



# Sovereign Borrowing Outlook for OECD Countries

## 2021



This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

# Introduction

The OECD Sovereign Borrowing Outlook provides data, information and background on sovereign borrowing needs and discusses funding strategies and debt management policies for OECD countries and the OECD area.

This booklet reproduces the executive summary and first chapter of the forthcoming 2021 edition of the publication. Based on data collected through the annual survey on OECD Central Government Marketable Debt and Borrowing of OECD governments, this report provides an overview of, and outlook for, sovereign borrowing needs, redemptions and outstanding debt in the OECD area for the period 2007-2021. The cut-off date for data collected through the survey and other data considered in this report is December 2020.

Comments and questions should be addressed to [publicdebt@oecd.org](mailto:publicdebt@oecd.org).

More information about OECD work on bond markets and public debt management can be found online at [www.oecd.org/finance/public-debt/](http://www.oecd.org/finance/public-debt/).



# Executive summary

## **Government funding needs and debts, which surged dramatically in 2020 as fiscal deficits increased and economies contracted in the wake of the COVID-19 crisis, will remain high in 2021**

The upsurge in government spending and reduced revenue collection in the wake of the COVID-19 crisis mean that the gross borrowing needs of governments have risen significantly. OECD governments borrowed USD 18 trillion from the markets in 2020, equal to almost 29% of GDP. Compared to 2019, this was 60% more in absolute terms, and 12 percentage points higher relative to GDP. This year's survey results forecast a continuation of this upward movement in 2021, albeit at a slower pace. However, 2021 projections are subject to a high degree of uncertainty largely due to the pace of the pandemic, the global economic outlook and changes in government fiscal policy responses.

The level of outstanding central government marketable debt for the OECD area is expected to increase from USD 47 trillion in 2019 to almost USD 56 trillion in 2020, and to USD 61 trillion by the end of 2021. At the same time, measures to contain the spread of the virus and tackle the health crisis caused extensive short-term economic disruption in the OECD area. In recent months, however, prospects for an eventual path out of the crisis have improved, as vaccination campaigns are under way in several countries. Hence, the OECD estimates that economies will recover gradually in 2021, following the last year's sharp contraction. Against this backdrop, the average level of central government marketable debt-to-GDP ratio for the OECD area is estimated to increase by around 20 percentage points between 2019 and 2021, and reach over 90% of GDP in 2021. However, if large-scale containment measures remain in place and potential additional fiscal policy support needs to be pursued, then, debt-to-GDP ratio may escalate further in 2021.

## **Interest rates on government securities have declined to record lows, limiting the debt service burden**

Despite the upsurge in borrowing amounts in 2020, financing costs of government budget deficits have fallen in the OECD area, thanks to robust investor demand regardless of the significant market disruption in March. Major central bank large-scale asset buying programmes and commitments to keep near-zero repo rates have supported the smooth functioning of financial markets and facilitated the absorption of increased debt issuance. In the euro area, for example, where the European Central Bank has become the largest creditor in several countries, government yields up to the 10-year maturity segment have declined to negative levels for almost all countries.

The low yield environment has made the use of expansionary fiscal policies less costly and more attractive in the fight against the COVID-19 pandemic. The average cost of fixed-rate dollar denominated bond issuance declined from about 2% in 2019 to 0.7% in 2020; and from 0.6% to less than 0.2% for euro

denominated bonds. In 2020, more than 20% of the government bonds in OECD area were auctioned at negative yields, the ratio reached 50% for euro area, and 60% for Japan.

### **Shortened maturities combined with continued large new borrowing needs mean higher rollover ratios and refinancing risk**

The share of short-term instruments in central government marketable debt issuance in the OECD area, which averaged 40% in the past five years, increased to 48% in 2020. This has also led to a decline in the average term-to-maturity for the OECD for the first time since the 2008 financial crisis. The bulk of the additional cash needs of governments due to the COVID-19 shock has been financed through T-bill issuance, typically considered as a 'shock absorber' by sovereign issuers. This trend has been mainly driven by two factors. From the demand side, investor demand was particularly higher for shorter-term liquid assets, during the period of heightened uncertainty in the financial markets in the early stages of the outbreak. From the issuer's perspective, short-term instruments have been preferred by sovereigns as the size and duration of financing requirement have also entailed considerable uncertainty.

Notwithstanding the cost advantages attached to short-term borrowings, from a risk management perspective, a heavy and continued reliance on short-term financing combined with rising financing needs can amplify near-term refinancing risk, and weaken fiscal resilience. Hence, roll-over ratios of outstanding central government debt have shown signs of worsening in many OECD countries over the last year. When conditions improve, rebalancing of debt portfolio maturities should be considered to strengthen the resilience of the debt portfolio against refinancing risk. This may also facilitate a smooth exit from expansionary monetary policies, when policy rates eventually rise in the future.

### **Prudent debt management will be required as financing needs for debt repayments soar and the outlook for the global economy remains uncertain**

The OECD area borrowing outlook has been hampered by unusual uncertainties surrounding the evolution of the pandemic and the pace of the economic recoveries. It should be noted that efficacy of COVID-19 vaccinations programmes, as well as the efficacy of the vaccines themselves entails risks. A positive outcome can boost confidence in the near-term and limit the need for additional financing. A strong pick-up in activity and inflation from the Q2 2021 onwards may put pressure on interest rates in the financial markets. On the other hand, the materialisation of downside risks may widen government budget deficits and pose challenges to funding operations in 2021.

The current outlook and increased refinancing needs mean that sovereign issuers should be mindful of risks and maintain flexibility in funding programmes. They should carefully manage changes in borrowing programmes and put additional efforts into communicating the changes in borrowing plans with market participants at a time when there is increased attention to the liquidity condition in the financial markets. It would also be prudent to consider rebuilding the contingency funding tools; increasing the financing capacity through new securities; and, calibrating auction sizes to address challenges.

# **1**

## **Sovereign borrowing outlook for OECD countries**

---

The year 2020 witnessed a massive increase in sovereign borrowing needs. This was the result of both a surge in government spending and reduced revenue collection due to the COVID-19 crisis. With record-low interest rates reducing the cost of borrowing and robust demand for government securities, sovereign issuers in the OECD area have successfully adapted their issuance strategies to the changing environment and significantly increased debt issuance without undermining the functioning of sovereign bond markets. As sovereigns' financing needs for debt repayments are soaring, persistent global uncertainties call for prudent debt management.

This chapter assesses the impact of the COVID-19 crisis on sovereign borrowing needs and debt issuance for 2020 and 2021. It looks at how sovereign debt management offices have been dealing with the large and unexpected increase in governments' borrowing needs, including adjustments made to borrowing strategies and techniques. In view of continued global uncertainties and higher government refinancing needs, the chapter also provides recommendations to assist policy makers in their efforts to navigate through the crisis.

---

## 1.1. Introduction

OECD governments dramatically increased their borrowings from the market during 2020, largely due to financing requirements of government programmes to mitigate the social and economic impact of COVID-19 pandemic. As a result of the increased borrowing needs and the decline in GDP, the public debt burden is set to hit record high levels in several OECD economies. Against this background, this chapter provides estimations for 2020 and projections for 2021 for governments' debt issuance and the outstanding stock of sovereign bonds. In addition to an overview of sovereign debt developments in the OECD area, this chapter also discusses policy considerations for sovereign debt management amid continued global uncertainties and rising government refinancing needs.

### Key findings

- OECD governments borrowed USD 18 trillion from the markets in 2020 in response to the COVID-19 pandemic, a USD 6.8 trillion increase compared with the previous year. This is the highest single-year increase in both absolute and relative terms in recent history, including responses to the 2008 financial crisis. In 2021, subject to a high degree of uncertainty, government borrowing is projected to rise further to USD 19 trillion.
- The combined impact of increased government expenditure and economic contraction has pushed debt-to-GDP ratios to record highs in many countries. The central government marketable debt-to-GDP ratio for the OECD area is set to rise by 16 percentage points in 2020 and at least 4 percentage points in 2021.
- While there has been a large and unexpected expansion in the supply of government securities, yields on these securities have declined to record lows, despite the significant market disruption in March 2020. Swift action by central banks has supported the smooth functioning of financial markets and facilitated the absorption of increased debt issuance. In addition, the general flight to safety and subdued inflation outlook have contributed to very low borrowing rates in major advanced economies.
- Many sovereign issuers have adapted their financing operations in response to rising borrowing needs and the challenges heightened uncertainty presents for cash flow forecasting and price discovery at auctions due. Existing mechanisms to market have intensified (e.g. the size and number of auctions has increased). In some cases, governments have also expanded the use of syndications, private placements and supplementary non-competitive auctions to gain additional flexibility in respect to financing programmes.
- A significant share of pandemic-related government expenditure has been financed by short-term debt in major advanced economies. The average term-to-maturity ratios, which had been trending upwards until 2019, fell in 2020. After a cumulative increase of 1.7 years since the 2008 financial crisis, the average term-to-maturity for the OECD area has declined slightly from 7.9 years to 7.7 years in the past year.
- Increased borrowing has also created scope for introducing both new maturity lines and new securities. Importantly, green bonds have become more common with debut issuance by Germany, Hungary and Sweden in 2020.
- Despite low interest expenditure, elevated debt servicing levels combined with continued large new borrowing needs have resulted in higher rollover ratios and refinancing risk for

many sovereigns in the OECD area. As of December 2020 about one quarter of total marketable debt will mature within one year.

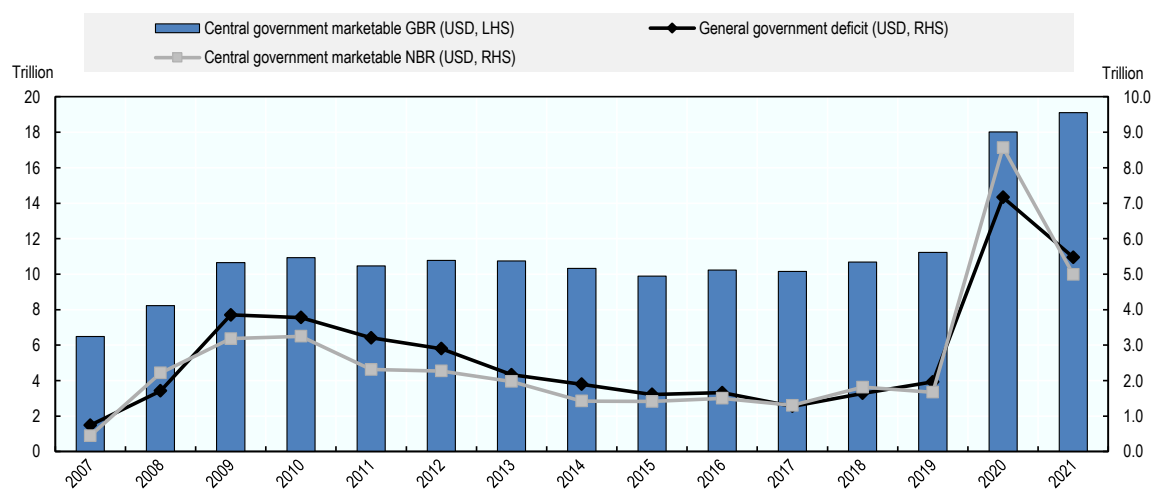
- In view of the uncertain global outlook and increased refinancing needs, sovereign issuers may consider rebuilding contingency funding tools; increasing financing capacity through new securities; and, calibrating auction sizes. It would also be prudent, particularly for governments that have significantly increased short-term borrowing, to target rebalancing their financing towards longer-dated tenors.

## 1.2. Sovereign borrowing hit a record high in 2020 and is projected to continue rising in 2021

The unprecedented impact of the COVID-19 crisis on economies and the ensuing fiscal response resulted in dramatic changes both in the size and pace of government borrowing requirements. The impact on government borrowing needs varies significantly across countries depending on the scale and types of fiscal policy measures put in place. In 2020, gross borrowings of OECD governments from the markets surged to a record high of USD 18 trillion (Figure 1.1). This is the highest increase recorded in a single year and nearly double the rise recorded during the 2008 financial crisis (Figure 1.2). Government borrowing is projected to increase at a slower pace in 2021, largely due to a lower expected increase in budget deficits. As of January 2021, gross funding requirements for 2021 are projected to reach USD 19.1 trillion. This amount reflects the issuance needs of government securities for both financing central government budget deficits (i.e. net borrowing requirements) and refinancing debt repayments due in the year.

Having risen significantly in the wake of 2008 financial crisis, gross borrowing requirements in the OECD area plateaued at around USD 10.5 trillion between 2010 and 2019. During this period, while the financing amount to repay debt redemptions made up around 80% of the total gross borrowings, net borrowing requirements stabilised at around USD 2 trillion. Before the pandemic hit, OECD governments were projected to raise around USD 12 trillion from the market in 2020 (Figure 1.2), the bulk of which again was required to refinance existing debt. Since OECD governments extensively used fiscal policy tools to mitigate the detrimental impact of the COVID-19 crisis on societies and economies, fiscal deficits surged. Consequently, net borrowing requirements increased dramatically from USD 1.7 trillion in 2019 to USD 8.6 trillion in 2020, making up almost half of the total funding for 2020.<sup>1</sup> As a comparison, this is more than the cumulative net borrowing over the past five years, and more than four times higher than the pre-COVID estimate for 2020. In 2021, net borrowing requirements are projected to moderate somewhat to USD 5 trillion, albeit still above historical averages. At the same time, financing requirements to repay debt redemptions are projected to increase by more than 15% from 2020 to 2021, largely due to increased issuance of new government securities in 2020.

Borrowing projections for 2021 are highly uncertain, reflecting risks to the global health and economic outlook. Introduction of additional fiscal support measures may significantly elevate government funding needs during the year.<sup>2</sup> Even in the absence of additional fiscal measures, budget deficits may still deteriorate due to weak economic activity, reflecting the impact of automatic stabilisers. Despite recent optimism inspired by the development of vaccines, delays to vaccination rollout and difficulties in controlling new variants of the virus could increase healthcare spending on top of the likelihood of renewed lockdowns and weakened economic activity, with negative implications for public finances.

**Figure 1.1. Fiscal and borrowing outlook in OECD countries, 2007-2021**

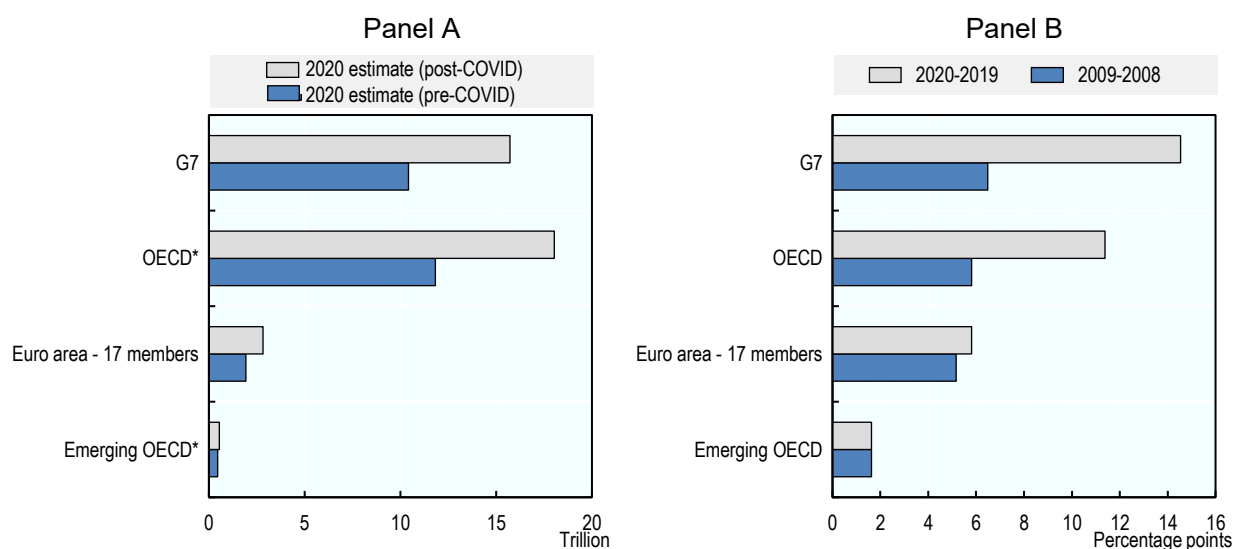
Notes: GBR = standardised gross borrowing requirement, NBR = net borrowing requirement.

Source: 2020 Survey on Central Government Marketable Debt and Borrowing; OECD Economic Outlook (December 2020); IMF World Economic Outlook Database (October 2020); Refinitiv, national authorities' websites and OECD calculations.

**Figure 1.2. Changes in gross borrowing requirements**

Panel A: Comparison of pre- and post-COVID estimates for 2020 (USD)

Panel B: Impact of 2008 financial crisis vs COVID-19 shock on borrowing needs (as percentage of GDP)



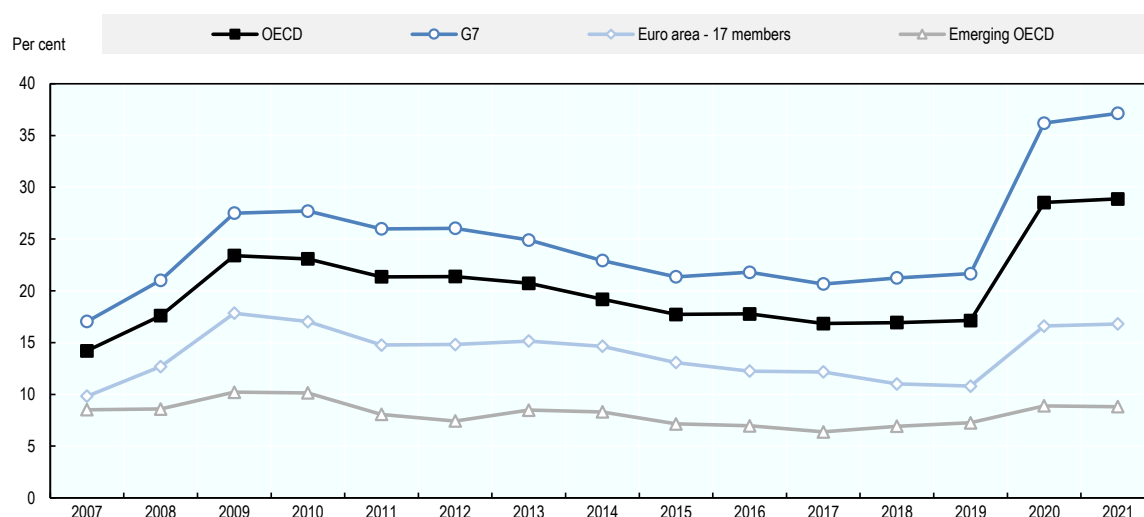
Note: Central government marketable borrowing requirements, \*Panel A 2020 excludes Colombia

Source: 2020 Survey on Central Government Marketable Debt and Borrowing; OECD Economic Outlook (December 2020); IMF World Economic Outlook Database (October 2020); Refinitiv, national authorities' websites and OECD calculations.

Figure 1.3 illustrates the trends in sovereign borrowing in the OECD area. Gross borrowing requirements in relation to GDP jumped more than 10 percentage points from around 17% of GDP in 2019 to 28.5% of GDP in 2020, as a result of the combined effect of the rise in fiscal deficits and the fall in GDP. Since economic growth is expected to pick up across the OECD area in 2021, gross borrowing requirements as a percentage of GDP is projected to remain at around 2020 levels.

Despite strong monetary and fiscal policy support, the impact of the pandemic on economies has been substantial. The OECD economy is estimated to have contracted significantly in 2020.<sup>3</sup> Measures to contain the spread of the virus and tackle the health crisis caused extensive short-term economic disruption, compounded by falling confidence and tighter financial conditions. In recent months, however, prospects for an eventual overcoming of the crisis have improved, as vaccination campaigns have started in several countries. The OECD area is projected to grow by around 3.3% in 2021 (OECD, 2020<sub>[1]</sub>). However, it should be noted that economic recovery will vary significantly across OECD countries depending not only on their ability to contain renewed outbreaks, but also on the use of fiscal support. The OECD Economic Outlook of December 2020 emphasises the importance of effective use of fiscal support for creating economic growth by investing in essential goods and services such as education, health as well as physical and digital infrastructure.

**Figure 1.3. Gross borrowing through marketable debt as a percentage of GDP**



Note: Standardised gross borrowing requirement.

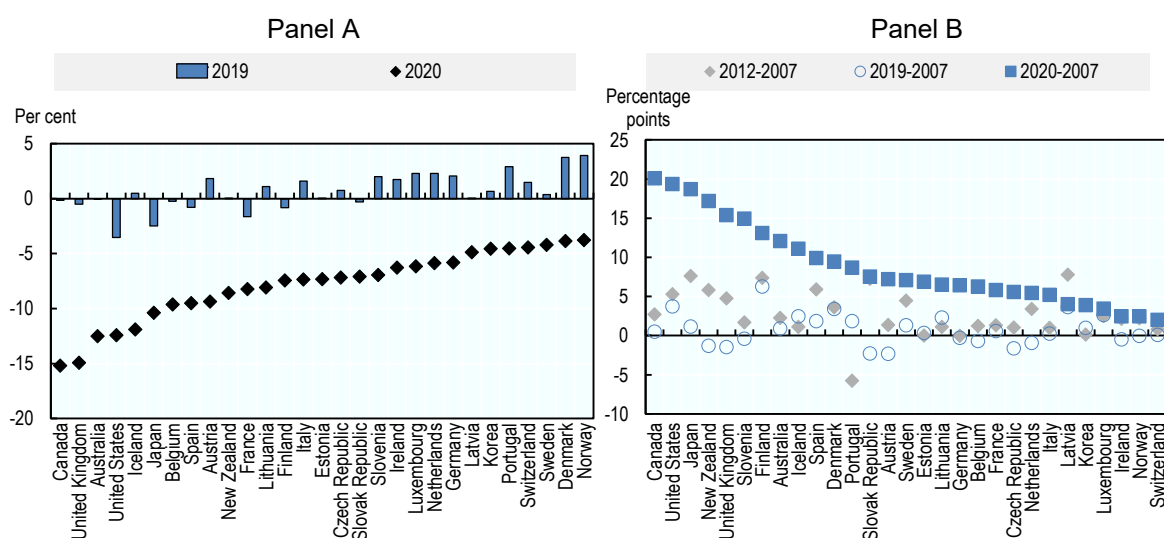
Source: 2020 Survey on Central Government Marketable Debt and Borrowing; OECD Economic Outlook (December 2020); IMF World Economic Outlook Database (October 2020); Refinitiv, national authorities' websites and OECD calculations.

The impact of the COVID-19 crisis at the country and regional levels is highly heterogeneous, with significant implications for government funding needs. Figure 1.4 illustrates that impact of the COVID-19 crisis on primary balances and sovereign financing needs across countries.<sup>4</sup> In 2020, the aggregate OECD primary deficit in relation to GDP increased by 8.5 percentage points to almost 10% of GDP. The ratios were more than 10% in Australia, Canada, Iceland, Japan, the United Kingdom and the United States. In terms of net funding amounts Canada, Japan, New Zealand, the United Kingdom and the United States saw the highest percentage point increases. Furthermore, new borrowing needs turned positive in 2020 in a number of countries, including Austria, Denmark, New Zealand, Sweden and the Netherlands, which were running primary surplus before the COVID-19 shock. Estonia, for example, re-entered the bond market after an 18-year absence.

**Figure 1.4. Impact of the COVID-19 shock on primary balance and net borrowing requirements in selected OECD countries**

Panel A: Primary balances in relation to GDP

Panel B: Changes in central government marketable NBRs in relation to GDP



Source: 2020 Survey on Central Government Marketable Debt and Borrowing; OECD Economic Outlook (December 2020); IMF World Economic Outlook Database (October 2020); Refinitiv, national authorities' websites and OECD calculations.

### 1.3. Key features of sovereign borrowing during the COVID-19 crisis

Choice of borrowing instruments and methods is central to sovereign debt management.<sup>5</sup> In normal times, policy makers consider various factors including medium and long-term costs and risks associated with a wide range of securities along with market demand in order to structure their annual borrowing strategy. Times of crisis such as the COVID-19 pandemic, however, risk provoking a mismatch between the timing and scale of government funding needs and market demand. Under such conditions, market demands for duration as well as liquidity conditions become more important factors in the choice of borrowing methods and instruments than those of associated long-term costs and risk considerations. Sovereign issuers are therefore expected to adjust their short-term borrowing strategies, giving priority to financing the increased borrowing needs of governments without putting extra pressure to the financial markets.

As the COVID-19 crisis evolved throughout 2020, sovereign debt managers had to adjust different aspects of their borrowing operations. In the initial phase of the crisis, market liquidity suddenly evaporated as uncertainty about the impact of the shock on economic activity increased, and investors became highly risk-averse. At the same time, cash forecasting became difficult as government health expenses and, in some countries direct transfers, rose while revenues suddenly dropped. Depending on the impact of the crisis on short-term cash needs as well as on market conditions, governments relied on contingency funding tools such as issuance of Treasury-Bills and use of available liquidity buffers.

While policy measures taken by major central banks improved liquidity conditions in the markets rapidly, the unprecedented increase in annual borrowing needs and continuing macroeconomic uncertainties have changed the annual sovereign borrowing plans in all OECD countries. These changes include increased

issuance of new types of securities, including short-term securities, and modifications to the size and number of auctions as well as use of other means of borrowings. At the same time, interest rates on government securities declined in line with robust market demand supported by central bank bond buying programmes. Overall, the increased supply of government securities in the wake of COVID-19 crisis has been well received by market participants. OECD area sovereign debt managers reported that the market remained resilient in the face of the unprecedented size of sovereign financing programmes.

### 1.3.1. New debt has been issued at lower costs

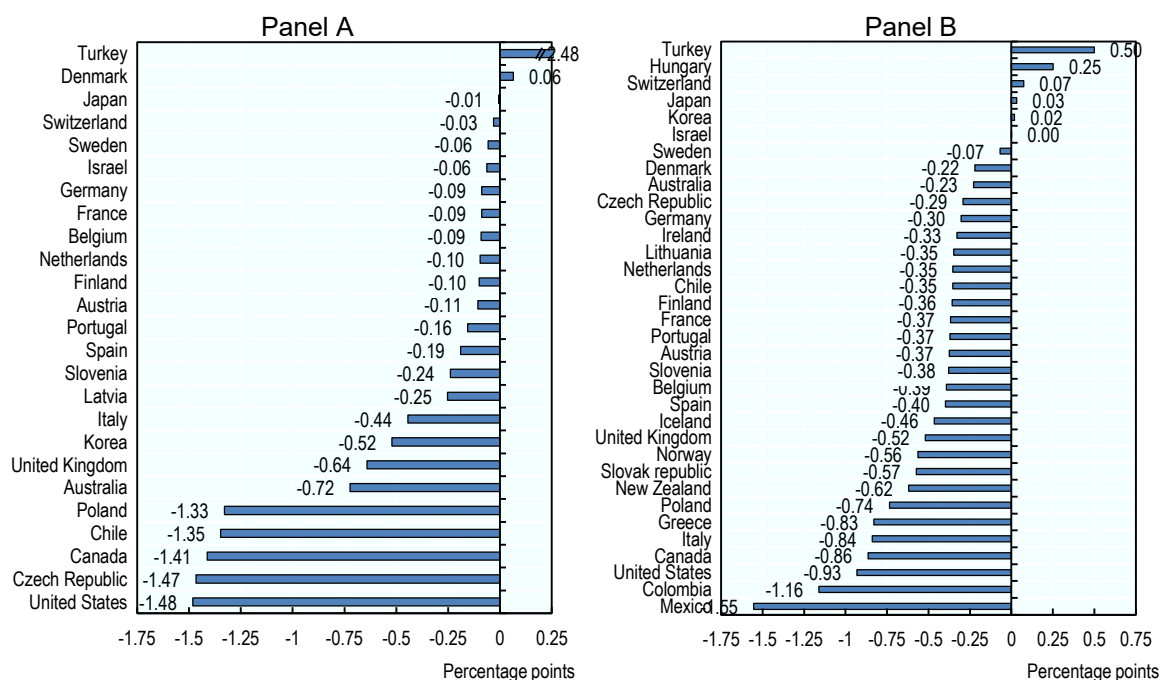
Despite the surge in borrowing needs in 2020, financing costs have continued to fall in the OECD area with the exception of a few countries including Hungary and Turkey. Borrowing conditions at favourable interest rates were stable throughout the year, apart from the significant market disruption in March 2020. As a result, the use of expansionary fiscal policies has become less costly and more attractive.

Over the year to December 2020, yields on both 2-year and 10-year benchmark bonds dropped by around 0.5 percentage point on average (Figure 1.5). The 10-year US Treasury was at 0.9% in December 2020, half of the yield a year before.<sup>6</sup> Despite significant decline in yields across all maturities between 2019 and 2020, US Treasury yields have remained among the few advanced economy bonds still holding above zero percent. Similarly, UK 10-year government bonds paid under 0.5%, which is less than half of the December 2019 rate. In the euro area, where the European Central Bank and the European Commission have been actively supporting member states with various measures and financial support packages, government yields up to the 10-year maturity segment have fallen to negative levels in almost all countries. This means that cost pressure on sovereign borrowings has lessened considerably.

**Figure 1.5. Change in benchmark yields between December 2019 and December 2020**

Panel A: Change in 2-year benchmark yields.

Panel B: Change in 10-year benchmark yields.



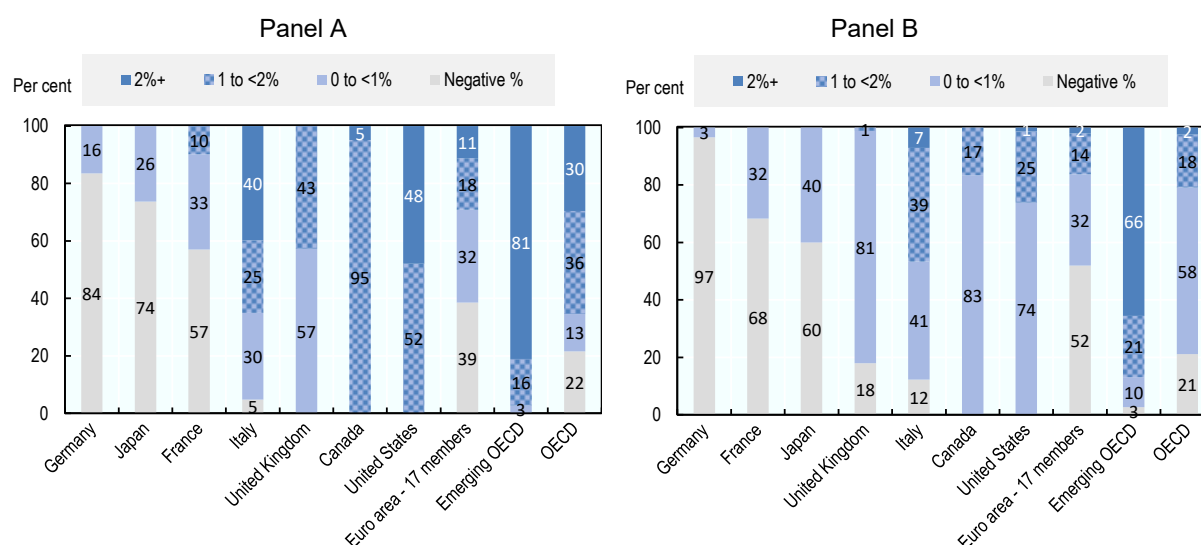
Note: Difference in average yields in December of each year.

Source: Refinitiv

As a result of this low yield environment, governments borrowed from the markets at very low costs in 2020. Figure 1.6 illustrates volume shares of fixed-rate bond issuance by yield category for 2019 and 2020. Compared to 2019, major changes took place in Canada, Italy, the United Kingdom and the United States, where the cost of borrowing across the maturities has declined significantly. In the OECD area, nearly 80% of the fixed-rate government bonds were issued with less than 1% yield in 2020, compared to 37% in 2019. More government bonds fell deeper into negative territory. In 2020, more than 20% of the fixed-rate bonds was allocated in the primary market at negative rates. This ratio is over 50% in the euro area and 60% in Japan.<sup>7</sup>

**Figure 1.6. Volume share of fixed-rate bond issuance by yield category**

Panel A: 2019; Panel B: 2020



Note: Fixed-rate bond issuances and re-opens categorised by yield at issuance.

Source: Refinitiv; OECD Economic Outlook (December 2020); IMF World Economic Outlook Database (October 2020); and OECD calculations.

Interest rates on government debt are essentially determined by market demand, hence sovereign issuers are naturally price takers in terms of interest paid on government debt. In this regard, members of the OECD WPDM observed robust demand from investors except for a temporary lack of demand in March and April.<sup>8</sup> The high degree of economic and financial uncertainty has supported strong demand for liquid, high-quality assets. Another factor contributing to this phenomenon has been the utility of government securities as an effective diversifier and hedge against major selling pressure on risk assets. At the same time, central banks' bond buying programmes have eased concerns over market absorption capacity of expanded borrowing programmes, helping to reduce risk premia on government securities.

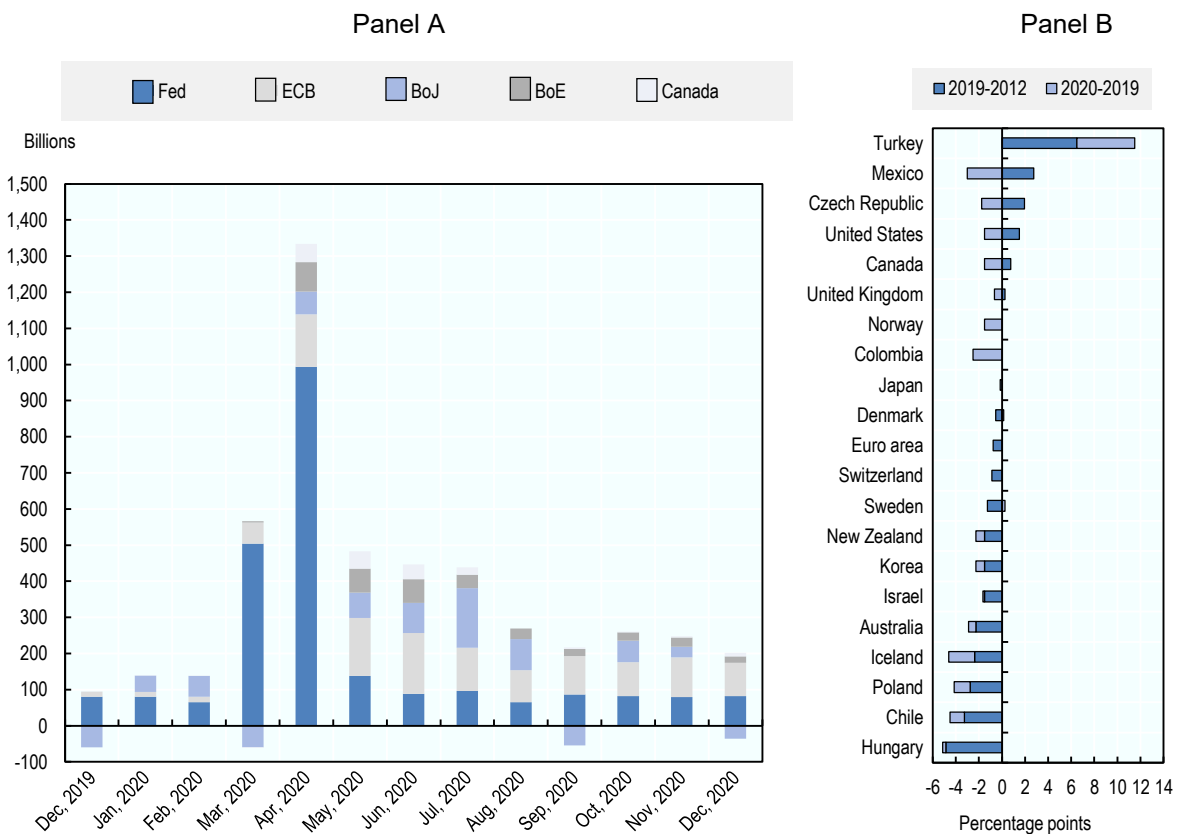
Long-term borrowing costs have declined in many OECD countries, and were even in negative territory in the euro area during the year. To an important extent, this has been driven by lower term premium on government securities, which is the compensation that investors demand for holding long-term bonds. Term premia have fallen or even turned negative in major advanced markets. Persistently low inflation and expectations that major central banks will maintain their very accommodative monetary policy stances for an extended period of time appear to be major factors in keeping term premia low since the 2008 financial crisis. In addition to interest rate easing, QE programmes that were tailored to target the longer-end of the yield curve play a larger role in reducing the term premia.

Major central banks' large-scale asset buying programmes and commitments to keep near-zero repo rates in some areas have supported the smooth functioning of financial markets and facilitated the absorption of increased debt issuance since the outbreak of the crisis. Central banks in 28 OECD countries purchased government bonds in 2020 with more than half of the net purchases occurring during the period between March and May. Total net purchases by major central banks reached USD 4.5 trillion in 2020, more than half of the new securities (i.e. excluding securities issued to roll over existing debt) issued by OECD sovereigns in the year (Figure 1.7). As a result of increased net purchases, central banks have become the single largest creditor in the majority of OECD countries holding around 45% of the outstanding stock in Japan and Sweden, more than 20% in most of the EU countries and the United States (OECD, 2020<sup>[2]</sup>). Looking ahead, one risk is that as economies improve, this may generate inflation and central banks may begin to scale back the degree of accommodation, in particular the tapering of bond purchases. This could happen at the same time as sovereign DMOs term out their debt issuance.

**Figure 1.7. Central banks purchases and change in policy rates**

Panel A: Net purchases of government securities by major central banks (USD)

Panel B: Change in policy interest rates from 2012 through to 2020



Note: Converted into USD at the end of each month. Calculated from data on security holdings for the Federal Reserve and the BoJ. For the BoE data are calculated from holdings of gilts by the Bank of England's asset purchase facility. Data for ECB are net purchases for the PSPP and the PEPP.

Source: Central banks and OECD calculations.

### **1.3.2. Growing number of new maturity lines and new instruments**

In 2020, many governments have increased the issuance of securities across the yield curve, and introduced new maturity lines. Increased budget deficits created room for issuance of additional securities, as the large funding needs allowed the volume of new bonds to be built-up in a relatively short period without reducing the volume of existing ones. The OECD survey on primary market developments revealed that 20 out of 34 respondent OECD countries issued either new types of securities or new maturity lines in 2020. Furthermore, 15 countries are planning to do so in 2021. While a number of countries, including Belgium, the Czech Republic, Israel, Sweden and the United States issued new longer-dated securities in 2020, some small issuers including Denmark and New Zealand issued euro-denominated debt.

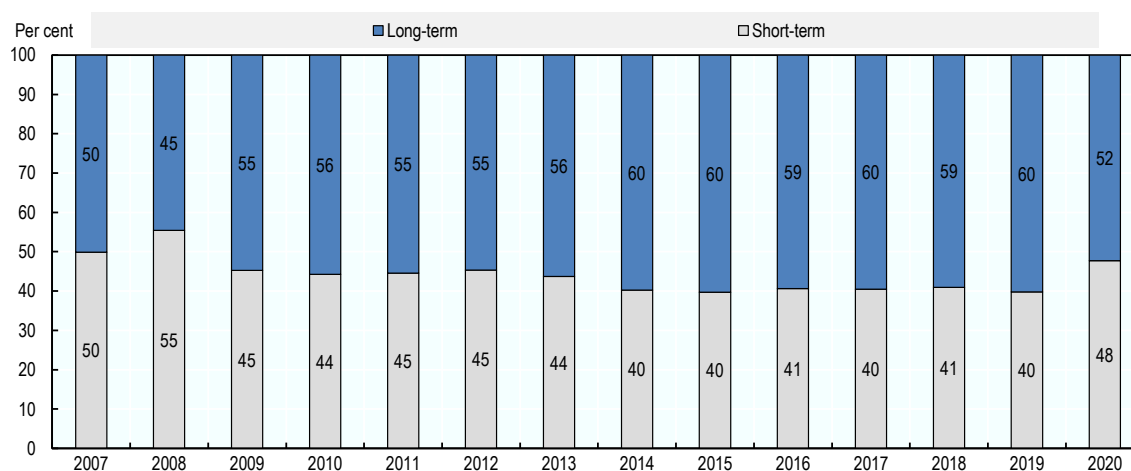
Another important examples for new instruments are retail bonds and green bonds. For example, Italy offered a new 10-year maturity bond called ‘BTP Futura’ to retail investors, the proceeds of which to be used to fund coronavirus measures. Germany, Hungary and Sweden launched green bonds in 2020; and Canada, Iceland, Italy, Spain and the United Kingdom are planning to issue in 2021. It should be noted that the countries that launched sovereign green bonds in 2020 made the decision on the introduction of green bonds as a new funding instrument before the COVID-19 crisis. The upsurge in government funding needs due to the pandemic have helped the issuers to increase the volume of the inaugural issuance of the green bonds in 2020.

From a debt management perspective, issuing a new instrument helps to enhance the financing capacity of sovereigns and to diversify their funding sources. Depending on their maturity structure, incorporation of long-dated securities is also useful to moderate interest rate and rollover risks, and is especially useful when the yield curve is fairly flat. In addition, green bonds feature broader benefits to the overall economy and the financial market by supporting governments’ efforts in financing the low-carbon transition and promoting the development of a domestic market for green bonds. Despite its rapid growth, the size of the sovereign green bond market is quite small compared to traditional bonds. In the OECD area, sovereign green bonds account for only 0.2% of all government debt securities.

### **1.3.3. Heavy reliance on short-term debt issuance**

T-Bill markets, typically used for cash management purposes, are often the most liquid markets and offer cheap financing conditions. Because of these features, T-Bills are considered as ‘shock absorbers’ by sovereign debt managers (Box 1.1) and played a key role in sovereign financing in 2020. The uncertainties associated with public expenditure related to the COVID-19 crisis have posed challenges for government cash-flow forecasting and management of the resulting cash positions resulted in increased use of short-term debt instruments. Many sovereigns issued T-Bills also for boosting liquidity buffers against possible changes in cash needs.

Given the funding flexibility T-Bills offer, the bulk of the initial cash needs of governments due to the COVID-19 shock were financed through T-bill issuance. More than 70% of pandemic-related debt has been issued in the form of T-Bills in France, Germany, Japan and the United States, at almost no cost (e.g. negative 6-month Treasury bill yields in euro area and Japan, and 0.1% in the United States). As a result, the share of short-term instruments in central government marketable debt issuance in the OECD area, which averaged 40% in the past five years, increased to 48% in 2020 (Figure 1.8).

**Figure 1.8. Maturity composition of central government marketable debt issuance**

Notes: This is based on standardised gross borrowing.

Source: 2020 Survey on Central Government Marketable Debt and Borrowing; OECD Economic Outlook (December 2020); Refinitiv; national authorities' websites; and OECD calculations.

While the initial borrowing needs were predominantly met through T-Bill issuance, sovereign issuers have been increasing long-term bond issuances steadily as a prudent means of managing their maturity profile and limiting potential future issuance volatility. This also aims at rebuilding contingency capacity in the event that significant funding is needed again in short order. The 2020 survey on Central Government Marketable Debt and Borrowing projects the share of long-term debt to increase by more than 2 percentage points in 2021 to reach 54.4% at the end of the year. However, it should be noted that governments' ability to rebalance their issuance towards long-dated bonds may be constrained in the short-term by the large size of the financing needs and limits to investor demand for duration.

### Box 1.1. Issuance of T-Bills to navigate shocks

T-Bills are typically considered as 'shock absorbers' by sovereign issuers. In case of an unexpected rise in funding requirements during a crisis, they tend to borrow more from the T-Bill markets. There are demand and supply factors for this: From the demand side, investors generally desire the safest, most liquid assets in times of crises, in particular for T-Bills. This leads to a larger decline in the yields on T-Bills, and results in cheaper financing conditions. From the supply side, under such circumstances there are often uncertainties regarding the size and duration of revenue shortfalls and expenses related to governments support measures. Issuing short-term instruments helps managing uncertainties regarding the financing requirement, some of which may be temporary. Considered together, both factors make this strategy consistent with the DMO's goal of funding government at the lowest cost over time.

Despite its advantages, a heavy and continued reliance on short-term financing amplifies near-term refinancing risk, as maturing debt needs to be refinanced several times within a short period of time at new market interest rates. When conditions improve, DMOs should consider gradually shifting from money markets to capital markets (i.e. to longer-term bonds) in order to regain their emergency response capacity and reduce rollover risk in the medium and long term.

During the 2008 financial crisis, OECD area DMOs increased T-Bill issuance to finance the unexpected increase in borrowing needs. More than 55 % of gross borrowing needs for 2008 is covered by issuing short-term debt. In the following years, there had been a gradual shift towards longer dated maturities to mitigate the rollover risk. The share of short-term debt issuance in total gross issuance fell gradually between 2010 and 2019, and was 40% on average in 2019 with large cross country differences. For example, in the United States, where T-Bills have historically played an important role in financing, their share rose to 84% of total marketable debt issuance in 2008, before declining significantly in the subsequent years. The US Treasury followed a similar strategy during the COVID-19 crisis, when the share of T-Bill issuance in marketable securities increased from about 75% in 2019 to 80% in 2020.

France has also had similar experience both in the 2008 financial crisis period and in 2020. The share of T-Bills (BTFs, Bons du Trésor à taux fixe et à intérêts précomptés) in total debt jumped from 8.5% in 2007 to 13.6% in 2008 and 18.7% in 2009. This ratio had been reduced gradually in the following years, and reached 6% in 2019 before the pandemic hit. During the period between 2010 and 2019 average maturity of debt has lengthen by almost one year to 8.2 years. With this renewed issuing capacity, French DMO (Agence France Trésor) has financed a bulk of its pandemic related financing through BTFs in 2020.

Given its critical role during periods of financial market stress, sovereign DMOs often prefer to maintain their T-Bill programme in normal times even if their borrowing needs decline. It should be noted that a few countries that were inactive in T-Bill markets prior to the 2008 financial crisis due to limited borrowing needs, re-entered the market in the wake of temporary increases in their borrowing needs following the crisis. In the years after 2008, they have kept their presence in the market to avoid a re-entry cost.

Source: 2020 Survey on Primary Markets Developments, discussions in 2009 and 2020 annual meetings of the OECD WPDM, [US Treasury's quarterly refunding documents](#) and [Agence France Trésor's key figures on short-term debt](#).

#### **1.3.4. Borrowing operations have been adapted to rapidly changing circumstances**

OECD sovereign issuers take the decision on issuance strategies, methods and procedures on the back of a comprehensive assessment of market demand, size of the annual financing needs, ability to access to different markets, and market segments. Due to the impact of the pandemic on market conditions and yield curves, sovereign issues have adjusted borrowing strategies and communications formats to rapidly changing circumstances, in some cases methods and procedures as well. While most of the OECD area debt offices consider recent adjustments to the borrowing strategies temporarily, some of them have made permanent changes in particular regarding auction calendars, frequency of auctions and the use of syndications (Table 1.1).

A major challenge for many DMOs has been cash flow forecasting and management of the sharp and unexpected changes in government funding needs throughout the year. Another issue has been the quality of price discovery at auctions due to heightened uncertainty. In response, several issuers have taken actions to adapt their borrowing operations to facilitate the primary market distribution process. While auctions remained the key means of selling government securities in the markets throughout the crisis, size and number of auctions have increased considerably across the OECD area. In many countries, other issuance techniques such as syndications and private placements have also been expanded since the pandemic (Table 1.1). Other changes include increasing supplementary non-competitive post-auction option facility in auctions (e.g. Italy, Turkey and the United Kingdom), which aims to ease price discovery challenge faced by primary dealers during stressed market conditions.

**Table 1.1. Temporary and long-term strategy changes in the wake of the pandemic**

	Temporary strategy changes	More permanent longer term strategy
<b>Auctions</b>		
Auction calendar	18 yes; 13 no	6 yes; 22 no
Frequency of auctions	20 higher; 0 lower; 13 no change	7 higher; 0 lower; 22 no change
Post-auction option facility (non-competitive bids)	4 higher; 1 lower; 18 no change	4 higher; 1 lower; 17 no change
<b>Other issuance techniques</b>		
Use of syndications	16 higher; 0 lower; 16 no change	6 higher; 1 lower; 23 no change
Use of private placements	8 higher; 1 lower; 12 no change	1 higher; 1 lower; 16 no change

Note: Based on the responses from 35 OECD countries.

Source: 2020 Survey on primary market developments.

A recent survey of primary market developments amongst OECD sovereign issuers revealed that one-third of the sovereign issuers increased the issuance of securities across the yield curve. In addition, around half of the countries, including Australia, Germany and Italy, have been making more use of syndications in the wake of the COVID-19 crisis. Syndications enabled DMOs to sell large amounts of securities in a short period of time without creating additional pressure on primary dealers (see Box 1.2 for a detailed discussion on the use of syndications). For example, in 2020, this procedure was used to cover around 10% of sovereign funding needs in the United Kingdom and 20% in Australia, Belgium and Portugal. Similar to syndications, private placements are often used as a complementary selling technique to auctions. In 2020, a number of small issuers such as Finland and Slovenia increased the use of private placements to raise large volumes of funds. One advantage of private placements is that there is a direct sale between the issuer and the buyer, so there is no agency fee. However, disadvantages such as the loss of transparency and heavy documentation requirements during issuance prevent the widespread use of the method.

### **Box 1.2. Use of syndications in sovereign debt management**

The syndication procedure is an issuing method whereby a DMO initially appoints a single or a group of financial institutions (the “Lead Manager(s)”) for subscription of the bonds to be issued and sold on to final investors. Since the late 1990s, this issuance method has been used in both advanced and less advanced sovereign markets. Today, syndications are part of the toolbox in a majority of sovereign debt management offices (DMOs) in the OECD area.

The role of syndications in sovereign funding programmes varies greatly. For most sovereign issuers such as France, Italy and the United Kingdom, they serve as a complementary tool to auctions. As such, even when the use of syndications increases at times of financial stress, sovereign funding through syndications is often limited compared to total funding needs (i.e. less than 15-20% of total annual borrowings). On the other hand, for a few smaller issuers such as Belgium, Ireland and Slovenia, syndications play a more important role in sovereign funding programmes. Major motivations for using syndications are the following:

- *Issuance of a new security or a new tenor:* In order to facilitate the price discovery process and to some extent get more marketing service, syndications are preferred when launching a new security or a new tenor, particularly at the long end of the yield curve. For example, Canada issued a new 50-year bond, and France issued a debut green bond in 2017 via syndications. In Finland, almost half of the long-term issuance, all of which are new lines, is executed in syndicated format in 2020. Also, they are used

for issuing foreign currency denominated bonds in international markets (e.g. Canada, Denmark, Poland and Turkey).

- *To support primary dealership systems:* DMOs use syndications to motivate primary dealers in their role of supporting primary and secondary markets of government securities. They often rank primary dealers based on their performance in primary and secondary market of government securities and top scoring banks get more syndication business and usually longer deals (e.g. France and Germany).
- *To provide flexibility in the financing of newly introduced programmes:* Syndications are useful to sell relatively large amount of securities in a short period of time. In the event of unexpected funding needs, or in times of turbulence, it becomes critical to have a tool in place to meet governments' financing needs in a reliable fashion without putting extra pressure on the primary dealers. Use of syndications are intended to serve this purpose. It also supports predictability of auction programmes by enabling DMOs to raise funds without changing their regular auction calendars.

In terms of operational aspects, a single or a group of financial institutions (e.g. often between three and six) called 'Joint Lead Managers' is designated to fulfil the role of book runner, to provide certainty of funds and intermediate the transaction between the issuer and investors. Some DMOs appoint co-leads with the principal objective of enlarging the order book. When selecting lead managers (and co-leads), DMOs consider a number of factors, including their annual performance in primary and secondary markets of government securities, distribution capabilities and their expertise in a specific market segment (e.g. green bonds). In some cases, rotation among the candidate banks is considered as well in the selection process.

Regarding the disadvantages, DMOs highlight two issues: costs stemming from fees and administrative preparations. Unlike auctions, syndications involve intermediation costs as lead managers demand fees for their service. These fees are usually small and linked to the size of the transaction and duration of the bond (e.g. France, Finland, Italy and the UK). In addition, some difficulties arise in terms of the administrative preparation and of the execution of the operations, as the process requires more human resources than auctions.

Source: OECD WPDM survey on design and implementation of syndications (2013), AOFM Investor insights (2019) and discussions held at the 2017 and 2020 annual meetings of the WPDM.

The COVID-19 pandemic has also put pressure on the operational capacity of DMOs in most countries, in particular where widespread remote work is taking place under lockdown measures. Although pandemics per se were not amongst the business interruption scenarios in many OECD country DMOs (except Colombia, Ireland, Japan and Switzerland) before the pandemic, all include arrangements to ensure business continuity in the event that their office is not available for use. Hence, they successfully activated their business continuity plans (BCPs) in the early stages of the outbreak (OECD, 2020<sup>[2]</sup>). Thereby, they managed to ensure the continuity of the funding and cash management activities, which are critical for the continuity of governments' fight against the pandemic.

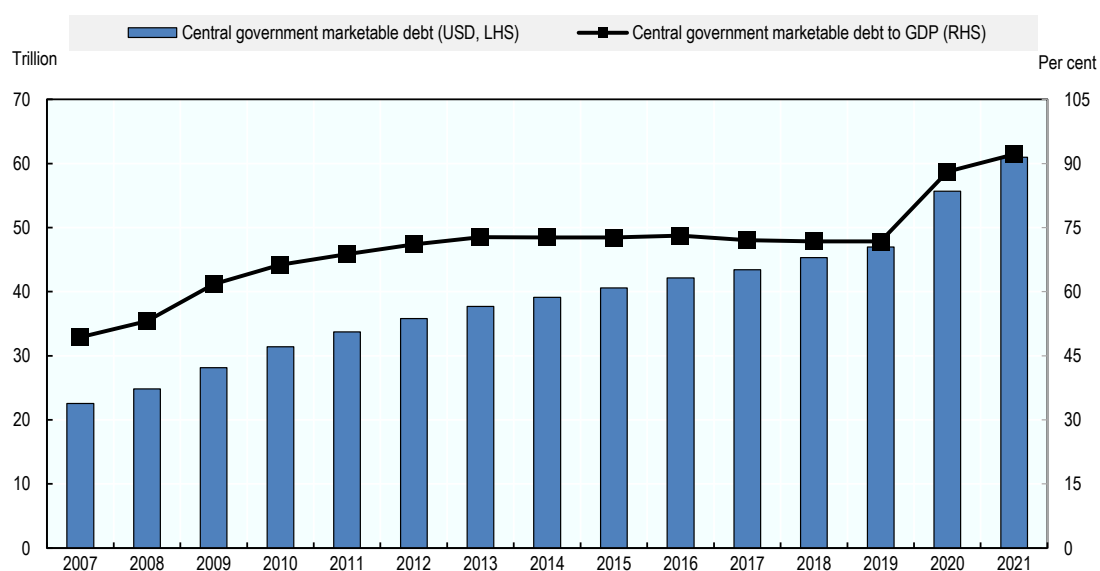
The pandemic forced sovereign issuers to change their communication format and strategy. DMOs have updated investors more frequently through digital communication tools (e.g. email distribution lists, publishing market notices on their websites, virtual meetings and phone calls) regarding changes in funding needs and plans in response to the COVID-19 crisis. In addition, senior government officials (e.g. Ministers, treasury secretaries and heads of DMOs) have communicated actively on how they evaluate the developments and address the risks to ensure proper functioning of government securities markets.

Many DMOs made adjustments in quarterly and annual auction calendars, reflecting modifications of various aspects of their financing plans. Given the level of uncertainty associated with expenditure on COVID-19 and its impact on the economy, especially at the initial stage of the crisis, it was not feasible for many countries to estimate their financing requirements for the whole financial year of 2020. In this regard, some DMOs have taken a cautious approach in communicating the uncertainty around new funding needs as well as revisions to refinancing strategies. The UK government, for example, reflected the high degree of uncertainty about both the size and pace of financing required to meet the costs of COVID-19, by announcing a series of partial in-year extensions to its financing requirements on an exceptional basis. Accordingly, the United Kingdom has implemented a series of matching extensions to its programme of gilt operations. Notwithstanding the necessity of the adjustments during a crisis, sovereign debt managers stressed that the temporary nature of some adjustments should be communicated clearly with investors to avoid potential misinterpretations, as well as reputational damage.

#### 1.4. Sovereign debt ratios reached all-time highs in many countries

The fiscal policy response of governments to the COVID-19 crisis has substantially increased sovereign debt levels across the OECD area. In absolute terms, outstanding central government debt for the OECD area is expected to increase from USD 47 trillion in 2019 to USD 55.7 trillion in 2020 as a result of the surge in new financing needs. While fiscal support measures are expected to continue in most countries, albeit at a lower scale, debt is projected to further increase to USD 61 trillion by the end of 2021 (Figure 1.9).

**Figure 1.9. Outstanding central government marketable debt in OECD countries, 2007-2021, nominal and as a percentage of GDP**

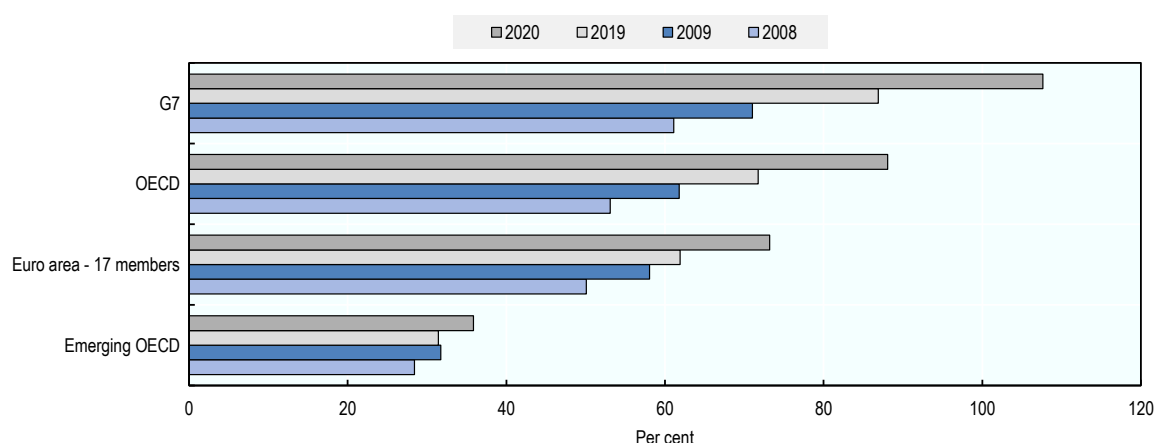


Source: 2020 Survey on Central Government Marketable Debt and Borrowing; OECD Economic Outlook (December 2020); IMF World Economic Outlook Database (October 2020); Refinitiv, national authorities' websites and OECD calculations.

Having increased sharply from 2008 to 2013, the outstanding debt-to-GDP ratio for the OECD area had somewhat stabilised before the pandemic hit in 2020. Despite increasing gross borrowing needs for the whole OECD area, the effect on the debt-to-GDP ratio was limited, largely due to favourable interest rate-growth differentials in most OECD countries (OECD, 2019<sup>[3]</sup>). As discussed in Section 1.1, economies

have been hard-hit by the COVID-19 pandemic despite unprecedented efforts by governments across the OECD. While fiscal balances deteriorated by around 10% of GDP, the OECD-area economy contracted by 5.5%. A combination of rising fiscal deficits and contracting economies pushed government debt-to-GDP ratios up significantly. Central government marketable debt-to-GDP ratios for the OECD area are estimated to have increased by 16 percentage points to over 88% in 2020 (Figure 1.9). This is nearly twice the impact of the 2008 financial crisis (Figure 1.10). Going forward, OECD economies are expected to gain momentum while fiscal supports are set to continue at a lower scale, the government debt-to-GDP ratio is projected to increase by at least 4 percentage points in 2021. Projections for 2021 depend on various factors, including the roll out of vaccination campaigns and the stringency of containment measures. A large-scale vaccination deployment would allow an easing of containment measures and would strengthen confidence. Under this scenario, fiscal plans may remain unchanged. However, if large-scale containment measures remain in place and potential additional fiscal policy support needs to be pursued, then, the debt-to-GDP ratio may increase further in 2021.

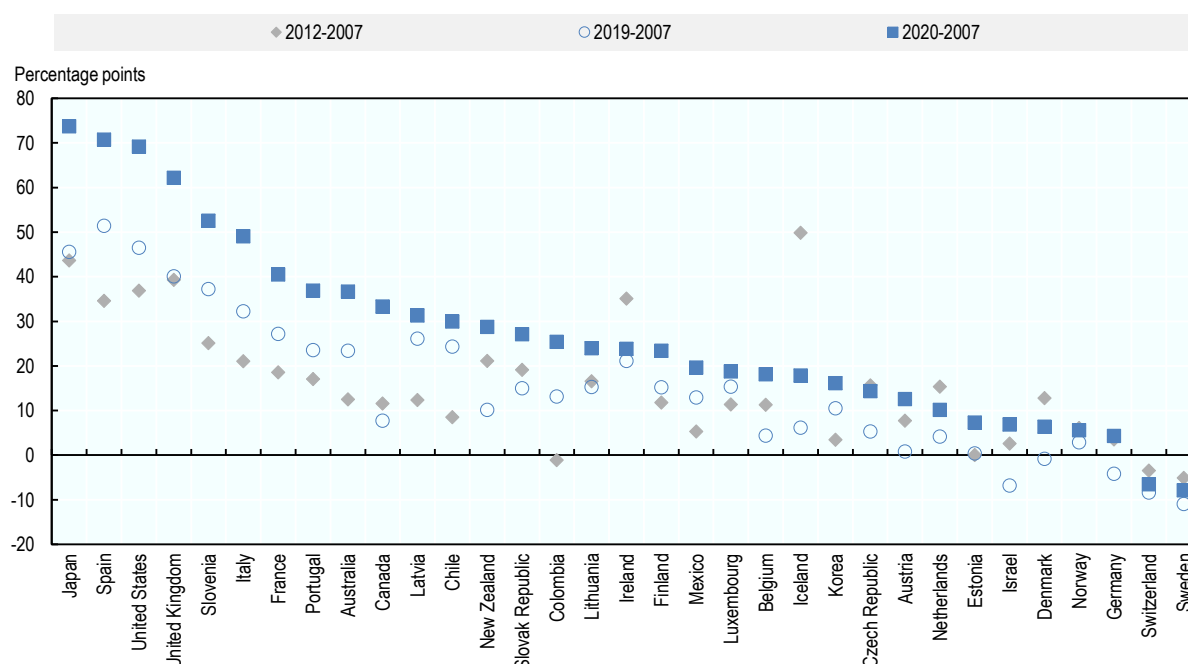
**Figure 1.10. Marketable debt-to-GDP: 2008 financial crisis vs COVID-19 shock**



Source: 2020 Survey on Central Government Marketable Debt and Borrowing; OECD Economic Outlook (December 2020); IMF World Economic Outlook Database (October 2020); Refinitiv, national authorities' websites and OECD calculations.

The 2020 survey on Central Government Marketable Debt and Borrowing reveals that increases in debt-to-GDP ratios varied considerably from country to country (Figure 1.11). The sheer scale of government fiscal support in major advanced economies including Canada, Japan, the United Kingdom and the United States has been unprecedented. In several advanced economies, central government marketable debt-to-GDP ratios are estimated to have increased by more than 15 percentage points in 2020. At the same time, the pace and scale of economic recoveries have differed widely in the OECD area. Economies with larger hospitality and tourism sectors are generally more affected. Some economies are also suffering more where stringent measures such as strict lockdowns have been put in place following renewed virus surges. Conversely, the impact on marketable debt has been limited in some cases, in particular where fiscal support has been provided in the form of loan guarantees, and complemented by the use of available government funds rather than security issuances. For example, central government marketable debt-to-GDP ratios are estimated to have risen less than 7 percentage points in some countries, including Ireland, Korea, Latvia and Sweden.

**Figure 1.11. Changes in central government marketable debt-to-GDP ratios in selected OECD countries**

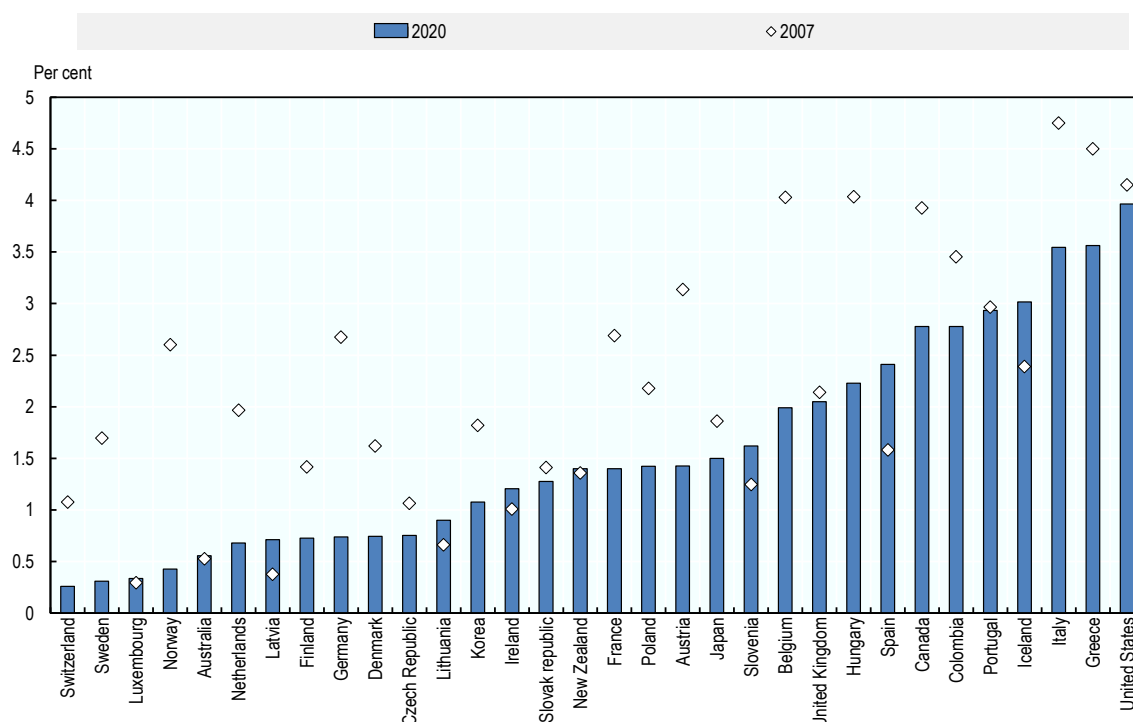


Source: 2020 Survey on Central Government Marketable Debt and Borrowing; OECD Economic Outlook (December 2020); IMF World Economic Outlook Database (October 2020); Refinitiv, national authorities' websites and OECD calculations.

The pandemic has highlighted the challenge for policy makers to strike the right balance: while they strive to support the economy with fiscal policy measures and limit the damage caused by the pandemic, the potential implications of rising sovereign debt levels need to be taken into consideration for long-term debt sustainability. Debt sustainability depends fundamentally on the interest rate any country pays on its debt; its capacity to generate primary balances and long-term growth trajectories. Currently, nominal interest rates are lower than nominal economic growth, allowing economic recoveries to be supported by deficit generating fiscal measures. At the same time, long-term economic growth depends on the efficient use of government expenditure on growth-enhancing investments so that they do not turn into recurring budget items. To this end, the *OECD Economic Outlook of December 2020* concluded that although this new environment requires the use of fiscal policy, fiscal stimulus should be well-targeted going forward to enhance resilience and support future economic growth.

#### **1.4.1. Prolonged low interest rates have contained the impact of higher financing needs on government interest expenses**

Thanks to prolonged low interest rates, OECD governments have paid less on their debt in recent years, even though sovereign debt levels are high and on an upward trend in many countries. Despite this surge in borrowing amounts provoked by the COVID-19 crisis, interest expense on outstanding government debt continued to fall in most countries in 2020. Figure 1.12 illustrates the percentage of government interest expenditure in GDP in 2007 and in 2020. Interest expenditure in relation to GDP in this period fell by around 50% in ten countries (including Austria, Belgium, France and Germany); and more than 25% in seven countries, remaining stable and slightly increased in some countries. For example, in the United States, government interest expense-to-GDP remained broadly stable (4.2% in 2020), despite the significant increase in government debt during this period.

**Figure 1.12. General government interest expenses in relation to GDP in selected OECD countries**

Source: OECD Economic Outlook (December 2020); and OECD calculations.

Going forward, sovereign financing needs will be subject to sizeable changes as a result of governments' ongoing response to the COVID-19 crisis and its effects on economic activity and government revenues. Interest rates are likely to remain low in the short-to-medium term and continue to help reducing the cost of financing public debt. While being an advantage for sovereign issuers, the associated prospects of low financial returns can harm long-term investors. For example, low returns on fixed-income assets may weigh on the value of pension reserve funds (OECD, 2020<sup>[4]</sup>).

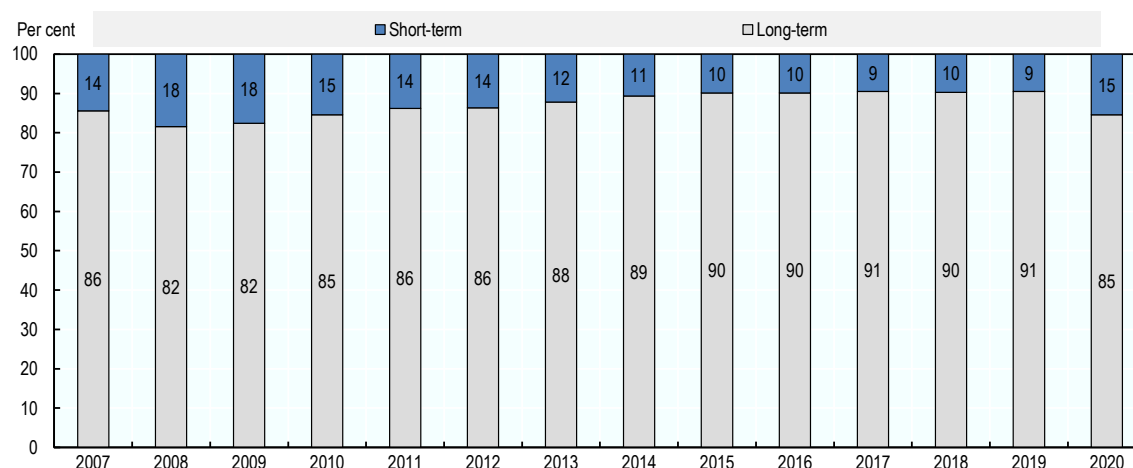
#### **1.4.2. The average maturity of outstanding debt has dropped from the pre-pandemic peaks in most countries**

Sovereign issuers in many OECD countries have expanded their short-term borrowing programmes to manage unexpected surges in financing needs in the wake of the COVID-19 pandemic. Shortened borrowing maturity during 2020 was apparent in the maturity composition of outstanding debt. The share of short-term instruments in outstanding central government marketable debt in the OECD area, which averaged 10% in the past five years, increased to 15% in 2020 (Figure 1.13).

Before the COVID-19 crisis, high indebtedness was accompanied by higher average term-to-maturity (ATM) in most OECD countries. The average ATMs, which have been extended in recent years, shrank in 2020. After extending by 1.7 years between 2007 and 2019, the ATM declined slightly from 7.9 years to 7.7 years, with striking differences across countries (Figure 1.14). In most countries including Canada, Denmark, Japan, the United Kingdom and the United States, the ATM of outstanding debt decreased in 2020 as a result of increased share of short-term debt in annual borrowing programmes. In the United States, for example, the average term-maturity of debt declined from 70 months in 2019 to 65 months in 2020. In some countries, such as Israel, Greece, Hungary and Mexico, the ATMs have lengthened considerably due to the issuance of long-term foreign-currency-denominated bonds. After a long break,

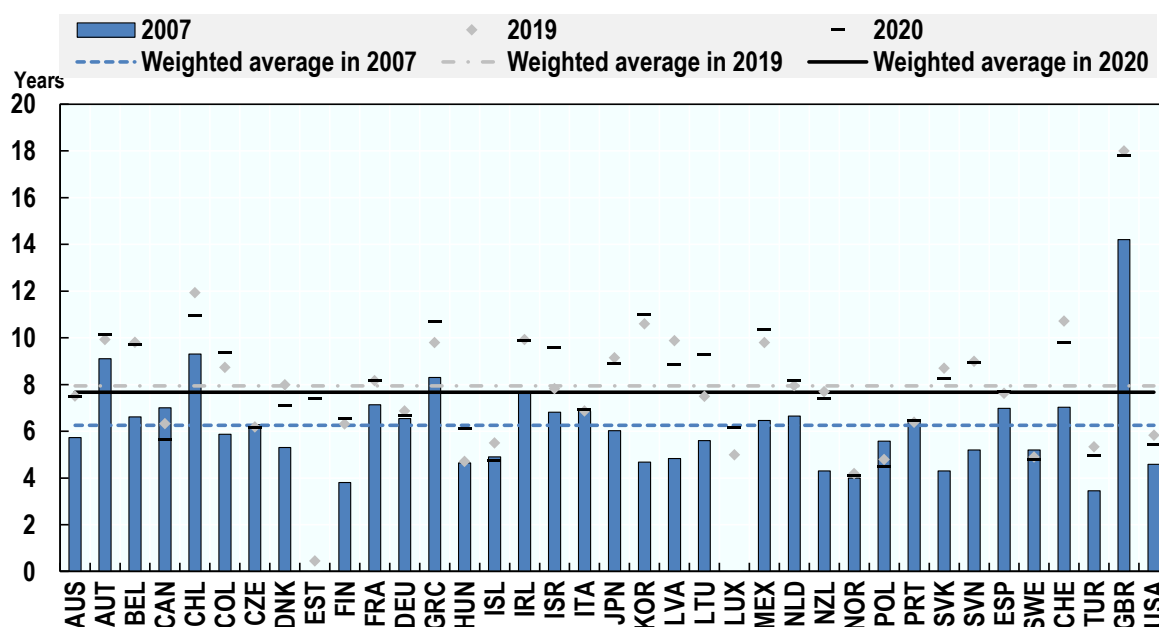
Estonia and Luxembourg issued bonds in the financial markets in 2020 for budget financing purposes. The average maturity of the debt stock of some countries, including Australia, Italy, Ireland and France, remained the same as in 2019.

**Figure 1.13. Maturity structure of central government marketable debt**



Source: 2020 Survey on Central Government Marketable Debt and Borrowing; OECD Economic Outlook (December 2020); IMF World Economic Outlook Database (October 2020); Refinitiv, national authorities' websites and OECD calculations.

**Figure 1.14. Average term-to-maturity of outstanding marketable debt in OECD countries**



Note: See Annex 1.A for country specific notes.

Source: 2020 Survey on Central Government Marketable Debt and Borrowing.

As discussed in previous editions of this publication, average maturities have important implications in terms of how much of the debt has to be refinanced in the short and medium term. From a risk management perspective, higher ATM and duration figures imply a lower pass-through impact of interest rate changes on government interest costs and enhanced fiscal resilience. This is less of a concern for sovereigns with economic flexibility and access to deep and liquid financial markets. Those countries might benefit from shortening borrowing maturities in order to take advantage of very low short-term rates (Maravalle and Rawdanowicz, 2018<sup>[5]</sup>). However, sovereigns, in particular those with a high debt redemption profile and/or relatively limited access to deep financial markets, should take a more cautious approach. Taking these considerations into account, some countries (e.g. Denmark, New Zealand, Slovenia and the Slovak Republic) plan to extend average maturities in 2021.

## 1.5. The outlook calls for a cautious approach to debt management

For many reasons, the outlook for 2021 calls for a cautious approach to debt management and greater flexibility in the implementation of financing programmes. The OECD area borrowing outlook has been hampered by unusual uncertainties surrounding the development of the pandemic and the pace of economic recoveries. Planned government budget revenues and expenditure may be subject to sizeable changes to which can pose challenges to funding operations in 2021. In addition, governments may introduce new fiscal packages to support economic recoveries. Depending on the extent of the changes, the planned size and timing of government funding needs are subject to modification.

The increased gross funding requirements brought high rollover ratios, and high average auction sizes in many OECD countries. This elevates potential vulnerability to market disruptions and other event risks. Amid persistent uncertainty, sovereign debt management offices are advised to diligently set out their annual financing programmes with careful consideration of expected events (monetary policy announcements, elections etc.), scheduled payments and the maturity profile of the debt stock. They should also ensure their emergency response capacities are adequate. This is important not only for smooth execution of financing plans, but also for the smooth functioning of financial markets at critical times.

Thus far, government securities markets have been functioning smoothly, apart from the market disruption in March 2020. The current consensus is that government securities market liquidity in the OECD area has improved substantially since then, largely due to actions taken by major central banks. This is also in part because debt managers have taken action to make them so by, for example, providing flexibility to primary dealership models (e.g. temporary ease of primary and secondary market obligations, or reporting deadlines), adjusting issuance patterns and making more use of syndication. In some countries where economies are still weathering the effects of the pandemic and with consequential information continuing to arrive, financial markets remain somewhat less liquid than before the pandemic. Annex B of this publication provides a detailed assessment of sovereign DMOs concerning market liquidity in government securities.

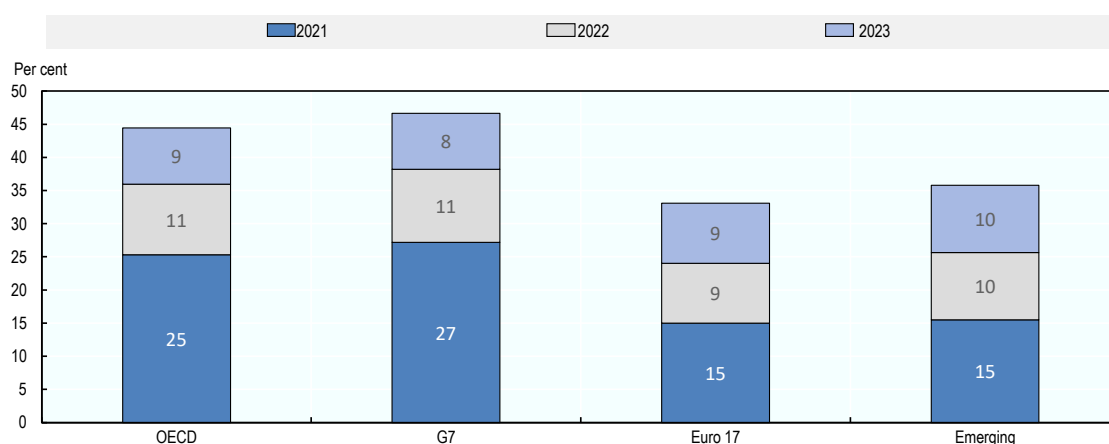
Historically, government bond prices are heavily dependent on expected default probabilities that are measured by credit ratings. During the 2008 financial crisis, and following the euro area sovereign debt crisis, credit ratings were significantly downgraded for some OECD countries. Some of these downgrades were coupled with deleterious selloffs of securities, the so-called “cliff effects”. This time around, increased public debt burdens have – thus far – not contributed to a wide range of sovereign credit downgrades in the OECD area, except for a few countries including Mexico, Turkey and the United Kingdom. It should be noted that there are several countries including Australia, Colombia, Mexico and Spain with a negative outlook. Going forward, weak economic recoveries, weak credit fundamentals with large external financing requirements and low reserve buffers can put strong downward pressure on sovereign credit ratings, which in turn may amplify vulnerabilities resulting from high sovereign and corporate debt levels. From debt management perspective, strengthened sovereign debt compositions in terms of maturity, interest rate and currency composition can help mitigate vulnerability concerns.

### 1.5.1. Rollover ratios as well as auction sizes are rising in many countries

An important aspect of governments' annual financing programme is related to the percentage of debt to be refinanced (i.e. rollover), and distribution of this refinancing needs over various instruments through different issuance mechanisms. In the OECD area, augmented re-financing needs in addition to new financing needs resulted in sizeable increases in gross financing needs. In addition, the sharp increase in short-term debt issuance in 2020 has resulted in higher rollover ratios near-term. Although the low interest rate environment has facilitated the financing of budget deficits as well as the re-financing of existing debt in recent years, increased rollover ratios may pose challenges for some countries depending on the additional financing needs that may occur during the year. In the United States, for example, the percentage of debt maturing in the next 12 months jumped from 27% in 2019 to 35% in 2020, as a result of increased T-Bill financing in 2020.

Figure 1.15 illustrates that one quarter of total stock of government securities is due in the next 12 months. In the next three years, governments will need to refinance around 45% of their outstanding marketable debt. This ratio was around 40% in the five years to end-2019. While rollover ratios indicate financing needs relative to repayments, they should be considered together with absolute volumes of scheduled redemptions. Due to fast accumulation of debt, redemption volumes have also increased significantly. Lower average maturities, accompanied by higher volume of redemptions often brings about challenging repayment schedules, and weakens investors' confidence. In the view of high rollover ratios, the size of governments' auctions in many countries are expected to remain substantial in 2021.

**Figure 1.15. Redemptions of central government marketable debt in OECD country groupings, as a percentage of debt stock**



Note: Using the debt comparable application data, calculated on current USD amounts outstanding.

Source: Refinitiv.

While a one-off shock to the level of debt may not on its own endanger long-term debt sustainability given the current low interest rate environment, a sustained period of high volatility could cause rollover risks for sovereigns, and debt may have to be rolled over at high cost. From a debt management perspective, the refinancing risk (i.e. a risk that debt might have to be refinanced at very high rates, or in the extreme case, cannot be rolled over at all) can be addressed by rebalancing the debt profile of the issuance programmes by incorporating more long-term instruments depending on market conditions. Several DMOs in the OECD area have already made important progress in this direction. For example, the Czech Republic started executing switch auctions in October 2020, whereby it buys back T-Bills and issues long-term government

bonds. The main aim of this operation is to adjust the redemption profile of debt in favour of long-term government bonds. Further discussion of managing refinancing risk is provided in Chapter 2.

In view of fast debt accumulation, rebalancing of debt portfolio maturities should be considered to ease near-term redemption pressures and strengthen the resilience of the debt portfolio against refinancing risk. A lengthening of government debt maturities may also facilitate a smooth exit of expansionary monetary policies, when policy rates eventually rise in the future (Bartsch et al., n.d.<sup>[6]</sup>). With lengthened maturities, this rise will be slowly passed on to the debt service and help to avoid endogenous debt accumulation.<sup>9</sup>

Increased refinancing needs also have implications for the banks that serve as primary dealers. As repeatedly discussed in the previous editions of this publication, regulatory reforms triggered by the 2008 financial crisis have improved financial stability, but at the same time have limited the appetite of bank dealers to warehouse investor flows on their balance sheets. While central banks have helped to absorb additional supply of government securities in the market in major advanced economies, the balance sheet capacity of primary dealers may need to be assessed more carefully in planning governments funding.

Country experiences suggest that complementing auctions with other issuance techniques such as syndications and private placements are useful for easing the pressure on primary dealership systems and providing flexibility in the execution of issuance programmes. In addition, having access to different funding sources such as foreign financing would supplement the issuance in local markets and reduce financial crowding out risks (Priftis and Zimic, 2021<sup>[7]</sup>). For euro area countries, funds from the European Union in particular loans from the SURE fund and the Next Generation EU Recovery Fund which aim to deal with the epidemic, will also contribute to alleviating the pressure on local markets, in particular primary dealers.<sup>10</sup>

### **1.5.2. Emergency response capacities**

While the outlook remains uncertain and confidence remains fragile despite positive news on the vaccine front, having emergency funding tools in place is relevant for all sovereign issuers. Sovereign debt management offices may benefit from building contingency funding tools, such as cash buffers for flexibility increasing the financing capacity and diversifying the investor base through new securities such as long-dated bonds and green bonds.<sup>11</sup> The 2020 Survey on Primary Market Developments indicates that several DMOs including Austria, France, Portugal and the United States benefited from liquidity buffers in 2020, in particular used to mitigate unexpected variations in borrowing needs during the initial phase of the COVID-19 crisis. In addition, some countries such as Germany, Italy, Sweden and the United States successfully introduced new types of securities without diminishing trading volumes of existing securities.

An important part of emergency response activities is to communicate the changes in financing programmes to stakeholders, including the general public. In their role as regular and large issuers in securities markets, DMOs should carefully manage changes in borrowing programmes by balancing the need for transparency and predictability while allowing for sufficient room for manoeuvre. Risks to financing programmes especially when they occur prior to an auction, poses a challenge for transparency and predictability and could cause reputational damage if not well managed. To this end, sovereign debt managers should remain vigilant in monitoring market developments and market participants carefully and closely in case of an event risk. Additional communication with market participants may be required to convey changes in borrowing plans.

Crises conditions require strong coordination and communication with fiscal and monetary policy authorities. In particular, a timely update of cash flow forecasts are critical for sovereign issuers to identify the volume and immediacy of funding needs. This requires efficient communication channels between cash managers and their counterparts in spending and revenue collection agencies. At a time when market liquidity becomes more sensitive in financial markets, communication with monetary authorities regarding government cash balances and borrowing strategies, in particular with respects to debt redemption

projections, and any change in cash buffer targets, could be critical in avoiding unnecessary pressure on market liquidity.

Furthermore, sovereign DMOs should regularly conduct business impact analysis to keep pace with the evolving risks such as cyberattacks and have an effective business continuity plan in light of the lessons learned during the COVID-19 crisis. Identification of gaps in business continuity and disaster recovery plans would help to improve preparedness in case of an emergency or an event risk. An important component of the revisions should be about key person risk. Cross-team training of more staff with critical skills through virtual classes and webinars to avoid key person risk (e.g. staff involved in cash market operations, derivative markets and debt repayments) can enhance emergency response capacity of debt management offices. In addition, the use and priority of secondary sites may be worth reviewing as the recent experience of wide-scale remote working has proved effective in managing certain type of stress scenarios.

## References

- AOFM (2019), "Bond issuance methods - Tenders vs Syndications", *AOFM Investor Insights*, [14]  
<https://www.aofm.gov.au/investors/wholesale-investors/investor-insights/bond-issuance-methods-tenders-versus-syndications>.
- Bartsch, E. et al. (n.d.), "It's all in the mix: how can monetary and fiscal policies work or fail together?", *Geneva Report on the World Economy* No 23. [6]
- Cohen, D. and S. Villemot (2011), "Endogenous debt crises", Vol. CEPR Discussion Paper 8270. [19]
- Corsetti, G. and L. Dedola (2013), "The Mystery of the Printing Press: Self-fulfilling debt crises and monetary sovereignty", *CEPR Discussion Paper*, Vol. 9358, [18]  
[https://cepr.org/active/publications/discussion\\_papers/dp.php?dpno=9358](https://cepr.org/active/publications/discussion_papers/dp.php?dpno=9358).
- Duffie, D. (2020), "Redesigning the US Treasury Market After the COVID19 Crisis", *Hutchins Center Working Paper*, Vol. June 2020/Number 62, [https://www.brookings.edu/wp-content/uploads/2020/05/WP62\\_Duffie\\_v2.pdf](https://www.brookings.edu/wp-content/uploads/2020/05/WP62_Duffie_v2.pdf). [20]
- Fleming, M. (2020), "Treasury Market Liquidity and the Federal Reserve during the COVID-19 Pandemic", *Liberty Street Economics*, [16]  
<https://libertystreeteconomics.newyorkfed.org/2020/05/treasury-market-liquidity-and-the-federal-reserve-during-the-covid-19-pandemic.html>.
- German Finanzagentur (2020), "Issues planned by the Federal government in the second quarter of 2020", *Press release*, Vol. April, [https://www.deutsche-finanzagentur.de/fileadmin/user\\_upload/pressemeldungen/en/2020/2020-03-23\\_pm01\\_EK\\_Q2\\_en.pdf](https://www.deutsche-finanzagentur.de/fileadmin/user_upload/pressemeldungen/en/2020/2020-03-23_pm01_EK_Q2_en.pdf). [10]
- Maravalle, A. and Ł. Rawdanowicz (2018), "To shorten or to lengthen? Public debt management in the low interest rate environment", *OECD Economics Department Working Papers*, No. 1483, OECD Publishing, Paris, <https://dx.doi.org/10.1787/192ef3ad-en>. [5]
- OECD (2020), "OECD Economic Outlook", Vol. Volume 2020 Issue 2, [1]  
<https://doi.org/10.1787/39a88ab1-en>.

- OECD (2020), *OECD Economic Outlook, Volume 2020 Issue 1*, OECD Publishing, Paris, <https://dx.doi.org/10.1787/0d1d1e2e-en>. [11]
- OECD (2020), "OECD Pensions Outlook 2020", <https://doi.org/10.1787/67ede41b-en>. [4]
- OECD (2020), "Sovereign Borrowing Outlook", Vol. Special COVID-19 Edition, <https://doi.org/10.1787/dc0b6ada-en>. [2]
- OECD (2019), *OECD Sovereign Borrowing Outlook 2019*, OECD Publishing, Paris, <https://dx.doi.org/10.1787/aa7aad38-en>. [3]
- OECD (2018), "Sovereign Borrowing Outlook", OECD Publishing, Paris, <https://doi.org/10.1787/23060476>. [9]
- OECD (2014), *OECD Sovereign Borrowing Outlook 2014*, OECD Publishing, Paris, [https://dx.doi.org/10.1787/sov\\_b\\_outlk-2014-en](https://dx.doi.org/10.1787/sov_b_outlk-2014-en). [12]
- Priftis, R. and S. Zimic (2021), "Sources of Borrowing and Fiscal Multipliers", *The Economic Journal*, Vol. Volume 131/Issue 633, pp. Pages 498–519, <https://doi.org/10.1093/ej/ueaa051>. [7]
- The UK DMO (2020), "Official Operations in the Gilt Market", *Operational Notice*, <https://www.dmo.gov.uk/media/16394/opnot060420.pdf>. [8]
- UK DMO (2020), "Response to an enquiry by Chairman of the Treasury Select Committee", <https://committees.parliament.uk/publications/4108/documents/40708/default/>. [13]
- US Treasury (November 4, 2020), "Minutes of the Meeting of the Treasury Borrowing Advisory Committee of the Securities Industry and Financial Markets Association", <https://home.treasury.gov/policy-issues/financing-the-government/quarterly-refunding/most-recent-quarterly-refunding-documents>. [15]
- Zhou, J. and P. Mauro (2020), "r-g<0: Can We Sleep More Soundly?", *IMF Working Paper* WP/20/52, <https://www.imf.org/en/Publications/WP/Issues/2020/03/13/r-minus-g-negative-Can-We-Sleep-More-Soundly-49068>. [17]

# Annex 1.A. Methods and sources

## Definitions and concepts used in the Sovereign Borrowing Outlook Survey

The Borrowing Outlook survey collects gross borrowing requirements, redemption and outstanding debt amounts with breakdown of these items by maturity, currency and interest rate types. It uses core definition of sovereign debt, so-called central government marketable debt, mainly due to its comparability and collectability. This measure, directly linked to the central government budget financing, enabled the OECD to collect not only for realisations but also for estimates of government borrowing requirements, funding strategies as well as outstanding debt with instruments, maturity and currency types.

### *Coverage of institutions: Central government*

The coverage of institutions by debt statistics varies from public sector to central government. Public sector stands as broadest institutional coverage, as it includes local governments, state funds financial and non-financial public corporations as well as central government debt. General government definition, which is used by for example by OECD System of National Accounts (SNA), consists of central government, state and local governments and social security funds controlled by these units. Central government covers all departments, offices, establishments and other bodies classified under general government, which are agencies or instrument of the central authority of a country, except separately organised social security funds or extra-budgetary funds. In terms of layers of coverage of institutions, central government stands out as the core definition. Debt of central government is raised, managed and retired by the national DMOs on behalf of the central government. Hence, advantage of this relatively narrow definition of debt is that it enables countries to provide comparable figures, in particular for the estimations.

### *Coverage of types of debt: Marketable debt*

In terms of instruments, liabilities can be in the form of debt securities, loans, insurance, pensions and standardised guarantee schemes, currency and deposits, and other accounts payable. Debt items can be classified as marketable and non-marketable debt. While marketable debt is defined as financial securities and instruments that can be bought and sold in the secondary market, non-marketable debt is not transferable. For example, bonds and bills issued in capital markets are marketable debt; multilateral and bilateral loans from the official sector are non-marketable debt.

The Borrowing Outlook survey focuses on marketable debt instruments, while most government debt statistics (e.g. OECD SNA, EU Maastricht debt, and IMF Public Sector Debt Statistics) cover both marketable and non-marketable debt items. OECD governments are financed predominantly by marketable debt instruments. This is a central definition for every analysis concerning various issues around debt management including borrowing conditions, portfolio composition, investor preferences and market liquidity. An advantage of using this definition is to indicate to investors which instruments are available for trade in the secondary market and which are not. Another reason is for the issuer to calculate different characteristics of the debt, such as duration or time to maturity, which in the case of non-marketable debt would present a difficult issue.

## Terminology

- *Standardised Gross borrowing requirement (GBR)* for a year is equal to net borrowing requirement during that year plus the short-term redemptions on the capital market at the beginning of the same year. Also, the (estimated) cash balance may affect the funding needs. In other words, the size of GBR in calendar year amounts to how much the DMO needs to issue in nominal terms so as to fully pay back maturing debt plus the net cash borrowing requirement through any issuance mechanism.
- *Net borrowing requirement (NBR)* is the amount to be raised for current budget deficit. While refinancing of redemptions is a matter of rolling over the same exposure as before, NBR refers to new exposure in the market.
- *The funding strategy* involves the choice of i) money market instruments for financing short-term GBR and ii) capital market instruments for funding long-term GBR. The strategy entails information on how borrowing needs are going to be financed using different instruments such as long-term, short-term, nominal, variable-rate, indexed bonds and FX-denominated debt.
- *Gross debt* corresponds to the outstanding debt issuance at the end of calendar years. This measure does not take the valuation effects from inflation and exchange rate movements, thus it is equal to the total nominal amount that needs to be paid back to the holders of the debt.
- *Redemptions* refers to the total amount of the principal repayments of the corresponding debt including the principal payments paid through buy-back operations in a calendar year.

## Regional aggregates

- Total OECD area denotes the following 37 countries: Australia, Austria, Belgium, Canada, Chile, Colombia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.
- The G7 includes seven countries: Canada, France, Germany, Italy, Japan, United Kingdom and the United States.
- The OECD euro area includes 17 members: Austria, Belgium, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Portugal, Slovak Republic, Slovenia and Spain.
- In this publication, the Emerging OECD group (i.e. OECD emerging-market economies) is defined as including six countries: Chile, Colombia, Hungary, Mexico, Poland and Turkey.
- The euro (€) is the official currency of 19 out of 28 EU member countries. These countries are collectively known as the euro area. The euro area countries are Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.

## Calculations and data sources

- Estimates that are presented as a percentage of GDP are calculated using nominal GDP data from the *OECD Economic Outlook*, December 2020.
- Debt is measured as the face value of current outstanding central government debt. Face value, the undiscounted amount of principal to be repaid, does not change except when there is a new issue of an existing instrument. This coincides with the original promise (and therefore contractual

obligation) of the issuer. DMOs often use face value when they report how much nominal debt will mature in future periods. One important reason for using face value is that it is the standard market practice for quoting and trading specific volumes of a particular instrument.

- To facilitate comparisons with previous versions of the Outlook, figures are converted into US dollars using exchange rates from 1 December 2009, unless indicated otherwise. Where currency are converted into US dollars using flexible exchange rates, notes in figures and tables refer explicitly to that approach. Source: Refinitiv. The effects of using alternative exchange rate assumptions (in particular, fixing the exchange rate versus using flexible exchange rates) are illustrated in Figures 1.3 and 1.4 of Chapter 1 of the *Sovereign Borrowing Outlook, 2016*.
- All figures refer to calendar years unless specified otherwise.
- Aggregate figures for gross borrowing requirements (GBR), net borrowing requirements (NBR), central government marketable debt, redemptions, and debt maturing are compiled from answers to the Borrowing Survey. The OECD Secretariat inserted its own estimates/projections in cases of missing information for 2020 and/or 2021, using publicly available official information on redemptions and central government budget balances.
- Yield group debt calculations in Figure 1.6 are based on all issuances and re-openings of fixed-rate bonds (i.e. data excludes: short-term instruments, indexed linked, floating rate instruments and strips). Data is sourced from Refinitiv.
- For Figure 1.7: Several central banks have become dominant holders of domestic government bonds. For the euro area countries, cumulative net purchases of government bonds in the Eurosystem Public Sector Purchase Programme and the Pandemic Emergency Purchase Programme at book value as of end-December.

## Average term to maturity

The following notes were provided by countries in relation to their calculations of average term to maturity.

### Annex Table 1.A.1. Average term to maturity country comments

Country	Note
Australia	Weighted average term to maturity calculation includes Treasury Bonds, Treasury Indexed Bonds and Treasury Notes. Security weightings are based on the face value of each instrument.
Chile	All marketable debt in Chile corresponds to Bonds. All calculation as of December 31st of each year. Some of them consider amortization with maturity January, 1st of the following year
Colombia	All marketable debt in Colombia corresponds to domestic bonds (TES) and foreign bonds.
Czech Republic	Marketable central government debt excludes savings government bonds (retail bonds).
Denmark	Excludes effects from swaps and other derivatives.
Estonia	Includes central government marketable debt only, excludes other levels of government.
France	Excludes swap effects
Germany	excludes swap effects and own holdings, maturities of inflation-linked securities are weighted by 0.75 %
Greece	The above-mentioned data refer to Long Term marketable debt securities (more than 1 year original maturity) and exclude Treasury Bills.
Hungary	Data excludes retail securities, locally issued FX bonds, loans, a non-marketable bond series held by the National Bank of Hungary (only negligible amount) and since 2020 also excludes the non-marketable bonds issued to municipalities. Data includes cross-currency swaps.
Iceland	Excludes swap effects.
Ireland	The estimated ATM for Ireland reflects bonds, Euro Commercial paper and Irish Treasury Bills. Inflation linked bonds and some ultra-long maturity notes issued since 2016 are excluded on the basis that they were issued as

Country	Note
	private placements. The total o/s for these products at end-2020 stood at €2.9bn, 2% of the total marketable debt o/s.
Israel	Estimated ATM excludes retail bonds and non-tradable bonds for pension funds and insurance companies
Italy	No security has been excluded; swap effects are excluded.
Japan	MOF announces ATM based on Fiscal Year, not Calendar Year. Figures from 2007 to 2019 exclude saving bonds. Figures of 2020 are estimated and include saving bonds.
Mexico	Our calculation of the ATM considers all outstanding market debt of the central government (short-term and long-term). Preliminary figures for 2020.
Netherlands	The information in the table is based on the data of Tbill and Bonds.
New Zealand	The calculation is based on all NZ government marketable securities including Nominal Bonds, Inflation-Indexed Bonds, and Treasury Bills. The calculation excludes the non-market securities held by NZ Reserve bank and Earthquake Commission. However, it includes securities held by the NZ Reserve bank that were purchased under their Large Scale Asset Purchase programme and Government Bond repurchases.
Norway	Includes all outstanding Treasury bills and government bonds
Portugal	Excludes securities issued for collateral purposes.
Spain	Central Government Treasury Bills, Bonds and Obligaciones (nominal, inflation linked and assumed) and foreign currency debt.
Sweden	Marketable debt securities include: Government bonds Inflation-linked bonds Green bonds Public bonds in foreign currencies Treasury bills Commercial paper, foreign currencies
Switzerland	Outstanding marketable debt, excluding: - own tranches not yet issued - securities for cash management purposes - swap effects
Turkey	Weighted average term to maturity (ATM) figures reflects central government marketable debt.
United Kingdom	Treasury bills for cash management purposes, DMO's gilt holdings and undated gilts are excluded from the calculation of the weighted average term to maturity.

Source: 2020 Survey on Central Government Marketable Debt and Borrowing.

## Notes

<sup>1</sup> Net borrowing requirements are estimated to be higher than budget deficits in 2020. This may stem from various factors including governments' prefunding operations or financing of off-budget measures, as well as some new borrowing needs may not be reflected on budget deficit estimations.

<sup>2</sup> While this report was being prepared in January 2021, new financial packages were announced in a few countries including the US, exact size of which is not certain yet.

<sup>3</sup> The OECD economy is estimated to have contracted by 5.5% in 2020, with declines over 10% in few OECD countries (OECD, 2020<sub>[1]</sub>).

<sup>4</sup> The primary balance is defined as the overall fiscal balance excluding net interest payments on public debt. The primary balance, as one critical indicator of short-term sustainability, shows the extent to which governments can honour their debt obligations without the need for further indebtedness.

<sup>5</sup> Borrowing instruments –often in form of securities in the OECD area- include a wide range of options with different maturity, interest rate and currency characteristics. Securities can be sold through different methods including auctions, syndications, private placements and taps.

<sup>6</sup> It should be noted that when this report was finished in early February 2021, the yield on the benchmark US 10-year bond was hovering around 1.2%, amid the expectations of a large stimulus package to be enacted.

<sup>7</sup> Issuers of negative yielding debt have received premiums from these issues. An examination of negative yielding fixed-rate sovereign bond issuance in 17 OECD countries between 2014 and 2019 indicates that the volume of negative-yielding fixed-rate bond issues reached USD 3.6 trillion and issuers received more than USD 28 billion from these issues (<https://dx.doi.org/10.1787/0d1d1e2e-en>).

<sup>8</sup> At the beginning of the COVID-19 outbreak, risk aversion in financial markets rose substantially, and as investors' preference shifted towards cash (and cash-like instruments), selling pressure put strains on primary dealers' balance sheets. Please find detailed discussion concerning the turmoil in March 2020 in [2020 edition of the OECD Sovereign Borrowing Outlook](#).

<sup>9</sup> As widely discussed in the literature, rising risk premia and interest rates cause endogenous debt accumulation, which in turn deteriorates borrowing conditions (Corsetti and Dedola, 2013<sup>[18]</sup>) (Cohen and Villemot, 2011<sup>[19]</sup>).

<sup>10</sup> Under the SURE instrument, the European Council approved a total of Euro 90.3 billion in financial support to 18 Member States. Between October and December 2020, the European Commission issued USD 53.5 billion bonds in four rounds at very low yields. The issuance consisted of 5-, 10- and 15-year maturities bonds ([https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/financial-assistance-eu/funding-mechanisms-and-facilities/sure\\_en](https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/financial-assistance-eu/funding-mechanisms-and-facilities/sure_en)).

<sup>11</sup> Another example of contingency option for managing cash flows came from the United Kingdom, where the Bank of England has temporarily extended the use of the government's 'Ways and Means (W&M) facility' to manage liquidity and the short-term volatility of cash forecasts. The government usually uses this facility to finance its day-to-day spending, before the BoE sells government bonds to the market. This facility is normally capped at GBP 370 million. See press releases from HM Treasury [here](#), and BoE [here](#).

[www.oecd.org/finance/public-debt](http://www.oecd.org/finance/public-debt)

