THEMATICS asset management *Insights*

INSIGHTS

IS CASH AN ENDANGERED SPECIES?

June 2020

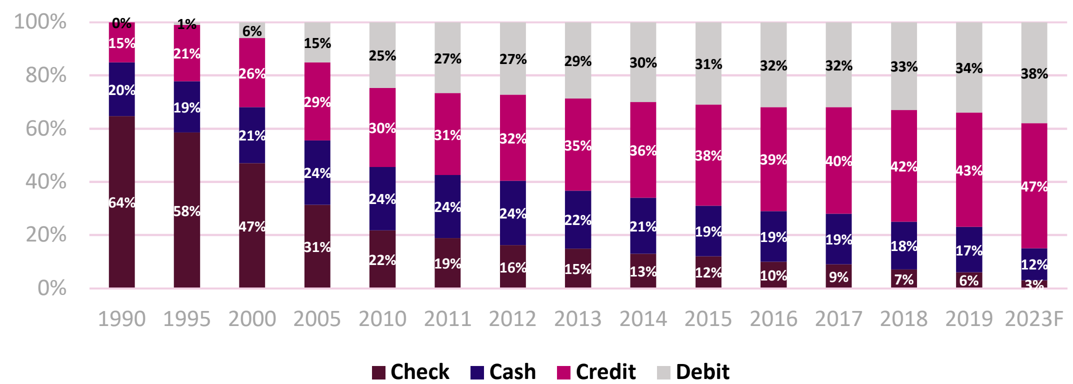
DOWN WITH CASH!

Are we moving towards a cashless society? The question touches on much more than the mere disappearance of a means of payment. It strikes a nerve. Cash is a payment method that anyone can use, and some believe that getting rid of it could mean the suppression of a fundamental right, thereby further restricting our individual freedom. However, since the beginning of the health crisis, merchants have actually quite often refused our bank notes and coins. Legally, they are not allowed to do that, but they make it clear that they don't want our physical money. They prefer our bank cards, smartphones and even our watches. Does this mean we have embarked on an era in which digital payments are being forced upon us?

Payment digitization has been in the works for years. The credit card has been hugely popular with consumers since it first came out in the United States in 1950[1]. And over the years, bank cards have gained market share over cash and checks.

In the United States the trend couldn't be clearer. In 2019, cash and check payments only accounted for 23% of the country's transaction volumes, and experts from Nielsen[2] estimate that the figure will drop to 15% by 2023.
By 2023, checks will have completely disappeared. Checks are currently the least secure payment method, and many shops do not even accept them anymore.

Share of each means of payment in the volume of spending in the United States



Source: JP Morgan, Payment Processing, 27 May 2020

This shift should be looked at in light of the number of bank cards per capita. The percentage is very high in developed countries, especially the United States, where each American holds an average of five bank cards.

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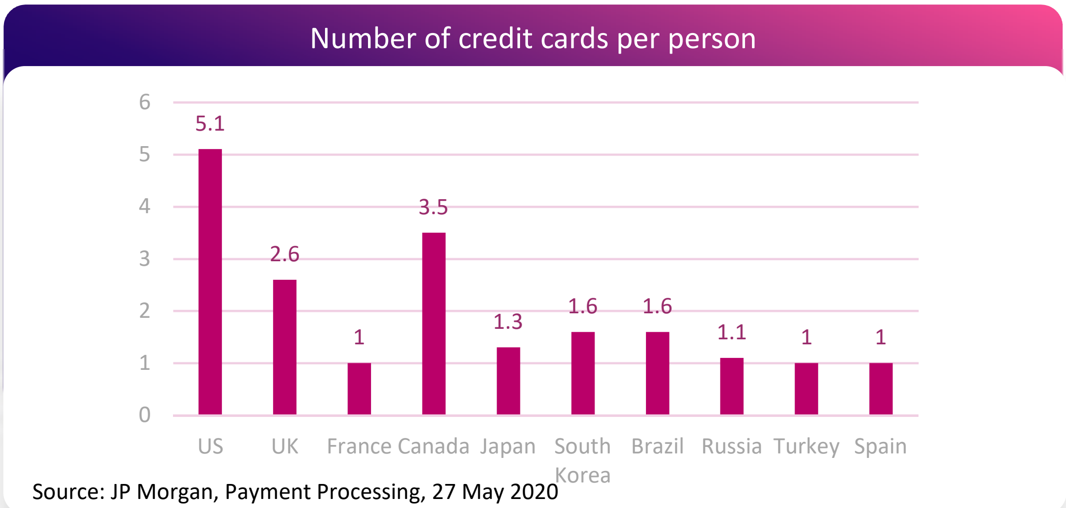
[1] By Ralph Schneider and Frank McNamara, the founders of Diners Club.

[2] JP Morgan, Payment Processing, 27 May 2020.



Source: JP Morgan, Payment Processing, 27 May 2020

But cards are not the only form of digital payment. We now have smartphones, apps and smartwatches... and soon cars and certainly most connected objects, which will take off with the rollout of 5G. The world of payments is going through a revolution, with the digitization process picking up pace. Technological innovation plays a key role in this transformation. But there's more going on...

The COVID-19 pandemic has been a considerable catalyst pushing us towards electronic payment methods. The fear of spreading the coronavirus due to handling notes and coins has encouraged consumers and merchants alike to use more digital payments. Many shops have posted little signs near the register, asking people to choose card payment, and if possible, contactless. There is good reason to believe that the recent shifts in consumer behavior towards electronic commerce and cashless payments are here to stay. Contactless payments mean people are less dependent on cash, and that bodes well for the electronic payment ecosystem.

To better understand the revolution under way, we will first break down the digital payment process. Next, we will analyze the impact of one of the biggest factors driving digitization, e-commerce, as well as look at contactless payment. Finally, we will conclude by imagining what a future would look like without bank cards.

HOW DO DIGITAL PAYMENTS WORK?

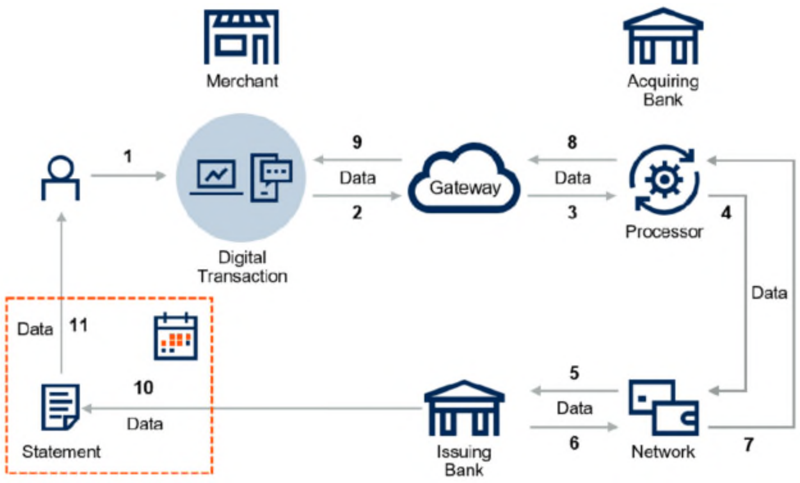
The digital payment is a relatively complex process. Several players interact to ensure that transactions go through in conditions of maximum security and reliability. Let us not forget that bank card payments are not just practical. They are also secure, and that is the reason these payments have become so widespread.
The main actors involved are, obviously, the customer, who makes the payment, and the merchant, who receives it. There is also the customer's bank, called the issuing bank, and the merchant's bank, or acquiring bank. And in the middle of all these players is the central element, without which not a single transaction would go through: the payment processor. The processor sends details on card transactions between the merchant, issuing bank and acquiring bank.

For traditional purchases, the customer presents a physical payment card to the merchant. In this case, the payment processor is the only intermediary needed to facilitate the transaction through. The payment terminal validates the authenticity of the customer's physical payment card. Credit cards use EMV[3] chip technology with cryptographic encoding to guarantee card authenticity. Once the customer's payment card has been authenticated and the customer has approved the transaction, the payment terminal sends the transaction details to the issuing bank. The issuing bank then approves or declines the transaction almost immediately. Once the issuing bank has approved the transaction, the payment processor sends the information to both the acquiring bank and the payment terminal to inform all parties that the transaction has gone through successfully. This process is essential, as it ensures that the transaction is completed successfully and securely. Bank card networks, such as Visa and MasterCard, also play an important role because they provide the technology and secure payment network necessary for transmitting payment transactions.

For online transactions, a payment gateway also comes into play, in addition to the payment processor. The gateway is responsible for authenticating the customer's digital credentials before sending transaction information to the payment processor. It basically does what the payment terminal does, but for online transactions. Security is an even more crucial element with these transactions and used specific encryption technology called Secure Socket Layer (SLL) to make customer data undecipherable as it zips through the web.

[3] Europay Mastercard Visa

Illustration of a transaction through a payment gateway and a payment processor

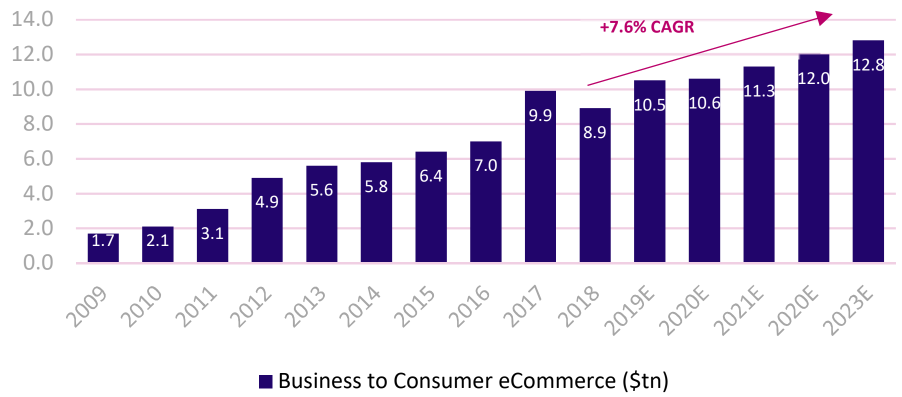


Source: Gartner, Navigating the digital commerce payment market, 13 February 2019

E-COMMERCE LEADING THE WAY

Online sales hit record figures of nearly $9 trillion in 2018, and the consultancy IDC forecasts that the e-commerce market will total $12.8 trillion in 2023, representing compound annual growth of 7.6%[4].

Global e-commerce market (USD trillions)



Source: Gartner, Navigating the digital commerce payment market, 13 février 2019

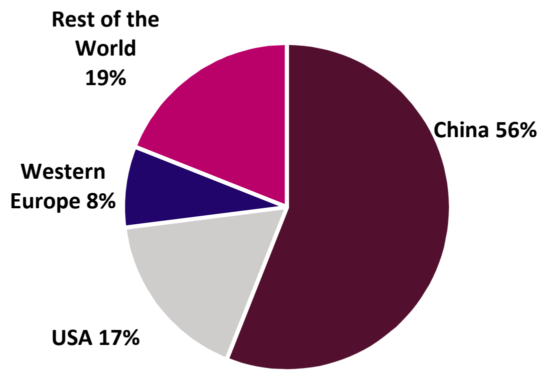
Online retail can be divided into four categories:

[4] Gartner, Navigating the digital commerce payment market, 13 February 2019

- Purchases via a web browser from a computer
- Purchases via a web browser from a smartphone
- Purchases from a mobile app
- Payments using a smartphone as a payment terminal. This last category is a variation of traditional physical point-of-sale payments in which smartphones simply replace bank cards.

Purchases from a computer are the oldest and most mature forms of e-commerce. In the United States, it is estimated that by 2021 more than half of online transactions will come from mobile devices. In developing countries, with their more recent telecommunications infrastructure and high mobile penetration rate compared to personal computers, m-commerce[5] wins out. Two-thirds of online purchases worldwide
are estimated to go through mobile devices, and that figure is even higher in developing countries.
Far from Europe and the United States is where the e-commerce market is actually biggest. Asia, especially China, tops the list of the highest e-commerce trade volumes.

Breakdown of e-commerce by region in 2019



Source : Gartner, Navigating the digital commerce payment market, 13 February 2019

With the health crisis and lockdown periods that most countries have experienced, e-commerce has taken off. On release of first-quarter 2020 earnings, Visa's Chief Financial Officer, Vasant Prabhu, stated that in April the volume of card-not-present transactions (excluding travel) was up 18%, while card-present transactions fell 45%. Of course that is a direct effect of stay-at-home measures. With the economy shut down and stores closed, the only way to buy anything was via websites and e-commerce apps. However, the lockdown was also the time when this form of consumption was introduced into many households. And more often than not, testing e-commerce means adopting it.
People need a digital payment method – bank card, electronic wallet or payment application – to shop online.

[5] M-commerce includes all purchases made from a mobile device, either via a web browser or an app.

CONTACTLESS PAYMENT

Numerous innovations have gone into improving digital payments. Contactless payment is one that has accelerated the shift towards digitisation. Bank card suppliers developed this type of payment as a way of directly targeting small, everyday purchases. But card payments have to be as reliable and practical as cash for consumers to agree to pay for little things like their daily bread with a card. The adoption of NFC[6] technology to enable contactless payment has made it significantly easier for customers to do that.

Across the board, banks raised their contactless payment limits during the COVID-19 health crisis to encourage people to use this payment method. When it comes to complying with health restrictions, contactless payment is indeed much more suitable than paying cash. And both consumers and merchants preferred this form of payment during the period.
Contactless payment is also gradually taking over our everyday transactions with the growing use of connected objects. Along with bank cards, smartphones and smartwatches are more frequently being used to make contactless payments. Soon, with the 5G network, we will also be able to make payments using our autonomous, connected cars. The range of possibilities is almost infinite.

WILL BANK CARDS DISAPPEAR BEFORE CASH?

They could indeed. But cash will never completely disappear. One of the main reasons is that a whole swathe of the economy is based solely on dealing in cash, i.e. the informal, or underground, economy. Any transaction that circumvents the legal, reported circuit of the economy needs cash to survive. Cash leaves no trace and is totally anonymous, unlike digital payments, where every single transaction is recorded. That may be why governments are big supporters of new digital payment methods.

Bank cards, on the other hand, could very well disappear, perhaps even within the next 10 years. By that, we are referring to the thin piece of plastic that lines our wallets today. But the technology still has many bright days ahead. Once again, technological innovation is the driving force.
Consumers are ever more fond of mobile technology and connected objects. These tools are increasingly pervading our lives, and payment is no exception. Payment via a smartphone or smartwatch continues to grow fast. Smartphones can be used in many ways over the course of a transaction:

- As a payment terminal by the merchant;
- As a remote payment method, for example when you need to use your mobile phone to log in to an app to make a purchase;
- As a proximity payment method with a terminal, thus replacing a bank card, cash or check, in which case either NFC or QR Code[7] technology is used.

[6] Near Field Communication

[7] Quick Response Code

The use of QR codes is growing because of the relatively low cost, but also because the technology does not require any special equipment and works just fine even in the event of a power failure or bad internet connection. That explains why QR code technology has boomed in Asia, especially in China, where it has become virtually impossible to buy anything without WeChat or Alipay installed on your smartphone. Alibaba (Alipay) and Tencent (WeChat) hold over 90% of the QR code payment market in China.

PayPal has recently developed a payment service to move into a market where it has not yet managed to establish a foothold, despite several attempts: physical commerce. In May 2020, the company launched its first QR code payment solution, enabling PayPal and Venmo[8] users to make payments at brick-and-mortar points of sale. The idea is simple: the seller creates a QR code generated by PayPal and presents it to the customer, who then scans it with the smartphone camera using his PayPal application, and proceeds with the payment. This solution is designed specifically for independent shops, offering them the first contactless payment solution that does not require an additional payment terminal, unlike the system available from Square for example. The amount spent in cash and checks at small offline merchants in the United States is estimated at more than $3 trillion[9], which represents a huge potentially addressable market for the company. PayPal offers this service in 28 countries, including the United States.

For larger merchants, PayPal is taking a different strategy. It plans to install its QR code reader at checkout points in stores to enable contactless payment. Some retail chains already have similar systems, such as the Amazon solution at Whole Foods Market stores, Netto in Germany or Carrefour in France.

The development of digital wallets such as PayPal and Venmo also raises a pressing question about the whole point of payment networks such as Visa and MasterCard. Digital payment could completely defeat the purpose of bank card networks, as users can transfer money directly from their bank account to their digital wallet. And to make payments, the same principle applies. The digital wallet communicates directly with the merchant’s wallet, thus bypassing traditional networks.

We are still in the early stages of these new payment methods. But in the longer term, they could pose a major threat to the two incumbents, which have been forced to adapt and innovate by creating their own digital wallet service.

[8] Venmo is a subsidiary of Paypal, specialized in payment and money exchange between individuals.

[9] Estimation Bank of America, June 2020

CONCLUSION

Despite a seemingly inevitable transformation, cash, coins and banknotes are not going anywhere for now. The path may be irreversible, but several factors are slowing the road to payment digitization such as the right to privacy. With digital payments, consumers can be traced, and their privacy violated. That is why markets such as Germany are still reluctant to adopt digital payments.
Risk of excluding the poor. These population groups are sometimes unbanked and therefore do not have access to digital payment solutions.
Cash remains a safe haven in times of crisis, especially when interest rates are low as they are now. Consumers have lost their trust in the banking sector and prefer to keep cash under the proverbial mattress.
Older generations are still attached to notes and coins and have not adopted these new technologies.
Cash is still far too prevalent in some countries to expect any dramatic change. For example, India's cash dependency came to the fore in 2016 when the government decided to replace 500 and 1,000 rupee notes in a move to battle corruption and the underground economy. This paper money accounted for almost 50% of the currency in circulation, and the measure led to a shortage of banknotes, which significantly impaired India's economic growth.
However, the world of payments is constantly evolving. Technological innovation is key in this industry, as that will determine how we pay for goods and services in the future. Cash will never totally disappear, but its use will dwindle to the bare minimum.
The digital payments market is a complex but dynamic segment. Revenue of companies operating in the sector has grown by an average of 16% per year[10] over the last five years. Mergers and acquisitions have also been stoking the industry in recent years, as sector giants seek new skills and strengthen their portfolios of solutions in a frenzied scramble for size. Some of the largest deals include Fidelity National Information Services, which acquired Worldpay for more than $40 billion; Global Payment, which acquired Total System Services for more than $25 billion; and Fiserv, which acquired First Data for about $40 billion.

Payment digitization will remain a source of growth in the years to come. The most innovative, perceptive and forward-thinking companies will emerge from this transformation stronger. The future will be digital, but it will take many forms. When each connected object can be used to make payments, security issues will become even more essential. And security can never be completely fail-safe as payments are digitized. With the growth of digital payment methods, a threat to the security of our transactions will always linger. As the number of digital transactions sky-rockets, hackers have developed sophisticated ways of stealing users' bank details, such as phishing. That is why the security of these transactions is becoming an absolute top priority. Regulations are continuously tightening. A new European directive set for September 2020 will round out the legal provisions protecting these transactions, PSD2[11]. The legislation aims to bolster security by requiring strong customer authentication. Security is definitely the central issue at hand. And now, more than ever, those that we don't see as we pay with our digital wallet or our smartwatch, those that guarantee our digital security, will be the big winners of this revolution.

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[10] Thematics Asset Management, Investable Universe, Shop segment, 5-year average revenue in 2019

[11] Payment Services Directive 2

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