

Box A

Central Bank Purchases of Government Bonds

Most advanced economy central banks have made large-scale purchases of government bonds during the COVID-19 pandemic. While employed for the first time in Australia, such purchases in the secondary market for government bonds have become an increasingly important monetary policy tool.^[1]

In the early months of the pandemic – following a sharp rise in the cost of transacting in government bonds as market participants sought to convert bond holdings into cash – central bank bond purchases were primarily used to support market functioning. Without central bank intervention, the resulting tightening of financial conditions would have exacerbated the shock to the real economy.

The motivation for central bank bond purchases since then has been to contribute to a further easing of financial conditions, given that policy rates had already been reduced to the point of being constrained by the effective lower bound. Bond purchases contribute to a decline in government bond yields. This contributes to lower yields on other assets as well as putting downward pressure on the exchange rate.^[2] This box outlines the channels through which central bank bond purchases contribute to easier financial conditions, and discusses some differences in the characteristics of bond purchase programs at different central banks in advanced economies.

How Have Government Bond Purchases Worked?

Central bank bond purchases contribute to easier financial conditions through a combination of three channels:^[3]

- *Signalling low policy rates*: bond purchases can help to signal that the central bank will not raise its policy rate for some time and so reinforce other guidance on the policy rate.
- *Improving liquidity*: central bank purchases reduce the liquidity premiums on bonds by improving market functioning and reducing the risk that bonds are difficult to sell. This channel can be particularly important in periods of financial market stress.
- *Portfolio rebalancing*: the announcement of government bond purchases bids up their price, causing yields to decline as they move inversely to the price. Financial markets are forward looking and price in the impact of the central bank purchases that are expected to occur in addition to those already completed. By lowering the yield on government bonds, central bank purchases cause investors to switch into alternative assets, including corporate bonds, asset-backed securities and equities. This contributes to a rise in the price of these assets, and a broad easing of financial conditions.

The effect of a central bank's bond purchase program on bond yields and broader financial conditions depends on the total

expected size of that program.^[4] The rate of purchases being conducted can provide some guide to the ultimate size that a purchase program is likely to reach, especially in open-ended bond purchase programs (see below).

To assess the size and hence the degree of stimulus provided by central bank bond purchases, it is relevant to consider purchases both as a share of bonds outstanding and relative to nominal GDP. The size relative to the bond market indicates how the central bank's purchases have affected the share of government bonds held by other market participants. The size relative to GDP accounts for differences in the size of the government bond market in different economies, and is particularly relevant for considering the size of the possible portfolio rebalancing effects as investors seek alternative assets.

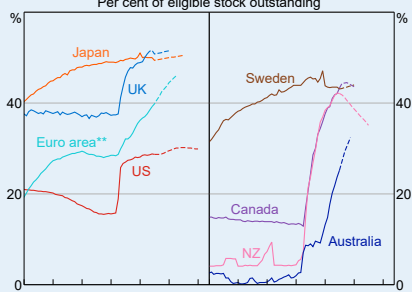
Graphs A.1 and A.2 depict bond purchases along these two dimensions, including projections of future purchases based on available information from central banks, surveys of market expectations and in lieu of those a continuation of the recent pace of purchases is assumed. Comparing across economies, the size of stimulus is particularly large in Japan based on both measures. In countries with less government debt on issue relative to the size of their economies like Australia, Canada, New Zealand and Sweden, the scale of stimulus is larger when considered as a share of the bond market.

Research generally supports the view that it is the total expected size of bond purchases that matters for financial conditions. When expectations arise for *additional* bond purchases, beyond those already expected by market participants, this provides *additional* stimulus.^[5] A related point is that

when a central bank ceases net purchases of government bonds, and maintains a constant stock of bonds on its balance sheet, it is maintaining a consistent level of stimulus via the portfolio rebalancing channel (akin to the effect of maintaining the policy rate at a given level). The available research supports this view and suggests that the stimulus begins to be withdrawn when the central bank is expected to allow for a reduction in the size of its bond holdings.^[6]

Graph A.1

Central Bank Government Bond Holdings*
Per cent of eligible stock outstanding



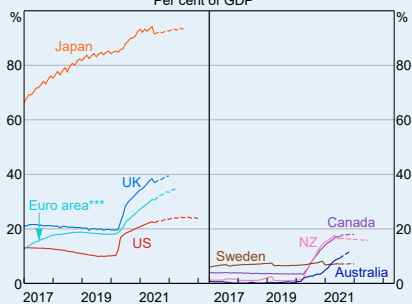
* Central government debt only for all countries except the euro area. Dashed lines represent forecasts based on announced purchase programs, recent pace of purchases, or market expectations in the case of US and Canada

** Holdings data for euro area only include bonds held as part of asset purchase programs; holdings for other central banks also include bonds held for operational or liquidity purposes

Sources: Central banks; debt management offices; RBA; Refinitiv

Graph A.2

Central Bank Government Bond Holdings*
Per cent of GDP**



* Central government debt only for all countries except the euro area. Dashed lines represent forecasts based on announced purchase programs, recent pace of purchases, or market expectations in the case of US and Canada

** Four-quarter rolling sum; forecasts are based on the IMF's World Economic Outlook

*** Holdings data for euro area only include bonds held as part of asset purchase programs; holdings for other central banks also include bonds held for operational or liquidity purposes

Sources: Central banks; IMF; RBA; Refinitiv

How Have Government Bond Purchase Programs Differed?

Central bank bond purchase programs conducted since the emergence of COVID-19 fall into a few broad categories (Table A.1).^[7]

Some programs designate a fixed size of purchases and a date for the completion of those purchases, such as the Bank of England's program. A close variant are those that have set an upper limit on purchases, as well as a completion date for purchases, such as those at the Reserve Bank of New Zealand and the European Central Bank.

Another category specifies the rate of purchases (per week or per month), with guidance on how the rate of purchases will be updated depending on how economic conditions evolve. This style of program has been implemented by the US Federal Reserve and the Bank of Canada.

Some central banks have programs based on yield targets for certain government bonds, rather than specifying their bond purchases in terms of a stock or flow of purchases. Since 2016, the Bank of Japan has set a target to maintain the 10-year bond yield within a certain range.

Policy measures implemented by the Reserve Bank of Australia include bond purchases to address market dysfunction, to support a yield target and as part of a separate bond purchase program.^[8] The design of the Bank's bond purchase program has evolved over the course of the economic recovery. The first two tranches designated a fixed size of purchases – \$200 billion in total – with an end date, most recently of September 2021. During this period, the weekly rate of purchases has been \$5 billion. In July, the Bank announced that from September bond purchases will occur at a rate of \$4 billion a

week, and that the Board would adopt a flexible approach, regularly reviewing the rate of those purchases with the option to adjust its purchases in either direction. The Board's decision will be based on an assessment of progress towards the Bank's goals for full employment and inflation, considering both actual outcomes as well as the outlook. In addition, the Bank remains committed to a yield target of 10 basis points for the April 2024 government bond. The April 2024 yield has remained consistent with the Bank's target over recent months, and purchases in support of the target have not been required since late February. The Bank stands ready to operate in the market to support the target if that is necessary.

At central banks with asset purchase programs that specify an end date, that date is generally between the end of 2021 and mid 2022. For those programs that are framed in terms of a rate of purchases, surveys of economists or market participants can provide a guide about the extent of future purchases. For example, the Federal Reserve Bank of New York conducts regular surveys of the expectations of bond market dealers and other market participants for the US Federal Reserve's program. There are no reliable methods for observing expectations for central bank bond purchases directly from market pricing – unlike expectations for the policy rate, which can be derived from rates on overnight index swaps and some other financial products. 🚫

Table A1: Central Bank Government Bond Purchase Programs

Programs announced since 3 March 2020

Program characteristics ^(a)	
US Federal Reserve	US\$80 billion per month, open-ended
Bank of Canada	<ul style="list-style-type: none"> • C\$5 billion per week prior to October 2020 • C\$4 billion per week between October 2020 and April 2021 • C\$3 billion per week between April 2021 and July 2021 • C\$2 billion per week since July 2021, open-ended
Bank of Japan	Yield curve control, targeting 10-year bond yield of around zero per cent
Sveriges Riksbank	Up to SEK700 billion by December 2021 ^(b)
Bank of England	£440 billion by December 2021 at the latest
European Central Bank	Up to €1,850 billion by March 2022 ^(b)
Reserve Bank of New Zealand	Up to NZ\$100 billion by June 2022 (purchases halted since July 2021)
Reserve Bank of Australia	<ul style="list-style-type: none"> • Yield target on April 2024 bond of 0.10 per cent • A\$200 billion by September 2021 • A\$4 billion per week from September 2021 until at least November

(a) Includes state and local government debt purchases where applicable; excludes purchases to address market dysfunction in some cases

(b) Includes purchases of some private sector assets

Sources: Central banks; RBA

Endnotes

[1] For a discussion of the use of asset purchase programs since 2008, see Committee on the Global Financial System (CGFS) (2019), 'Unconventional Monetary Policy Tools: A Cross-country Analysis', CGFS Paper No 63, October, pp 26–32. Available at <bis.org/pub/cgfs63.pdf>.

[2] For a discussion of the transmission to the broader economy, see Bailey A, J Bridges, R Harrison, J Jones and A Mankodi (2020), 'The Central Bank Balance Sheet as a Policy Tool: Past, Present and Future', Bank of England Staff Working Paper No 899. Available at <bankofengland.co.uk/working-paper/2020/the-central-bank-balance-sheet-as-a-policy-tool-past-present-and-future>.

[3] For a discussion of the transmission mechanisms in the context of the Reserve Bank's Bond Purchase Program, see Debelle G (2021), 'Monetary Policy During COVID', Speech at Shann Memorial Lecture, University of Western Australia,

Perth, 6 May. Available at <<https://www.rba.gov.au/speeches/2021/sp-dg-2021-05-06.html>>.

[4] For example, the Reserve Bank's bond purchase program announced in November 2020 is estimated to have reduced longer-term Australian Government Security yields by around 30 basis points. For details of these estimates, see Finlay R, D Titkov and M Xiang (2021), 'An Initial Assessment of the Reserve Bank's Bond Purchase Program', RBA *Bulletin*, June, viewed 31 July 2021. Available at <<https://www.rba.gov.au/publications/bulletin/2021/jun/an-initial-assessment-of-the-reserve-banks-bond-purchase-program.html>>.

[5] However, that additional stimulus is often hard to observe in movements in bond yields because market participants gradually price in their expectation of further purchases. Research that

adjusts for information on the expectations of market participants includes Cahill et al (2013), 'Duration Risk versus Local Supply Channel in Treasury Yields: Evidence from the Federal Reserve's Asset Purchase Announcements', FEDS Discussion Paper 2013-55.

- [6] For example, see Ihrig J, E Klee, C Li, M Wei and J Kachovec (2018), 'Expectations about the Federal Reserve's Balance Sheet and the Term Structure of Interest Rates', *International Journal of Central Banking*, March.

- [7] In some cases, these asset purchase programs include the purchase of non-government securities such as asset-backed securities.

- [8] In March and April 2020, the Reserve Bank purchased in secondary markets around \$50 billion of Australian Government Securities (AGS) and securities issued by the state and territory central borrowing authorities. These purchases were intended to alleviate the dysfunction in the Australian government bond market at the time, as well as support the target for the 3-year AGS yield.

