GOVERNMENT DEBT MANAGEMENT MEMO

NO. 1 | 2022
AUGUST 2022
VETLE ØYE OPHEIM

Turnover in the Norwegian government securities market

NORGES BANK

The papers in the Government Debt Management Memo series present reports and documentation written by staff members and other authors affiliated with Norges Bank, the central bank of Norway. The views and conclusions expressed in these papers do not necessarily represent those of Norges Bank.

1 Introduction

From August 2022, Norges Bank will publish new data series with turnover statistics for the Norwegian government securities market using the data warehouse found on the Bank's website. The turnover statistics are based on reporting from primary dealers in Norwegian government securities[1].

Turnover statistics have previously been published using monthly data since 2018. These series are now being replaced with new, more detailed series that date back to 2013.

The aim of publishing more comprehensive data is to improve information on the Norwegian government securities market for investors, analysts, researchers or other interested parties.

This *Memo* uses the new statistics to more closely examine developments in the Norwegian government securities market since 2013.

2 Data

Since 2013, primary dealers have reported turnover in the secondary market for Norwegian government securities to Norges Bank. Up to and including 2017, reporting was conducted on a monthly basis. Reports included aggregated turnover data for the entire month by region and counterparty type. In 2018, monthly reporting was replaced by a system in which all transactions in Norwegian government securities carried out by primary dealers are reported daily. The data are aggregated to monthly totals prior to online publication. These two data sets have now been combined into a single data set for turnover in Norwegian government securities since 2013. The turnover statistics will be updated on the 10th of each month with turnover from the preceding month. Publication is subject to a 10-day lag to take account of any revisions[2].

Monthly turnover data for Norwegian government securities have previously been published on Norges Bank's website. These statistics have only covered turnover reported through the reporting system that was implemented in 2018. This data set therefore contained no historical data before that time. Moreover, it only showed total turnover of all government securities (sorted by the parameters ISIN and type of instrument).

The new statistics include more parameters than those published previously. All parameters currently published are summarised in Table 1.

1 Turnover data are available on Norges Bank's website: Secondary market (norges-bank.no)
2 In most cases, no revisions will be made after 10 days, although revisions are still possible.

Table 1: Reporting parameters

Parameter	Description
ISIN	Turnover for each government security
Region	Geographical location of the primary dealer's counterparty
Counterparty type	The type of counterparty the turnover is with
Instrument type	Whether the instrument is a Treasury bill or a government bond

The new turnover reporting data make it possible to observe the counterparty types that are active in the government bond market and the regions where they are located. Turnover can be further categorised into individual bonds or bills and bonds together. This provides an overview of the types of investors that are active in the different maturity segments.

Since the statistics only include turnover with at least one counterparty as a primary dealer, they do not provide a complete picture of secondary market activity. It is difficult to assess the extent of turnover that does not involve at least one of the primary dealers[3].

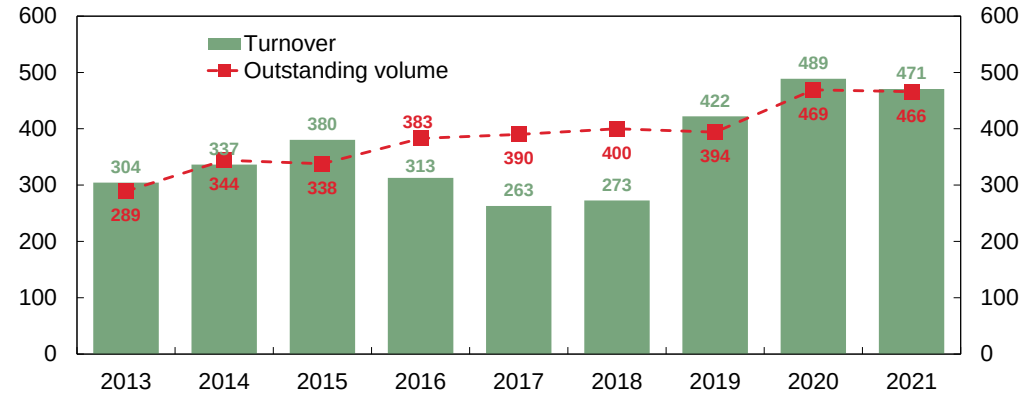
3 Secondary market for government bonds

Chart 1 shows total annual turnover in the secondary market for government bonds in the period between 2013 and 2021, as reported by the primary dealers. Annual turnover has varied between NOK 263 billion and NOK 489 billion. Turnover was markedly higher after 2019 and highest in 2020. Turnover in the market has tended to increase somewhat as volume outstanding rises.

Chart 2 shows average turnover by month for the entire period between 2013 and 2021. The chart shows that average turnover tends to be highest in the first half of the year. Turnover is by far the highest in January and in May. Year-end is often a natural time for portfolio rebalancing and promotes high turnover in January. Moreover, owing to summer holidays, turnover is often lower in July in Norway and in August abroad.

3 Some trading platforms, such as Euronext Oslo (formerly Oslo Børs), also publish turnover data for Norwegian government bonds.

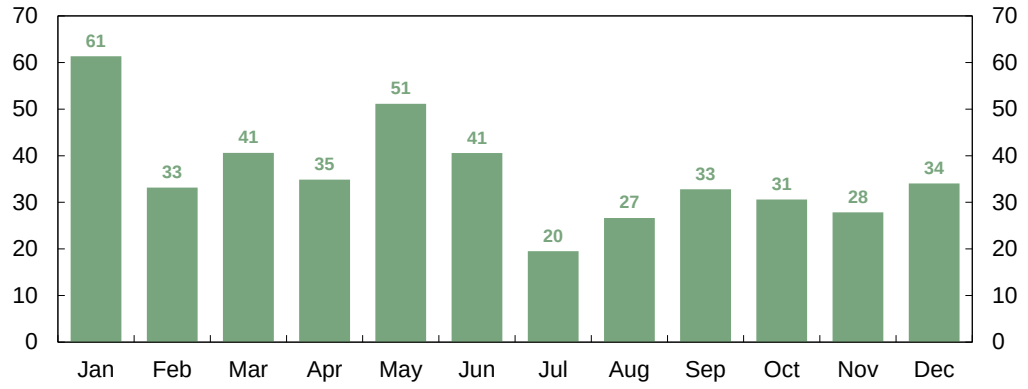
Chart 1: Norwegian government bond turnover and outstanding volume
Annual. In billions of NOK. 2013-2021



Sources: Primary dealers and Norges Bank

In recent years, Norwegian government bonds have primarily matured in May, which contributes to high turnover in May for two reasons: When a bond matures, the investors receive a large amount of cash, the reinvestment of which can lead to higher turnover in other bonds. Moreover, rebalancing may occur when the bond's residual maturity falls below one year.

Chart 2: Average turnover of Norwegian government bonds by month
In billions of NOK. 2013-2021.

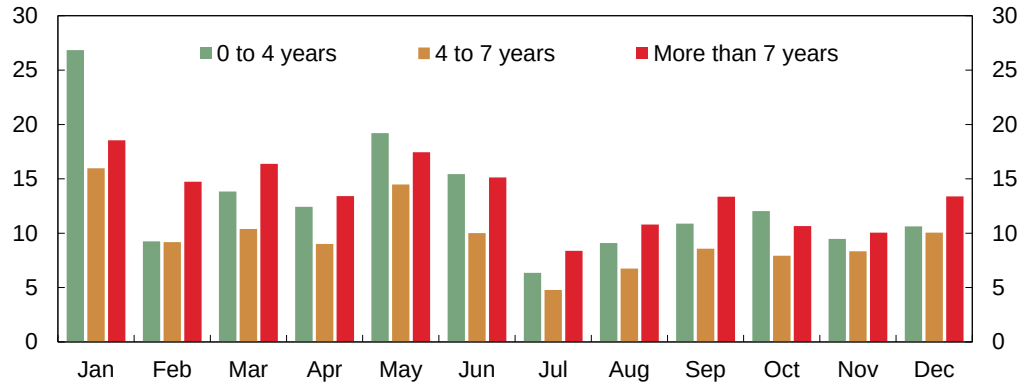


Sources: Primary dealers and Norges Bank

Chart 3 shows monthly turnover distributed across three different maturity segments. Bonds with maturities exceeding seven years normally have the highest turnover. Turnover is lowest for the medium-term bonds, yet not always significantly lower than the bonds with the shortest maturities.

In January and May, the bonds with the shortest maturities have the highest turnover, underpinning high turnover in these two months owing to rebalancing and reinvestment among investors. When bonds mature or near maturity, investors will divest from the bond with the shortest maturity either at the beginning of a new year or in a maturity month in the preceding year. One reason could be that the bond is excluded from indexes on which different investment managers base their portfolios. The obvious course of action would then be to reinvest the capital in other bonds with short residual maturities.

Chart 3: Average turnover of Norwegian government bonds by month and maturity segment
In billions of NOK. 2013-2021



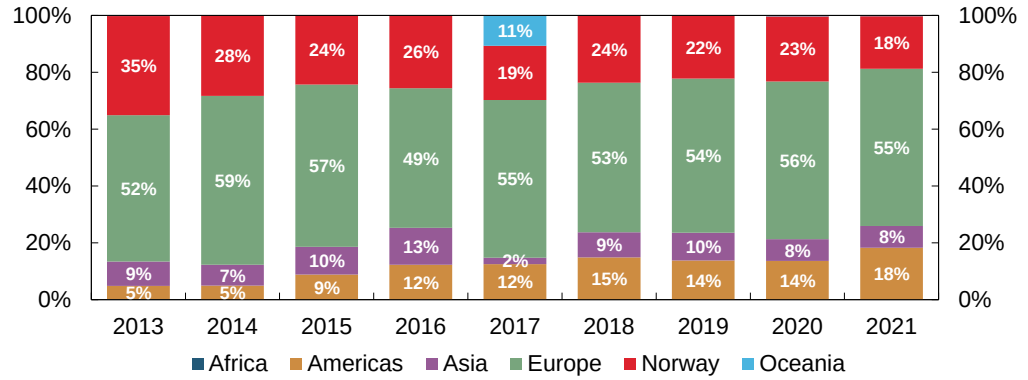
Sources: Primary dealers and Norges Bank

Region and counterparty distribution in the government bond market

Chart 4 shows government bond turnover by region expressed as a share of total annual turnover. Since 2013, the largest group of investors has been European, normally accounting for a share of just above 50 percent of total market turnover. European investors include turnover between primary dealers as three out of four primary dealers are European. Only DNB is headquartered in Norway.

Norwegian investors have historically been the second largest investor group, although investors in the Americas have become more active in recent years. Turnover with investors in the Americas is now as large as with Norwegian investors. Turnover with Asian investors normally accounts for around 10 percent of total turnover.

Chart 4: Norwegian government bond turnover by region. Share of total turnover
Annual. 2013-2021



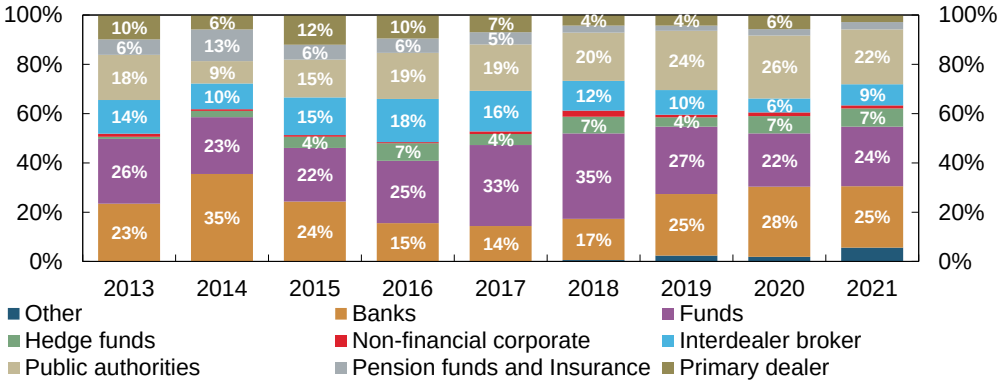
Sources: Primary dealers and Norges Bank

Chart 5 shows bond turnover in the secondary market by counterparty type. Banks and funds are the two largest counterparty types, accounting for approximately a 50 percent share of turnover. In recent years, there has been a certain tendency for public authorities – which include central banks – to account for an increasing share of the

market. At the same time, the share of turnover accounted for by pension funds and insurance companies appears to have declined.

The share held by Norwegian investors has remained between 30 and 40 percent in recent years. The share of turnover accounted for by Norwegian investors is thus relatively similar to the ownership share. The ownership share of Norwegian investors also includes the government's own stock of government bonds, which now stands at NOK 60 billion, or approximately 12 percent of the outstanding volume. If this is taken into account, the Norwegian investors' share of turnover is even closer to the ownership share[4].

Chart 5: Norwegian government bond turnover by counterparty type
Share of total turnover. Annual. 2013-2021

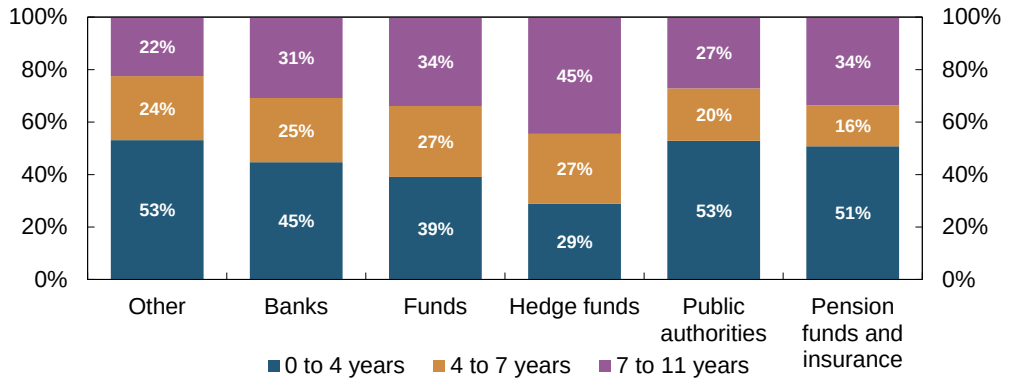


Sources: Primary dealers and Norges Bank

Chart 6 shows maturity segments in which the different counterparty types were most active. The data are only for 2021. In relative terms, pension funds, insurance companies, banks and public authorities showed the most activity in bonds with the shortest maturities in 2021[5]. In contrast, hedge funds and non-financial corporations were most active in the bonds with the longest maturities. Funds were also most active in the bonds with the shortest maturities, albeit with a relatively even distribution across the different maturity segments.

4 Overviews of ownership composition can be found in Government Debt Management's quarterly and annual reports. See eg the annual report for 2021: *Government debt – Annual Report 2021* (norges-bank.no).
5 The data set only includes turnover for each individual bond and bill, and not maturity segments as shown in Chart 6. However, the bonds can be classified according to residual maturity. Information about government security maturity dates is available here: Debt issues and buybacks (norges-bank.no).

Chart 6: Norwegian government bond turnover by counterparty type and maturity segment
Share of counterparty turnover. 2021



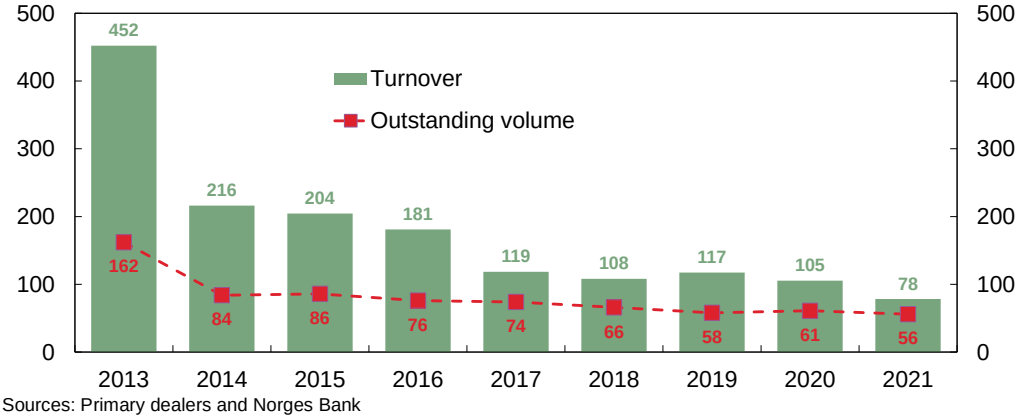
Sources: Primary dealers and Norges Bank

4 Secondary market for Treasury bills

In recent years, turnover in the Norwegian Treasury bill market has been considerably lower than government bond turnover. However, this has not always been the case. In 2013, Treasury bill turnover was much higher than government bond turnover (Chart 7), reflecting higher levels of outstanding volume and turnover owing to the swap arrangement.[6]

Turnover in the Norwegian Treasury bill market has declined since 2014. At the same time, outstanding volume has also fallen. In the period between 2017 and 2020, turnover was fairly stable at just over NOK 100 billion per year. However, in 2021, total turnover was only NOK 78 billion.

Chart 7: Norwegian Treasury bill market turnover and outstanding volume
Annual. In billions of NOK. 2013-2021



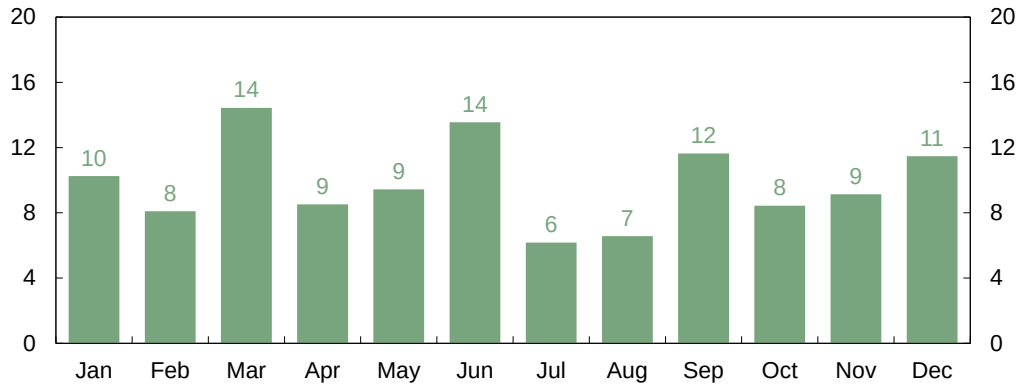
Sources: Primary dealers and Norges Bank

There is also a marked pattern in Treasury bill turnover through the year (Chart 8). Turnover is substantially higher in March, June, September and December, months with

[6] See Swap arrangement (norges-bank.no) for more information on the swap arrangement.

IMM dates, compared with other months[7]. This probably reflects the four months when new bills are both issued and mature, which entails portfolio rebalancing for investors.

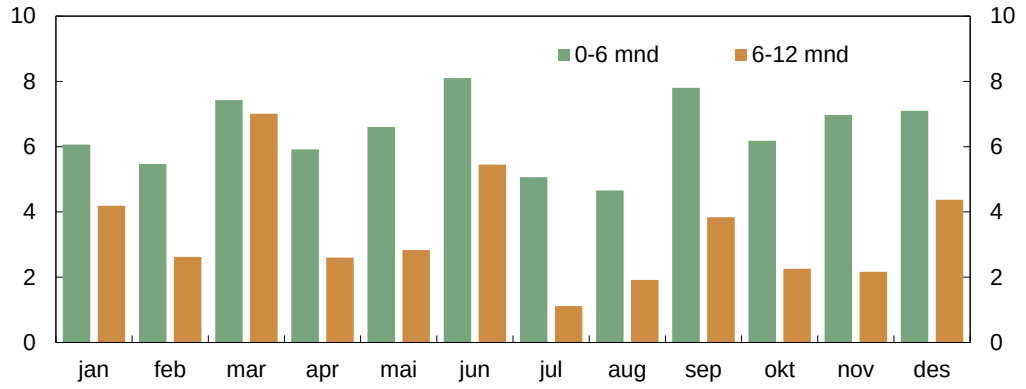
Chart 8: Average turnover of Norwegian Treasury bills by month
In billions of NOK. 2013-2021



Sources: Primary dealers and Norges Bank

Chart 9 is based on the same data as Chart 8 but divides turnover into two maturity categories: short-term bills (maturity between 0 and 6 months) and long-term bills (maturity between 6 and 12 months). Short-term bills normally have a higher turnover in all twelve months of the year, but the difference across the IMM months is somewhat less.

Chart 9: Average turnover of Norwegian Treasury bills by month and maturity category
In billions of NOK. 2013 – 2021



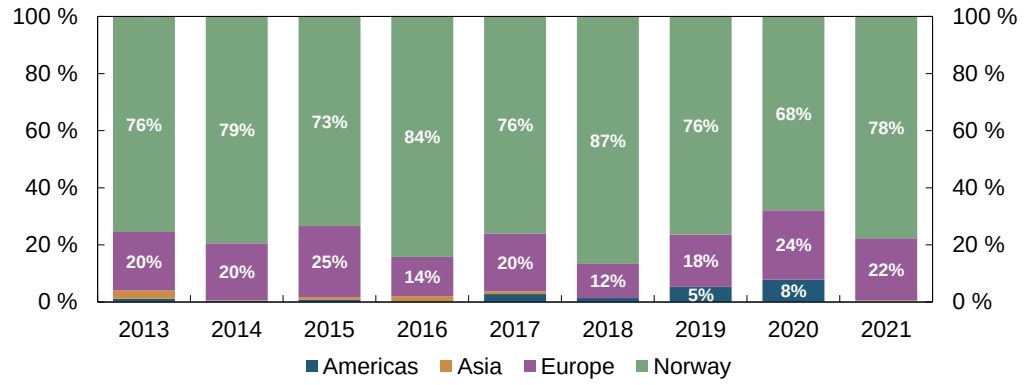
Sources: Primary dealers and Norges Bank

Turnover in the Treasury bill market by region and counterparty

In contrast to the government bond market, the Treasury Bill market has a majority of Norwegian participants. The market turnover of Norwegian participants normally accounts for between 70 and 80 percent of total turnover. The share of turnover is therefore relatively similar to the share of Treasury bills held by Norwegian investors.

7 IMM stands for the International Money Market, and the IMM dates are the third Wednesday in March, June, September and December. The IMM dates are used as maturity dates for a number of derivative contracts both in Norway and globally.

Chart 10: Turnover of Norwegian Treasury bills by region. Share of total turnover
Annual. 2013-2021

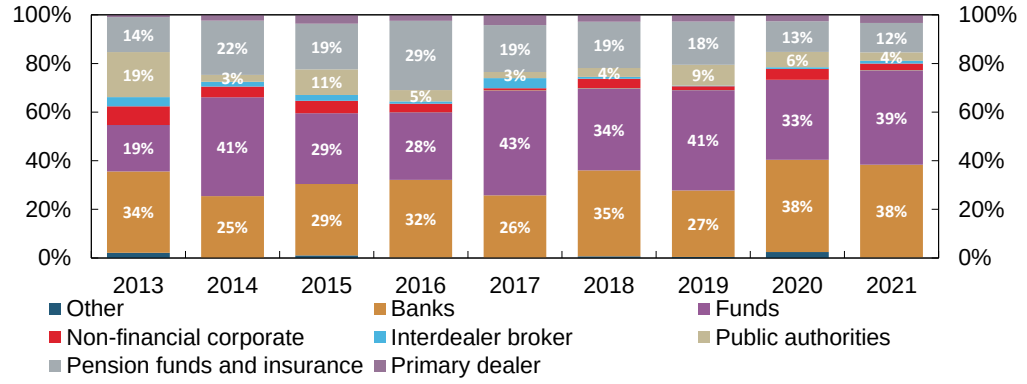


Sources: Primary dealers and Norges Bank

The turnover share of European investors has normally been around 20 percent, while activity in the Treasury bill market by investors in the Americas and Asia is relatively sporadic.

Chart 11 shows turnover in the Treasury bill market by counterparty. Since 2013, banks and funds have been the largest counterparty type in the market and their share has also increased through the period. Pension funds and insurance companies are the third largest group of investors, but their share has declined somewhat in recent years. Other investors have a much smaller share.

Chart 11: Turnover of Norwegian Treasury bills by counterparty. Share of total turnover
Annual. 2013-2021



Sources: Primary dealers and Norges Bank

5 Summary

In this *Memo*, we have presented an overview of turnover data for Norwegian government securities that are now published on Norges Bank's website and examples of information available from the data set. The data set replaces previous turnover data that contained turnover data from 2018.

The data set will be updated once a month with new turnover data for the previous month and contain turnover statistics from 2013. The data set contains various parameters that make it possible to categorise Treasury bill turnover by investor type, region and maturity.