ACMA CURRENCY NOTES

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IN THIS ISSUE

THE FUTURE OF RETAIL CASH TECHNOLOGY

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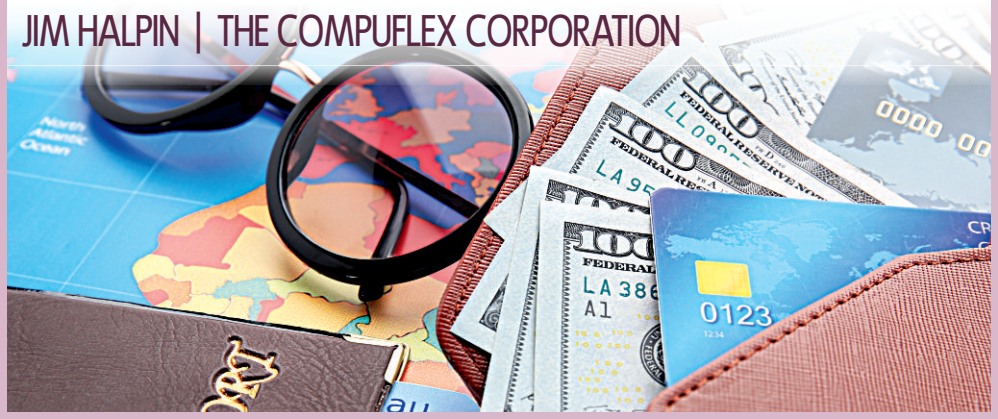

How will we use cash in 2035 or 2050? Retail transactions drive cash usage, and many believe advances in retail automation are changing the way we shop and use cash.

Of course, no article on cash would be complete without a discussion of its demise, but as the Javelin Health of Cash 2020 study (1), sponsored by Cardtronics points out, cash continues to be a common payment choice. US unbanked and chronically underbanked consumers rely on cash, and 83% of households with incomes greater than $85,000 used cash in the thirty days prior to the study. Importantly, cash is not a holdover payment or used exclusively by consumers lacking access to card or digital payment options. Globally cash remains a choice for many consumers based on multiple factors including convenience, privacy, and reliability.

The war on cash however is real, and a natural occurrence as technology innovates new payment choices. Cash payments are slowly declining as digital shopping and wallets increase. This article explores the potential for cash to either decline further or resurge as online shopping and digital wallets reduce brick and mortar stores and automate those that remain.

Exploring Chinese and United States payment choices

A January 2020 Deutsche Bank research paper "The Future of Payments" (2) describes the differences between cash payment preferences in China and the West as digital payments are adopted. Although payment preferences vary from one country to another, exploring the two largest economies of China and The United

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States presents a useful comparison of widely different experiences.

China

In China the future of cash may already be here, and it isn't bright. In 2014, Tencent's WeChat enabled mobile payments on its platform and introduced a Red Packet application allowing Chinese customers to use its platform to gift payments to family and friends during Chinese New Year - a long held tradition. By 2016, billions of transactions followed, and WeChat morphed into a super application allowing companies to use its platform to conduct retail business and transactions.

In 2016, Jack Ma of Alibaba fame, coined the phrase "the new retail" to describe the migration to an online and mobile cross platform retail experience. Using WeChat and others, China quickly moved from cash-based payments to mobile digital retail and wallet.

Although the Chinese model includes a world class payment platform, it is more than payments that drive its use. Consumers are attracted to the convenience of super apps enabling orders, fulfillment, and payment using their mobile phone. Need a ride share or cab? There's an app for that to schedule and pay for the service. Home food delivery? There's an app to order from your favorite restaurant, arrange delivery, and pay. Rather eat out? An app allows selection and QR labels on tables transfer payment when ready. Dining at a buffet? There's an app to identify selections, calculate charges, scan your face, and deduct the amount due from your account. Friends need to purchase drinks from a vending machine? An app scans faces and selects one for payment; automatically charging the amount to the lucky identified face.

AI, facial recognition, and big data deliver unprecedented convenience, but not everyone participates. As in most societies, a wealth gap exists. In the case of China, the "new retail" is experienced in the mega cities. Outlying villages remain a cash society; not unlike unbanked US consumers without the financial means to participate in digital online environments.

With government, entrepreneurial, and financial institution involvement the Chinese model sacrifices privacy and choice for convenience. Circumstances and personal preferences of US and Western societies are not likely to make the same choices. But there is no denying the consumer convenience the Chinese model achieves. The South China Morning Post reports "The rapid growth has been driven in part by changing consumer habits and innovations by technology companies, such as Alipay operator Ant Financial Services Group and WeChat Pay owner Tencent Holdings" (3).

USA

In the United States, legacy card systems retain a strong presence, while unbanked and chronically underbanked consumers rely of cash. Transactions under $25 are often cash, and tight budget consumers use cash monthly. 15%-25% of US household are considered unbanked or chronically underbanked, and Career Builder estimated in 2017 as many as 75% of households live paycheck to paycheck struggling to control debt. Adding to cash usage, a majority of US household with incomes greater than $80,000 still use cash monthly. Differences between Chinese and United States payment preferences, financial institutions, governments, and privacy concerns cast doubt on if the Chinese model will be adopted in the United States or Western countries. But changes in retail and payments are inevitable.

Andrew Yang, a recent US Presidential candidate (4) and others warn of major reductions is the US workforce - including retail cashiers - as AI, facial recognition, and automation are implemented. With fewer cashiers over time, how does cash survive or flourish as a payment?

A window to future cash usage may be cash recycler equipped self-service machines, which retailers turned to in order to relieve cashier peak and extended shift times. Now new equipment is coming online at POS locations and kiosks enabling consumers to pay with cash without cashier intervention. How quickly stores will reduce cashier positions, and to what extent stores will adopt the technology is still unknown. Early adopters of retail kiosk saw dramatic increases in usage when kiosks were equipped with cash recyclers. But will future shoppers migrate from cards to digital wallets? Cash to card solutions? Or will stores automate cash transactions?

As the changes Jack Ma, Andrew Yang, and others describe take place, retailers and payment providers across the world face new challenges. Challenges that may result in a decline or resurgence of cash as a form of payment.

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The role of digital currency

As digital technologies emerge including online, AI, and facial recognition, will central bank digital currencies emerge?

The wide value variations of Bitcoin make it less likely as a daily payment media, but central bank government digital currency (CBDC) may offer a stable future cash substitute. While central banks may provide a needed sense of stability to digital currencies, individual country payment preferences vary widely; and central banks are not likely to disrupt working legacy and banking systems

John Winchcombe of Currency Performance Consultant 7 Layer Solutions states the following:
"In terms of the impact on cash, there is the short term and the future. In the short term, next 30-40 years (!), society will want to hang on to cash. Initially this will be around the ability of large numbers of people to handle a digital future. Then there will be the whole store of value and privacy challenge. If the underlying technology, policy and politics of CBDCs can be got right, trust will build, and the transition could be faster. It will remain fragile though. A hint that negative interest rates will be used, or state surveillance is in place, and people will seek a different store of value. So long as one of the big, stable democracies keeps cash, people will seek it out."

Unknown is to what extent superior retail experiences will drive payment preferences. Will the convenience of cross-platform mobile shopping drive consumers to use compatible payment solutions? And can technology make cash compatible in the digital world?

Innovation

Technology is driving online retail, reducing brick and mortar stores, and reducing cashiers in remaining stores. Retail transactions are the backbone of cash usage. And digital wallets provide payment choices for online purchases, but no linkage to physical cash exist. Will cards and loyalty points proliferate drawing consumers away from cash, or can technology provide similar linkage for consumers paying with cash?

Cash automation technology providers are responding with cash recycler equipped POS systems and kiosks including Glory Global Solutions, CIMA SPA, and Masterwork Automodules. Early results show fewer cashiers are required when cash automation is interfaced with POS, and kiosks equipment with cash recyclers substantially drives usage up.

Mr. Carlos Molina Glory Global Solutions Global Director Thought Leader states shares his thoughts on the current and future state of cash. "Time and again, we are seeing societies and retailers pulling up short of going fully cash-less. But increased automation will be needed to reduce many of the costs and inefficiencies that exist in the cash cycle as the world moves towards a less-cash future." The adoption of consumer mobile cross platform retail and digital wallets varies between countries and as Mr. Molina states, retailers in varying countries continue to see the value of continuing cash

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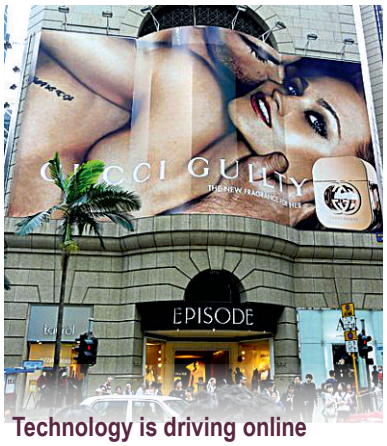

Technology is driving online retail, reducing brick and mortar stores. Retail transactions are the backbone of cash usage.

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acceptance and improving the efficiency of cash cycles for the those that choose cash.

Countries working to reduce cash often find it necessary to back away to avoid discriminating against those that rely on cash, and to retain infrastructure to properly handle upsurges of cash during emergencies. At a national grocery conference an industry official from Puerto Rico commented that in 2017 many Puerto Rico grocers found cash was the only form of payment possible after hurricane Maria and were no longer equipped to handle it. Prior to the hurricane the majority of payments were card based. The sudden increase in cash after the hurricane left stores struggling to count, reconcile, and safely store cash until it could be deposited again.

Glory Global Solutions provides cash recycling solutions to interface with existing POS systems or Kiosk, and in JAN 2020 acquired 80% shares of Acrelec Group S.A.S., a leading manufacturer of retail kiosks. “By teaming-up with Acrelec, the Company aims for further business expansion by increasing our self-service offerings and adding significant software capabilities, including use of artificial intelligence to guide and improve customer experiences and increase point of sale profitability.” Motozumi Miwa, President Glory Ltd JAN 2020 News Release

Jonathan Wang, EVP Masterwork Automodules states "kiosks are engineered to conveniently lead retail to an efficient, advanced and relevant consumer experience. Turn-key kiosk with cash automation not only speeds up efficiency, but service quality. To optimize consumer experience and acceptance, cash and cashless payment methods like credit card, cellular e-payment, and NFC cards must be accepted as well as integrating orders from delivery apps. All orders converged to one device".

Vik Devjee, VP CIMA Cash Handling America, states “We have seen a significant

increase in interest from QSR groups and kiosk vendors to provide cash automation and cash payment capability to kiosks. Over the last few years the QSR space has seen major investments in self ordering kiosk solutions. However, almost all of these kiosks have no way of accepting cash. CIMA aims to address that and other retail environments where automation of cash payments at POS is becoming a bigger requirement.”

Dan Littman Retired Federal Reserve Bank of Cleveland, questions, "are we at a point of cash decline similar to the once flourishing check payments?" Although at one point personal checks were a popular consumer preference, consumers migrated to card-based credit and debit solutions with faster checkout times and loyalty points.

Looking Ahead

Whether we are at a point of a slow decline of cash as Mr. Molina suggests, a resurgence of cash as cards decline as Deutsche Bank suggests, or a slow decline similar to checks, as Mr. Littman suggests, may depend on innovations in cash automation and integration. In the past, cash automation enhanced back end handling, and depositing, but new assistive technology cash automation allows consumers to pay with cash without cashier intervention at POS and kiosks. Still to come is the ability to select cash online and pay an intermediary before shipping; order with a mobile device and pay at a kiosk; or scan products and pay with cash as we exit a store.

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> “COUNTRIES WORKING TO REDUCE CASH OFTEN FIND IT NECESSARY TO BACK AWAY TO AVOID DISCRIMINATING AGAINST THOSE THAT RELY ON CASH, AND TO RETAIN INFRASTRUCTURE TO PROPERLY HANDLE UPSURGES OF CASH DURING EMERGENCIES.”

In the aftermath of major calamities like hurricane Maria, cash becomes the only form of payment possible.

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A recent Currency Research report takes a comprehensive look at the Cash Industry in Transition where a recent *Business Insider* article is quoted about the success of mobile payments in China (5): *"Paying with your phone isn't a novelty in China these days. Paying with cash Is"*. Privacy and legacy issues in Western societies may prevent the Chinese model flourishing globally, but the convenience of an omni-channel retail experience and cross platform payments has a strong pull. Retail transactions are the backbone of the cash cycle. It's why we use cash, and any change in retail consumer patterns will affect cash. It seems likely the omni-retail cross platform consumer experience will flourish, but the future of cash is less clear. Will cash remain a hand-to-hand transaction used on a limited basis at check-out or kiosks by consumers unable to participate in the coming digital retail experience? Or will cash automation, AI, and QR technology link cash to a digital cross platform consumer experience? We don't know, but changes to retail and cash are inevitable, nevertheless.

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WHAT CREDIT CARDS WERE NOT ABLE TO DO, DEBIT CARDS, CONTACTLESS AND MOBILE JUST MIGHT...

JENS SEIDL | CURRENCY RESEARCH

If I had a Dollar for every time I heard someone say "reports of the death of cash are greatly exaggerated", I would be retired by now. Card issuers declared a "War on Cash" as early as the 1990s, but the real casualty in that war were cheques. Over the decades, card payments replaced cash payments only to a small extent while they practically eliminated cheque payments in many parts of the world. In Australia for instance, in 1980 cheques represented 85% of non-cash payments; in 2016 that share had dropped to 1% . The US is showing similar figures, but is still a while away from cheque extinction, with cheques making up 86% of non-cash payments in 1979 and 8.3% in 2018 , a share that is not so much due to use at the Point of Sale but for bill payments that have not been replaced by bank transfer yet. Cash on the other hand kept going strong, with Central Banks around the world reporting year-on-year increases of cash in circulation, and the few studies looking at actual cash usage (which is typically not subject to a formal reporting framework but estimated through consumer surveys and similar

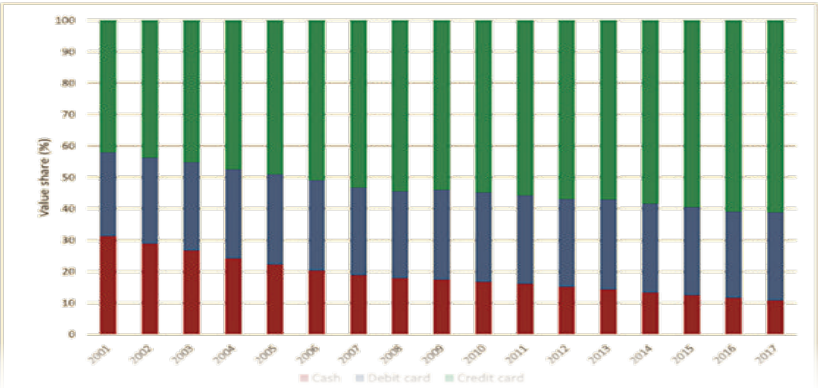

Chart 2a: Value share of cash (red), debit card (blue), and credit card (green) payments in Canada from 2001 to 2017. *Sources: TSI International & author's calculations.*

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In London. reportedly more than 50% of card payments are now made contactless.

> THE LOW ENTRY LEVEL BARRIER FOR THE MERCHANT ACCEPTING QR-CODE PAYMENTS HAS DRIVEN AN ADOPTION RATE THAT COULD NEVER HAVE BEEN ACHIEVED WITH THE ROLLOUT OF TRADITIONAL POS TERMINALS, REQUIRING CAPITAL INVESTMENT AND TELE-COMMUNICATIONS INFRASTRUCTURE.

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tools) also suggested that cash was still King and not going anywhere soon. That was the case until a few years ago, when countries such as Sweden, Norway, Finland, Canada, Australia and more recently the UK reported a substantial decline in cash usage. At the beginning, Sweden was seen as the sole exception, a victim of a social experiment promoting a cashless society, and again, if I had a Dollar for every time I heard someone say "we are not like Sweden" … well, you know. Chart 2a depicts how Debit and Credit Cards have reduced the share of cash payments significantly in Canada over the last 20 years, and in the UK, Debit Cards overtook Cash by volume in 2017, a trend that has continued since. The UK has indeed commissioned an independent review called "Access to Cash" to – as put very eloquently by the review – prevent the UK from sleepwalking into a cashless society. We are clearly seeing now that in some countries, cash is not King anymore, and even in others where cash is still the dominating payment instrument by volume, cash usage is beginning to decline for the first time ever. So, what is different now, and what is driving this change? I don't believe there is a single answer to that question, but a number of factors that need to be considered.

Outside North America, Credit Cards were slow to gain significant market share, perhaps due to a mix of reluctance of merchants to accept credit cards due to the high commissions and delayed settlement, and a reluctance of consumers to use a payment instrument that made it harder to control spend (as the credit card bill would typically only be issued once per month) and, in the case of credit cards offering revolving credit, attract extremely high interest rates. Debit cards however did not present any of these issues as the cost to the merchant and the consumer is significantly lower and money flows much faster. Consequently, globally Debit Cards in 2018 represented 29% of POS payments versus 20% for Credit Cards . In EMEA, that difference is even more prominent at 36% for Debit Cards and 7% for Credit Cards, and Asia Pacific is also showing a significant preference for Debit Cards over Credit Cards with 26%, and 16% respectively. The move from a signature-based process to chip and pin has certainly helped accelerating the acceptance of debit cards at retailers due to the reduced risk and increased convenience. And convenience is the key word when it comes to new card functionality that has caused exponential growth rates in card usage, namely contactless payments. The speed and convenience of that relatively new function paired with the lack of significant fraud (which was one of the main concerns) has caused merchants and consumers to change their behaviour and replace cash payments with contactless payments instead. In London for instance, reportedly more than 50% of card payments are now made contactless.

But it doesn't stop with contactless payments. Mobile payments have also had a significant impact on cash usage, particularly in Asia Pacific. There, eWallet solutions account for 27% of POS transactions, and 52% of eCommerce payments, with aggressive growth forecasted for the next years. Solutions that still use cards as the underlying payment rail, such as Google Pay or Apple Pay, are less relevant here (although they helped increasing the value limit for contactless payments). The growth of QR-code based payments by software giants such as Alipay and Tencent / WeChat Pay have reshaped consumer behaviour in China and Southeast Asia to an extent that has never seen before. The low entry level barrier for the merchant accepting QR-code payments has driven an adoption rate that could have never been achieved with the rollout of traditional POS terminals, requiring capital investment and telecommunications infrastructure. Instead, a mobile phone and a printed QR code are sufficient to start accepting payments, and the exponential growth rates of mobile payments in Asia are testament to the strength of the proposition. Mobile payments had grown from just under

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2 trillion US-Dollars in 2015 to around $9tn in 2016 and $18tn in 2017 (6). Mobile payments continued to grow to $27tn in 2018 and $16tn in the first half of 2019 (7). There are no reliable statistics on cash usage in China, but these growth figures in conjunction with reports that typically cash-heavy merchants such as food stalls and taxis have practically stopped accepting cash are suggesting, that cash usage in China has been and continues to be on a steep decline.

Another trend that has made an impact on typically cash-heavy use cases are contextual payments. Companies such as Uber, Lyft Grab and FreeNow, designed as a ride-share service to transport people from A to B have, almost inadvertently replaced cash payments through their built-in payment functionality. Food delivery services such as Deliveroo, UberEats or GrabFood did the same for that industry – a service typically paid for in cash is now being settled with the food ordering app as a contextual payment.

In summary, while cash is still not dead and probably will not be for a long time, its ability to survive as an efficient and competitive payment method is being threatened by new technologies that attract a massive user base quicker than any other payment innovation before. It is therefore imperative that our industry understands these developments, considers their impact on cash usage and the cash cycle and plans accordingly. Investments in training, automation, better forecasting solutions, new processing technologies and market intelligence are now more important than ever. At Currency Research we aim to assist this transitional process with our events, publications, training programmes and consulting services.

Go to our website **www.currencyresearch.com** and download your complimentary copy of our latest report, "The Cash Industry in Transition", to read more about this topic.

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SPINNAKER

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Clients are deploying systems equipped with multiple security dye colours/types or glue and dye to high risk areas in Europe. This complex degradation has been installed in the a2m ATM cash protection cassettes and the iBox, Spinnaker's cross pavement box.

Spinnaker is also providing "CrimeTag", our own forensic protection technology to these complex degradation systems.

Bi-colour staining creates a unique and obvious indelible staining pattern that is near impossible to pass on to banks, retailers or members of the public. The security dye is stored in separate containers and released when the system detects an attack. This permits a true 'bi-colour' staining pattern on the banknotes.

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