

Trends in the cash cycle

As a direct consequence of the fall in cash payments, banknote withdrawals have declined steadily over the past decade, along with banknote flows observed by cash cycle stakeholders (the Banque de France, banks and cash-in-transit firms). Although recent phenomena such as high inflation and hikes in interest rates led to a pause in the decline, the downward trend resumed as of 2023. However, demand for cash is not only driven by transactional use; banknotes are also withdrawn for hoarding purposes and in response to foreign (extra-euro) demand, which generally remains robust.

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JEL Codes
E50, E51,
E58

-3.6%

decline in banknote inflows in 2024, similar to the average annual decline observed before Covid

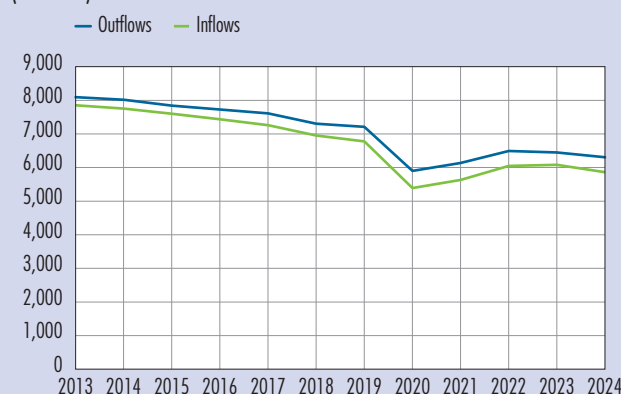
52%

share of banknotes recycled (sorted and put back into circulation) externally in 2024

EUR 26

average value per banknote returned to cash cycle stakeholders in 2024, compared with EUR 24 in 2014

Banknote flows at cash cycle exchange points in mainland France
(millions)



Source: Banque de France.

Note: Cash cycle exchange points are points where banknotes are exchanged between cash cycle stakeholders (the Banque de France, banks and cash-in-transit firms) and the rest of the economy (notably merchants and individuals).

The cash cycle comprises all stakeholders involved in managing and circulating banknotes and coins. In France, the main pillar of the sector is the Banque de France, as it participates in all stages of the cycle, from the manufacture, issuance and quality control of banknotes to their withdrawal at the end of their useful life. The cycle also includes a network of private operators such as cash-in-transit firms, commercial banks and certain large retailers. These help to sort and recirculate banknotes, ensuring a constant, high-quality supply of cash to the economy.

This article provides an overview of the main trends in the cash cycle, notably:

- banknote flows at different points of exchange, to illustrate changes in French households' attitudes to cash over the past decade; flows are generally following a downward trajectory;
- stocks of euro banknotes in circulation (also known as net banknote issuance) in France, the euro area and the rest of the world, to illustrate the impact of recent disruptions (high inflation and hikes in interest rate) on banknote demand; after rising steadily, stocks stagnated as of 2022 but have begun to pick up again more recently.

1 Cash cycle flows have resumed their downward trajectory

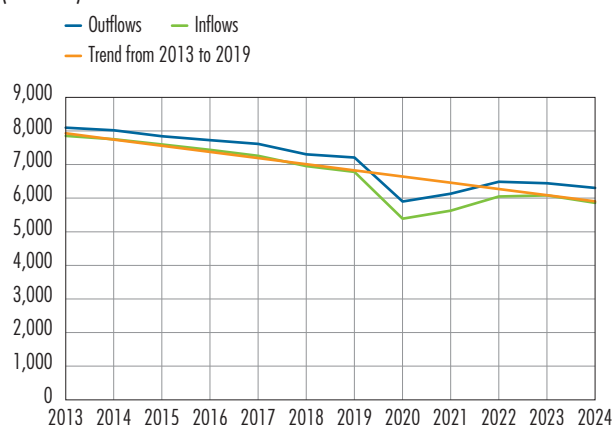
Banknote inflows and outflows began to decline again in 2024

The French cash cycle was marked by a decline in banknote flows in 2024. Inflows – which refers to banknotes returned to cycle stakeholders – fell by 3.6% versus 2023 (to 5.9 billion banknotes; see Chart 1), which is roughly in line with the average annual fall observed before the Covid pandemic (2017-19). The decline in outflows was slightly smaller at -2.2% (to 6.3 billion banknotes).

The trend was interrupted in 2020-23

The period 2020-23 was marked by a succession of events, notably the public health crisis, and can be seen as something of an exception. Firstly, in 2020, the lockdowns and shop closures linked to Covid triggered a sharp drop in household spending and hence in cash purchases and banknote flows. However, the following year, flows began to rise again as household spending rebounded. This recovery then continued in 2022-23, fuelled by high inflation linked in part to global geopolitical tensions. **Since 2023, however, with the dissipation of inflation and of the effects of the health crisis, banknote flows have returned towards their pre-Covid trend.**

C1 Banknote flows at cash cycle exchange points in mainland France (millions)



Source: Banque de France.

Note: Cash cycle exchange points are points where banknotes are exchanged between cash cycle stakeholders (the Banque de France, banks and cash-in-transit firms) and the rest of the economy (notably merchants and individuals). These exchanges constitute inflows (from the economy to the cash cycle) and outflows of banknotes (from the cycle to the economy).

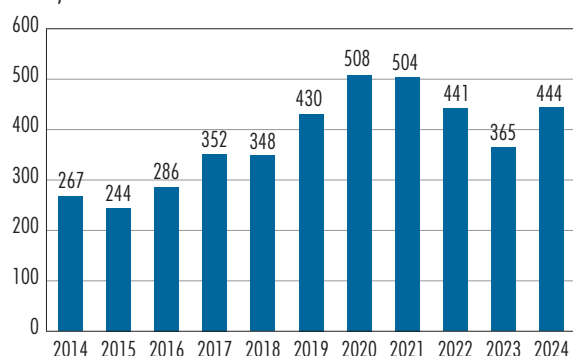
Outflows are structurally higher than inflows. In other words, **“net outflows” of banknotes** (outflows less inflows – see Chart 2) **remain positive**, indicating there is still strong demand (see section 2).

Indeed, net outflows rose substantially in 2024 (to 444 million banknotes, representing a rise of 21.7% compared with 2023). The trajectory of banknote outflows can be broken down into several phases:

- up to 2015, net outflows remained more or less stable at 200-300 million, before rising again as of 2016; the upward trend then accelerated during the Covid crisis, with outflows reaching just over 500 million in 2020 and 2021;
- in 2023, with the hike in interest rates in response to high inflation (see section 2), net outflows began to decline again, falling below 400 million (inflows grew faster than outflows due to a sharp rise in banknotes returned by banks); in 2024, they began to rise again.

C2 Net outflows of banknotes from the cash cycle in mainland France

(millions)



Source: Banque de France.

Note: Net banknote outflows are cash cycle outflows minus inflows.

External recycling

External banknote recycling is carried out by private operators (cash-in-transit firms, commercial banks, retailers) that have signed an agreement with the Banque de France. The process consists in sorting returned banknotes to verify their authenticity and quality, under the close supervision of the Banque de France, and putting those that meet Eurosystem standards back into circulation.

External recycling is becoming increasingly widespread throughout the Eurosystem, primarily for efficiency reasons as it shortens the banknote management cycle. With cash use declining, it offers a way of controlling costs. Nonetheless, the Banque de France remains the main pillar of banknote recycling and strives to maintain a balance between the share it recycles itself and those it entrusts to outside parties. In 2023 and 2024, private operators processed around half of all banknotes.

The restructuring of the Banque de France’s cash centre network and creation of auxiliary banknote stocks

In 2022, to adjust the size of its network to actual banknote flows, the Banque de France reduced its number of cash centres from 37 to 23. At the same time, to maintain a smooth flow of cash in areas affected by the closures, it opened 16 *stocks auxiliaires de billets* (SABs – auxiliary banknote stocks) in partnership with the cash-in-transit firms Brinks and Loomis (see Box 1). The restructuring has made the cycle more efficient without affecting access to cash for cash-in-transit firms, banks and the public (CNMP, 2025).

Three years later, in 2025, the Banque de France launched the second phase of the restructuring and aims to have one cash centre per region by the end of 2025,¹ and then keep this number stable for at least the next ten years. This second phase also involves the joint creation of 26 additional SABs, bringing the total to 42 throughout mainland France.

¹ Except in Corsica where there will still be two cash centres, one in Ajaccio and one in Bastia.

BOX 1

Auxiliary banknote stocks (SABs): outsourced Banque de France banknote cash centres

What is an SAB?

An SAB is a limited stock of new or valid banknotes owned by the Banque de France and stored in a vault at a cash-in-transit firm. Each SAB contains an equivalent storage unit for coins, known as a *dépôt auxiliaire de monnaie* (DAM – auxiliary coin depository).

Why does the Banque de France have SABs?

SABs have been set up to improve the logistical management of “physical” means of payment (banknotes and coins), which is necessary to make cash more competitive.

What role do they play?

SABs are used exclusively for the secure storage of banknotes. They do not carry out sorting or other operations. They are a form of extension of Banque de France cash centres.

How many are there?

In 2022, 16 SABs were opened across France following the closure of Banque de France cash centres. In 2024, the number remained stable. More SABs were opened in 2025 as part of the restructuring of the Banque de France cash centre network.

Where are they located?

The SABs are managed by cash-in-transit firms such as Loomis and Brinks, and are located on their premises. The Banque de France does not directly manage these stocks.

Is this system common in Europe?

France is one of the few European countries to use this system. Other countries with SABs include Spain, Portugal and Finland.

Who owns the stored banknotes?

The banknotes still belong to the Banque de France, even if they are stored externally. The way they are recorded in the Banque de France’s accounts and declared to the European Central Bank remains unchanged.

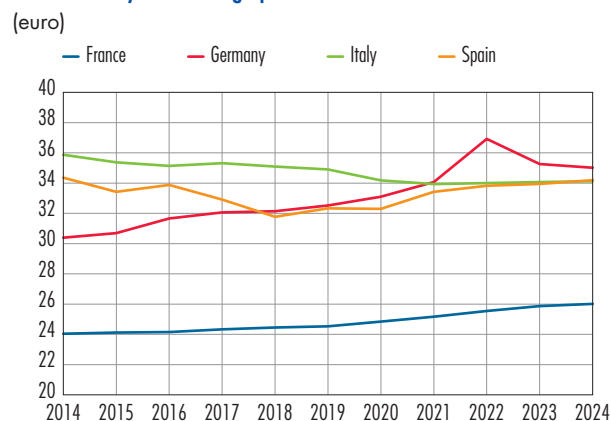
The average banknote value is rising

The average banknote value for cash cycle inflows, calculated by dividing the total value (in euro) of banknote inflows by the total number of banknotes returned, has tended to rise.²

In 2024 it stood at EUR 26, up from EUR 24 in 2014 (see Chart 3). Over the period, it has risen by an average of 20 cents a year. The rise was initially modest but then accelerated between 2019 and 2023. This reflects an increasing concentration of higher denominations in banknote flows. Indeed, the share of EUR 50 notes in inflows has increased in recent years, from 18% in 2014 to 27% in 2024.

The faster rise in the average banknote value over recent years can be linked to the inflationary environment. That said, from 2019 to 2024, the increase remained well below inflation (+6% compared with HICP³ inflation of 17%).

C3 Country comparison of average banknote values for inflows at cash cycle exchange points



Source: European Central Bank.

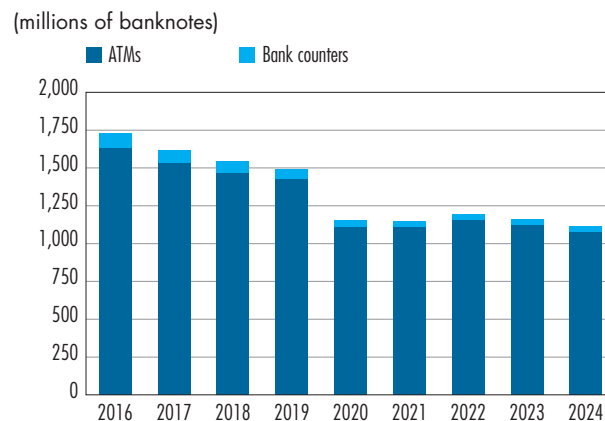
Note: Cash cycle exchange points are defined in Chart 1.

The **average banknote value is much higher in other euro area countries than in France**. In Germany, Italy and Spain, for example, it has ranged between EUR 30 and EUR 35 in recent years (see Chart 3). The difference can be ascribed to national specificities in payment behaviour and higher average cash payments in these countries.

Cash withdrawals at automatic teller machines have resumed their long-term downward path

The total number of withdrawals at automated teller machines (ATMs; see Chart 4) declined steadily up to 2019, while 2020 saw a particularly sharp drop due to Covid, the lockdowns and the closure of many shops. In 2021-22, withdrawals rose again, fuelled by shop reopenings and a rebound in consumption; however, the downward trend resumed after 2022.⁴

C4 Annual ATM and bank counter withdrawals in France



Sources: European Central Bank; Banque de France estimates.

Note: ATM, automated teller machine.

² The average banknote value for outflows is following a similar trajectory to that for inflows.

³ Harmonised Index of Consumer Prices.

⁴ In 2024, there were over 1 billion withdrawals at ATMs (1,078 million) and 34 million at bank branches. In 2016, ATM withdrawals totalled 1.6 billion, so the number has dropped by 34% in eight years. The trend is even more marked for branch counter withdrawals, which have dropped by nearly 66% in eight years.

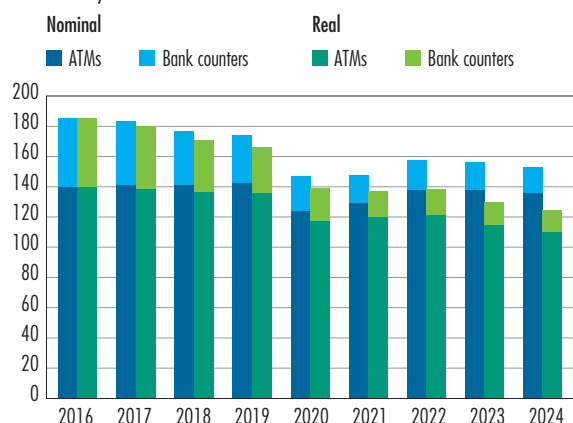
The total value of ATM withdrawals (see Chart 5) remained stable at around EUR 140 billion up to 2019, before falling to EUR 124 billion in 2020. After recovering for two successive years, amounts are now falling again slightly. The downward trend is even clearer in real terms, i.e. adjusted for inflation.

Overall, the figures are consistent with the downward trend in the transactional use of cash (Bacos et al., 2025).

The change is reflected in the French public's behaviour. In 2024, French citizens aged 16 and over made an average of **1.6 ATM withdrawals per month** (provisional data – see Chart 6). The figure has declined steadily over the past decade, falling below the threshold of two per month with the Covid crisis, in 2020. The average amount of each ATM withdrawal is continuing to rise and reached EUR 126 in 2024 compared with EUR 82 in 2014 (+50%).

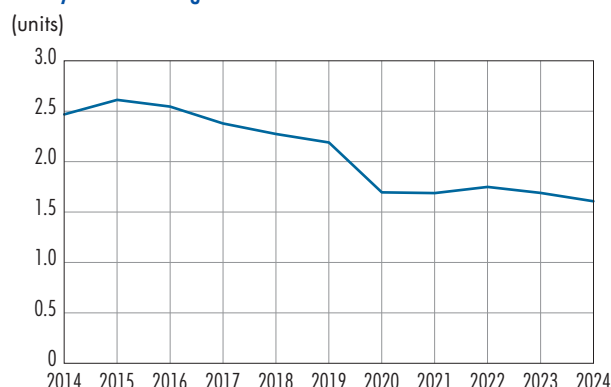
C5 Nominal and real value of annual banknote withdrawals in France (reference price: 2015)

(EUR billions)



Sources: European Central Bank; Banque de France estimates.
Note: The deflator used is the Harmonised Index of Consumer Prices (HICP).

C6 Average number of withdrawals per month in France by individuals aged over 16



Sources: European Central Bank; Banque de France estimates.

French people are therefore making fewer ATM withdrawals but taking out more money each time.

It is also now possible to withdraw cash at local shops, as well as from ATMs and bank counters.⁵

In addition to analysing inflows and outflows at cash cycle exchange points, it is also useful to look at net banknote issuance, which corresponds to the stock of banknotes in circulation.⁶

2 The stock of banknotes in circulation is slowly returning to pre-Covid trends

Net issuance of euro banknotes has recovered slightly

Although transactional use of cash, i.e. its use as a means of payment, has decreased in all euro area countries (see section 1), net banknote issuance has risen almost continuously since the single currency's launch in 2002 (see Chart 7).⁷ This appears to reflect unwavering demand for cash. Indeed, demand is growing at a faster pace

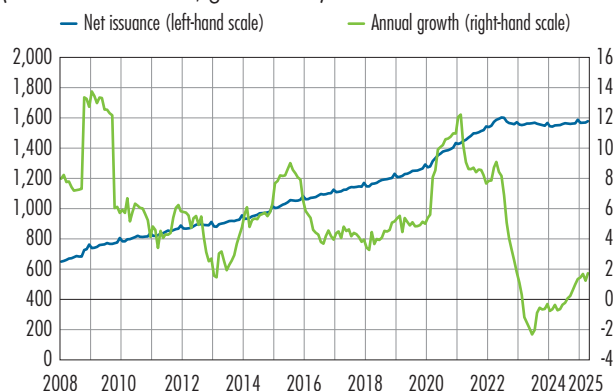
⁵ See the annual report of the *Comité national des moyens de paiement* (CNMP – National Payments Committee) for a more detailed analysis of access to cash in France.

⁶ Net banknote issuance corresponds to the stock of banknotes in circulation, i.e. the sum of all banknotes issued (by the Banque de France and all other euro area national central banks) since 2002, minus those returned to NCBs. It is a stock and not a flow. Net issuance for year Y corresponds to net issuance in year Y-1 plus outflows in year Y.

⁷ An analysis of volumes gives similar but less marked results due to the neutralisation of the price effect on transactional use and hoarding.

C7 Net banknote issuance in the euro area – value and annual growth

(value in EUR billions, growth in %)



Sources: European Central Bank; Banque de France.

Note: The growth rate is calculated year-on-year.

Net banknote issuance corresponds to the stock of banknotes in circulation, i.e. the sum of all banknotes issued (by the Banque de France and all other euro area national central banks) since 2002, minus those returned to central banks.

than the economy, suggesting factors other than household consumption may be at play. This phenomenon is known as the “paradox of banknotes” (Zamora-Pérez, 2021).

The paradox can be easily explained. It is linked to the fact that demand is determined not just by transactional use and growth in domestic activity, but also by **hoarding** and **net shipments of banknotes**.⁸

- Banknote hoarding refers to the saving of banknotes by economic agents: cash kept by individuals for non-transactional purposes and liquidity reserves held by businesses and banks. These reserves are generally a form of *precautionary savings* or *adjustment buffer*.

BOX 2

Demand for coins is also decreasing

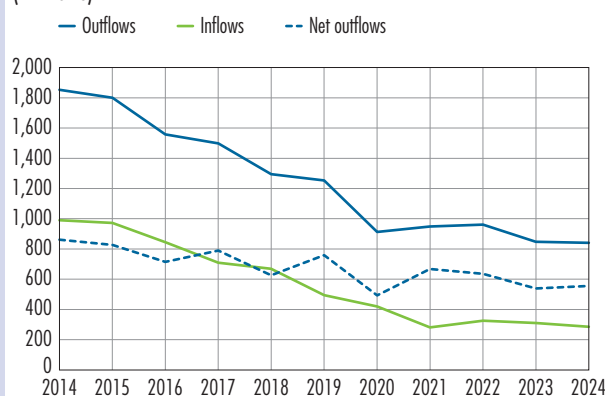
In 2024, outflows (withdrawals) and inflows (lodgements) of coins at Banque de France counters amounted to 841 million and 286 million respectively. As expected, inflows were much lower than outflows. This phenomenon is well-known in France and relates to the fact that households tend to keep large numbers of coins (especially very small ones) at home, for example in jars or at the bottom of drawers; it is not as marked in the rest of the euro area (total outflows of 12.5 billion coins and inflows of 9.2 billion in 2024).

The difference between outflows and inflows at Banque de France counters (net outflows) was 555 million in 2024.

These net outflows, which indicate the strength of public demand for coins, have declined over the past decade (average of -3.9% per year over 2014-24). Each year, production volumes are set for the Monnaie de Paris (Paris mint) based on an estimate of demand for new coins in France.

Net outflows of coins in France, in volume

(millions)



Source: Banque de France.

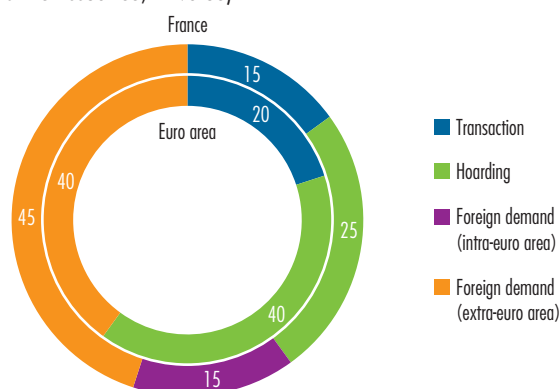
⁸ Banknote exports less imports.

- Net shipments reflect demand for (and supply of) euro banknotes from outside the euro area. They depend on tourism-related flows, global economic uncertainty and the euro's perception as a *safe-haven asset*.

In a study of euro area banknote holdings, Zamora Pérez (2021) estimates that 20% are held for transactional use, 40% are hoarded and 40% are exported outside the euro area (see Chart 8). In France, 15% are held for transactional use, 25% are hoarded and 60% are exported to euro area and non-euro area countries (Seitz et al., 2022). In value terms, transactional holdings therefore make up a very small minority, with the bulk of banknotes being held for non-transactional purposes. The informal economy may also have an impact on cash use (Avouyi Dovi et al., 2023). These factors explain why net issuance remains strong, despite the overall decline in cash cycle flows.

C8 Reasons for holding cash in France and Europe in 2019

(% of net issuance, in value)



Sources: European Central Bank; Banque de France.

In volume terms, as at 30 April 2025, total net issuance stood at just over 30 billion notes (+2.5% versus 30 April 2024), while in value terms it was nearly EUR 1,600 billion (+1.7%).⁹

The hike in interest rates in 2022 slowed the rise in net euro banknote issuance

From 2011 to mid 2022, net banknote issuance in value terms rose by an average of nearly 6% per year, with occasional accelerations during periods of strong economic uncertainty (subprime crisis, rouble crisis,¹⁰ and, more recently, the public health crisis and war in Ukraine). The peaks can be attributed to **higher than normal precautionary saving** by domestic and international agents in response to heightened tensions (Jobst and Stix, 2017; Ashworth and Goodhart, 2020).

However, the upward impact of the international environment was brought to an abrupt halt in the summer of 2022, when the European Central Bank began to raise interest rates:

- The end of negative deposit facility rates led to a sharp rise in the opportunity cost of holding cash.¹¹ **Euro area commercial banks – especially German and Austrian banks** which had plenty of vault space available and had built up substantial banknote reserves when rates were negative – **deposited a large portion of these reserves with their central bank**. This led to a huge rise in banknote inflows. As a result, net outflows, and hence net issuance, fell markedly (decline then stabilisation).
- **The other main explanation for the persistent sluggishness of net issuance is the decline in net banknote shipments** (see later).

⁹ As at 30 April 2025, France's net issuance (i.e. banknotes issued by the Banque de France) stood at 8.4 billion notes (+6%), or EUR 227 billion (+7.3%).

¹⁰ The impact of this was mainly felt in Germany and eastern euro area countries.

¹¹ The opportunity cost of holding cash refers to the benefit derived by banks from depositing their banknotes with the central bank. It corresponds to the deposit facility rate.

- In contrast, **no returns of hoarded banknotes from households were observed** (in other words, they continued to keep their money “under their mattress”; Devigne et al., 2023).
- There were **other contributing factors**, but these are harder to analyse (e.g. tourism-related banknote flows).

A drop in net shipments of euro banknotes

After remaining stable at a high level of around EUR 160 billion per month, net shipments of banknotes to non-euro area countries began to decline by around 3 million per month as of July 2022 (see Chart 9), reaching 64 billion in March 2025. **The trend has affected most areas that are traditionally net importers of euro notes** (eastern Europe, Africa, other areas), and is linked to factors specific to these economies (social crises, high inflation, etc.). Returns (or imports) of banknotes from these areas are higher than previously observed, while demand (or exports) has moderated. **Flows to and from France are following a similar trajectory.** At this stage, it is hard to predict when the trend is liable to end.

The different effects appear to diminish over the end of the observation period. Since August 2024 net issuance has begun to rise again (+2% year-on-year in recent months), although they remain below pre-Covid levels.

These factors may also help to explain why inflows remained steady and net outflows fell in 2021-23 (see section 1).

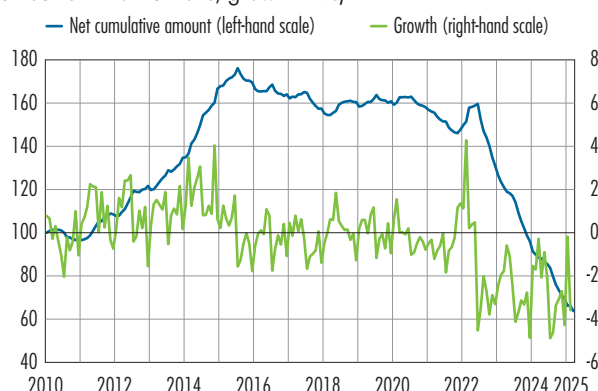
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Banknote flows fell markedly between 2012 and 2020, with the volume of inflows declining from 7.5 million to nearly 7 million in 2019, and then to 5.4 million in 2020 with the Covid crisis. This was followed by a recovery in 2020-23, which was driven by various exceptional factors (see Chart 10).

However, since 2023, flows appear to have been returning to their previous downward trend, and standard forecasting tools suggest this could continue in coming years.

C9 Net shipments of banknotes from the euro area

(amounts in EUR billions, growth in %)

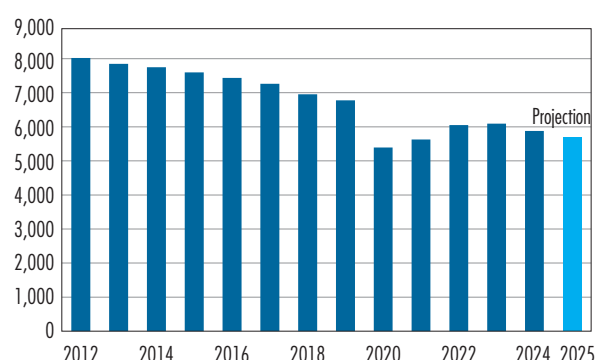


Source: Banque de France.

Note: The growth rate is calculated year-on-year.

C10 Banknote inflows at cash cycle exchange points in mainland France

(millions of banknotes)



Source: Banque de France.

Note: Cash cycle exchange points are defined in Chart 1.

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