

# A STUDY ON USAGE STATUS OF ELECTRONIC PAYMENT SYSTEM (EPS): BEFORE, DURING AND AFTER COVID 19 PANDEMIC LOCKDOWN PERIOD IN INDIA

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## ABSTRACT

COVID-19 pandemic enforces the world to move the electronic payment system. Due to nationwide lockdown in India for the period of 68 days in four phases starting from 25 March and ends on 18 May 2020, most of the payments are through electronic payment system (EPS). For purchases of goods and services through a physical store, where the shops used point of sale (POS) terminals for processing the card payment or a virtual sales point such as a computer, mobile or electronic devices applied electronic payment system. EPS comprises various methods but the present study mainly focuses on card services such as debit and credit cards. It is a quantitative study that classifies the study period into three sectors are before, during, and after the COVID 19 pandemic lockdown period in India. The objective of the research is to study the usage status of debit and credit cards for POS, it includes both numbers of transactions and amount of transactions. Usage status is measured through growth percentage. The study depends on secondary data were collected from RBI publications specifically from Bank wise ATM/POS/Card statistics. Based on data analysis the study concluded that the growth percentage of both debit and credit card usage for POS has been decreased from before the lockdown period to during the lockdown period. After the lockdown period, the status of usage increased in all banks. Overall, the decrease in the growth percentage of usage of cards is between 50% and 70% from before the lockdown period during the lockdown period. At the same time, the growth percentage of card usage has been increased in both number and amount of transactions from during the lockdown period to after the lockdown period is between 55% and 154%

**Keyword:** Electronic payment system, lockdown, point of sale (POS), debit card, credit card, and growth percentage.

## 1. INTRODUCTION

An electronic payment system (EPS) is a method of devising transactions or making payments for goods and services in an electronic mode. EPS is associated with online transactions of the internet using electronic devices viz. computers, tablets, and smartphones. White's (1997) [1] study pointed out electronic fund transfers which include internet, mobile banking, credit cards, and debit cards. This system does not use cash or cheques for the transactions, it takes place only through electronic payment. EPS is in many forms are bank transfers, automated clearing house, wire transfers, remote deposit capture, automated teller machines, card services (credit and debit cards), electronic wallets, mobile payments, etc. In general, the electronic payment system has grown at the world level and in India in particular. Statista website (2020) [2] is projected the annual growth percentage of 13.4% in the digital payment system for the period of 2020 to 2024. Further, the website projected the total amount of digital payment US \$ 8,170, 406 million by 2024. This study is mainly focused on the most popular electronic payment

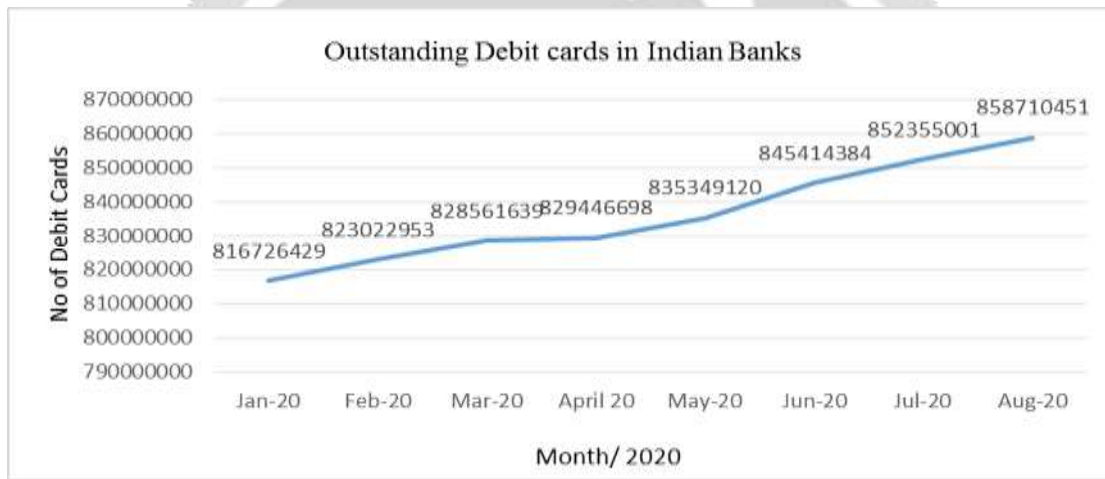
systems card services such as debit cards and credit cards for point of sale (POS). POS refers to the customer executes the payment for goods and services purchased either a physical store (where the shops used POS terminals for processing the card payment) or a virtual sales point such as a computer or mobile electronic device.

**1.1 Outstanding Debit cards in Indian Banks**

Debit cards are a payment card which deducts the money directly from the customers’ savings account for the purpose of purchase of goods or services for point of sale. The debit cards reduce the risk of carrying cash, at the same time to make purchases directly from the savings account. A study conducted by Klee (2006) [3] indicated that most of the consumers choose debit cards instead of cheques and the study concluded that debit card transactions are faster than cheques.

As per the information from RBI publications (Banks wise ATM/POS/card statistics), the total number of outstanding debit cards in Indian banks as at the end of June 2019 and June 2020 are 81,19,44,533 and 84,54,14,384 respectively. This is an increase of 33,469, 851 as a rate an increase of 4.12. The outstanding debit cards of Indian banks has been increased every month. Chart 1 shows information about month-wise outstanding debit cards in Indian banks for the period of 2020.

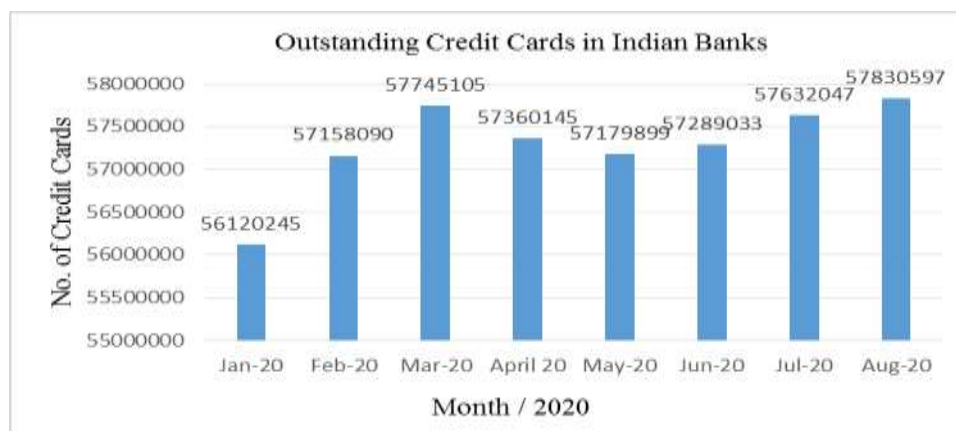
**Chart 1** Month-wise outstanding Debit cards in Indian Banks (January to August 2020)



**1.2 Outstanding Credit cards in Indian Banks**

Credit cards is a payment card issued by the bank or financial institutions, cardholders can pay for this card for the merchant for goods and services. In this arrangement, the card-issuing bank grants a line of credit to the cardholders. The cardholders can make use of the borrowed money for payment to a merchant or as a cash advance. As per the condition of the card, the cardholders pay back the borrowed money to the bank with applicable interest along with additional charges if agreed (O’Sullivan, Arthur; Steven M. Sheffrin, 2003) [4]. The due date of the payment is either the billing date or over time.

According to RBI publication (Banks wise ATM/POS/card statistics), the outstanding credit cards issued by the Indian banks as at the end of June 2019 and June 2020 are 4,96,48,103 and 5,72,89,033 respectively. It has been increased to 15.39% for these two periods. Chart 2 shows information about month-wise outstanding credit cards in Indian banks for the period of 2020.

**Chart 2** Month-wise outstanding Credit cards in Indian Banks (January to August 2020)

Nowadays all the banks can issue debit cards to their customers while opening an account. Credit cards are provided to the account holders based on their financial status and according to the respective banks' norms. Functionally these two cards differ in the sense of removal of funds, debit cards remove the funds immediately after the transaction, in the case of credit cards are made at the end of the month when the cardholder pays the bill (Mann, 2002) [5]. The RBI classifies the banks into five categories on the basis of card issues are public sector banks, private sector banks, foreign banks, payment banks, and small finance banks.

According to World Health Organization (WHO), the name of the disease is coronavirus is also known as COVID-19 Pandemic, is an ongoing pandemic of coronavirus disease 2019 caused by severe acute respiratory syndrome coronavirus 2 (SARS -CoV-2). Due to the pandemic, the Government of India ordered nationwide lockdown in four phases, the details of the lockdown period and number of days are presented in Table 1.

**Table 1** Nationwide COVID-19 Pandemic Lockdown periods in India

Phase	Starting date	End date	No. of days
I	25 March 2020	14 April 2020	21
II	15 April 2020	3 May 2020	19
III	4 May 2020	17 May 2020	14
IV	18 May 2020	31 May 2020	14
		Total	68

The electronic payments system is inevitable because of social distancing norms and lockdown followed in India. People are mostly using digital systems particularly debit and credit cards for payment rather than cash.

### 1.3 Statement of the problem

The Government of India ordered a nationwide lockdown to control the spread of the COVID 19 outbreak in India. The initial lockdown on 24 March 2020 has been extended to four phases until 31 May 2020 amounting to 68 days. In general, customers use electronic payment systems for the purchase of goods and services. This concept is supported by a study (van der Crujisen, Hernandez & Jonker, 2015) [6] pointed out that modern society applies debit cards for most of the retail payments.

In December 2016 the Indian government introduced demonetization, it has been urge consumers to adopt cashless transactions, therefore in most places accepting card transactions (Indian Express, September 2013) [7]. There is a possibility of a difference in the usage status of bank cards before, during, and after lockdown. Therefore it is necessary to study individually the usage status of debit and credit cards for POS with respect to the number of transactions and amount of transactions.

#### 1.4 Aim and Objectives of the study

The aim of the study is to provide the usage status of the bank cards before, during, and after the lockdown period. The objectives of the study are as follows.

1. To study the usage status of debit cards for POS before, during, and after a nationwide lockdown in India
2. To study the usage status of credit cards for POS before, during, and after a nationwide lockdown in India

## 2. REVIEW OF LITERATURE AND RESEARCH GAP

Debit and credit cards are the most suitable methods of electronic payment systems for the purchase of goods or services through POS. Klee's (2006) [3] study mentioned that the users of the bank cards preferred debit cards to use the purchase smaller amounts, further they feel that it is convenient to purchase without the difficulty of counting notes. Another study supported this concept conducted by Runnemark, Hedman, and Xiao (2015) [8], which stated that consumers are willing to pay for debit cards than by using cash. Foscht et al. (2009) [9] study differently analyses the age-wise preference of bank cards and concluded that youngsters prefer debit cards and the old age group people prefer credit cards. A study argued differently, that cash payment still the most used payment method and it dominates low-value transactions (Bennett et al. 2014) [10]. Van der Crujisen, Hernandez, and Jonker (2015) [6] partially supported and argued debit cards are the most preferable option at the same time still the consumers dependent on cash based transactions.

Due to COVID 19 cases in India, the banking sectors are shifted to contactless payment through debit and credit cards. The general public is accustomed to using more digital transactions instead of cash transactions. According to Money Control news, the spending pattern has been changed from credit cards to debit cards, the consumers use debit cards for the purchase of groceries, utilities, and other essential products and services (Money control. Com). [11] During the lockdown period, there are many shops that supply essential goods for swipe credit cards on the POS machine shopping.

Another interesting study conducted by Pal R, Bhadada SK (2020) [12] discussing public concerns about cash and coins transmit the virus and the study suggested digital transactions offer a good alternative for cash and coins based transactions.

*“In metros, credit card spending has taken a hit as malls and travel was completely shut during the lockdown. While conventional spending in big retail was impacted, we have seen an excellent pickup in digital spending in smaller retail outlets in metros and in small cities. In all these small-ticket transactions, it is largely the debit cards that were used,” said Pine Labs CEO Amrish Rau.*

Source: The Times of India  
Lockdown forces shift from credit to debit cards  
Mayur Shetty | TNN | Updated: Sep 14, 2020, 13:55 IST [13]

Ashwin Kumar Tewari, SBI Cards CEO, pointed out that the usage of credit card spending has improved since the 'unlock down' and is back to 80% of pre-covid level (Mayur Shetty, The Times of India, Sep 14, 2020) [13]. According to the Deccan Herald, web desk report (Deccan Herald, Sep 14, 2020) [14] mentioned that the Indian consumers shift to debit card usage amid the covid-19 lockdown period. According to Financial Express (14, August 2020) [15] provided the statement based on RBI data that currently, the debit and credit cards transactions have reached a pre-COVID level, further it mentioned that it has jumped 111% in June 2020 as compared to April 2020.

Yan Xiao, Martin Chorzempa (2020) [16], an article in World Economic Forum, stated that the digital payments system allows people to purchase goods and services while in quarantine or social distancing. Further, it indicates that during the Coronavirus crisis, digital payments support the country's economy running also helping the general public to reduce contact with the virus. To increase the number of electronic payments systems, simultaneously create banking-related fraud cases. Therefore RBI has issued a guideline to secure the way of using credit and debit card transactions. The new norms effect from October 1, 2020, the key points related to guidelines are all debit and credit cards enables to use only in ATM and POS devises within India, for the facility to use the cards outside India need to request their banks for this facility, cardholders have a new facility of setting up the transaction limit, etc.

Based on the review of literature, it is clear that most of the literature supports the electronic payments system via debit and credit cards while POS. Few studies still observed the traditional payment method of cash transactions among consumers. The newspaper articles and reports provide details about debit and credit cards application in the COVID-19 Pandemic period in India. This is a new and unpredictable situation, therefore no studies related to EPS via debit and credit cards related to the lockdown period. There are few research gaps in the literature on is the usage status of debit and credit cards specifically for before, during, and after the lockdown period. Therefore the current study is to fill up the research gap, to study the usage status of cards for POS including the number of transactions and amount of transactions.

## 1. METHODOLOGY

The present study is quantitative and descriptive in nature. It depends on secondary data, it has been collected from the RBI website. The study period is classified into three prospects are before, during, and after lockdown periods. The study selected one month from each category for analysis. In this regard, January, April, and August months are identified to study the usage status of debit and credit cards for POS.

**Table 2** Study period

Before Lockdown	During Lockdown			After Lockdown
January 1 to 31	March 25 to 31	<b>April 1 to 30</b>	May 1 to 31	August 1 to 31

Month-wise and bank-wise classification of statistical data available on the RBI website. The first phase of lockdown implemented on 25 March, therefore March month data is bifurcated into the first 24 days before lockdown and the remaining 7 days during the lockdown. As per Bank-wise ATM/POS/Card statistics, the banks are classified into five categories and its numbers are in bracket public sector banks (13), private sector banks (20), foreign banks (8), payment banks (6), and small finance banks (10). All the banks have provided debit card facilities to their customers. Payment banks and small finance banks are not having credit card services for their customers. The objectives are measured through growth percentage.

$$\text{Growth \%} = \left[ \frac{\text{Present value} - \text{Past value}}{\text{past Value}} \right] \times 100$$

## 2. ANALYSIS AND DISCUSSION

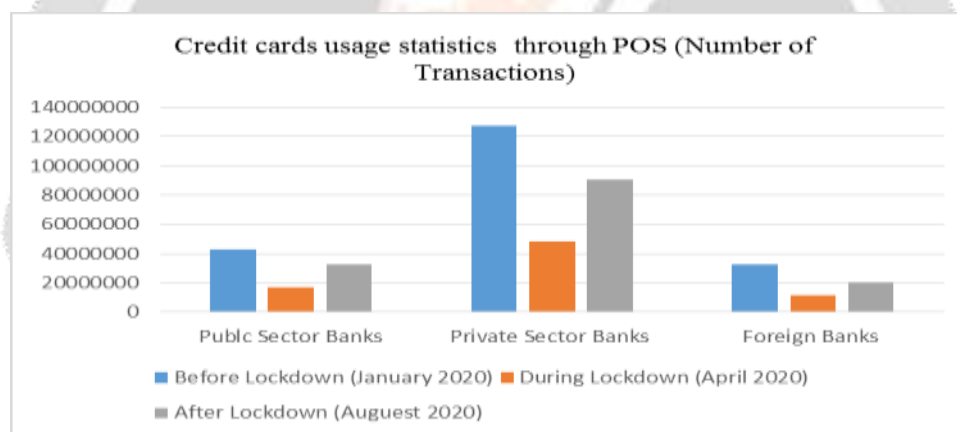
### 4.1 Usage status of Credit cards through POS (Number of Transactions)

The details of credit cardholders' transactions through POS, in three different periods according to their associated banks is provided in table 3. Payment banks and small finance banks are not issuing credit cards to their customers. The growth percentage has been provided in the bracket.

**Table 3** Credit cards usage statistics for POS (Number of Transactions)

Details	Public Sector Banks	Private Sector Banks	Foreign Banks	Payment Banks	Small Finance Banks	Total
Before Lockdown (January 2020)	4,30,02,140	12,71,97,706	3,27,28,979	---	---	20,29,28,825
During Lockdown (April 2020)	1,69,76,409 (-60.52)	4,84,46,095 (-61.91)	1,17,01,947 (-64.25)	---	---	7,71,24,451 (-61.99)
After Lockdown (August 2020)	3,22,58,124 (90.01)	9,07,04,470 (87.23)	1,99,36,128 (70.37)	---	---	14,28,98,722 (85.28)

As per the table information, it is clear that the overall growth percentage from before the lockdown period to during the lockdown period is - 61.99%, it is a tremendous decrease between these periods. Further growth percentage for during the lockdown period to after the lockdown period is 85.28%. After lifting the lockdown, the transactions have been increased to 85.28%, still, it is lesser than before the lockdown period. The same effect has occurred in all banks. The same information plotted in chart 3.

**Chart 3** Credit cards usage statistics for POS (Number of Transactions)

#### 4.2 Usage status of Credit cards for POS (Amount of Transactions)

The amount spent by credit cards for POS in three different study periods is provided in table 4.

**Table 4** Credit cards usage statistics for POS - Amount of Transactions (Rupees in Lakhs)

Details	Public Sector Banks	Private Sector Banks	Foreign Banks	Payment Banks	Small Finance Banks	Total
Before Lockdown (January 2020)	1332641	4321609	1045975	---	---	6700225
During Lockdown (April 2020)	448001 (-66.38)	1332886 (-69.16)	304930 (-70.85)	---	---	2085817 (-68.87)
After Lockdown (August 2020)	1128486 (151.89)	3272606 (145.53)	630814 (106.87)	---	---	5031906 (141.24)

Credit card usage for POS has been decreased from before lockdown period to during lock down period, irrespective of the classifications of banks. The highest negative growth percentage in foreign banks and overall decrease of

68.87 percentage. After the lockdown period, the usage increased in attractive numbers, in an overall increase of 141.24 percentage.

#### 4.3 Usage status of Debit cards for POS (Number of Transactions)

The debit cards usage of the study period is also the same effect on credit cards, during the lockdown period the overall usage has been decreased, later from during lockdown to after lockdown increased attractively. The details provided in table 5.

**Table 5** Debit cards usage statistics for POS (Number of Transactions)

Details	Public Sector Banks	Private Sector Banks	Foreign Banks	Payment Banks	Small Finance Banks	Total
Before Lockdown (January 2020)	274716640	168296557	10056189	3836305	1541402	458447093
During Lockdown (April 2020)	139091089 (-49.37)	63300934 (-62.39)	3293906 (-67.24)	1830363 (-52.29)	755524 (-50.98)	208271816 (-54.57)
After Lockdown (August 2020)	215113231 (54.65)	115614400 (82.64)	5757486 (74.79)	3083879 (68.48)	1300736 (72.16)	340869732 (63.67)

Debit card usage for POS has decreased during the lockdown period by approximately 50 percent overall. After lockdown, the usage of debit cards has been increased and to touch the highest growth percentage of 82.64 percentage in private sector banks.

#### 4.4 Usage status of Debit cards for POS - Amount of Transactions

Debit card usage for POS represented in the amount of transaction also having the same effect of before to during lockdown decreased and after increased. The details provided in table 6.

**Table 6** Debit cards usage statistics for POS - Amount of Transactions (Rupees in Lakhs)

Details	Public Sector Banks	Private Sector Banks	Foreign Banks	Payment Banks	Small Finance Banks	Total
Before Lockdown (January 2020)	3565760	2474108	130496	24922	20068	6215354
During Lockdown	1405360	826819	48759	11339	7539	2299816

(April 2020)	(-60.58)	(-66.58)	(-62.64)	(-54.50)	(-62.43)	(-63)
After Lockdown (August 2020)	3181302 (126.37)	2102335 (154.29)	98850 (102.73)	26171 (131)	19056 (152.77)	5427714 (136)

After lockdown, the amount of transactions growth percentage has increased in an attractive percentage. Specifically, private sector banks have the highest growth percentage of 154.29 percentage. Overall, the total amount reached a growth percentage of 136 percentage.

### 3. CONCLUSION

The present research work is an attempt to analyze the status of the electronic payment systems particularly card payments including debit and credit cards for POS. The study period focuses on before, during, and after lockdown periods. There are 68 days of lockdown in four phases in India started on 25 March and ends on 18 May 2020. For the analysis purpose, January 2020 data are observed before the lockdown period. April month data considered for during the lockdown period and August month data were taken for after the lockdown period. The debit and credit card usage status in both a number of transactions and the amount of transactions for POS is presented in growth percentage. The number of transactions and amount of transactions of usage of credit cards for POS in all the banks decreased from before lockdown to during lockdown period in ranging 60 to 64 percentage and 66 to 70 percent respectively. The same growth percentage has been increased from during lockdown to after lockdown period ranging 70 to 90 percent and 106 to 150 percent respectively. The decrease growth percentage of debit card usage of a number of transactions and amount of transactions ranging 50 to 67 percent and 54 to 67 percent respectively. The debit card usage of the number of transactions and amount of transactions has been increased from during lockdown period to after lockdown period in the ranging of 55 to 83 percent and 102 to 154 percentage respectively.

### 6. REFERENCES

- [1] White, Lawrence H. "The technology revolution and monetary evolution." *The Future of Money in the Information Age*, The Cato Institute, Washington DC (1997): 15-20.
- [2] Statista .com – Digital payments  
<https://www.statista.com/outlook/296/100/digital-payments/worldwide>
- [3] Klee, Elizabeth. "Paper or plastic? The effect of time on check and debit card use at grocery stores." *The Effect of Time on Check and Debit Card Use at Grocery Stores* (November 2004).
- [4] O'Sullivan, Arthur, Steven M. Sheffrin, and Stephen J. Perez. *Economics: principles, applications, and tools*. Pearson Education, 2008.
- [5] Mann, Ronald J. "Credit cards and debit cards in the United States and Japan." *Vand. L. Rev.* 55 (2002): 1055.
- [6] van der Crujnsen, Carin, Lola Hernandez, and Nicole Jonker. "In love with the debit card but still married to cash." (2015).
- [7] The Indian Express. September 2013, "RBI says fee on debit card usage not permissible".
- [8] Runnemark, Emma, Jonas Hedman, and Xiao Xiao. "Do consumers pay more using debit cards than cash?." *Electronic Commerce Research and Applications* 14, no. 5 (2015): 285-291.



- [9] Foscht, Thomas, Cesar Maloles, Bernhard Swoboda, and Swee-Lim Chia. "Debit and credit card usage and satisfaction." *International Journal of Bank Marketing* (2010).
- [10] Bennett, Barbara, Douglas Conover, Shaun O'Brien, and Ross Advincula. "Cash continues to play a key role in consumer spending: Evidence from the diary of consumer payment choice." *Fednotes*, Federal Reserve Bank of San Francisco (2014).
- [11] Money Control .com "COVID-19 impact | Consumers move to debit cards from credit cards <https://www.moneycontrol.com/news/india/covid-19-impact-consumers-move-to-debit-cards-from-credit-cards-5834401.html>
- [12] Pal, Rimesh, and Sanjay K. Bhadada. "Should anti-diabetic medications be reconsidered amid COVID-19 pandemic?." *Diabetes research and clinical practice* 163 (2020).
- [13] The Times of India, "Lockdown forces shift from credit to debit cards" Mayur Shetty | TNN | Updated: Sep 14, 2020, 13:55 IST
- [14] Deccan Herald, "Indian consumers shift to debit cards amid Covid-19 lockdown: Report" Deccan Herald, Sep, 14, 2020. <https://www.deccanherald.com/business/business-news/indian-consumers-shift-to-debit-cards-amid-covid-19-lockdown-report-887259.html>
- [15] Financial express, "Debit, credit card use climbs bo pre-COVID level; consumer spending rises amid layoffs, salary cuts" August 14, 2020 11:52 AM <https://www.financialexpress.com/industry/banking-finance/debit-credit-card-use-climbs-back-to-pre-covid-level-consumer-spending-rises-amid-layoffs-salary-cuts/2054874/>
- [16] Yan Xiao, "Project Lead, Digital Trade", World Economic Forum <https://www.weforum.org/agenda/authors/yan-xiao>

## BIOGRAPHIES



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