in order to issue bonds that are becoming scarcer on the market. The Agency has the possibility to refuse or accept it. As for the ORI, there is no right to non-competitive subscriptions.

In a particularly volatile market, these ORI auctions, which give the primary dealers the confidence to continue to offer competitive prices to all market participants even for rare OLOs, have once again proved to be an advantage for the liquidity of the OLO market.

Besides EUR 25.95 billion of regular auctions, a nominal amount of EUR 3.68 billion of OLOs was issued as part of these ORI auctions in 2022. Seven ORI auctions took place; it was only on the first scheduled date (in February) that the primary dealers reported weak demand and that the Agency decided to not organise the ORI auction. In 6 of the 7 auctions, two different OLO lines were offered; in June only, a single line was offered. Demand for the ORI auction was for both the shorter “off-the-run” OLOs (2025 to 2028) and some of the ultra-long OLOs. In particular, OLO 83 (June/2005) was offered at an ORI on 3 occasions, and OLO 66 (March/2032) on 2 occasions.



In total, 16 of the 32 outstanding bonds were issued at the auctions, in a wide range of maturities from OLO 74 (June/2025) to OLO 80 (June/2066). In a year of rising and volatile interest rates, demand was focused on the slightly shorter maturities between 2025 and 2029 (EUR 8.31 billion) and on the 10- and 30-year benchmark bonds (issues of EUR 12.67 billion and EUR 6.31 billion respectively).

As usual, the 10-year segment was issued most frequently. The new 10-year benchmark loan, OLO 94, was replenished at each of the regular auctions for a total amount of EUR 11.47 billion. Therefore, this bond reached a nominal outstanding amount of EUR 16.47 billion at the end of the year. The new 30-year OLO 95 has been auctioned four times for a total amount of EUR 5.64 billion, so that, for this bond, the threshold of EUR 10 billion in outstanding amount has already been reached (EUR 10.64 billion). Two other bonds, OLO 91 (October/2027) and OLO 87 (June/2029) have been increased two times each for a total amount of respectively EUR 1.82 and 2.26 billion.

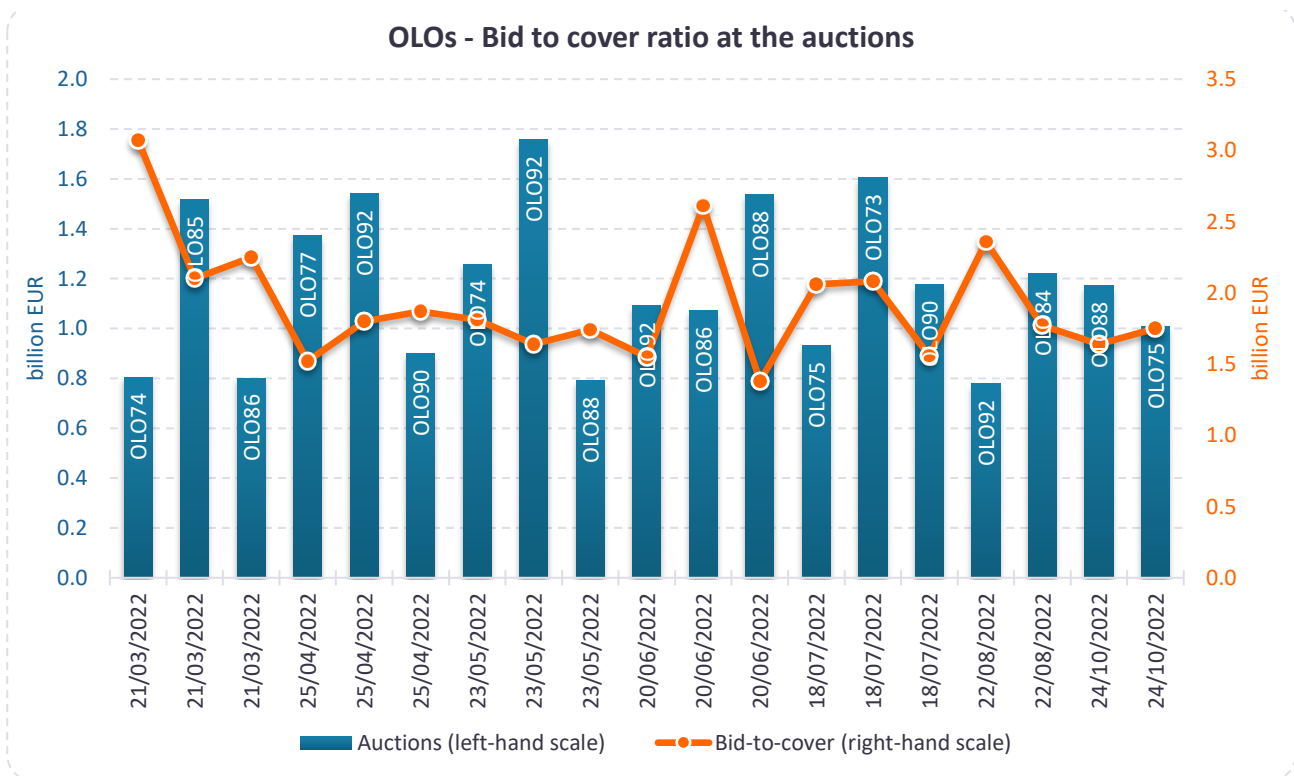
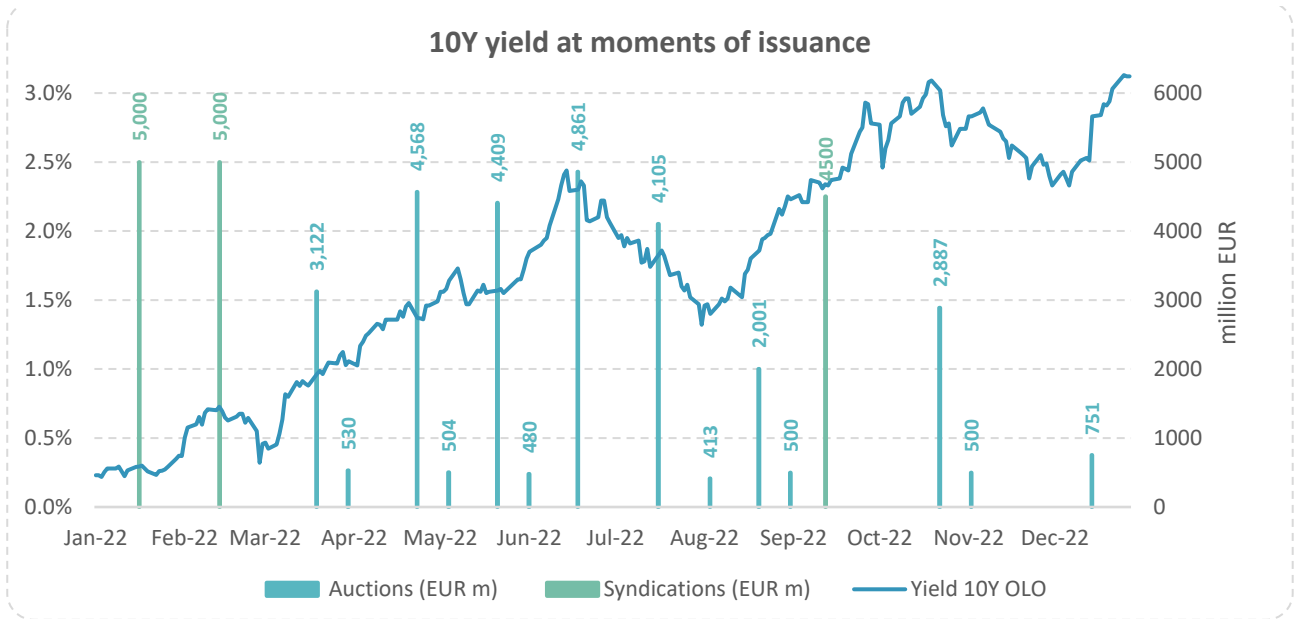
In 2022, the *framework* of green OLO issuances has been renewed. According to this renewed *framework*, the new green OLO 96 has been issued by syndication in September for an amount of EUR 4.50 billion. Due to a particularly strong demand, the current green OLO 86 (March/2023) has been

3. A RANGE OF DIVERSE PRODUCTS

offered during the ORI auction of August for a nominal amount of EUR 201 million.

Finally, the primary dealers received auction results after 5.14 minutes on average, right from

the moment the bids are closed. The extreme records were 3 minutes at the May auction and 7 minutes at the September auction.



3. A RANGE OF DIVERSE PRODUCTS

OLO AUCTION RESULTS IN 2022 (in EUR million)																		
Issue date	OLO	Maturity date	Coupon	ISIN Code	Amount offered	Accepted amount (competitive)	Allocated amount (non-competitive)	Total amount	Average weighted price	Average weighted yield	Bid-to-Cover	Lo/Hi bid	Stop Price	% at stop price	Rewarded bidders	Min Range	Max Range	
21/03/2022					7,460	3,122	0	3,122			2.39						2,300	3,100
	OLO87	22/06/2029	0.90%	BE0000347568	2,468	805		805	102.87	0.496	3.07	102.20 / 102.92	102.84	20.57	11			
	OLO94	22/06/2032	0.35%	BE0000354630	3,190	1,516		1,516	94.825	0.88	2.1	94.00 / 94.88	94.77	26.76	12			
	OLO90	22/06/2040	0.40%	BE0000350596	1,802	801		801	86.393	1.238	2.25	85.25 / 86.48	86.28	100	12			
25/04/2022					6,544	3,814	754	4,568			1.72						2,800	3,800
	OLO81	22/06/2027	0.80%	BE0000341504	2,083	1,372	271	1,643	99.676	0.865	1.52	99.35 / 99.74	99.63	100	12			
	OLO94	22/06/2032	0.35%	BE0000354630	2,781	1,542	310	1,852	90.021	1.412	1.80	89.50 / 90.08	89.98	20.77	13			
	OLO95	22/06/2053	1.40%	BE0000355645	1,680	900	173	1,073	88.069	1.912	1.87	87.00 / 88.15	87.98	100	12			
23/05/2022					6,543	3,807	602	4,409			1.72						2,800	3,800
	OLO74	22/06/2025	0.80%	BE0000334434	2,283	1,258	267	1,525	100.41	0.665	1.81	100.34 / 100.44	100.39	32.44	12			
	OLO92	22/06/2032	0.35%	BE0000354630	2,882	1,757	335	2,092	88.72	1.569	1.64	88.50 / 88.76	88.7	100	12			
	OLO88	22/06/2066	2.15%	BE0000340498	1,378	792		792	100.912	2.118	1.74	99.50 / 101.06	100.8	100	10			
20/06/2022					6,615	3,701	1,160	4,861			1.79						2,700	3,700
	OLO87	22/06/2029	0.90%	BE0000347568	1,697	1,092	366	1,458	93.486	1.903	1.55	92.45 / 93.52	93.45	100	10			
	OLO94	22/06/2032	0.35%	BE0000354630	2,797	1,073	433	1,506	82.798	2.295	2.61	82.40 / 82.86	82.77	85.27	8			
	OLO95	22/06/2053	1.40%	BE0000355645	2,121	1,536	361	1,897	71.225	2.801	1.38	70.25 / 71.34	71.08	100	13			
18/07/2022					7,090	3,712	393	4,105			1.91						2,700	3,700
	OLO91	22/10/2027	0.00%	BE0000351602	1,917	931	107	1,038	93.883	1.208	2.06	93.60 / 93.91	93.86	37.11	12			
	OLO94	22/06/2032	0.35%	BE0000354630	3,331	1,604	142	1,746	86.484	1.854	2.08	85.90 / 86.53	86.46	53.13	11			
	OLO95	22/06/2053	1.40%	BE0000355645	1,842	1,177	144	1,321	75.918	2.532	1.56	74.75 / 76.11	75.83	100	13			
22/08/2022					3,999	2,001	0	2,001			2.00						1,500	2,000
	OLO91	22/10/2027	0.00%	BE0000351602	1,842	780		780	93.751	1.258	2.36	93.55 / 93.80	93.72	21.3	7			
	OLO94	22/06/2032	0.35%	BE0000354630	2,157	1,221		1,221	86.968	1.809	1.77	86.25 / 87.04	86.94	100	8			
24/10/2022					3,679	2,179	708	2,887			1.69						1,700	2,200
	OLO94	22/06/2032	0.35%	BE0000354630	1,916	1,171	368	1,539	78.534	2.935	1.64	78.01 / 78.58	78.48	100	9			
	OLO95	22/06/2053	1.40%	BE0000355645	1,763	1,008	340	1,348	63.596	3.307	1.75	62.00 / 63.68	63.51	100	11			
TOTAL AMOUNT								25,953										

ORI AUCTION RESULTS IN 2022 (in EUR million)														
Issue date	OLO	Maturity date	Coupon	ISIN Code	Amount offered	Allocated amount	Average weighted price	Average weighted yield	Lo/Hi bid	Stop Price	% at stop price	Rewarded bidders	Min Range	Max Range
01/04/2022					1,899	530							0	500
	OLO66	28/03/2032	4.00%	BE0000326356	749	262	128.897	0.951	128.81 / 128.91	128.88	8.03	4		
	OLO83	22/06/2057	2.25%	BE0000343526	1,150	268	117.847	1.585	117.10 / 117.90	117.77	5.71	5		
06/05/2022					1,211	504							0	500
	OLO64	28/03/2026	4.50%	BE0000324336	546	228	114.345	0.738	114.26 / 114.35	114.34	71.88	3		
	OLO31	28/03/2028	5.50%	BE0000291972	665	276	125.51	1.011	125.20 / 125.51	125.51	68.75	2		
03/06/2022					530	480							0	500
	OLO66	28/03/2032	4.00%	BE0000326356	530	480	119.962	1.765	119.80 / 119.99	119.88	100	3		
05/08/2022					1,032	413							0	500
	OLO86	22/04/2033	1.25%	BE0000346552	780	201	98.702	1.381	98.60 / 98.71	98.7	66.67	3		
	OLO83	22/06/2057	2.25%	BE0000343526	252	212	105.082	2.045	104.80 / 105.18	105.01	100	6		
02/09/2022					940	500							0	500
	OLO85	22/06/2028	0.80%	BE0000345547	620	310	94.872	1.738	94.76 / 94.88	94.84	60	2		

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OLO83	22/06/2057	2.25%	BE0000343526	320	190	88.782	2.755	88.60 / 88.91	88.75	100	2		
04/11/2022				1,439	500							0	500
OLO74	22/06/2025	0.80%	BE0000334434	669	250	96.46	2.205	96.42 / 96.46	96.46	62.5	2		
OLO73	22/06/2034	3.00%	BE0000333428	770	250	100.234	2.975	99.90 / 100.32	100.2	42.67	4		
16/11/2022				1,211	751							0	750
OLO71	22/06/2045	3.75%	BE0000331406	311	208	112.345	2.988	111.96 / 112.48	112.26	100	5		
OLO80	22/06/2066	2.15%	BE0000340498	900	543	84.349	2.774	84.10 / 84.65	84.25	52.86	6		
TOTAL					3,678								

OLO - OUTSTANDING AMOUNT AS OF 31/12/2022 (in EUR)							
Maturity	ISIN Code	No.	Net available ¹⁴	Buybacks in portfolio	Strips		
					Stripped amount	%	
22/06/2023	BE0000328378	68	12,444,000,000.00	1,208,000,000.00			
22/10/2023	BE0000339482	79	8,584,500,000.00	917,500,000.00			
22/06/2024	BE0000332412	72	15,015,000,000.00	870,000,000.00			
22/10/2024	BE0000342510	82	12,875,000,000.00				
22/06/2025	BE0000334434	74	22,588,000,000.00	509,000,000.00			
28/03/2026	BE0000324336	64	11,847,000,000.00				
22/06/2026	BE0000337460	77	16,752,000,000.00				
22/06/2027	BE0000341504	81	15,508,000,000.00				
22/10/2027	BE0000351602	91	9,818,000,000.00				
28/03/2028	BE0000291972	31	20,387,939,136.01		1,663,959,160.62	8.16 %	
22/06/2028	BE0000345547	85	15,837,000,000.00				
22/06/2029	BE0000347568	87	19,098,000,000.00				
22/06/2030	BE0000349580	89	12,738,000,000.00				
22/06/2031	BE0000335449	75	17,597,000,000.00				
22/10/2031	BE0000352618	92	14,087,000,000.00				
28/03/2032	BE0000326356	66	9,146,000,000.00		148,673,682.51	1.63 %	
22/06/2032	BE0000354630	94	16,472,000,000.00				
22/04/2033	BE0000346552	86	10,631,000,000.00				
22/06/2034	BE0000333428	73	9,294,000,000.00				
28/03/2035	BE0000304130	44	19,849,692,800.00	30,000,000.00	2,466,852,029.81	12.43 %	
22/06/2037	BE0000344532	84	7,073,000,000.00				
22/06/2038	BE0000336454	76	8,587,000,000.00		170,200,000.00	1.98 %	
22/04/2039	BE0000356650	96	4,500,000,000.00				
22/06/2040	BE0000350596	90	8,922,000,000.00				
28/03/2041	BE0000320292	60	17,299,000,000.00		2,411,823,381.30	13.94 %	
22/06/2045	BE0000331406	71	9,945,000,000.00		547,640,000.00	5.51 %	
22/06/2047	BE0000338476	78	11,064,000,000.00		258,600,000.00	2.34 %	
22/06/2050	BE0000348574	88	11,181,000,000.00		368,900,000.00	3.30 %	
22/06/2053	BE0000355645	95	10,639,000,000.00		83,700,000.00	0.79 %	
22/06/2057	BE0000343526	83	6,866,000,000.00		1,545,000,000.00	22.50 %	
22/06/2066	BE0000340498	80	8,164,000,000.00		1,130,400,000.00	13.85 %	
22/06/2071	BE0000353624	93	5,535,000,000.00		66,600,000.00	1.20 %	
			400,344,131,936.01	3,534,500,000.00	10,862,348,254.24	2.71 %	

¹⁴ Available on the market (issued amounts minus buybacks) on 31/12/2022.

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3.1.3. Secondary market

The Agency draws the attention on the fact that the following data are solely based on figures obtained from primary and recognised dealers. They are the main active dealers on our debt, although they are not the only ones. Moreover, these figures do not take into account the volume purchased by the ECB during the operations of its quantitative easing implemented since March 2015. However, these figures allow to notice certain trends among other investors as regards the Belgian debt instruments. It must also be noted that it only refers to the purchases and sales of the final investors and do not concern the interdealer market.

Volumes

After two consecutive years of decline, the volume of negotiated OLO is on the rise again in 2022. With a considerable increase of 43.5% on 2021, a record volume of EUR 306 billion was achieved. This figure exceeds the previous record of 2019, when EUR 302 billion were traded, by around EUR

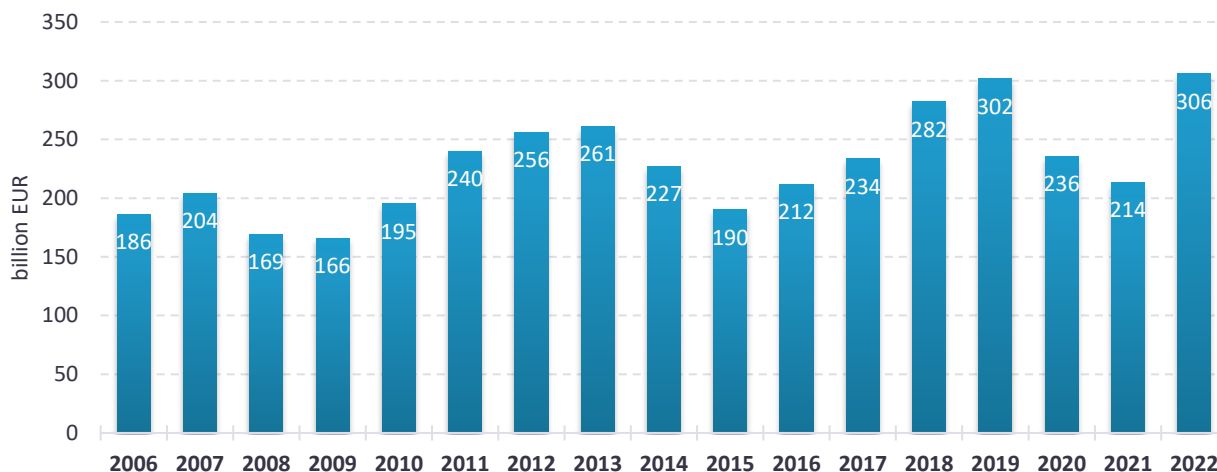
4 billion. There is no doubt that stopping buyback programs of the ECB plays a major role in this regard.

Geographically, sales were up in all regions. The euro area is again the most important region, with a total volume of EUR 98 billion, either an increase of 44.1% in comparison with 2021. An even greater increase was seen in the American continent, where volume rose by 50.4% to a total of EUR 95 billion.

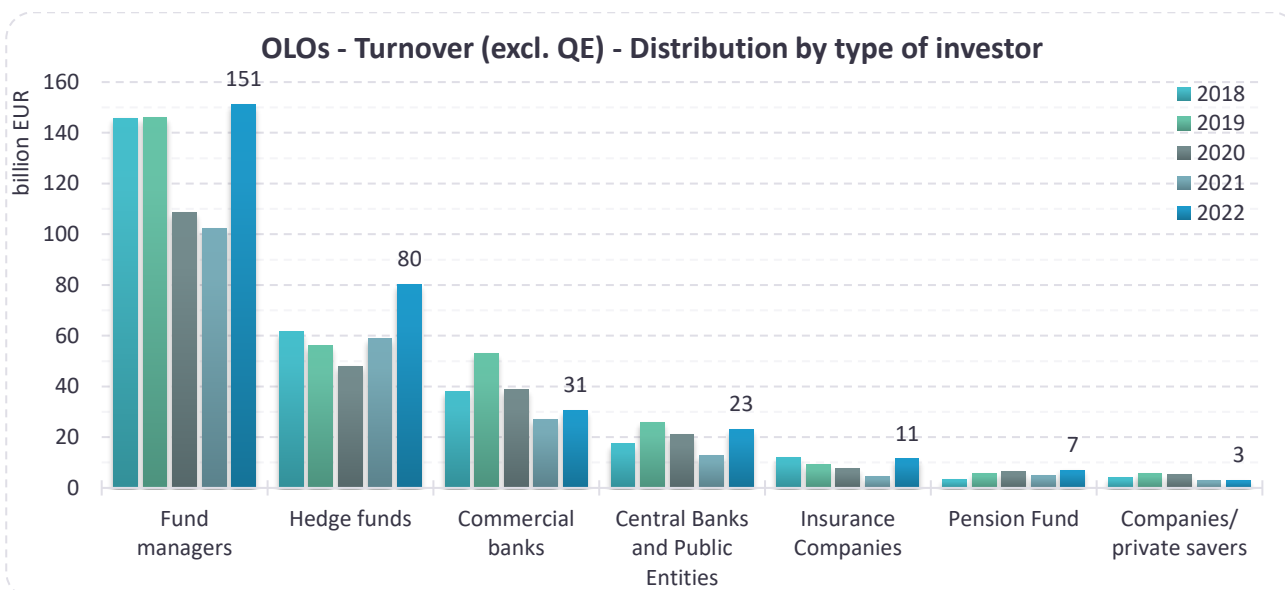
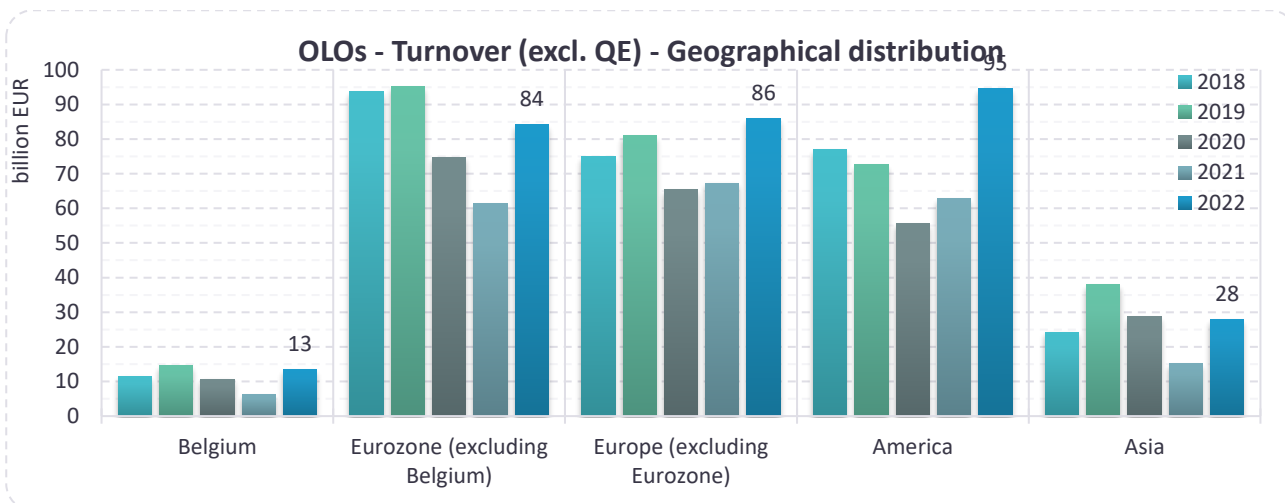
Investors in this area thus overtook the rest of Europe (excluding the euro area) for the first time since 2018. Despite a 27.7% increase on 2021, the rest of Europe is the third largest region in 2022, with a total volume of EUR 86 billion. However, it is once again Asia that records the highest percentage increase. After reaching an all-time low in 2021 with a volume of EUR 15 billion, volume in 2022 has risen by 83.4% to a total of EUR 28 billion.

Inside the euro area, the volume of Belgian investors has also risen from EUR 6 to 13 billion, either an increase of 117%. However, this amount is still well below the records set in 2011 and 2012, when Belgian investors traded EUR 52 and EUR 48 billion.

OLOs - Turnover on the secondary market (excl. QE)



3. A RANGE OF DIVERSE PRODUCTS

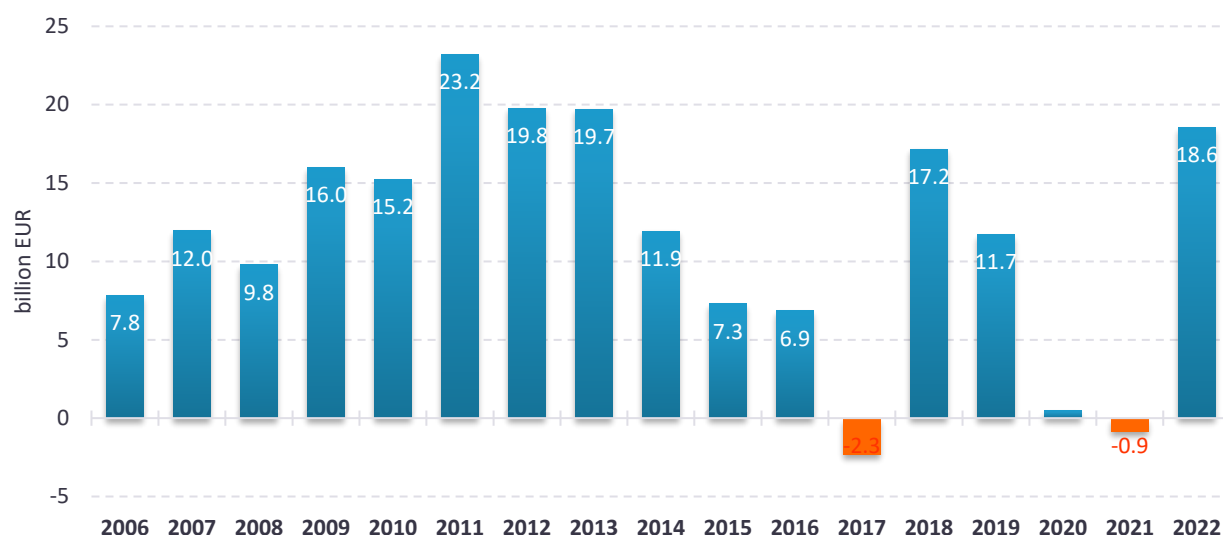


The results are similar in terms of investor types. While a drop in volume was recorded for most investor types in 2021, an increase in volume is observed for all investor types in 2022. As in previous years, fund managers remain the most important investors. In 2022, their volume increased by 47.8% to reach a total of EUR 151 billion, the highest level ever recorded. As for *hedge funds*, the only group whose volume had increased in 2021, volume rose by 35.8% in

2022 to reach EUR 80 billion. This puts them well ahead of commercial banks, which recorded a volume of EUR 31 billion, an increase of 13.1%. Central banks, whose volume had fallen to EUR 13 billion in 2021, are again at the forefront in 2022, their volume rising by 80.3% to a total of EUR 23 billion. Finally, volumes from insurance companies and pension funds have also increased, reaching EUR 11 and EUR 7 billion respectively.

3. A RANGE OF DIVERSE PRODUCTS

OLOs - Net purchases on the secondary market (excl. QE)



Net purchases by investors

Like sales, net purchases by investors also rose sharply in 2022. Whereas these only amounted to EUR 1 billion in 2021, and were still negative by EUR 1 billion in 2022, investors have now made net purchases of EUR 19 billion. These are the largest net purchases since 2013, when EUR 20 billion were purchased. Only in the first two months of the year were investors net sellers, but this is explained by the issue of new 10-year (OLO 94 - June/2032) and 30-year benchmarks (OLO 95 - June/2053) issued by syndication in January and February. Besides, stopping buyback programs of the ECB played doubtlessly a major role in the excellent net purchases of investors.

Geographically, a high concentration of net purchases was observed in the euro area. After two lean years with slightly negative or positive figures, investors have been buying for an amount of EUR 13.6 billion of OLO in the euro area in 2022. Investors from Belgium, Germany, France, Italy and the Netherlands stood out with a total of EUR 11.8 billion.

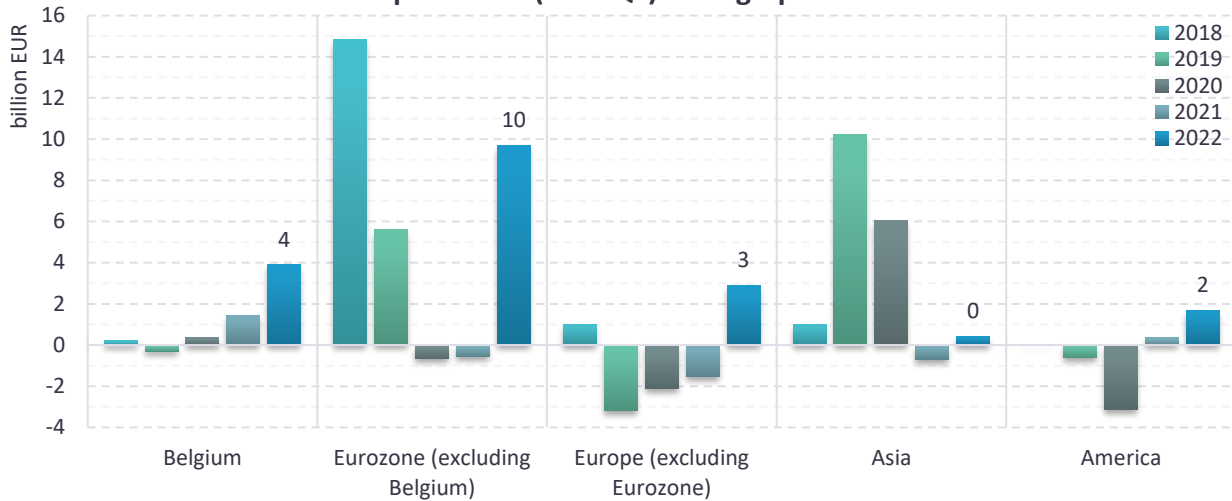
In the rest of Europe, investors purchased a net total amount of EUR 2.9 billion worth of OLOs. However, there were major differences between the different types of investors. Central banks and public entities bought a net amount of EUR 4.7 billion, while fund managers and other types of investors together sold a net amount of EUR 1.8 billion.

In the American continent, net purchases made mainly by *hedge funds* and fund managers amounted to EUR 1.7 billion, the highest figure since 2012 when net purchases amounted to EUR 3 billion.

In Asia, major differences were recorded throughout the year in the net buying and selling operations carried out by investors in the various sub-regions. Central banks and public entities bought a net amount of EUR 4.1 billion in Central and East Asia, while they sold a net amount of EUR 2.1 billion in the other Asian regions. Other types of investors were still net buyers of EUR 0.8 billion in the first quarter, but during the following nine months they also sold a net amount of EUR 2.3 billion. Net purchases by Asian investors amounted to EUR 0.4 billion.

3. A RANGE OF DIVERSE PRODUCTS

OLOs - Net purchases (excl. QE) - Geographical distribution

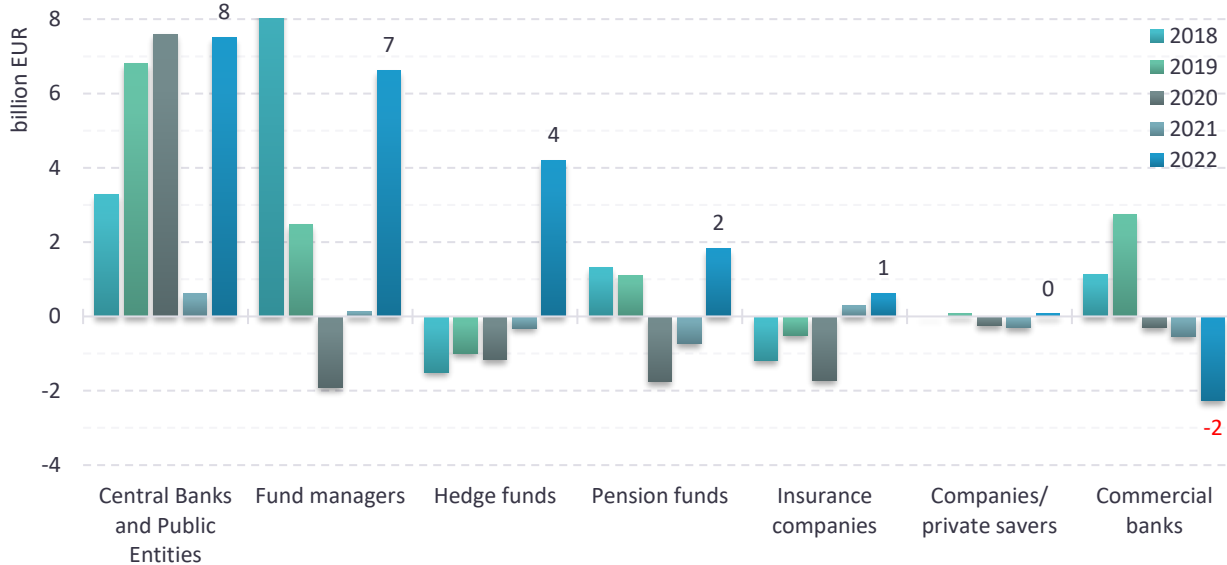


There were also major differences in terms of investor types. Central banks and public entities, after a mediocre year of 2021, when only EUR 0.6 billion net were purchased, are back in force with a positive figure of EUR 7.5 billion, bringing them back to their 2019 and 2020 levels.

Next in line are fund managers, who made net purchases of EUR 6.6 billion after two weaker

years. For the first time since 2014, *hedge funds* have also been net purchasers of OLO for an amount of EUR 4.2 billion. Finally, the pension funds and insurance companies have also purchased together a net amount of EUR 2.4 billion of OLO. In contrast, the commercial banks appeared to have sold OLO continuously over the past year. They have sold a total net amount of EUR 2.3 billion.

OLOs - Net purchases (excl. QE) - Distribution by type of investor



3. A RANGE OF DIVERSE PRODUCTS

3.1.4. Buy-backs by the Agency

The buy-back of an OLO arriving at maturity in a near future offers two advantages:

- A more efficient cash management, since the amount bought back is refinanced during the previous period on a phases basis. Therefore, a lower amount is obtained at the maturity date itself, which brings a decreasing refinancing risk.
- pre-financing in the year preceding the maturity date. The latter makes it possible to adjust the amount to be issued in an OLO if issue conditions are favourable.

For the buy-backs of its bonds, the Agency has been using since July 2001 the MTS Belgium (MTSB) electronic trading platform, as it offers liquidity, efficiency and *pricing* transparency. Buy-backs are carried out via a screen (*Belgian Buy-Backs/BBB*) available to the primary dealers, and on which the Agency continuously displays the purchase prices of the selected OLOs to be bought back. In case of technical problems, the dealers may also contact the Agency by phone in order to take part in this buy-back programme.

The Agency always starts the buy-backs of 12-month OLO before the due date. Subject to prior publication to its primary dealers, the Agency can however start it sooner. Therefore, also in 2022, the buy-backs of the two OLO lines coming due the following year (OLO 68 - June/2023 and OLO 79 - October/2023) have started since the start of January 2022.

No additional buy-backs were made between the start of the year and the maturity of the OLO 48, on March 28th 2022. However, EUR 1.14 billion of this line were already bought back in 2021 and the Agency already had EUR 85 million of this OLO as portfolio further to former purchases. The total amount of 8.66% issued on OLO 48 has been bought back. The OLO 65 (September/2022) has been bought back for an amount of EUR 125 million in 2022 after buy-backs for an amount of EUR 1.27 billion for the former year and EUR 317 million from former buybacks. At the maturity date, the Agency held thus 10.52% of the nominal outstanding amount on this OLO.

Spread over the entire year 2022, a nominal amount of EUR 671 million was bought on OLO 68 (June/2023), while during the previous years EUR 537 million had already been bought in this line. Finally, EUR 917.5 million of the OLO 79 (October/2023) have also been bought back in 2022. Both lines will continue to be bought back by the Agency till they mature in 2023, together with both OLO lines maturing in 2023 (OLO 72 and OLO 82).

OLOs - Buy-backs in 2022 on a monthly basis

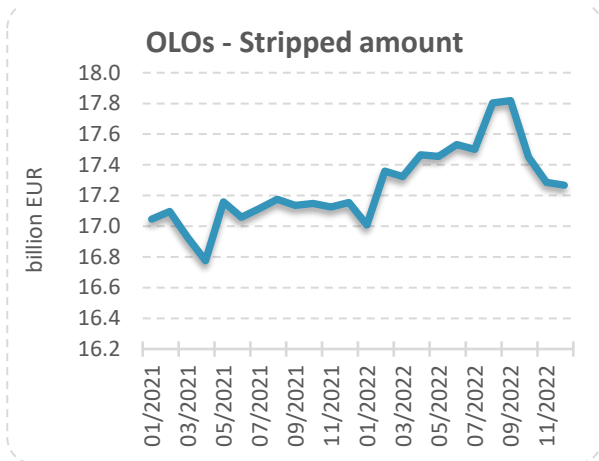


3. A RANGE OF DIVERSE PRODUCTS

3.1.5. Strips

As for the former years, the stripping and regrouping activity of OLO has been restricted.

A total nominal amount of EUR 1.95 billion of OLOs has been stripped against a nominal amount of EUR 1.86 billion of regrouping.

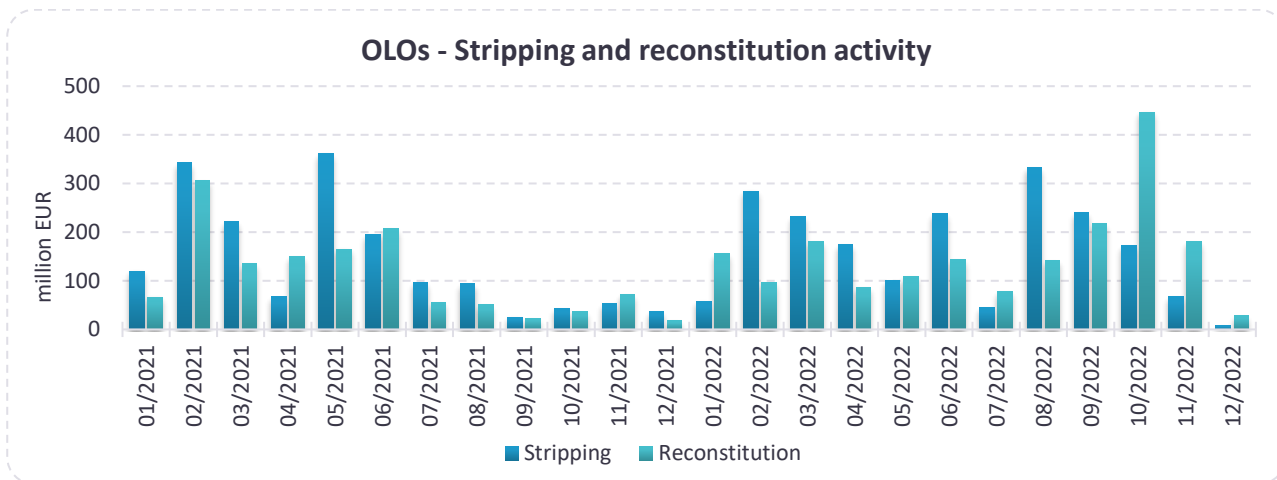


Once again long-term OLO lines have been stripped. It concerns mainly OLO 71, 78, 83 and 88. It was mainly OLO with a maturity coupon in June which have been stripped. As for the 4 remaining OLO lines with a maturity coupon in March (OLO 64, 31, 71 and 78), it has been noticed they have been almost exclusively regrouped.

The issue in 2022 of the whole amount of OLO lines under the existing collective action clause (CAC) regime was certainly an asset for the strip market. At the end of the year 2022, 21 lines had a coupon maturity in June. Since the maturity dates of these OLO lines are well distributed across the yield curve, it has been possible to make maximum use of the fungible nature of strips whose maturity date is the same regardless of the fact that they originally represented coupons or capital.

This fungible nature and the regrouping of OLO strips on the short part of the curve have resulted in the fact that the nominal outstanding amount of these OLO often exceeded the amount initially issued on the primary market. At the end of the year 2022, 14 lines of OLO have an outstanding amount higher than the amount issued on the primary market. A total amount of EUR 839 million of regrouped OLO has been recorded at the end of 2022 against an amount of EUR 806 million in 2021.

Unlike the activity on the stripping and regrouping market on OLO, there has been a large volume of Be-strips operations on the secondary market. A total amount of EUR 6.73 billion has been traded on the secondary market, among which an amount of EUR 2.89 billion on the electronic platform of MTS Belgium. In 2022, the whole set of the Primary Dealers has taken part on a voluntary basis in the *market making* of the strips on OLO.



3. A RANGE OF DIVERSE PRODUCTS

3.2. TREASURY CERTIFICATES

On several occasions in this document, we have already referred to the particularly sharp rise in interest rates on the financial markets (see also 4.4 under strategic points). This rise in interest rates was particularly noticeable on shorter maturities. During the first three months of 2022, the yield of treasury certificates during auctions has first decreased from -0.65% to -0.75%, but it progressively increased since April to 2.50% in December. The yield increase of Treasury certificates has clearly attracted growing interest from investors.

In the Agency's financing strategy, predictability and flexibility are also central to the issue of Treasury certificates. Predictability to the market is created by using a fixed issue calendar, which is published as early as December of the previous year. As in previous years, in 2021 two auctions per month were organised, and issues were spread over six Treasury certificates, each with a maturity date in the odd-numbered months. The specific Treasury certificates auctioned differ between odd and even months:

In odd months:

- First auction: 4- and 6-month certificates;
- Second auction: 4-month certificates and a new 12-month certificate

In even months:

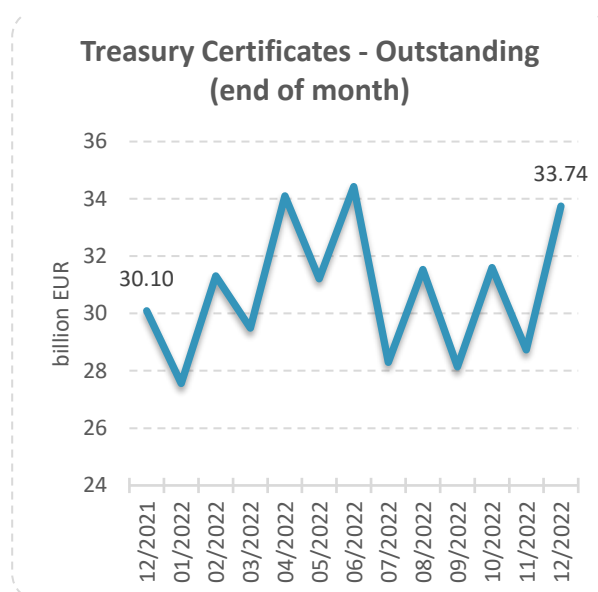
- First auction: 3-month certificates
- Second auction: 3- and 11-month certificates

Thanks to this issue calendar, the different certificates reach a sufficiently large outstanding amount to be considered as highly liquid, with about EUR 3 billion within the month after the issue of a new line and a target amount of EUR 7 billion on the maturity date of each line. Each Treasury certificate is thus re-opened six times after the initial 12-month issue.

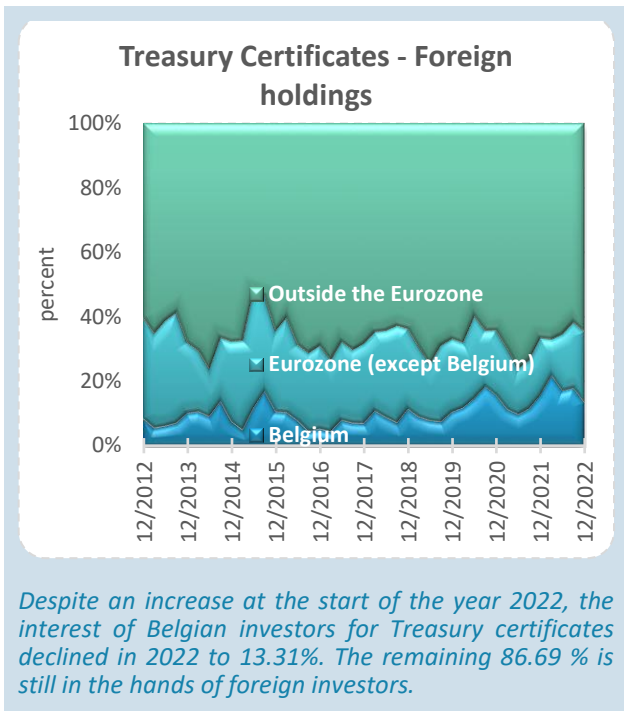
Flexibility is reflected first of all in the amounts auctioned, since the indicative amounts per certificate and the range of the auction are always

announced on the Friday preceding the auction. This allows the issue strategy to be adjusted according to specific short-term financing needs, or recent market movements to be taken into account. In addition, the Agency can always decide to add an extra Treasury certificate to an auction, to organise an extra auction or to cancel a planned auction.

However, in 2022, the whole predefined plan was observed. A total amount of 24 auctions was thus organised throughout 2022. The outstanding amount of Treasury certificates increased during this period, from EUR 30.10 billion at the end of 2021 to EUR 33.74 billion at the end of 2022.



3. A RANGE OF DIVERSE PRODUCTS



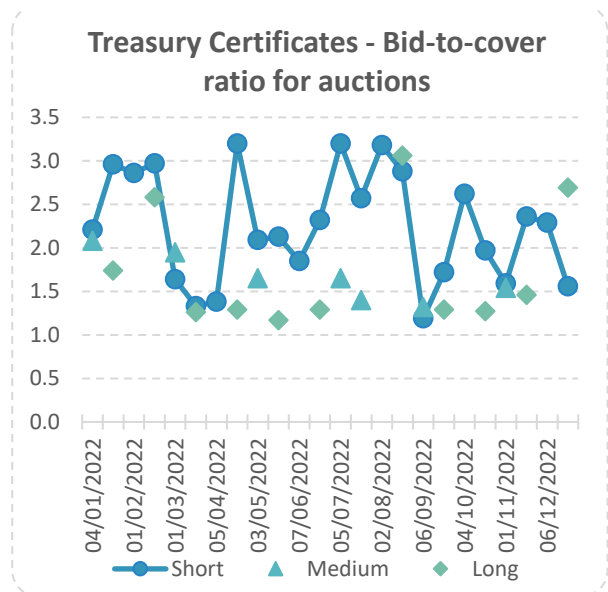
3.2.1. Primary market

During the year 2022, a total amount of 24 auctions of Treasury certificates has been organised, pursuant to the programme. Thus, a nominal amount of EUR 56.36 billion has been issued, allocated between competitive auctions (EUR 54.75 billion) and non-competitive subscriptions (EUR 1.61 billion). The non-competitive subscriptions allow the primary dealers to purchase State notes a few days after the competitive auction for a maximum amount and provided some conditions are observed, to the weighted average yield of the auction. Primary dealers will only exercise this right if it is “in-the-money”, that means if the weighted average yield of the auction is higher than the secondary market yield of the specific certificate.

The largest part of the total amount issued has been obtained in the shortest maturities of 3 and 4 months, with 54% of the whole amount of issue. 35% of the Treasury certificates issued had long

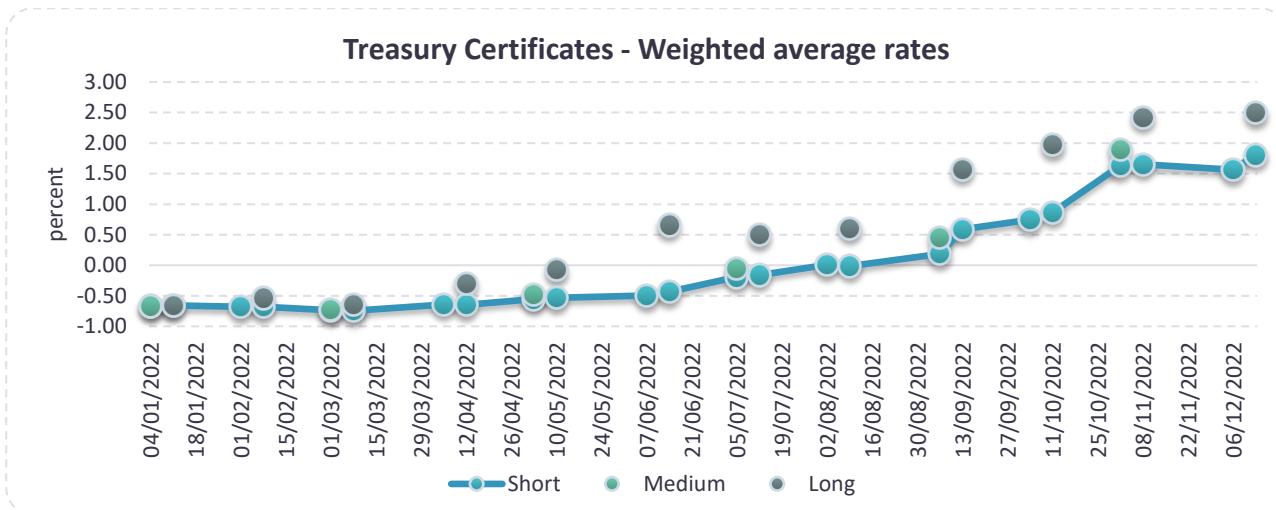
maturities of 11 and 12 months, and 11% of them, medium maturities of 6 months.

In each competitive auction, the demand for Treasury certificates was well in excess of the amount auctioned. This is measured by the so-called “bid-to-cover ratio”, which is the ratio of the total demand for Treasury certificates by the primary dealers to the final amount auctioned. The “bid-to-cover” ratios per auction varied throughout the year between a minimum of 1.25 and a maximum of 3.18. As usual, demand was highest for the short-term Treasury certificates, with an average ratio of 2.16, compared to a ratio of 1.70 for the 6-month maturities and 1.69 for the long-term maturities.



The financing via Treasury certificates remained very attractive in 2022 thanks to low interest rates (still negative in the first half of the year). The average weighted interest rates for the short-, medium- and long-term maturities were respectively of 0.083%, 0.051% and 0.638%. Although these average interest rates are higher than in the previous year, when interest rates were negative throughout the year for all maturities, they remain extremely low from a historical point of view.

3. A RANGE OF DIVERSE PRODUCTS

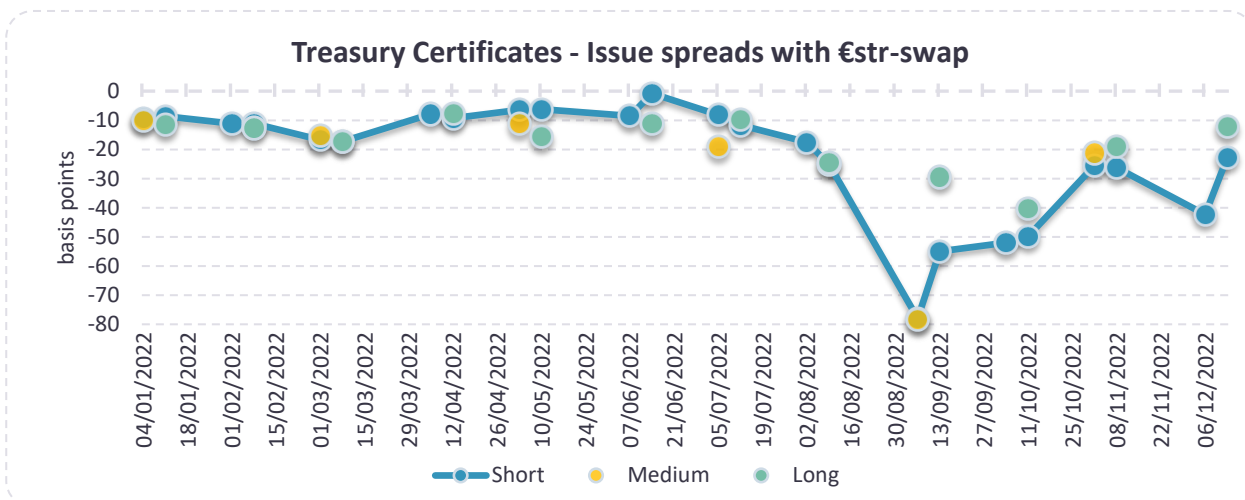


The absolute yields thus achieved at the auctions of Treasury certificates can be compared to the €STR swap rate with the same maturity in order to get a market reference. Through the whole year, spreads with this benchmark rate respectively amounted in average to -23.1, -25.3 and -17.3 basis points for the short-, medium- and long-term maturities.

In September, gaps between the yields of Treasury certificates and €STR swap rates have strongly increased, which allowed the Agency to get a very cheap financing in relative terms. The situation is due to the regulation on government deposits at national central banks, which, at that time, did not provide for any compensation for any sovereign treasury surplus. Since the start of September, following the second increase in ECB key interest

rates, deposit rate has turned again positive to 0.75%. In the perspective of new rate increases in order to curb persistent inflation, investors are afraid that the European States reduce their short-term debt issues in order to limit the treasury surplus, which led to a general scarcity of these issues in Europe. During the auction of Treasury certificates of September 6th 2022, the 3- and 6-month certificates have been allocated to a lower yield of 78 basis points than the one of the relevant €STR swap rate.

However, on September 8th 2022, the ECB decided to remunerate government deposits at a rate corresponding to the market temporarily till the end of April 2023, after which the gaps between short-term European securities and the €STR swap rate have gradually stabilized.



3. A RANGE OF DIVERSE PRODUCTS

RESULTS OF TREASURY CERTIFICATES AUCTIONS IN 2022 (in EUR million)

Auction date	Date of maturity	ISIN	Duration	Bid amount	Accepted amount (competitive)	Non-competitive subscriptions	Total amount	Weighted average price	Weighted average rate	Bid-to-Cover	Min/Max bid	Rate/limit price	% at stop price	Rewarded bidders	Spread swap €STR	Min Range	Max Range
04/01/2022				4,485	2,090	0	2,090			2.15						1,800	2,200
	12/05/2022	BE0312782544	S	2,225	1,005	0	1,005	100.234	-0.667	2.21	-0.687/-0.625	-0.658	100.00	9	-9.5		
	14/07/2022	BE0312783559	M	2,260	1,085	0	1,085	100.351	-0.667	2.08	-0.682/-0.630	-0.655	100.00	9	-10.0		
11/01/2022				6,770	3,186	0	3,186			2.12						2,800	3,200
	12/05/2022	BE0312782544	S	2,965	1,001	0	1,001	100.218	-0.658	2.96	-0.662/-0.615	-0.653	57.14	7	-8.6		
	12/01/2023	BE0312786586	L	3,805	2,185	0	2,185	100.664	-0.652	1.74	-0.675/-0.615	-0.641	100.00	10	-11.5		
01/02/2022				3,320	1,160	0	1,160			2.86						800	1,200
	12/05/2022	BE0312782544	S	3,320	1,160	0	1,160	100.186	-0.682	2.86	-0.696/-0.630	-0.676	100.00	9	-11.2		
08/02/2022				6,923	2,518	69	2,587			2.75						2,200	2,600
	12/05/2022	BE0312782544	S	3,288	1,108	0	1,108	100.172	-0.679	2.97	-0.684/-0.600	-0.674	100.00	7	-11.1		
	12/01/2023	BE0312786586	L	3,635	1,410	69	1,479	100.506	-0.540	2.58	-0.552/-0.450	-0.534	100.00	10	-12.7		
01/03/2022				4,225	2,400	15	2,415			1.76						2,000	2,400
	14/07/2022	BE0312783559	S	2,375	1,450	0	1,450	100.273	-0.737	1.64	-0.760/-0.670	-0.727	66.67	10	-16.7		
	08/09/2022	BE0312784565	M	1,850	950	15	965	100.380	-0.721	1.95	-0.750/-0.670	-0.712	100.00	8	-15.3		
08/03/2022				4,580	3,540	0	3,540			1.29						3,000	3,600
	14/07/2022	BE0312783559	S	2,125	1,595	0	1,595	100.262	-0.745	1.33	-0.760/-0.700	-0.735	100.00	12	-17.3		
	09/03/2023	BE0312787592	L	2,455	1,945	0	1,945	100.662	-0.650	1.26	-0.661/-0.600	-0.640	100.00	13	-17.2		
05/04/2022				2,615	1,895	0	1,895			1.38						1,600	2,000
	14/07/2022	BE0312783559	S	2,615	1,895	0	1,895	100.176	-0.644	1.38	-0.660/-0.600	-0.632	100.00	9	-7.9		
12/04/2022				6,220	2,600	112	2,712			2.39						2,200	2,600
	14/07/2022	BE0312783559	S	4,800	1,500	20	1,520	100.165	-0.650	3/20	-0.656/-0.590	-0.644	25.00	9	-9.3		
	09/03/2023	BE0312787592	L	1,420	1,100	92	1,192	100.271	-0.296	1.29	-0.310/-0.200	-0.280	100.00	13	-7.7		
03/05/2022				4,430	2,365	0	2,365			1.87						2,000	2,400
	08/09/2022	BE0312784565	S	2,480	1,185	0	1,185	100.194	-0.553	2.09	-0.561/-0.500	-0.546	100.00	8	-6.4		
	10/11/2022	BE0312785570	M	1,950	1,180	0	1,180	100.253	-0.480	1.65	-0.491/-0.400	-0.467	100.00	9	-11.3		
10/05/2022				5,140	3,206	0	3,206			1.60						2,800	3,200
	08/09/2022	BE0312784565	S	3,065	1,440	0	1,440	100.177	-0.534	2.13	-0.545/-0.480	-0.530	100.00	8	-6.2		
	11/05/2023	BE0312788608	L	2,075	1,766	0	1,766	100.076	-0.076	1.17	-0.090/-0.040	-0.060	60.71	13	-15.6		
07/06/2022				2,135	1,155	0	1,155			1.85						800	1,200
	08/09/2022	BE0312784565	S	2,135	1,155	0	1,155	100.125	-0.495	1.85	-0.502/-0.420	-0.489	100.00	10	-8.5		
14/06/2022				3,805	2,060	9	2,069			1.85						2,000	2,400
	08/09/2022	BE0312784565	S	2,590	1,115	0	1,115	100.101	-0.434	2.32	-0.450/-0.320	-0.428	100.00	7	-0.8		
	11/05/2023	BE0312788608	L	1,215	945	9	954	99.402	0.658	1.29	0.640/0.720	0.675	100.00	13	-11.1		
05/07/2022				4,690	2,055	9	2,064			2.28						1,800	2,200
	10/11/2022	BE0312785570	S	2,685	840	0	840	100.067	-0.193	3/20	-0/204/-0.110	-0.186	100.00	8	-8.2		
	12/01/2023	BE0312786586	M	2,005	1,215	9	1,224	100.027	-0.052	1.65	-0.070/0.010	-0.046	100.00	10	-19.1		
12/07/2022				5,260	3,005	0	3,005			1.75						2,800	3,200
	10/11/2022	BE0312785570	S	2,325	905	0	905	100.054	-0.162	2.57	-0.175/-0.100	-0.156	100.00	8	-11.7		
	13/07/2023	BE0312789614	L	2,935	2,100	0	2,100	99.496	0.501	1.40	0.400/0.650	0.525	100.00	9	-9.7		
02/08/2022				2,561	805	18	823			3.18						800	1,200
	10/11/2022	BE0312785570	S	2,561	805	18	823	99.999	0.005	3.18	-0.021/0.080	0.015	22.31	6	-17.5		
09/08/2022				5,379	1,805	614	2,419			2.98						1,600	2,000
	10/11/2022	BE0312785570	S	2,304	800	222	1,022	100.004	-0.014	2.88	-0.030/0.040	-0.006	70.00	7	-25.1		
	13/07/2023	BE0312789614	L	3,075	1,005	392	1,397	99.440	0.603	3.06	0.595/0.680	0.607	100.00	5	-24.5		
06/09/2022				3,056	2,446	0	2,446			1.25						2,200	2,600
	12/01/2023	BE0312786586	S	1,690	1,415	0	1,415	99.935	0.185	1.19	0.160/0.300	0.250	100.00	11	-78.0		
	09/03/2023	BE0312787592	M	1,366	1,031	0	1,031	99.775	0.446	1.32	0.420/0.600	0.480	100.00	11	-78.3		
13/09/2022				4,745	3,165	171	3,336			1.50						2,800	3,200
	12/01/2023	BE0312786586	S	2,625	1,525	171	1,696	99.806	0.588	1.72	0.575/0.750	0.595	100.00	9	-55.0		
	14/09/2023	BE0312790620	L	2,120	1,640	0	1,640	98.441	1.567	1.29	1.535/1.750	1.590	100.00	11	-29.5		
04/10/2022				3,145	1,202	0	1,202			2.62						800	1,200
	12/01/2023	BE0312786586	S	3,145	1,202	0	1,202	99.798	0.745	2.62	0.740/0.900	0.750	78.57	6	-52.0		

3. A RANGE OF DIVERSE PRODUCTS

11/10/2022			3,620	2,290	0	2,290			1.58
12/01/2023	BE0312786586	S	1,990	1,010	0	1,010	99.782	0.866	1.97
14/09/2023	BE0312790620	L	1,630	1,280	0	1,280	98.194	1.970	1.27
01/11/2022			3,440	2,195	0	2,195			1.57
09/03/2023	BE0312787592	S	1,885	1,185	0	1,185	99.433	1.629	1.59
11/05/2023	BE0312788608	M	1,555	1,010	0	1,010	99.013	1.898	1.54
08/11/2022			5,265	3,000	135	3,135			1.76
09/03/2023	BE0312787592	S	2,355	1,000	35	1,035	99.457	1.652	2.36
09/11/2023	BE0312791636	L	2,910	2,000	100	2,100	97.611	2.421	1.46
06/12/2022			4,115	1,800	0	1,800			2.29
09/03/2023	BE0312787592	S	4,115	1,800	0	1,800	99.606	1.563	2.29
13/12/2022			5,860	2,804	458	3,262			2.09
09/03/2023	BE0312787592	S	2,320	1,489	273	1,762	99.580	1.806	1.56
09/11/2023	BE0312791636	L	3,540	1,315	185	1,500	97.768	2.498	2.69
TOTAL						56,357			

										2,000	2,400
0.845/1.000	0.884	100.00	10	-49.8							
1.930/2.050	1.995	100.00	11	-40.3							
										1,800	2,200
1.610/1.750	1.647	100.00	11	-25.4							
1.879/2.000	1.915	100.00	11	-21.2							
										2,800	3,200
1.634/1.725	1.665	60.00	9	-26.3							
2.300/2.490	2.463	40.00	13	-19.0							
										1,400	1,800
1.545/1.700	1.585	50.00	9	-42.3							
										2,400	2,800
1.770/1.880	1.840	80.77	10	-22.7							
2.470/2.570	2.510	100.00	7	-12.2							

Total amounts	S	M	L
Competitive bids	29,585	6,471	18,691
Competitive and non-competitive bids	30,324	6,495	19,538

Average yield	S	M	L
	0.083	0.051	0.638

3.2.2. Secondary market

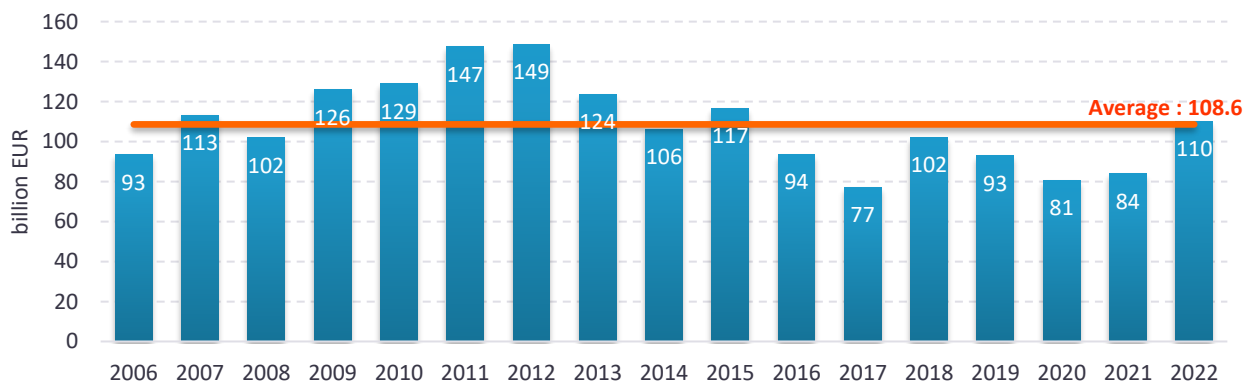
As for the secondary market for OLOs, the following data is solely based on figures obtained from primary dealers. They are the main active dealers as regards our debt, although they are not the only ones. Besides, these figures do not take into account the volume purchased by the ECB during the operations of its quantitative easing implemented since March 2015. However, certain

trends can be inferred from these figures. It should also be noted that the figures only refer to the purchases and sales of final investors and therefore not the *interdealers* market.

Volumes

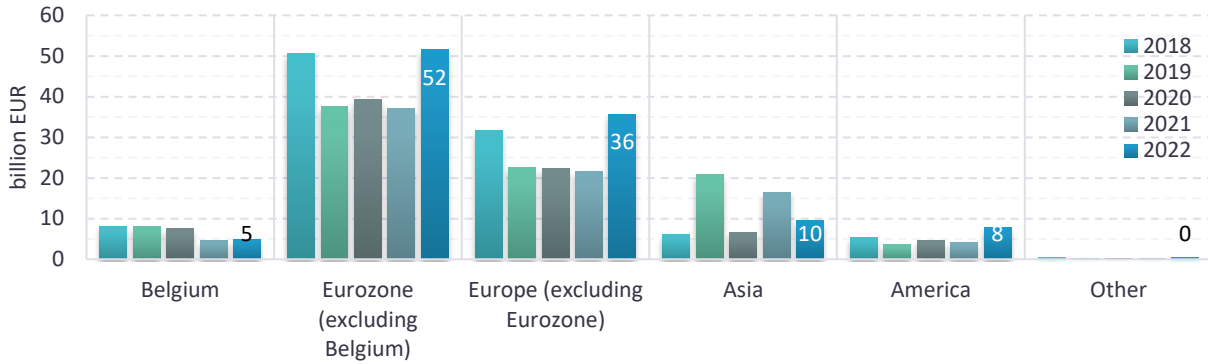
After several years of decline, the volume of Treasury certificates traded is set to rise again in 2022, reaching EUR 110.0 billion, either an increase of 31% in comparison with 2021, and EUR 1.4 billion more than the average volume since 2006.

Treasury Certificates - Volume traded on the secondary market



3. A RANGE OF DIVERSE PRODUCTS

Treasury Certificates - Turnover - Geographical distribution



Geographically, volume is increasing in all regions, with the exception of Asia. As every year, the euro area is once again the most important region, with a total volume of EUR 56.5 billion, either an increase of 35.7% in comparison with 2021. As usual, the most important countries are the Netherlands, Luxembourg, France, Portugal, Germany and Belgium, which together traded a volume of EUR 44.7 billion. Spain and Ireland also recorded strong increases in 2022.

An even greater increase than in the euro area was seen in the rest of Europe, where volumes rose by 64.8% to a total of EUR 35.7 billion. British investors took the lion's share with EUR 26.7 billion.

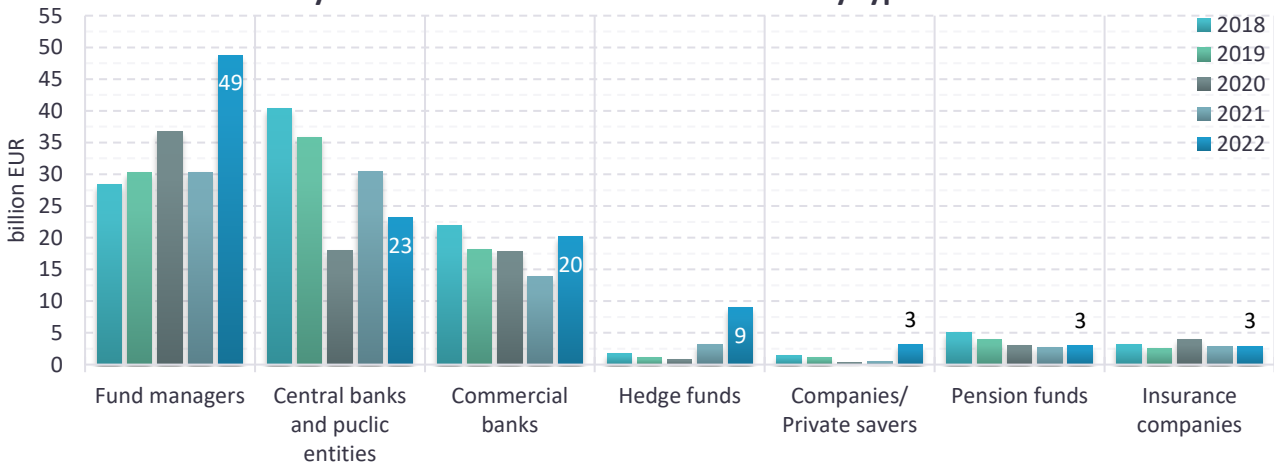
Together, the two aforementioned regions accounted for 83.8% of total volume.

However, the biggest increase in volume was recorded by American investors. In 2022, they traded EUR 7.9 billion, an increase of 96.0% in comparison with 2021. The United States of America and the Cayman Islands together accounted for 95.4% of volume.

By contrast, Asian investors saw their volume fall by 41.6%, just before the Americans, with a total of EUR 9.5 billion. This decline mainly concerns investors in West and East Asia.

In 2022, the Treasury certificates have been purchased and sold by investors from 50 different countries.

Treasury Certificates - Turnover - Distribution by type of investor



3. A RANGE OF DIVERSE PRODUCTS

In terms of investor types, fund managers become by far the number one, with an increase of 60.6% and a total volume of EUR 48.7 billion. They thus come ahead of central banks and public entities, which were still the leading investor type in 2021, and whose total volume fell by 23.8% to reach a total of EUR 23.2 billion in 2022.

Commercial banks also saw their volume increase by 44.6% in 2022, bringing their total amount of EUR 20.1 billion back to the level of the 2018-2020 period, after a weaker year 2021.

It is worth noting the sharp increase in *hedge funds* activity. With a total volume of EUR 9.0 billion, an increase of 180% in comparison with 2021, they have never before been so active as regards Treasury certificates.

In relative terms, the largest increase came from private and corporate investors, whose volume increased sixfold, from EUR 0.5 billion in 2021 to EUR 3.1 billion in 2022.

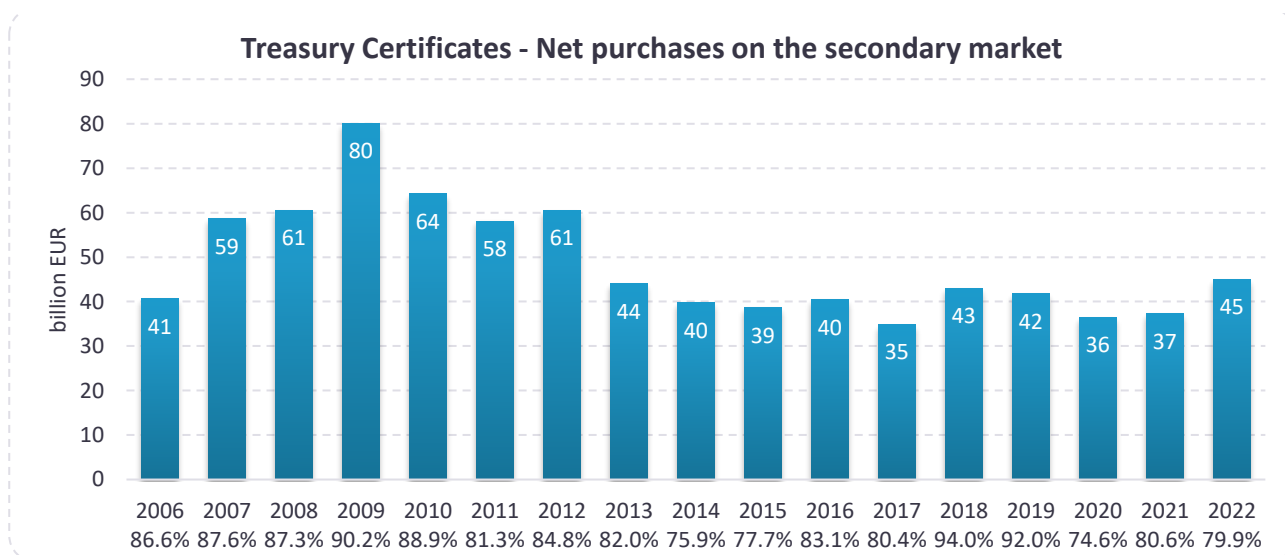
Finally, the volume from pension funds and insurance companies remained virtually stable compared to 2021, at EUR 2.9 billion each.

Net purchases by investors

Like sales, net purchases by investors also rose sharply in 2022. In 2021, net purchases amounted to EUR 37.3 billion, the third-lowest result on record, while by the end of 2022, they had reached EUR 45.0 billion. This is the best result since 2012, when investors made net purchases of EUR 60.5 billion. With this sharp increase, however, it should be noted that the year 2022 was also marked by a sharp increase of issues of Treasury certificates on the primary market (EUR 56.4 billion).

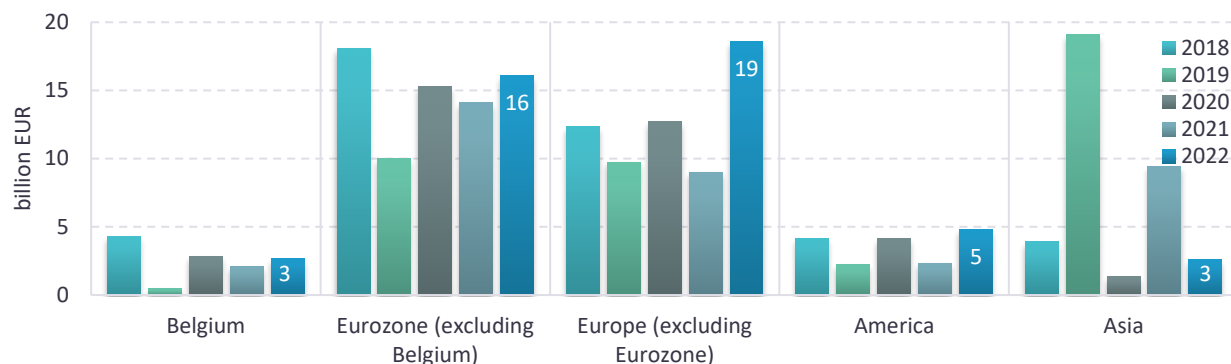
If the ratio “net purchases/primary market” is considered, it will be noticed that the percentage of Treasury certificates issued on the primary market which have been subject to net purchases by investors in 2022 amounted to 79.9%. Despite the high level of net purchases by investors, this percentage is 0.7% lower than in 2021 and 2.8% below the average since 2010. In 2018 and 2019 in particular, a very high percentage of Treasury certificates newly issued has been purchased by investors.

The part not purchased by investors in 2022 (20.1% or EUR 11.3 billion) has been sold by primary dealers to other dealers and traders (EUR 7.5 billion) and to central banks within the framework of the quantitative easing (EUR 1.4 billion). About EUR 2.4 billion has been held by primary dealers themselves.



3. A RANGE OF DIVERSE PRODUCTS

Treasury Certificates - Net purchases - Geographical distribution



Geographically, as in previous years, there was a strong concentration in Europe, where 82.9% of investors' net purchases took place. For the first time since 2019, net purchases in the euro area (EUR 18.7 billion) and the rest of Europe (EUR 18.6 billion) were almost equal, with the most active countries being the UK, Belgium, Ireland, Germany, Luxembourg and the Netherlands.

After a sharp drop in net purchases in 2022, Asian investors were overtaken by American investors, with the United States of America and the Cayman Islands being the most active. The decline in net purchases by Asian investors mainly concerns West Asia and East Asia.

There were also major differences in terms of investor types. The share of fund managers, already the largest in 2020 and 2021, has increased again in 2022. With a total amount of

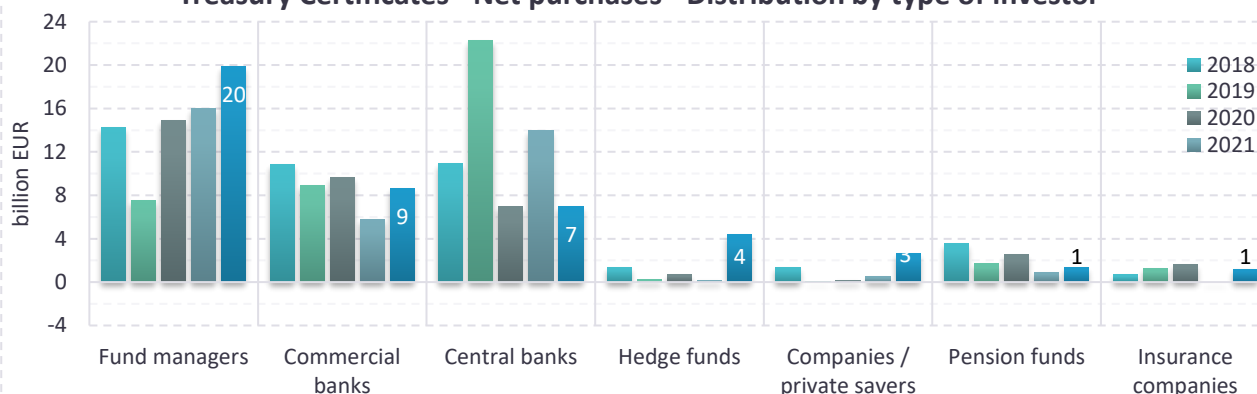
EUR 19.8 billion, they now account for 44.1% of total net investor purchases.

Commercial banks are now the second-largest type of investor, with EUR 8.6 billion, followed by central banks and public entities, whose net purchases fell from EUR 13.9 billion in 2021 to EUR 6.9 billion at the end of 2022. The *hedge funds* have purchased a net amount of EUR 4.4 billion of Treasury certificates in 2022. This is by far their highest level of net purchases ever.

The enterprises and the private investors have also purchased much more Treasury certificates than during the former years. With total amount of EUR 2.7 billion in net purchases, they were well ahead of pension funds and insurance companies.

For the latter, net purchases amounted to just EUR 0.8 billion in 2021. In 2022, they rose to EUR 2.6 billion.

Treasury Certificates - Net purchases - Distribution by type of investor



3. A RANGE OF DIVERSE PRODUCTS

3.3. EURO MEDIUM TERM NOTES (EMTN) AND SCHULDSCHEINE

As in former years, the OLO remained the cheapest instrument for the long-term financing of the Kingdom of Belgium.

In a year marked by major interest rate shocks, investor demand focused on the most liquid instruments as OLO. Issues in other currencies within the framework of the EMTN programme revealed themselves to be more expensive - after swap in € - than OLO with similar maturities.

Therefore, no EMTN or Schulscheine has been issued in 2022.

3. A RANGE OF DIVERSE PRODUCTS

3.4. EURO COMMERCIAL PAPER (ECP)

The issue of short-term debt within the framework of the ECP programme has remained the ideal way to clear off the possible cash deficits remaining after the issue of OLO and Treasury certificates and with as main advantages, the flexibility in terms of currency and maturity, as well as attractive financing terms.

In 2022, a nominal amount of USD 37.49 billion equivalent has been issued within the context of the ECP programme, that means EUR 35.24 billion. This is an increase compared to 2021, when the equivalent of only USD 30.68 billion was issued under this program, but it's still less than in previous years. In 2020, an amount of USD 45.59 billion has been financed by ECP issues reaching an amount of USD 51.96 billion in 2019. The relatively limited amounts issued over the past two years are mainly due to the historically cheap financing of short-term instruments denominated in EUR, that is to say Treasury certificates as well as the high level of long-term financing during the first semester of the year.

Traditionally, most of the ECP issues took place before the issue of an OLO in order to finance its reimbursement. This was also the case in 2022: an amount of USD 10.78 billion equivalent has been issued during the month of March anticipating the maturity of OLO 48 of March 28th. At the end of September 2022, when the OLO 65 came due, a nominal amount of USD 8.60 billion equivalent has been issued in order to finance it partly. The last quarter of the year also saw strong activity of ECP issue, with USD 18.06 billion equivalent issued

during these three months with the largest amount which has been issued during November (USD 9.39 billion equivalent).

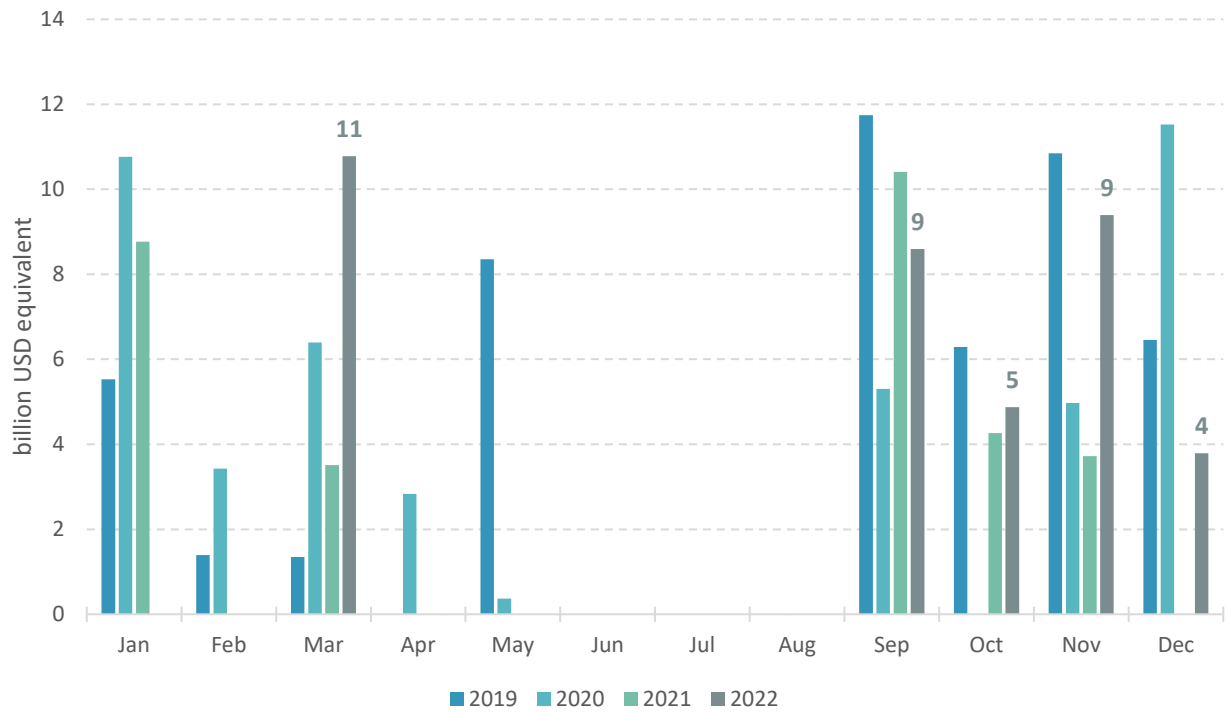
The ECP programme is very flexible, since the issues can be made in a wide range of currencies - in theory, all currencies for which the ECB daily publishes its key rates. However, the ECP issues in a foreign currency are always concluded in the form of a *package deal* with a *FX-swap* so that the Agency only receives the euro at the issue and thus without any risk of change between the issue and the maturity date. In 2022, 41% of all issues were denominated in EUR, closely followed by issues in USD (40%). The Agency also performs ECP issues in sterling pounds (19%), which it has been doing since 2020.

Issues periods are also very flexible. ECP issues can also be performed *on tap* each time it exists a specific financing need and for the maturity wished, from 3 to 364 days. Since the ECP programme is mainly used to finance remaining cash deficits after OLO and Treasury certificate issues, the maturities of these ECPs are very short in truth. In average, the maturity of these ECP issues amounts to 24.5 days in 2022, slightly higher than the average maturity period of 23 days in 2021. 46% of the whole amount of issues has been concluded for a period lower than 1 month, against 38% for 1-month and 16% for 2-month period.

Due to short maturities of ECP issues, these instruments have almost always been held by investors till the final maturity date. The main types of investors in the ECP programme of the Kingdom of Belgium are fund managers (66%) and public entities such as central banks (28%). To a lesser extent, these ECPs are also purchased by pension funds (2%), banks (2%) and insurance companies (1%).

3. A RANGE OF DIVERSE PRODUCTS

ECP issued per month (2019-2022)



3. A RANGE OF DIVERSE PRODUCTS

3.5. STATE NOTES

State notes are medium- and long-term loans with fixed income and annual coupons, in EUR. They are invested through investment establishments contractually bound to the Agency or by the *Service des Grands-Livres*.

On the primary market, this product is intended for private individuals living in the European Economic Area as well as certain other categories of investors: foundations, certain public organisations, non-profit organisations, churches or similar entities.

Since all the data of *Service des Grands-Livres* has been digitalised, the possibility is offered to private individuals as well as some legal entities to subscribe to State notes online, to carry out the related payment and to check their portfolios. It is an application which offers a user-friendly, efficient and high-quality service. Besides, it should be emphasised that a nominative registration with the Ledger Service is entirely free of charge.

After suspending more than 3-year issues due to low interest rates, State notes have again been offered to Belgian private investors and this for the first time in June 2022 (see strategic point 4.1.), as well as during the two following campaigns (in September and December 2022).

During the last three campaigns of the year, the Agency offered 7 State notes, three 5-year State notes, one 8-year State note and finally three 10-year State notes, as rates have not increased enough for offering 3-year issues. In spite of still lower coupons (5-year with 0.7% - 10-year with 1.30%), the June subscription showed encouraging result with a cumulated amount of EUR 39.6 million. The September campaign, which offered three different notes (5-year with 1.05% - 8-year with 1.4% - 10-year with 1.7%) saw a decrease to EUR 20.6 million. Finally, 2022 closed with the December campaign, with increasingly attractive rates (5-year with 2% - 10-year with 2.4%) with a cumulated result of EUR 48.6 million. The amount subscribed for 2022 amounted to EUR 108.73 million, the highest level since 2012. Within this context, and considering the interest aroused, the continuation of the issues is justified by the low cost of these issues for the Agency, but also by a concern for diversification of the issue instruments of the debt.

As for the secondary market, the State notes are quoted on the Euronext Brussels market and the liquidity is underwritten by the company Florint BV.

Finally, in order to facilitate liquidation and tax payment of State notes, they are included in the Belgian National Bank's X/N liquidation system.

STATE NOTE ISSUES IN 2022						
Issues	State notes	Coupon	Price	ISIN	Total amount subscribed	
04/06/2022	TOTAL					39,574,100 EUR
	5-year BE	0.70 %	100 %	BE3871280108	18,140,700 EUR	
	10-year BE	1.30 %	100 %	BE3871281114	21,433,400 EUR	
04/09/2022	TOTAL					20,565,900 EUR
	5-year BE	1.05 %	100 %	BE3871282120	8,037,300 EUR	
	8-year BE	1.40 %	100 %	BE3871283136	3,810,300 EUR	
	10-year BE	1.70 %	100 %	BE3871284142	8,738,300 EUR	
04/12/2022	TOTAL					48,565,600 EUR
	5-year BE	2.00 %	100 %	BE3871285156	12,000,000 EUR	
	10-year BE	2.40 %	100 %	BE3871286162	36,206,700 EUR	
TOTAL					108,725,600 EUR	

3. A RANGE OF DIVERSE PRODUCTS

A close-up, artistic photograph of a car's headlight lens. The lens is circular and features a complex, multi-faceted design with numerous small, rectangular prisms that create a textured, crystalline appearance. The lighting is dramatic, with a strong blue tint dominating the scene, while some highlights in white and silver are visible. The background is dark and out of focus, emphasizing the intricate details of the headlight.

4. MAIN STRATEGIC POINTS

4.1. THE RETURN OF THE STATE NOTES

In June 2022, after being interrupted for more than three years, State notes have reappeared on the Belgian financial scene. Indeed, this instrument existed since June 1996¹⁵ and has been offered for the last time in March 2019. Later, the rates had become so low that it was no longer interesting for the investors to invest in them or for the Agency to offer them.

Indeed, let's not forget that the Agency always favours the cheapest financing way. During this period, it was able to finance itself at extremely competitive (or even negative) rates on the whole set of its other short- and long-term instruments (Treasury certificates, ECP, OLO and EMTN). It was therefore decided to suspend issue campaigns of State notes, but without stopping them definitely, given on one hand the special consideration linked to this instrument among Belgian investors and on the other hand its potential usefulness for State financing.

Interest and success of the State note are due to the fact that it meets the expectations of the domestic market: it is a simple product (fixed rate with annual payment) with the possibility of subscribing free of charge via the *Service des Grands-Livres*. And Belgian citizens are known for their aversion to risk, as evidenced by the volumes deposited in savings accounts¹⁶, the amounts invested in various insurance and guarantee schemes, and their pronounced taste for real

estate investment. This investment behaviour has the added advantage of keeping money directly available in case an opportunity, such as the State note, would arise.

For the Agency, it is important to keep the State note operational in order to diversify its products and investor base. This possibility of issuing to the public can even become strategic, as was the case in autumn 2011, during the crisis of sovereign debts when OLO rate had strongly increased and the issue of three State notes (with the strong preceding promotion) had then allowed to collect nearly EUR 6 billion and had then allowed to bring OLO rates to more sustainable levels.

All these reasons, added to the fact that during the second half of 2022 the commercial banks had not raised their savings account rates again, gives as result that the return of State notes of 2022 was a resounding success. On three occasions, during the June, September and December campaigns, investors responded with a total amount for the year 2022 of more than EUR 108 million.

In 2023, for the first time since 2019, State notes make their return in the Belgian Debt Agency's financing plan. The Agency had planned to raise EUR 250 million for the whole year. In the end, this amount will already have been exceeded after the first campaign, when EUR 262.3 million were raised, to which EUR 127.5 million must be added for the June 2023 campaign.

It makes no doubt that in the future, the State note will carry on keeping a prominent place in the portfolio of the Belgian investors.

¹⁵ State notes have succeeded to the loans "Philippe", referring to Philippe Maystadt, Minister of Finance (1988-1998).

¹⁶ EUR 342 billion on December 31st 2022.

4 MAIN STRATEGIC POINTS

4.2. THE END OF THE QUANTITATIVE EASING OF THE ECB

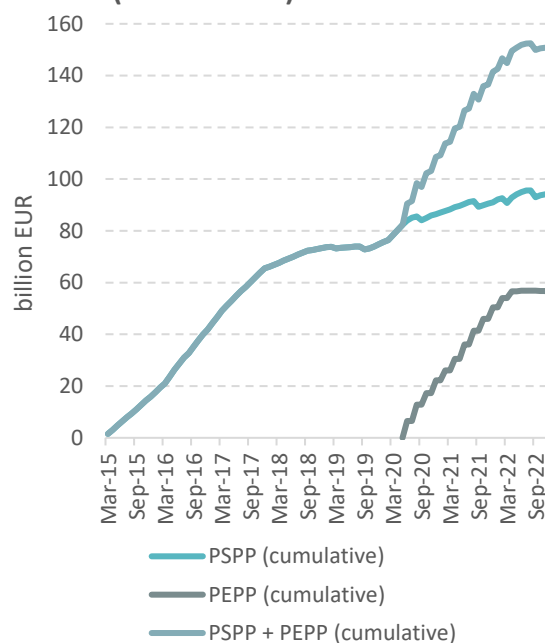
In January 2015, the European Central Bank decided to start buying sovereign bonds of the euro area countries¹⁷ A few months earlier, it has already started to purchase *Asset Backed Securities* and *Covered bonds*, but, in order for the quantitative easing programme to be efficient enough, it also had to focus on the much larger market of sovereign bonds.

With the quantitative easing, the ECB used a method said non-conventional to reach its objective (obtaining the price stability or a 2% medium-term inflation) Successive cuts in its key rates proved insufficient, so it resorted to this non-conventional method. By buying the financial securities, in particular State notes, the ECB supports and increases the price of these securities, which reduces the interest rate of these State notes. The stronger economic growth which results thereof feeds then the inflation.

The purchase programme of State notes was called *Public Sector Purchase Programme (PSPP)*. During the following years, the ECB has adjusted the pace of its purchases on several occasions. In March 2020, it even introduced a new purchase programme in view of the expected sharp slowdown in economic growth and the downward pressure on inflation caused by the COVID-19 crisis. This programme was called the *Public Emergency Purchase Programme (PEPP)*.

¹⁷ It concerned State notes of countries with at least an *investment grade*, that is to day they got the minimum rate of BBB-

Cumulative net purchases of Belgian government securities (PSPP + PEPP) 2015 - 2022



During the last meeting of the ECB in December 2021, it has been decided to reduced the net purchases within the framework of the PEPP since January 2022 and to interrupt them at the end of March 2022. Reinvestment of securities coming due would carry on until at least the end of 2024. The ECB also announced that net purchases within the framework of the PSPP would progressively decrease during 2022. For this programme too, the securities coming due would also be invested in the PSPP until well after the decision to raise key rates.

The sharp rise in inflation due to the invasion of Ukraine forced the ECB to put an end to the net purchases within the framework of the PSPP as from June 2022. Indeed, it will increase the key rates for the first time since July.

During the last meeting of the ECB, on December 21st 2022, the ECB has then set a date for the reduction of the portfolio of state notes it was

4 MAIN STRATEGIC POINTS

holding for the first time. As from March 2023, the reinvestment of PSPP securities would not concern the total amount and its portfolio would be reduced by EUR 15 billion per month until the end of the second quarter of 2023, and by an unspecified amount per month from the third quarter onwards. As for the PEPP securities, the full reinvestment remained unchanged until the end of 2024.

The end of purchases within the framework of PSPP in July 2022 means the private sector had to buy more again (Belgian and other) state notes, which put further pressure on interest rates. In the meantime, the ECB will also raise its key rates on several occasions. Therefore, the yield of state notes and other securities saw a sharp and unprecedented rise in the course of 2022.

4 MAIN STRATEGIC POINTS

4.3 FLEXIBILITY AND TRANSPARENCY OF THE FINANCING PLAN

The Belgian Debt Agency strives to be sufficiently predictable as regards its financing plans. In general, the final financing raised should not deviate significantly from the amounts announced. This predictability, also known as transparency, is valued by investors. Uncertainty about what will be achieved in the end would result in a higher interest rate for the federal State.

Comparison of the amounts planned for the long-term financing on the 2018-2022 period with the amounts actually raised shows that the differences are only substantial in 2020. That year, financing needs were suddenly revised drastically as a result of the COVID-19 crisis, so it proved impossible to estimate correctly the financing needs beforehand.

As for the type of financing, OLO or EMTN and Schuldscheine, there was also a slight discrepancy between the amounts forecast and those finally achieved, since the EMTN and Schuldscheine have invariably not reached their predetermined amount. However, the Agency has always been transparent about the fact that financing through other products will only take place if they are cheaper than the corresponding OLO rate. Throughout the year, the Agency always communicated the expected developments in

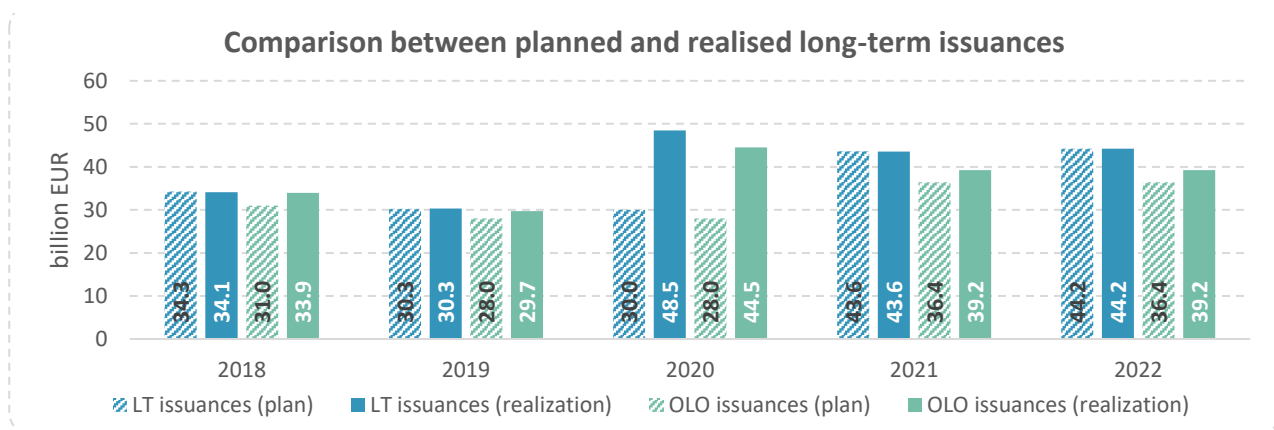
alternative financing and the increased use of its standard product, the OLO.

However, the significant development of interest rates obliges from now on the Agency to announce less specifically the duration of new OLO loans when the financing plan is published. On one hand, it is more difficult to accurately forecast the duration that the market will want to finance. On the other hand, the Agency will let its choice depend on interest rates and their expected development. Thus, for 2023, no other indication has been given as for the duration of the third new OLO.

It is vital that the Agency has significant margins in relation to the standards imposed in the General Guidelines of the Minister of Finance. Values of risks and the average duration on December 31st 2022 demonstrate these significant margins.

Parameters	Value on 31/12/2022	Max./min.
12-Month refinancing risk	13.22%	17.50% max.
12-Month rate refixing risk	13.69%	17.50% max.
60-Month refinancing risk	36.89%	42.50% max.
60-Month rate refixing risk	37.35%	42.50% max.
Average period	10.32 years	9.25 years min.

The Agency will therefore have a sufficient flexibility in its financing choices for the coming years.



4 MAIN STRATEGIC POINTS

4.4. CONTROL OF THE AGENCY ORGANISATION

The Federal Debt Agency has a governance structure as well as internal control and risk monitoring standards in order to keep under control the risks thus identified. Following the Belgian Debt Agency's integration in the implementing scope of the Royal Decree of May 15th 2022 as regards the control of the organisation within some departments of the federal executive authority, a risk committee has been set up in February 2022. 13 meetings of this committee took place in 2022 and dealt with aspects related to risk management and the application of standards on organisational control and completes the existing governance structure.

A risk management methodology has been drawn up in the *Risk Management Policy* of the Federal Debt Agency and is followed up by the *Risk Officer* as well as the relating risks of the organisation.

An analysis has been implemented and mentions all the risks of the organisation, the controls and the actions to be taken to keep the risks at an acceptable level. A report of the risk analysis is submitted to the Executive Committee and the Strategic Committee of the Federal Debt Agency. The risk analysis is reviewed twice a year with the Directors and key managers of the organisation.

The main risks identified relate to organisation and governance, availability of staff, business continuity and risks specific to the processes of the Debt Agency. The controls in place enable all identified risks to be maintained at an acceptable level and ensure the achievement of the objectives of the Agency within an acceptable control environment.

The internal audit function of the Agency is taken into consideration by the Federal Internal Audit pursuant to the Royal Decree of November 15th 2021 determining the functioning and organisation of the internal control and internal audit of the Federal Debt Agency.

Pursuant to Article 7 of the Royal Decree of May 15th 2022 as regards the control of the organisation within some departments of the federal executive authority, the Belgian Debt Agency drafted a report in this matter. The annual report 2022 of the control of the organisation has been sent on March 15th 2023 to the Minister of Finance, the audit committee of the federal administration and the Federal Internal Audit.

This internal control report includes the results of the assessment of the internal control systems based on the evaluation grids designed for the areas of management by the Federal Internal Audit. This analysis is used to measure maturity in various areas of management, with a view to assessing the organisation's level of management and highlighting any areas for improvement to ensure that risks are adequately controlled.

This analysis has made it possible to highlight additional control measures that need to be implemented to achieve a higher level of maturity, such as the standardisation and development of additional procedures, the preparation of an HR Report and the extension of the continuity plan.

Each year, the Agency receives from the Minister of Finance a clear mission as well as general Guidelines in order to guarantee the State financing while reducing the costs.

The Agency has governance rules and internal control mechanisms integrated into processes and systems, as well as external control by the Court of Audit and the Federal Internal Audit, which enable it to carry out its mission in an adequate control environment.

4 MAIN STRATEGIC POINTS

A low-angle, upward-looking photograph of a modern building's glass facade. The image shows a grid of dark metal frames holding large glass panels. The sky is visible through the glass, appearing as a clear, bright blue. In the lower-left foreground, a single window frame is more prominent, showing a dark, possibly black or dark grey, frame. The overall composition is geometric and emphasizes the architectural details of the glass and metal structure.

ANNEXES

A. STATE GUARANTEES GRANTED TO THE FINANCIAL INSTITUTIONS

AMOUNTS GUARANTEED IN CIRCULATION AND PREMIUMS RECEIVED (IN EUR)				
	Outstanding on 31/12/2021	Outstanding on 31/12/2022	Premium 2021	Premium 2022
Dexia - 2013 guarantee	24,730,142,867	19,435,163,938	13,701,155	11,584,818

B. EVOLUTION OF THE KINGDOM OF BELGIUM'S RATING

- **Fitch Ratings**
 - 10.03/2023: Rating AA- confirmed, outlook negative
 - 18.03/2022: Rating AA- confirmed, outlook stable
 - 26.03/2021: Rating AA- confirmed, outlook negative
- **S&P**
 - 17.03/2023 : Rating AA confirmed, outlook stable
 - 16.09/2022 : Rating AA confirmed, outlook stable
 - 21.03/2022 : Rating AA confirmed, outlook stable
 - 22.03/2021: Rating AA confirmed, outlook stable
- **MOODY'S**
 - 26.11/2021: Rating Aa3 confirmed, outlook stable
 - 01.12/2020: Rating Aa3 confirmed, outlook stable
- **DBRS**
 - 03.02/2023 : Rating AA confirmed, outlook stable
 - 12.08/2022: Rating AA confirmed, outlook stable
 - 11.02/2022: Rating AA (high) confirmed, outlook negative
 - 12.02/2021: Rating AA (high) confirmed, outlook negative
- **JAPANESE CREDIT RATING AGENCY**
 - 25.03/2022: Rating AAA confirmed, outlook stable
 - 23.09/2020: Rating AAA confirmed, outlook stable
- **RATING AND INVESTMENT INFORMATION, INC.**
 - 28.06/2021 : Rating AA+ confirmed, outlook stable
 - 27.01/2020: Rating AA+ confirmed, outlook stable
- **CREDITREFORM RATING**
 - 24.06/2020: Rating AA confirmed, outlook negative
 - 07.02/2020: Rating AA confirmed, outlook negative

C. DEALERS AND INVESTMENTS ESTABLISHMENTS (ON 31/05/2023)

PRIMARY DEALERS

- BARCLAYS BANK IRELAND PLC, Dublin
- BNP PARIBAS FORTIS SA, Brussels
- BOFA Securities Europe SA, Paris
- CITIGROUP GLOBAL MARKETS EUROPE AG, Frankfurt
- CREDIT AGRICOLE CIB, Paris
- DEUTSCHE BANK AG, Frankfurt
- HSBC CONTINENTAL EUROPE SA, Paris
- JP MORGAN SE, Frankfurt
- KBC BANQUE SA, Brussels
- MORGAN STANLEY EUROPE SE, Frankfurt
- NATIXIS SA, Paris
- NATWEST MARKETS NV, Amsterdam
- NOMURA FINANCIAL PRODUCTS EUROPE GMBH, Frankfurt
- SOCIETE GENERALE SA, Paris

DEALERS (ECP)

- ABN AMRO BANK NV, Amsterdam
- BARCLAYS BANK IRELAND PLC, Dublin
- BRED BANQUE POPULAIRE SA, Paris
- CITIGROUP GLOBAL MARKETS EUROPE AG, Frankfurt
- ING BANK NV, Amsterdam
- COÖPERATIEVE RABOBANK U.A., Utrecht

INVESTMENT ESTABLISHMENTS

STATE NOTES

- BANQUE DEGROOF PETERCAM SA, Brussels
- BELFIUS BANQUE SA, Brussels
- BNP PARIBAS FORTIS SA, Brussels
- BPOST BANQUE SA, Brussels
- CRELAN SA, Brussels
- DEUTSCHE BANK AG, Brussels
- GOLDWASSER EXCHANGE, Brussels
- ING BELGIQUE SA, Brussels
- KBC BANQUE SA, Brussels
- LELEUX ASSOCIATED BROKERS SA, Brussels
- VAN DE PUT & CO, Antwerp
- VDK SPAARBANK, Ghent

D. ORGANIGRAM OF THE BELGIAN DEBT AGENCY

D1 FRONT OFFICE

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ANNEXES