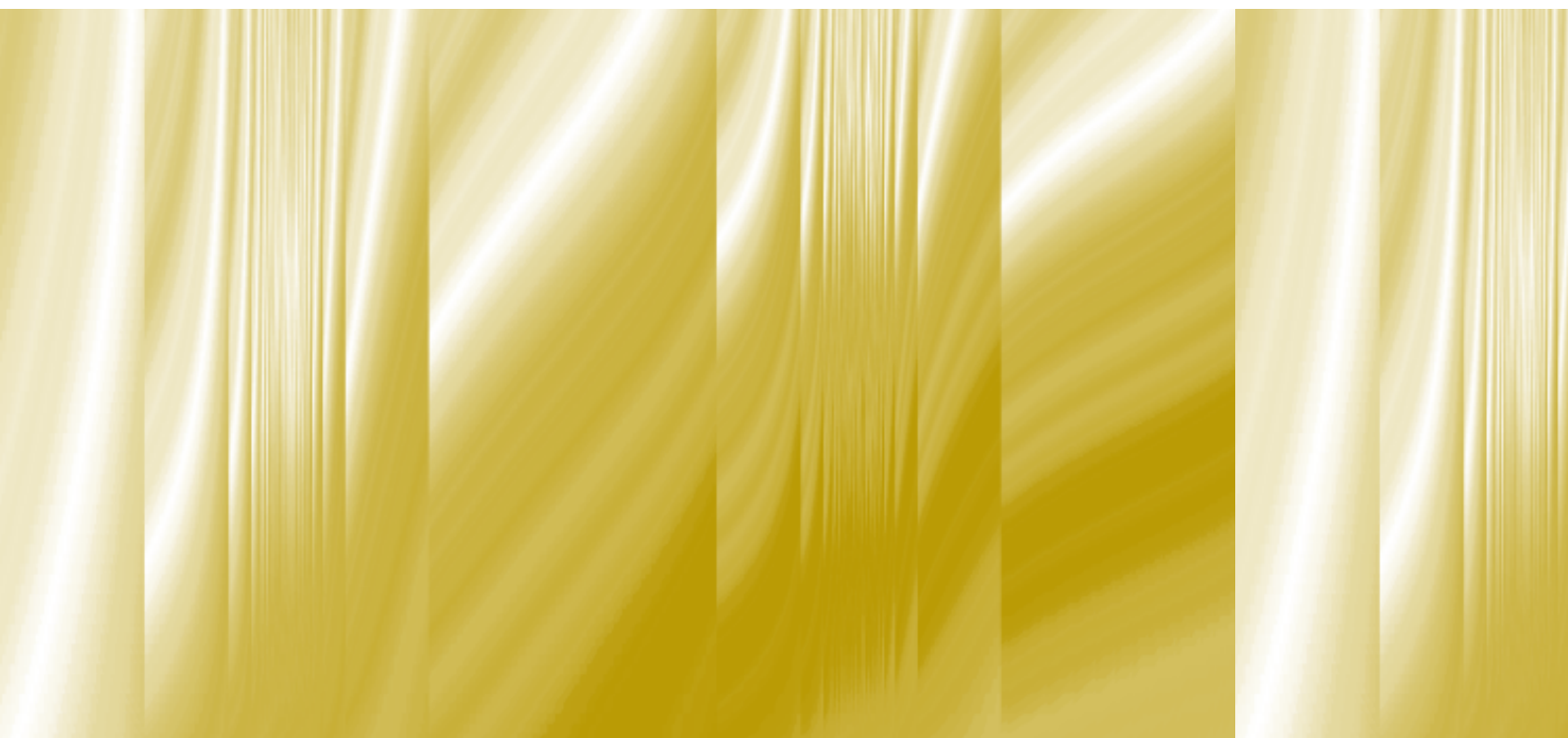




BANK OF SLOVENIA STAFF ANALYSIS

**ANALYSIS OF THE IMPACT
OF MEASURES IN CONNECTION
WITH THE COVID-19 EPIDEMIC
ON CASH AND CARD OPERATIONS**



INTRODUCTION

The spread of Covid-19 and comprehensive preventive measures to contain it have been reflected in part in the payment patterns of consumers at points of sale. In a special analysis, Banka Slovenije finds that the behavioural patterns of consumers in connection with the use of cash and payment cards from the first wave of the epidemic have been largely repeated during the second wave: the amounts of individual withdrawals at ATMs, which are now used less often, have risen, the use of payment cards has declined due to the partial closure of the economy, and the proportion of online purchases has risen. The only exception is demand for cash for precautionary reasons. That demand rose sharply during the first wave of the epidemic, while consumers have responded more calmly during the second wave.

Banka Slovenije has expanded the period covered by its analysis of the impact of the Covid-19 epidemic on patterns of card payments and the use of cash, which was published [in June 2020](#). This analysis also focuses on the amount of net cash issuance (i.e. the amount of cash issued into circulation minus the amount of all cash returned from circulation), cash withdrawals at ATMs and card payments. The expanded analysis, which covers the period from 1 February until the end of 2020, indicated that certain trends that emerged during the first wave of the epidemic have repeated themselves during the second wave.

Demand for cash rose sharply, following the first declaration of the epidemic in Slovenia, particularly in terms of cash as a store of value. The largest increase in demand for cash during the aforementioned period was seen immediately after the epidemic was declared on 12 March 2020, when people rushed to the shops to buy essentials before the lockdown began. In contrast, Banka Slovenije has not seen a renewed rise in demand for cash for precautionary reasons; demand has remained close to the level recorded before the declaration of the epidemic in the spring. The only exception was during the December pre-holiday season, when we typically record increased demand for cash, which was accompanied last year by the temporary easing of restrictive measures.

Focusing on another category, our analysis indicates a change in the behaviour of consumers with regard to withdrawals at ATMs during the epidemic. The behaviour of the citizens during the second wave is similar to the first wave: people are making fewer visits to ATMs (the weekly average number of withdrawals in the period between the two waves of the epidemic was 929 thousand, compared with 692 thousand during the first wave and 682 thousand during the second wave), which is being offset by larger average cash withdrawals (the average individual withdrawal amounted to EUR 134.3 EUR in the period between the two waves of the epidemic, compared with EUR 152.8 during the first wave and EUR 152.6 during the second wave).

Similarly, our **analysis of payments with payment cards and card transactions** indicated a repetition of the trend from the first wave. Both the number and value of card transactions fell (to around 474 thousand daily transactions with a daily value of close to EUR 16.8 million) following the declaration of the first epidemic in the context of the partial closure of the economy, but neared the average values recorded prior to the first lockdown (around 677 thousand daily transactions with a daily value of close to EUR 21.7 million) during the summer months. In the period from 19 October until the end of the year, those values fell again (to around 544 thousand daily transactions with a daily value of close to EUR 18.5 million). However, the stringent restrictions imposed in October did not result in such a sharp increase followed by a fall in the number and value of card transactions as in the first lockdown. This can be explained by the reduced scope of panic buying relative to the first wave, as people reacted more calmly after facing a similar situation in the recent past. Also contributing to this was the fact that activities were locked down gradually during the second wave.

There was a change in the **ratio of card payments at physical points of sale to card payments for online purchases** in both the first and second waves of the epidemic. Our analysis indicated that following a sharp increase in the proportion of card payments for online purchases during the first wave (to 12% in terms of the number of transactions and 16% in terms of value), the proportion between the two waves returned to a level similar to the level prior to the first wave (to 8% in terms of the number of transactions and 11% in terms of value). The increase in the proportion of card transactions for online purchases was even sharper following the imposition of new restrictive measures (to 14% in terms of the number of transactions and to 20% in terms of value). The only exception was during the December pre-holiday period when

measures were temporarily eased. At that time, the proportion of card transactions for online purchases reached (and on certain days even exceeded) the proportion recorded during the period of less stringent restrictive measures.

Banka Slovenije helped to ensure the smooth functioning of cash and payment systems during the first and second waves by implementing the appropriate preventive measures. The aim of those measures was to avoid any disruption to private payment systems and the related infrastructure, and to ensure the smooth supply of cash to the market.

CASH OPERATIONS

It was determined in the scope of the analysis performed in June 2020 (after the first wave of the epidemic) that there was a sharp increase in demand for cash (in the sense of net issuance), particularly in terms of cash as a store of value, and that the largest increase in demand for cash was recorded immediately after the epidemic was declared on 12 March 2020, when people rushed to the shops to buy essentials before the lockdown began. With regard to the period following the redeclaration of the epidemic on 18 October 2020, we find that the reclosure of the majority of points of sale was not reflected in increased demand for cash (such as occurred during the first wave of the epidemic), as demand had already been adjusted to the conditions experienced by the citizens during the first wave of the epidemic. People did not repeat major purchases of essentials for precautionary reasons, nor did they stockpile cash. In the period following the declaration of the epidemic on 18 October 2020, demand for cash remained at the level established between the first and second waves, and is close to the level recorded during the period prior to the declaration of the epidemic on 12 March last year.

We recorded a sharp increase in demand for cash during the pre-holiday period in December, when we typically record an increase in demand for cash. Representing an additional factor in increased demand for cash was the Slovenian government's decision to ease certain restrictive measures in the period from 15 to 23 December 2020, inclusive, which facilitated an increase in consumption during the pre-holiday period.

An analysis of withdrawals at ATMs during the first wave of the epidemic indicated an increase in the average individual ATM withdrawal, particularly during the first days after the epidemic was declared on 12 March 2020, which can be attributed to preventive and precautionary behaviour by people. By contrast, the number of withdrawals at ATMs fell significantly during this period, as people made fewer visits to ATMs, withdrawing larger amounts when they did so. Average total weekly withdrawals at ATMs were also down during the first wave of the epidemic. The citizens demonstrated almost identical behaviour in the period following the declaration of the epidemic on 18 October 2020, with very similar average amounts recorded in all observed categories. Confirmation that the citizens made conscious adjustments in this regard are data regarding withdrawals at ATMs in the period between the first and second waves, when the average amounts in all observed categories began to return the average values recorded prior to the declaration of the epidemic on 12 March 2020.

All of the above statements regarding demand for cash and withdrawals at ATMs are explained in detail with the help of the data in Table 1 and the accompanying text, and presented in Figures 1 and 2.

Table 1: Demand for cash and withdrawals at ATMs during the periods analysed

Period	Average daily net cash issuance (EUR million)	Average weekly total withdrawals at ATMs (EUR million)	Average single withdrawal amount at ATMs (EUR)	Average weekly number of withdrawals at ATMs (thousands)
Pre-crisis period (2019)	4.1	126.0	118.5	1,063
First wave of the epidemic (12 March to 31 May)	8.3	103.4	152.8	692
Period between first and second wave of epidemic	5.3	125.2	134.3	929
Second wave of the epidemic (19 October to 31 December)	6.9	104.8	152.6	682

Sources: Banka Slovenije: Banka Slovenije Bulletin, own calculations

In the period from the declaration of the epidemic on 12 March 2020 until 31 May 2020 when the epidemic was revoked, daily net cash issuance averaged EUR 8.3 million (see Figure 1). The average daily increase in net cash issuance was only higher during the first half of October 2008 (prior to the announcement of the bankruptcy of Lehman

Brothers on 14 October 2008), when the average daily net cash issuance was EUR 16.6 million. The observed increase in demand during the first wave of the epidemic (except immediately after the declaration of the epidemic on 12 March due to major precautionary purchases of essentials, and during the last two weeks before the epidemic was revoked on 31 May, when the reopening of physical points of sale was already expected) related primarily to the function of cash as a store of value, as the majority of physical points of sale for cash (and non-cash) transactions were closed.

In the period between the first and second waves of the epidemic (from 1 June until 18 October 2020, inclusive, when the epidemic was redeclared), the average daily net cash issuance fell to EUR 5.3 million, which is closer to the normal level (average daily net cash issuance was EUR 4.1 million in 2019). During that period and in the context of the opening of physical points of sale, the use of cash for transaction purposes rose again, while a gradual return to the use of cash to a relatively normal level was seen (levels prior to the declaration of the epidemic on 12 March 2020 were not fully achieved).

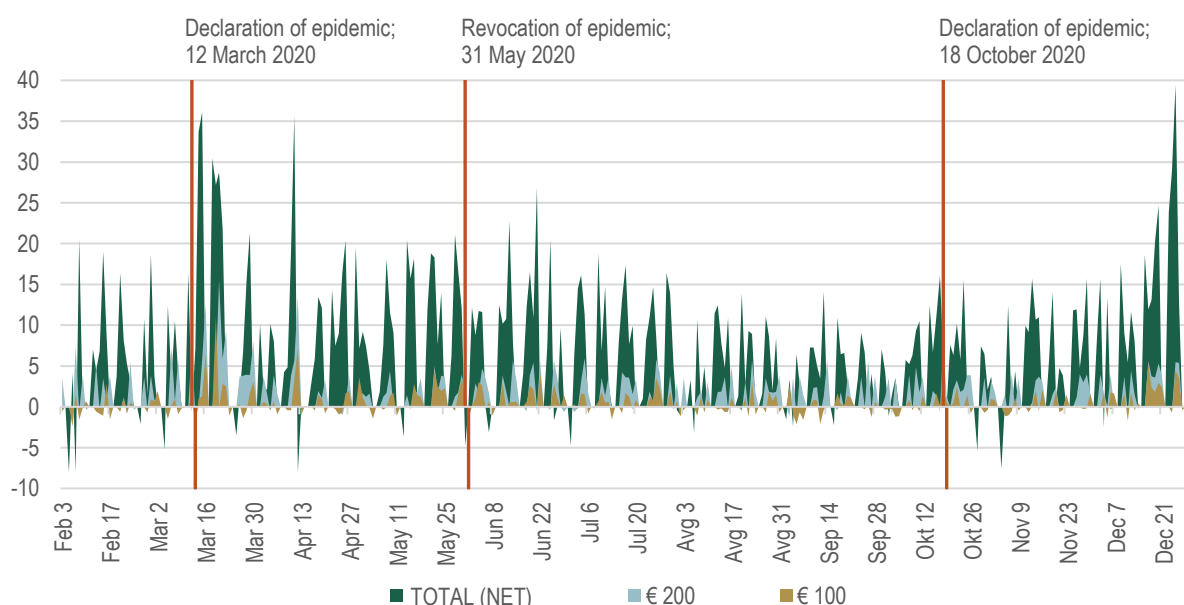
From the start of the second wave on 19 October until 31 December 2020 (the second wave was not yet over at that date), the average daily net cash issuance rose to EUR 6.9 million, but did not reach the level of demand recorded during the first wave. Here it should be noted that the slightly higher average for the aforementioned period (relative to the normal situation prior to the epidemic) was largely the result of the high net cash issuance in December, particularly in the period from 14 to 24 December 2020, when net issuance is traditionally higher due to the pre-holiday period (the average daily net cash issuance was EUR 9.7 million in December 2020). The aforementioned period in the middle of December 2020 was especially worthy of note, as the Slovenian government eased certain restrictive measures during that period (from 15 to 23 December, inclusive) in order for people to do their holiday shopping (several physical points of sale were reopened, resulting in the return of the use of cash for transaction purposes).

If we look at the average daily net cash issuance of EUR 5.4 million in the period from 19 October to 11 December 2020, we see that the aforementioned figure was nearly the same as the average recorded between the two waves of the epidemic. This indicates that the citizens has not experienced the same level of uncertainty during the second wave as it did during the first wave, that it is already accustomed to the new situation, and that it is not stockpiling cash or using it to an increased extent for transaction purposes, such as the purchase of major

stocks of food products (except during the December pre-holiday period). The use of cash at physical points of sale fell during the second wave of the epidemic, together with the closure of certain activities, when the total number of cash transactions fell again.

Given the above findings, we can conclude that the second wave of the epidemic has not led to a further change in demand for cash, as adjustments have already been made to the conditions faced by the citizens during the first wave. Moreover, based on demand for cash in December when the Slovenian government temporarily eased certain restrictions and several physical points of sale reopened, we can even conclude that demand for cash was primarily adjusted to existing conditions during the Covid-19 epidemic, and that this is not a situation that we can say with certainty will continue over the long term after all restrictive measures have been lifted. It seems that cash payments by the citizens could approach the pre-Covid-19 level after all restrictive measures have been lifted. Here it should be noted that the second wave of the epidemic is not yet over, and final conclusions regarding the use of cash by the citizens cannot be given.

Figure 1: Total net cash issuance and net issuance of €200 and €100 banknotes by Banka Slovenije, EUR million



Sources: Banka Slovenije, own calculations

The average individual ATM withdrawal during the first wave of the epidemic, in the weeks from 9 March to 31 May 2020, was EUR 152.8, where this average amount was up sharply, primarily in the first part of the analysed period. This can be attributed to both increased purchases of food products and the precautionary behaviour of people (the stockpiling of cash) in moments of uncertainty.

The average individual ATM withdrawal then fell to the 'normal' level of EUR 134.3 after the epidemic was revoked on 31 May until the epidemic was redeclared on 18 October 2020.

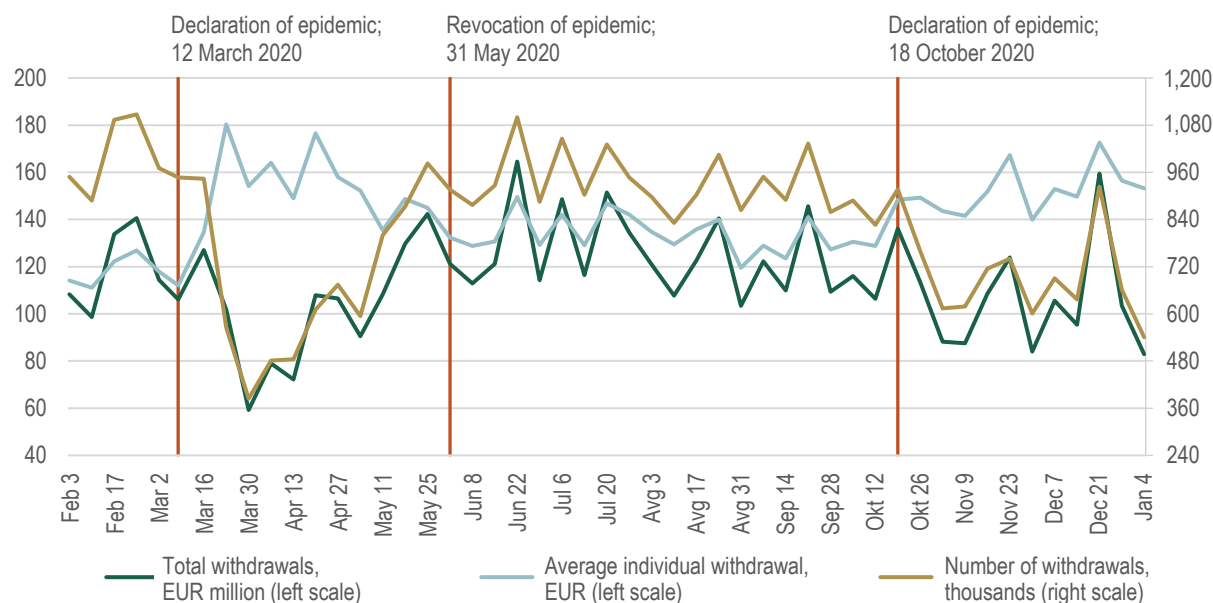
A rise in the average individual ATM withdrawal can be observed after the redeclaration of the epidemic on 18 October 2020. At EUR 152.6, this average amount in the weeks from 19 October 2020 to 3 January 2021 was practically the same as in the first wave of the epidemic. We did not record such extreme increases on a weekly basis as we did during the first wave, with the exception of the pre-Christmas period when demand for cash is traditionally above-average (both in terms of net issuance and withdrawals at ATMs). The partial easing of measures contributed further to the latter last year. The average individual ATM withdrawal was EUR 164.5 in the period 14 to 27 December.

A similar trend was also seen in the first and second waves of the epidemic in terms of the number of withdrawals and the average total weekly withdrawals at ATMs (with the same upward deviation in the week prior to Christmas). The average number of withdrawals at ATMs fell during the second wave, from 929 thousand in the period between the two waves to 682 thousand in the weeks from 19 October 2020 to 3 January 2021 (692 thousand withdrawals on average during the first wave).

Average total weekly withdrawals at ATMs also fell, from EUR 125.2 million to EUR 104.8 million (EUR 103.4 million on average during the first wave). Changes in the aforementioned values are illustrated by week in Figure 2.

In general, we can conclude with regard to withdrawals at ATMs that the citizens behaved quite similarly during both waves of the epidemic: they adapted appropriately to the situation by making fewer withdrawals at ATMs, while the average withdrawal was larger than usual. These trends were less pronounced during the second wave (primarily until the pre-Christmas period and the partial easing of measures) than they were during the first wave.

Figure 2: Total weekly withdrawals, average individual withdrawal, and weekly number of cash withdrawals at ATMs



Sources: Bankart d.o.o. and NETS CEE d.o.o., own calculations

Similar to the first wave of the epidemic, Banka Slovenije and commercial banks are working together during the second wave to ensure (and continue ensuring) the undisrupted supply of cash to the market through all existing standard distribution channels (bank branches and ATMs).

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Out of growing concern over infection through cash and the sharp rise in the use of payment cards during the outbreak of the epidemic in the spring, the ECB conducted a survey during the summer of 2020 on the impact of the pandemic on cash trends (IMPACT)¹. The results revealed that the current health crisis has slightly accelerated the trend of decline in the use of cash. It was determined that proportions of cash payments at points of sale in the euro area are lower than normal, with 40% of respondents stating that they use cash (considerably) less frequently than before the pandemic. Some 10% of respondents stated that they use cash (considerably) more frequently, while 50% stated that they use cash as they did previously. According to the same study, the majority of the Slovenian citizens is unconcerned about being infected with the virus through the use of cash.

¹ The IMPACT study supplements the more extensive study on the payment attitudes of consumers in the euro area (SPACE), which was published by the ECB in December 2020 and based on data for 2019. The latter represents the repetition and supplementation of the first Eurosystem-wide survey on the use of cash by households (SUCH) conducted in 2016. The results of the SPACE and SUCH studies are accessible at: [SPACE](#), [SUCH](#).

CARD OPERATIONS

Measures linked to the epidemic, in particular the lockdown, were clearly seen in card operations immediately following the declaration of the epidemic on 12 March 2020. The turning point came on 13 March 2020. This is evident from Figures 3a and 3b, which illustrate the number and value of card transactions executed with cards² of Slovenian issuers between 1 February and 31 December 2020.³ Until 13 March, there were an average of roughly 650 thousand card transactions per day, with a total value of approximately EUR 20.1 million. In the period from 14 March 2020 until the end of the first wave of the epidemic on 31 May 2020, the average daily volume had fallen to roughly 474 thousand transactions with a total value of approximately EUR 16.8 million, while there were just 364 thousand daily transactions with a value of around EUR 12.9 million in the first two weeks following the declaration of the epidemic.

The total number and value of daily card transactions rose sharply on 12 and 13 March 2020, before falling significantly after 14 March 2020. The declaration of the epidemic at that time and the ensuing lockdown prompted people to stockpile in the days just before the lockdown. After 13 March 2020, during the first lockdown, shopping became less frequent, there were fewer opportunities to make purchases in bricks-and-mortar outlets, and non-food shops were closed, which meant that average values increased. The average value of an individual

² With an aim to clearly and transparently show changes of the number and value of card transactions since the emergence of Covid-19 in Slovenia, all figures are outlined by calculating the average daily number and value of card transactions in individual week (based on data of daily number and value of card transactions). This offsets daily fluctuations associated with the closure of physical stores on Sundays and holidays.

³ The data are captured from the authorisation databases at the processing centres of Bankart d.o.o. and NETS CEE d.o.o. (formerly Mercury Processing Services International d.o.o.). Captured are all authorised transactions (executed at home and abroad) using physically present payment cards (at physical points of sale (POS terminals) and payment cards that were not physically present (mostly online payments) that were issued by payment service providers that are members of (i) Bankart's processing centre and (ii) the Aactiva system. To that end, the authorisation process entails the approval of a card transaction (i.e. verification of whether the cardholder has sufficient funds for the purchase of a good or service). In the scope of that process, 'only' the reservation of funds on the cardholder's account is carried out, with those funds representing the amount of a purchase that will be subsequently debited. The actual number and amount of transactions booked can be several percent lower due to cancellations. However, authorisation information is the most up-to-date and information is obtained from both reporting entities in the same manner.

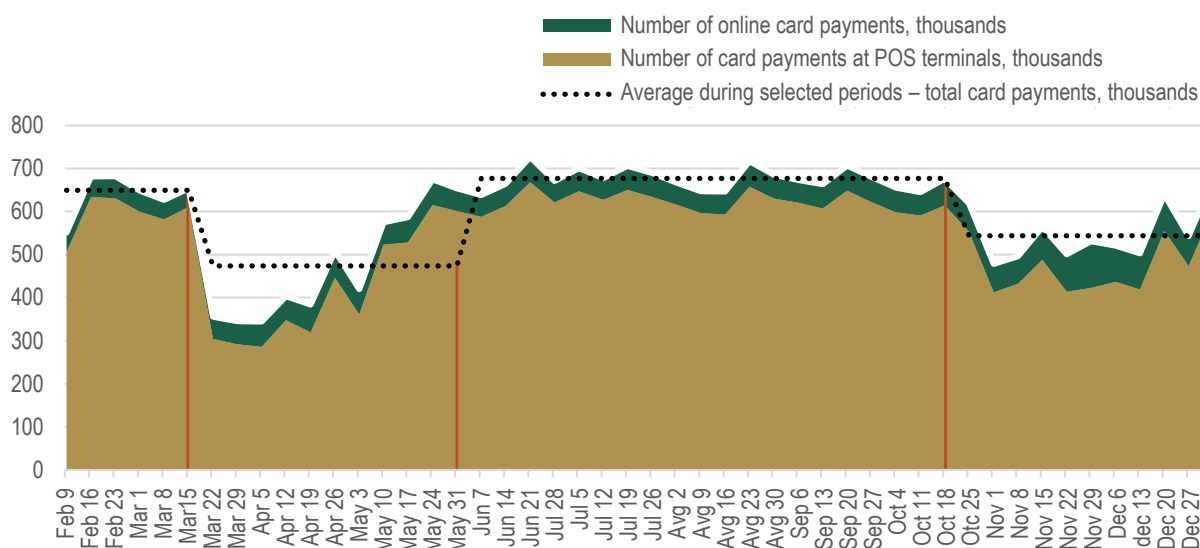
transaction in the period prior to the first lockdown⁴ was around EUR 31, but the figure had risen to around EUR 35 by the end of the first wave of the epidemic.

It is also evident from Figures 3a and 3b that the number and value of card transactions increased evenly and then began to return to the level prior to the declaration of the epidemic, in the context of the gradual easing of measures related to the epidemic and the revocation thereof on 31 May. The daily average in the period from 1 June 2020 until the redeclaration of the epidemic on 18 October 2020 was close to 677 thousand transactions with a value of around EUR 21.7 million. During the aforementioned period, the average value of an individual transaction (of around EUR 32) also began to return to the average transaction value recorded prior to the first lockdown. Attention should be called here to the impact of the seasonal component. Cardholders typically use payment cards more frequently in late-spring and summer months than during the first months of the year, primarily as the result of annual leave.

The daily average fell again in the period from 19 October to 31 December 2020 to around 544 thousand transactions with a value of close to EUR 18.5 million. In contrast to March, the stringent restrictive measures to contain Covid-19, which entered into force nine days following the declaration of the epidemic on 18 October 2020, did not result in such a sharp increase followed by a fall in the number and value of card transactions in October as in the first lockdown. This can be explained by the reduced scope of panic buying relative to the first wave, as people reacted more calmly after facing a similar situation in the recent past. Also contributing to this was the fact that activities were locked down gradually during the second wave. It should also be noted that the number and value of card transactions were up sharply in December 2020 in the context of the partial (temporary) easing of measures in connection with the epidemic, as people were able to spend more for the upcoming Christmas-New Year holidays.

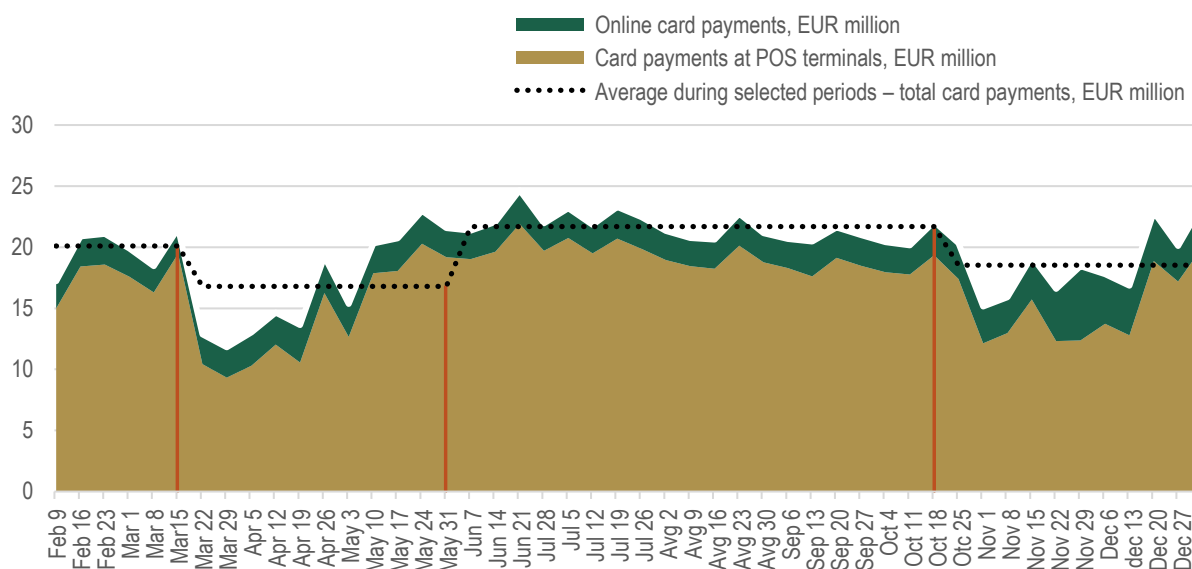
⁴ The period prior to the first lockdown covers the period from 1 February 2020 to 13 March 2020.

Figure 3a: Number of card transactions, physical points of sale and online (nominal)



Sources: Bankart d.o.o. and NETS CEE d.o.o.; own calculations

Figure 3b: Value of card transactions, physical points of sale and online (nominal)



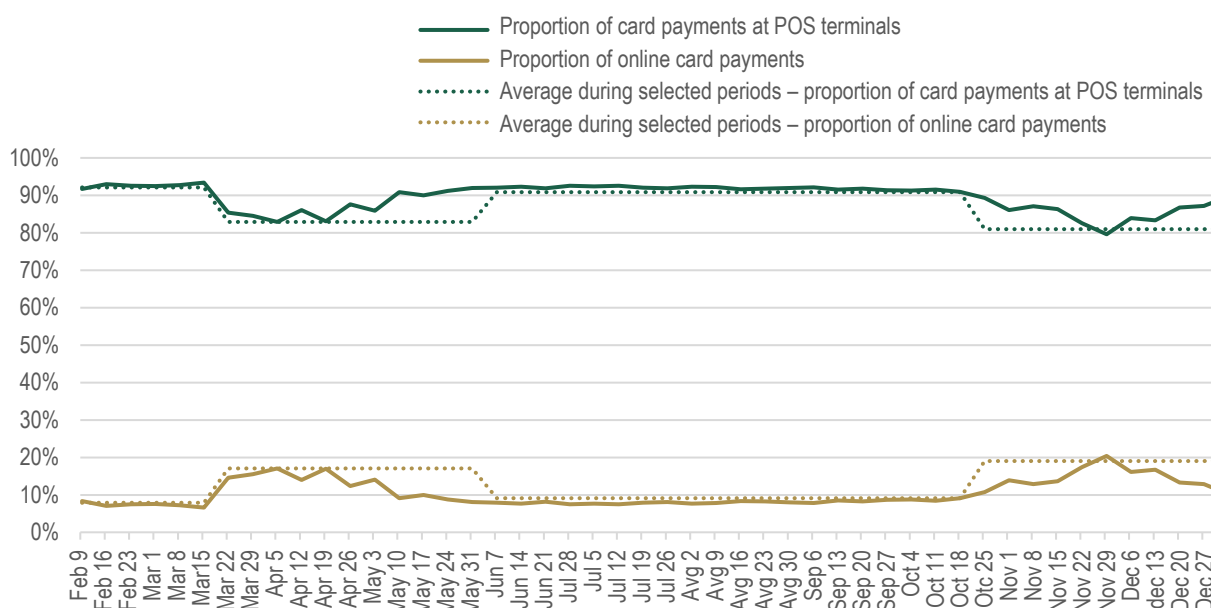
Sources: Bankart d.o.o. and NETS CEE d.o.o.; own calculations

In addition to the changing number and value of card transactions with the outbreak of Covid-19, there was a change in the ratio of card payments at physical points of sale to card payments for online purchases. This is also the result of the lockdown measures and the closure of certain bricks-and-mortar shops.

Figures 4a and 4b illustrate the breakdown of the number and value of card transactions executed with the cards of Slovenian issuers between 1 February and 31 December 2020 into transactions at physical points

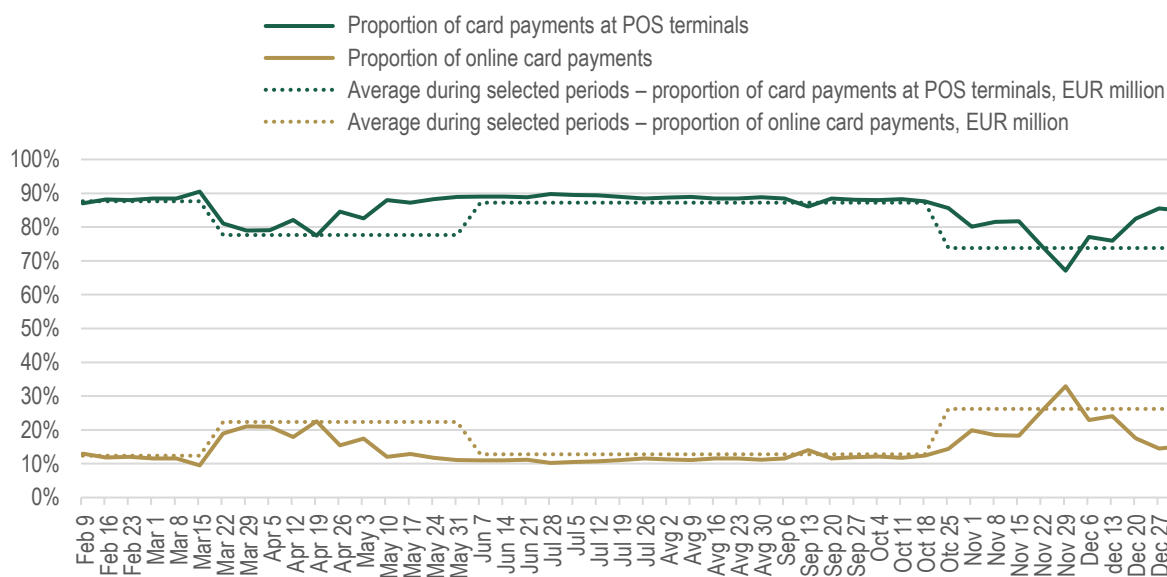
of sale and online transactions. It is evident from both figures that the ratio of card transactions at physical points of sale and card transactions for online purchases in the period from 1 June to 18 October (when restrictive measures were considerably less stringent) gradually returned to the ratio prior to 13 March when the proportion of card transactions for online purchases was 7% in terms of number and 12% in terms of value. In the period from 1 June to 18 October, card transactions for online purchases thus accounted for 8% and 11% of all card transactions executed using the cards of Slovenian issuers in terms of number and value, respectively. There was a significant increase in the proportion of card transactions for online purchases in both periods of stringent restrictive measures. That proportion rose to 12% in terms of the number of transactions and 16% in terms of value in the period from 13 March to 31 May. The increase in the proportion of card transactions for online purchases was even sharper in the period from 19 October to 31 December, to 14% in terms of number of the transactions and to 20% in terms of value of all transactions executed with the cards of Slovenian issuers. When comparing the two periods, account must be taken of the fact that measures were gradually eased prior to the end of May during the first period, while the stringent restrictive measures imposed during the second period are still in place (with the exception of the easing of some measures prior to the December holidays). Despite that fact, the data presented in Figures 3a and 3b indicate that consumers are buying more online during the second period of stringent restrictive measures (also contributing to that were the holidays and the gift-giving period at the end of December). It is evident from Figures 4a and 4b that in December 2020 the proportion of card transactions for online purchases neared the proportion recorded in periods when stringent restrictive measures were not in place as part of the partial (temporary) easing of measures. Nevertheless, the future will show whether online shopping will become/remain so popular amongst consumers that the inflated number and value of card transactions for online purchases will carry forward to the period when restrictive measures are finally eliminated.

Figure 4a: Breakdown of number of card transactions, physical points of sale and online



Sources: Bankart d.o.o. and NETS CEE d.o.o.; own calculations

Figure 4b: Breakdown of value of card transactions, physical points of sale and online



Sources: Bankart d.o.o. and NETS CEE d.o.o., own calculations