



2018

Canadian Payment Methods and Trends



PAYMENTS
CANADA



Canadian Payment Methods and Trends: 2018

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Payments Canada discussion papers concern a variety of issues relevant to the role of Payments Canada. The views expressed in this paper are those of the authors at the time of publication and do not necessarily represent those of Payments Canada.

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 Payments Canada

RESEARCH SIMPLIFIED

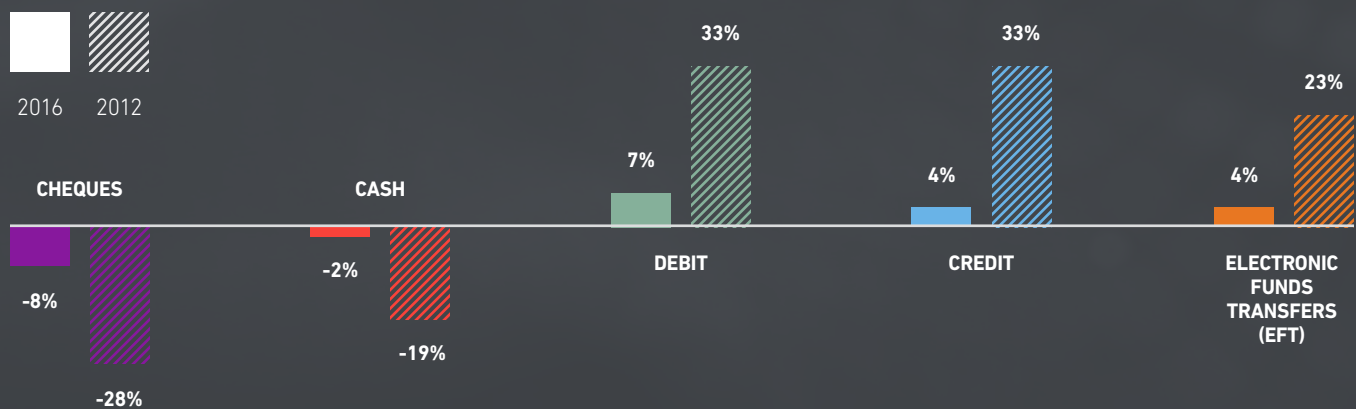
The Impact of Digitization on Payments

The digitization of payments continued to influence and evolve in 2017. As consumers opt for more convenient and digital methods of payments such as contactless, online transfers and in-app purchases, we see traditional forms of payment, like cash and cheque, declining in the marketplace.

Businesses too are seeing the impact of digitization, most notably through the use of cheques. While fewer cheques are being written, their value is increasing, indicating a need for better electronic payment options for businesses. Wider adoption of electronic payments by businesses is expected once faster and more data-rich payment options become available through Modernization.

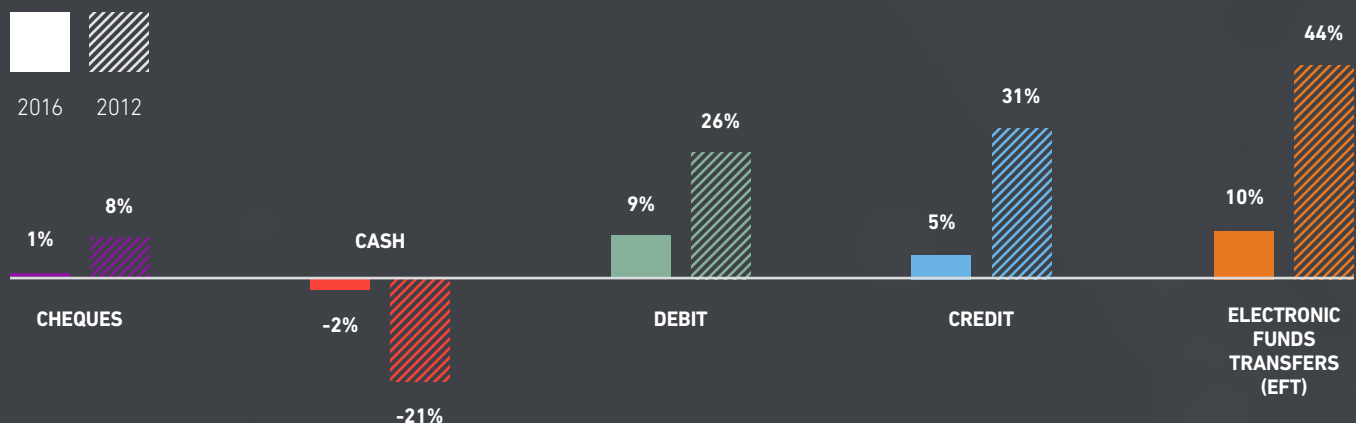
VOLUME % DECREASE / INCREASE SINCE 2016 AND 2012

Volume: The number of payment transactions



VALUE % DECREASE / INCREASE SINCE 2016 AND 2012

Value: The dollar value of payment transactions





VOLUME:
734 MILLION

VALUE:
\$4 TRILLION

CHEQUES

Digitization Impact:

- Consumers and businesses opting for more convenient methods of payment, like online transfers and credit cards.
- Businesses continue to increase their use of Electronic Funds Transfers (EFT) over cheques.
- The value of cheques continues to grow, while Canadian businesses await digital innovations that meet their needs for improved payments data.



VOLUME:
6.5 BILLION

VALUE:
\$114 BILLION

CASH

Digitization Impact:

- Consumers opting for more convenient and electronic methods of payment, such as contactless to purchase low-value items like food and coffee.
- Growing use of in-app payments over cash, such as paying for an Uber.
- Online transfers are being used heavily for P2P payments as an alternative.



VOLUME:
5.8 BILLION

VALUE:
\$247 BILLION

DEBIT

Digitization Impact:

- Canada is a global leader in contactless debit card use.
- Growing use in e-Commerce and in-app payments.
- Debit still trails credit due to lucrative rewards programs and much less debit use in e-Commerce and in-app payments.



VOLUME:
4.9 BILLION

VALUE:
\$554 BILLION

CREDIT

Digitization Impact:

- Online and in-app transactions, which predominantly leverage credit card networks, are driving growth in this space.
- Credit card loyalty and rewards programs continue to incentivize both consumer and business use.



VOLUME:
2.7 BILLION

VALUE:
\$4.6 TRILLION

ELECTRONIC FUNDS TRANSFERS (EFT)


Digitization Impact:

- Wide use of EFT by Canadians for routine household bills.
- Businesses and government agencies all rely on EFT transactions for their essential payments to staff and other businesses.
- While continuing to dominate as a payment channel, EFT growth slowing slightly with the rise in credit card use.

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EXECUTIVE SUMMARY

Payments Canada contributes to the industry through leading-edge payments research as part of its commitment to be a centre of excellence. This objective is promoted by providing an annual overview of the payment methods and trends observed in Canada. For our 2018 research, we worked closely with payment service providers, payments consultants and researchers to compile a comprehensive 2017 data set and insightful analysis on consumer and business payment habits.

In 2017, the total payments market in Canada grew to 21.9 billion transactions worth more than \$9.7 trillion (an increase of almost three per cent and six per cent in volume and value terms, respectively, since 2016). The 2017 data and analysis show a payments market that has continued its steady transition to more electronic payments and a migration away from legacy methods of payment, such as cash and cheques. While traditional forms of payment still comprise the majority of Canadian payments, there is fast growth in the number of transactions using newer channels to access funds from deposit and credit card accounts, including e-wallets, contactless technology and e-Commerce portals.

We find very different trends in the data regarding payment instrument utilization, depending on whether the volume (number) of transactions or the value of transactions are being examined. This dichotomy can be explained mostly by the fact that Canadians transact in two very distinct environments: the point-of-sale (POS) and remote payment environments. Each environment reveals different insights on Canadian payment habits.



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The 2017 data and analysis show a payments market that has continued its steady transition to more electronic payments and a migration away from legacy methods of payment, such as cash and cheques.

The POS Transaction Environment

Our data indicate that in 2017 there were a total of 16.5 billion POS payments worth \$868 billion. The POS includes transactions that take place in either physical or virtual payee locations, including in-app and online store fronts. POS instruments include cash, prepaid, debit and credit card transactions, which combine to account for about 75 per cent of the total Canadian volume, but only about nine per cent of the total transaction value. POS volume is high because it consists of mostly consumer-initiated payments for lower value shopping and commerce. At the POS, we observe the following trends:



Cash continues to be the most widely used payment method by a slight margin, at almost 6.5 billion transactions. While cash has been in decline in recent years, in 2017, the rate of decline showed signs of slowing.



Debit card transactions are the second most used POS payment instrument in terms of transaction volume. Canada is a global leader in debit contactless card use, which has provided a lift to debit transactions overall.



Credit cards continue to dominate the POS environment in transaction value, as consumers and businesses migrate more transactions to credit cards to earn rewards. Credit cards are also being boosted by more POS transactions shifting to online and in-app channels, where more than nine in 10 transactions are completed via credit card rails. Canada has also become a global leader in credit card use as a growing number of Canadians use their credit cards for larger portions of their monthly spending.



Prepaid transactions are the fastest growing POS transaction type but continue to account for a small portion of POS volume and value (two and three per cent, respectively).¹

¹ Prepaid cards allow users to load funds or purchase a gift card for future purchases. For example, a Visa or Mastercard labeled prepaid card or a card to be used at a specific restaurant or merchant location (e.g. Canadian Tire, Tim Hortons, Apple iTunes card).



The Remote Transaction Environment

In 2017, there were a total of 5.4 billion remote transactions worth \$8.9 trillion. Remote transactions include all transactions that are not made at physical and virtual payee locations (i.e., via store fronts or payee provided apps). Instead, they use financial institutions or payment service providers as intermediaries that accept payment instructions and move funds to payees through their services. Remote transactions enable payors to initiate transactions virtually anywhere via cheques, electronic funds transfers (EFT) and online transfers (e-wallets and electronic P2P transactions). These transactions represent 91 per cent of the total Canadian transaction value, but only 25 per cent of the total volume. A major factor why remote transactions account for so much value is because remote transactions consist of many payments moving to and from commercial enterprises (e.g., businesses, non-profits) and the government for relatively large amounts.



Remote transactions represent

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Remote transactions **enable payors to initiate transactions virtually anywhere** via cheques, electronic funds transfers (EFT) and online transfers (e-wallets and electronic P2P transactions).



We observe the following trends in the remote payment environment in 2017:



EFT transactions (bill payments, electronic data interchange, pre-authorized debits and direct deposits using deposit accounts) dominate remote transactions, as the leading payment type in both volume and value terms, making up about 65 per cent of the volume and 52 per cent of the value of remote payments, in 2017.



Credit card use was significant in remote environments, slowing overall EFT use and contributing to the negative growth of cheque volume.² Indeed, we find that one out of five remote bill payments and routine household expenditures are made using credit cards.³ In addition, Canadian businesses reported making almost a quarter of their total value of expenditures using credit cards.



Cheques continued to represent a large portion of remote transaction volume even as their numbers decline each year. In 2017, the rate of cheque decline was eight per cent. However, the total value of cheques continued to increase slightly (by one per cent), as fewer cheques were written but for higher amounts. The average cheque transaction size has increased by 49 per cent since 2012 (to \$5,491).



Commercial cheque use has declined by 21 per cent since 2012. However, commercial cheques remain prominent in payments for professional services, rent, payments to governments (including taxes), and B2B payments (e.g., for supplies, stock, raw materials and insurance payments).

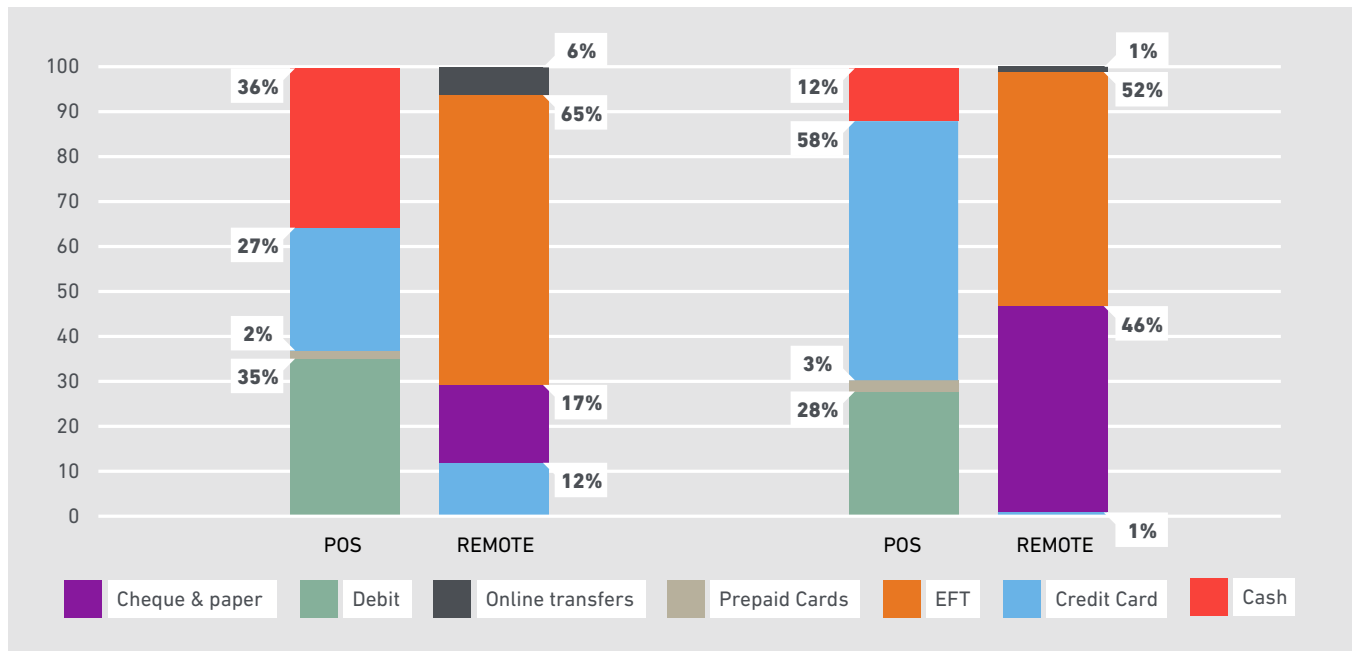


Online transfers top all payment instruments in terms of growth, and expanded to a full one per cent of all remote transaction volume and value. Consumer use of online transfers (mostly INTERAC e-Transfers) grew such that their online transfer volume was nearly equal to the number of consumer cheques, in 2017.

Figures 1 and 2 illustrate the differences between the two environments, in terms of volume and value.

Figure 1: POS and Remote Volume

Figure 2: POS and Remote Value



² Credit cards are predominantly used in POS environments. However, they can also be used in the remote environment to pay for bills, including memberships, subscriptions, insurance and utilities.
³ Based on our estimates from the market survey research.



INTRODUCTION AND METHODOLOGY

The Canadian economy depends on the exchange of billions of dollars each day. Payments Canada is responsible for the clearing and settlement infrastructure, processes and rules essential to many of those transactions. As the owner and operator of the Automated Clearing Settlement System (ACSS) and the Large Value Transfer System (LVTS), Payments Canada underpins the Canadian financial system. To support its objective to be a centre of excellence in payments, Payments Canada is pleased to present the *2018 Canadian Payment Methods and Trends (CPMT) report*. Through the CPMT, Payments Canada is able to compile data for its financial institution members and share knowledge with the larger payments industry, to promote a common understanding.

The primary objective of the research is to inform readers on the most common consumer and business transactions made in Canada, providing for a holistic view of the payments market.⁴ To that end, the CPMT analysis reflects ACSS data, external payment service provider data, Canadian market research, and expert analysis.⁵ Experts and market survey research are used to fill in areas where accurate payment use data are unavailable. This year's report focuses on the 2017 calendar year, and leverages historical data to provide a long-term view of the payments market in Canada.⁶ This paper also includes transactions that may not specifically be used for the exchange of goods and services. For example, ABM transactions are used to obtain cash, where the cash is subsequently used to purchase goods and services. Both types of transactions fall within the scope of this research, as each represents an important element of the payments market in Canada. However, we recognize that this may pose as a form of double counting.

There are certain transactions that are not included in our analysis. We exclude some payment types that have not reached volumes that would have a significant impact on the national payments market. This includes payment instruments that do not make up at least one per cent of the volume or value of either remote or point-of-sale transactions; for example, virtual currencies (e.g., Bitcoin). Finally, LVTS (wire) transactions are excluded, as they amount to less than 10 million transactions annually and are very large in value, which would obscure the value trends of the other segments of interest.⁷

⁴ **Appendix II B** includes definitions on a variety of terms used throughout the paper.

⁵ Please see **Appendix II A** for details on methodology and assumptions, including consumer and business survey market research methodologies.

⁶ Canadian Payment Methods and Trends: 2017, Payments Canada Discussion Paper No.8, December 2017;

Canadian Payment Methods and Trends: 2016, Payments Canada Discussion Paper No.7, November 2016;

Canadian Payments Methods and Trends: 2015, Payments Canada Discussion Paper No.4, December 2015;

Examining Canadian Payment Methods and Trends, October 2012.

⁷ For more details on the LVTS, please see <https://www.payments.ca/about-us/our-systems-and-rules/large-value-transfer-system>



INDUSTRY ENVIRONMENT

Domestic Environment

Canada's domestic payment environment continues to be influenced by four key developments: 1) Payments Canada's core system modernization efforts; 2) service provider innovation; 3) regulator involvement in payment systems; and 4) the continued expansion and innovation in credit card use. Each of these forces can be attributed in large part to consumer and business demands for new payment offerings. Consumers' preference for convenience is an undeniable force, while Canadian businesses are showing renewed interest in making their payments processes easier and more efficient.

Payments Canada is supporting the industry in transitioning to cheque imaging technology and the migration towards the adoption of ISO 20022, through its rules and standards. Payments Canada has worked with this industry to make Automated Funds Transfers (AFT) a faster and more convenient payment method, by introducing a third exchange combined with two-hour funds availability (now operational), and in designing new core clearing and settlement systems. These combined enhancements to AFT support faster and more uniform services across the country.

The influence of payment innovators is being felt across the payments industry, as paytechs, payments service providers and financial institutions push innovation in all corners of the payments value chain. Perhaps most influential has been the variety of paytechs collaborating with Canadian financial institutions. These collaborations are bringing new payment products and services to market in Canada and contributing to payment industry innovation. In **Featured Analysis A**, we highlight these recent developments in the payments ecosystem.

Payments Canada has been involved in legislative and regulatory initiatives which had important impacts for our systems including the implementation of collateralization in the ACSS to meet Principles for Financial Market Infrastructures (PFMI) standards and the federal government's consultation on the role of non-bank payment service providers in national payment systems.⁸

While new payment offerings are in development and trying to gain traction with Canadian consumers and businesses, it has been the international credit card companies that are dominating the new payments landscape and emerging payment channels. For many innovative mobile or in-app services, credit cards payment products are the only viable payment options. Credit cards have evolved to become the most ubiquitous payment instrument in the Canadian payments ecosystem offering unrivaled incentives for users. Credit card networks have also become the innovative focus for most of the new products and providers, making credit cards a key environmental force shaping payment options, and the types of innovative payment products that are able to take root.

⁸ The Department of Finance Canada recently completed a consultation on potential changes to the Canadian Payments Act. The consultation sought feedback on making payment service providers that meet the requirements of the federal government's planned retail payments oversight framework, eligible for a new Payments Canada membership class called "Associate Members". The main objective of which is to permit payment service providers access to Payments Canada's planned real-time payment system infrastructure. Please see: Consultation on the Review of the Canadian Payments Act, Department of Finance Canada, May 2018: <https://www.fin.gc.ca/activity/consult/rcpa-elcp-eng.asp>

PAYMENTS TECHNOLOGY (PAYTECH) IN CANADA

By Jeffrey Stewart, Payments Canada

“Paytech” services use digital channels and technologies to facilitate the transfer of value. In Europe, the U.S. and China, paytech has been transformative.⁹ Canada’s paytechs are shaping Canadian innovation, through their partnerships and collaborations with incumbent financial institutions and payment providers.

Regulation

Canada’s regulatory landscape is evolving in profound ways to keep pace with paytech innovation. A new Retail Payments Oversight Framework, currently being reviewed by the Department of Finance, seeks to regulate payments service providers in the retail payments space by function rather than entity type.¹⁰ In addition, a recently launched advisory committee on Open Banking is exploring a financial services environment where access to accounts and payments services is available to third-party applications. These developments in the payments industry echo some aspects of Open Banking and third-party payment service provider regulations recently implemented elsewhere in the world, including with Europe’s Revised Payments Services Directive (PSD2).

Innovation in payment channels

Paytech innovation and partnerships are introducing new channels to serve important payment use cases. For instance, INTERAC, which began offering mobile contactless payments in 2016, has recently been partnering with a variety of financial institutions in expanding INTERAC e-Transfers to address business needs, including request-for-payment and batch payment services. INTERAC e-Transfer also provides the payment mechanism for a number of social media and AI payment pilot programs, currently launched with financial institutions.

Featured Analysis A continues...

Paytech innovation and partnerships are introducing new channels to serve important payment use cases.

⁹ For example, Alipay and WeChat Pay have evolved into comprehensive closed-loop systems in China, PayPal and Venmo have transformed P2P payments in the US, and Europe has flourishing payment service providers offering instant payments.

¹⁰ <https://www.fin.gc.ca/activity/consult/rpof-cspd-eng.asp>

Other social media and artificial intelligence (AI) schemes have also emerged, including cloud-based voice services offered by Amazon (Alexa) and Google (Google Home) providing a new channel for placing orders and making payments. For example, Alexa can be used to place voice orders through the Starbucks mobile app. Banks are testing voice-activated technology as well: TD Skill offers hands-free interaction with Amazon Alexa and has integrated Kassisto's KAI chatbot into its mobile app.¹¹ RBC innovation labs have harnessed voice assistant technology and text messaging so that customers can now pay bills with Apple's Siri assistant and initiate INTERAC e-Transfers via iMessage.¹² RBC has also partnered with MyKai to offer message-based AI banking services through Facebook Messenger, SMS and other channels.¹³

Open Banking and authentication

Flinks is pioneering Open Banking in Canada by standardizing third-party access to bank accounts through Application Program Interfaces (APIs). These APIs are the standard conduit that can be integrated by other apps to connect to their customers' bank accounts. Wealthsimple, Transferwise and ATB Financial are currently using the Flinks platform.¹⁴

Better digital identity and authentication will be critical as banking opens to third-parties. National Bank has joined the "big five" Canadian banks and other financial institutions on the SecureKey network, which is developing a digital identity service based on blockchain technology.¹⁵ This builds on existing services, such as SecureKey Concierge, which uses a "triple-blind" authentication protocol for login information between financial institutions and other organizations (e.g., Canada Revenue Agency). SecureKey has also joined the Decentralized Identity Foundation (DIF) to explore integration between various digital-identity platforms including its Verified.Me and Hyperledger Indy projects.¹⁶

A number of other collaborative technologies are also emerging in the identity and authentication space. For instance, Tangerine Bank is implementing novel biometric features such as eye print ID, voice password and in-app secure chat to its iOS app. In addition, RBC is partnering with Toronto-based Nymi to test its HeartID heartbeat authenticated payments wristband.

Featured Analysis A continues...

Better digital identity and authentication will be critical as banking opens to third-parties.

¹¹ <https://kasisto.com/press-releases/td-announces-conversational-ai-platform-agreement-with-kasisto/>

¹² <http://www.rbc.com/newsroom/news/2017/20170801-siri.html>

¹³ <https://kasisto.com/press-releases/kasisto-releases-kai-smart-bots-for-banking-in-facebook-messenger-slack-and-sms/>

¹⁴ <https://www.nbc.ca/en/about-us/news/news-room/press-releases/2018/20180704-Banque-Nationale-Luge-Capital-participant-investissement-dans-Flinks.htm>

¹⁵ <https://business.financialpost.com/news/fp-street/canadas-big-banks-testing-toronto-based-digital-identity-network-powered-by-blockchain>

¹⁶ <https://betakit.com/today-in-fintech-nanopay-rentmoola-securekey/>

Credit card innovation

Credit cards are also providing innovative services. “One-touch” payments from Visa Checkout and Mastercard’s Masterpass are a clear example. In addition, credit card networks are expanding their footprint by making card payments possible in new settings. For example, Visa is partnering with Translink to build upon European successes and test credit card and mobile tapping on public transit fare gates and buses on Metro Vancouver trains and buses.¹⁷

Mobile point-of-sale (mPOS) is changing the retail card payment experience by untethering payments from the register, for example: Square, Shopify and Moneris’ Payd. Dream Payments goes a bit further with its cloud-based mPOS that uses a bluetooth-paired card reader with smartphones. National Bank and Mobeewave are partnering to innovate even further, with new technology that requires only a mobile device equipped with NFC to accept contactless credit card payments.¹⁸

Incubation and acceleration

Canada is investing heavily in digital payment innovation, through a variety of technology programs and incubators. Good examples include Scotiabank’s Digital Factory and Tangerine Bank’s biometric technology incubators.¹⁹ Canada is also home to the MaRS Discovery District and British Columbia Technology Industry Association, both dedicated to furthering paytech businesses.²⁰ The focus on paytech, has given rise to new payment technology services that promise to alter the payments space in profound ways.

International Environment

Canada’s domestic payment environment is also influenced by international payments developments. For the most part, these influences stem from interventions by regulators and oversight bodies in other jurisdictions, and payment service providers from other countries, bringing innovative payment products to the Canadian market.

Regulator and oversight body interventions in payment systems in other countries are having a cross-border impact on Canada. Some recent examples of this include Open Banking and seeking regulation in response to the growing influence of paytechs.²¹ The Department of Finance Canada’s Retail Payment Oversight Framework and the Canadian Payment Act Review consultations also provide some recent examples, which have been inspired by the efforts of regulators in other jurisdictions.

The international environment is also influencing Canada’s payment systems through international payment service providers. Large international payment providers have long established operations in Canada that continue to influence our domestic ecosystem in profound ways. For example Visa, Mastercard, Square, and PayPal continue to develop new payment products abroad and introduce them to Canadians. In addition, newer international service providers are reaching Canadian payment users via remote payments through online channels that transcend borders (e.g., Bitcoin and Transferwise), and offering proximity payments through mobile channels (e.g., WeChat Pay, Alipay, and Apple Pay). Further, international service providers are also beginning to reach Canadian users through online social networks facilitated via social media (e.g., Facebook, and Instagram payments).²²

17 https://www.visa.ca/en_CA/about-visa/newsroom/press-releases/visa-collaborates-with-translink-to-modernize-mass-transit-payments-no-more-fumbling-for-cash-or-paper-tickets.html

18 <https://www.crowdfundinsider.com/2018/06/135467-canadas-national-bank-launches-new-mobile-point-of-sale-solution-powered-by-fintech-mobeewave/>

19 Please see: <http://www.actcda.com/information/act-news/2017-newsletter-archives/january-2017.html#five> and <https://www.tangerine.ca/forwardthinking/culture-and-community/tangerine-and-ryerson-launch-the-thinkubator-in-toronto>

20 <https://wearebctech.com/betakit-mars-announces-fintech-partnership-with-bc-tech-to-bridge-gap-between-vancouver-and-toronto/>

21 Regulation supporting payment service provider competition can be traced back to European PSD1 and PSD2 regulations (The PSD1 directive became law in 2009 and PSD2 entered into force in 2016) with a number of other jurisdictions at varying stages of regulation development (e.g., U.K., U.S., Australia). Please see: <https://www.ft.com/content/f5b0be4-7381-11e6-bf48-b372cdb1043a>

22 One third of Canadians say they are interested in social networking apps such as WeChat Pay and Alipay, as payment options in Canada. Leger Marketing/Payments Canada’s Payments Pulse Survey: Consumer Edition (Leger 2018)



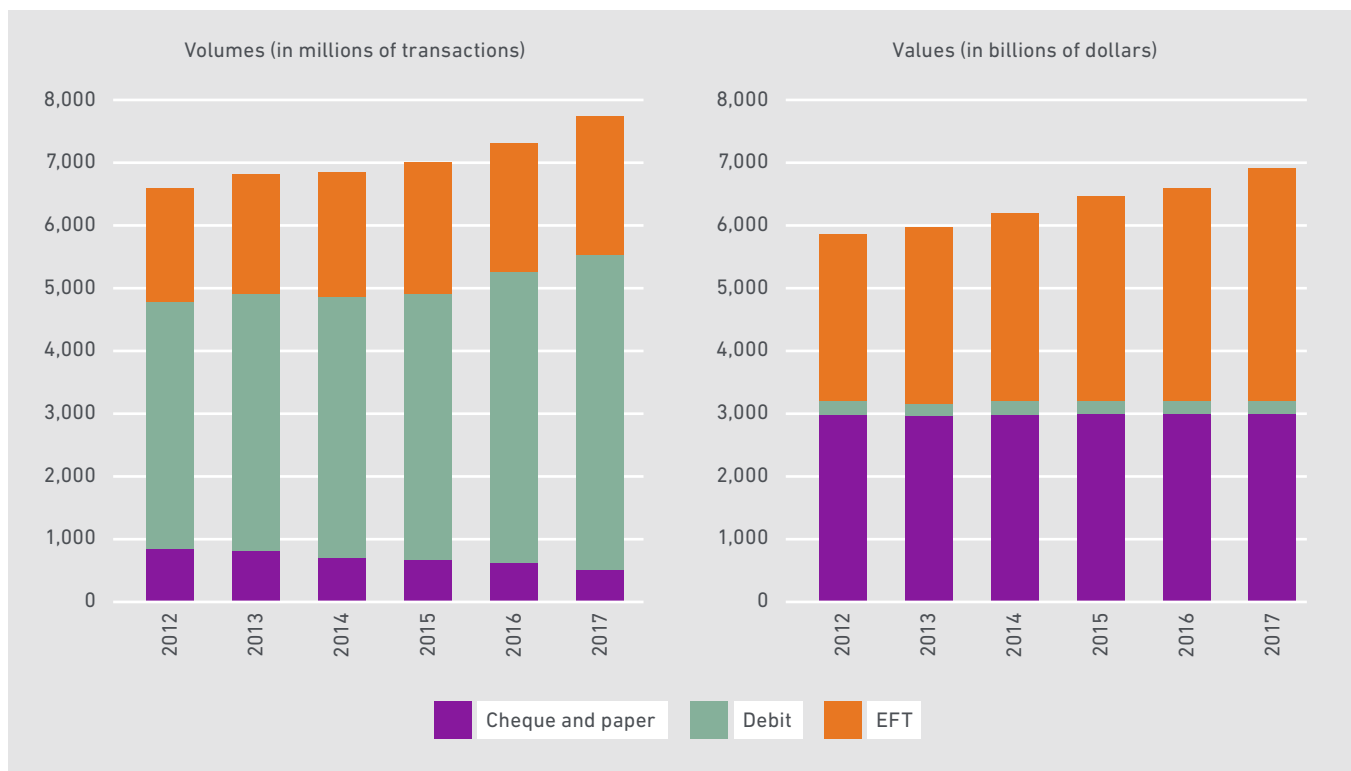
FINDINGS OVERVIEW

A. ACSS Data

The national retail clearing system, the ACSS, cleared and settled 7.67 billion payments worth \$6.96 trillion in 2017. The ACSS provides the cornerstone of our analysis as it provides over a third of the volume data and over two-thirds of the transaction value data used. The ACSS clears both paper-based and electronic payment items, through various payment streams, all of which are based on the use of deposit accounts. The transactions are mainly low-value, high-volume retail payments, which can be categorized into three main types: cheque and paper, debit and electronic funds transfers (EFT).²³ **Figure 1** provides an overview of how these categories have changed over the last five years, in volume and value terms.

In 2017, overall ACSS volume grew by 241 million payments while the value of transactions grew by \$352 billion (four per cent and five per cent growth, respectively). Electronic payments in the ACSS increased by one per cent in volume and value terms and paper-based payments, in turn, decreased by one per cent in both volume and value terms. AFT payments (pre-authorized debits and direct deposits) collectively continued to maintain the largest share of value, followed by cheques. In the coming sections, we build upon the ACSS data to include other consumer and business payments, in order to provide for a holistic view of payments in Canada.

Figure 1: ACSS Volumes and Values Historical Overview



²³ Debit includes ABM, POS and INTERAC Online; EFT includes AFT debits and credits, EDI and electronic remittances. For more details on the ACSS please see <https://www.payments.ca/about-us/our-systems-and-rules/retail-system>

B. Overall Canadian Payment Transaction Trends

In 2017, the Canadian payments market comprised of a total of 21.9 billion transactions worth \$9.7 trillion.²⁴ Since 2012, the total payments market (within our scope) increased by an average of one per cent in volume terms and an average of five per cent in terms of value. As such, the overall average transaction size also expanded by about 16 per cent since 2012. This higher growth in value can be partially attributed to favourable economic conditions and inflation over this period (the inflation rate was 1.3 per cent annually).²⁵ Technological advancements and the growth of electronic payments by non-bank service providers have also played a role, as they frequently require multiple transactions as part of their payments cycle, which serves to inflate transaction value more than volume.

Figures 2 and 3 show the total volume and value of the Canadian transactions compiled in 2012 and 2017. The figures also illustrate changing payment habits through a breakdown of the payment instruments, and their change over the five year period. Overall, the data illustrate the reshaping of payment instrument use through the impact of trends towards electronic payments and emerging digital payment channels.

Cash and cheque payments have been decreasing for a while, with cheques declining since the 1990s when debit cards became prevalent and cash being in decline since 2011 when contactless credit cards (and subsequently contactless debit cards) began to gain traction. We note a more rapid decline in cheque payments observed since 2014 that can be largely attributed to a new wave of digitization in Canadian payments.²⁶ Since 2012, cheque and paper items decreased by almost 30 per cent in terms of volume. Cash and ABM transaction volumes have also decreased by around 20 per cent each (in total) during this period. **Figure 2** shows cheque, ABM and cash instruments losing shares in the total transaction volume in 2017, compared to 2012.

In 2017, electronic payments grew to account for more than 65 per cent of the total annual volume and 57 per cent of the total annual value of transactions. In the last five years, **Figure 2** shows how electronic payments have grown mostly through debit, credit and prepaid payment volume growth, where each category grew by at least five per cent each year, on average. Debit cards showed robust growth in 2017, as contactless debit continued to grow in Canada. Regardless, paper forms of payment remain highly relevant, with cash still being the payment instrument with the most transaction volume and cheques still accounting for over three per cent of the total transaction volume.

The transaction value analysis offers a different view of the payment trends in motion. While debit and credit make up a large portion of the total overall volume, EFT and cheque transactions dominate the overall transaction value in Canada. EFT and cheques combine for over \$8.6 trillion and 89 per cent of the total transaction value. Credit cards make-up over twice the total value of transactions of debit cards (six per cent and three per cent, respectively), making credit cards a key focal point in our transaction environment analysis.

Figure 2: Payment Categories: Total Volume and Percentage of Total

	Total Volume (in millions) 2012	% of Total Volume 2012	Total Volume (in millions) 2017	% of Total Volume 2017
Cash	8,070	39.7%	6,499	29.8%
Debit	4,370	21.5%	5,794	26.5%
Credit Card	3,762	18.5%	4,994	22.9%
EFT	2,230	11%	2,742	12.6%
Cheques and Paper	1,016	5%	734	3.4%
ABM	695	3.4%	531	2.4%
Prepaid Cards	158	0.8%	290	1.3%
Online Transfers	41	0.2%	261	1.2%
TOTAL	20,343	100%	21,845	100%

²⁴ Please see **Appendix I** for a historical overview of the total volume and value.

²⁵ Bank of Canada inflation calculator figures from 2012 to 2017: Accessed on June 8, 2018. <http://www.bankofcanada.ca/rates/related/inflation-calculator/>

²⁶ *The Role of Automated Funds Transfer Payments in Canada's Declining Use of Cheques*. Available at: <https://www.payments.ca/sites/default/files/2015-role-aft-cheque-decline.pdf>

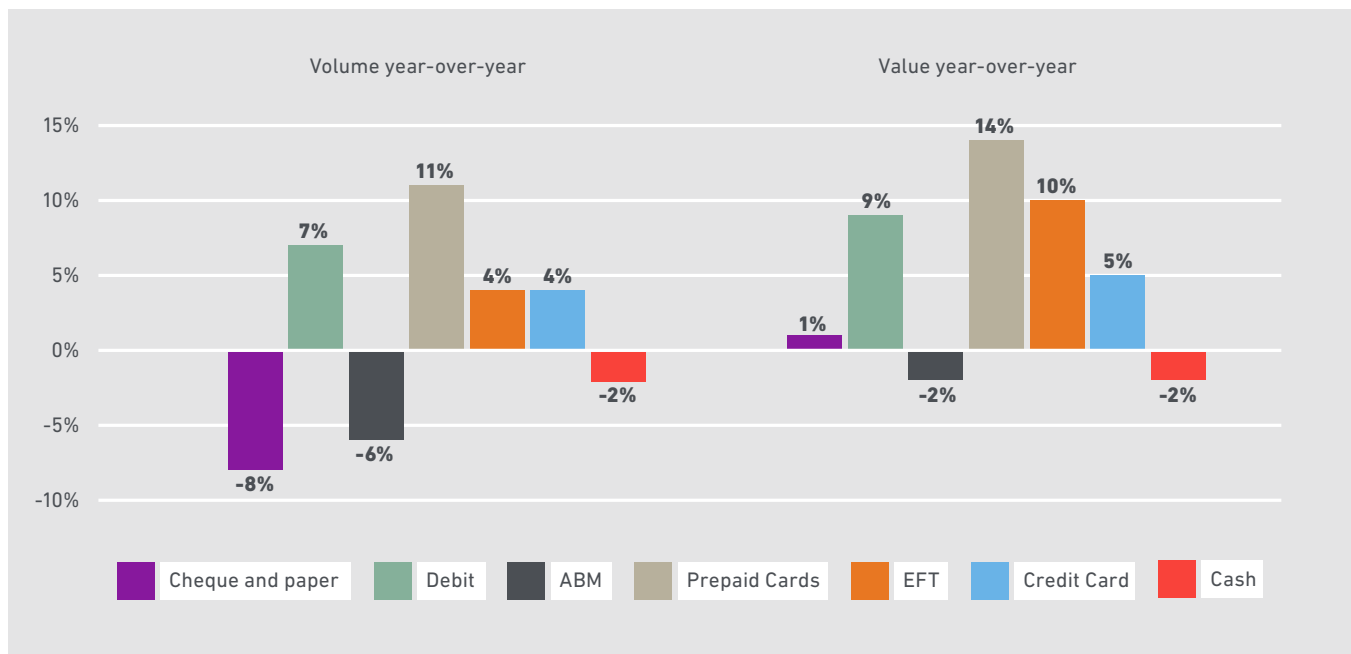
Figure 3: Payment Categories: Total Value and Percentage of Total

	Total Value (in \$millions) 2012	% of Total Value 2012	Total Value (in \$millions) 2017	% of Total Value 2017
EFT	3,190,552	40.9%	4,583,973	47.2%
Cheques and Paper	3,743,843	48%	4,030,697	41.5%
Credit Card	422,339	5.4%	554,268	5.7%
Debit	195,206	2.5%	246,499	2.5%
Cash	145,017	1.9%	113,910	1.2%
Online Transfers	14,295	0.2%	93,513	1.0%
ABM	80,758	1%	70,001	0.7%
Prepaid Cards	10,798	0.1%	21,990	0.2%
TOTAL	7,802,808	100%	9,714,852	100%

C. Year-Over-Year 2017

In 2017, we observe mostly a continuation of the longer-term trends set in motion since 2012.²⁷ First, cheque and paper item volumes fell by eight per cent in 2017, outpacing the five-year average of six per cent, indicating cheque volume decline is accelerating (see **Figure 4**). Meanwhile, electronic payments thrived with payment segments such as online transfers growing by 48 per cent.²⁸ In addition, payment cards benefitted from emerging channel growth, with credit cards and prepaid expanding by four per cent and 11 per cent respectively, over their 2016 volumes. Debit card use also picked up momentum, growing by seven per cent in 2017.

Figure 4: Year-Over-Year Growth Rates for Transaction Volume and Value



27 Please see **Appendix I** for long-term payment instrument average growth rate charts.

28 Online transfers are not depicted in **Figure 4** due to their large growth rates in comparison to the other payment methods. Online transfers maintained their growth pace in 2017 at 48 per cent and 36 per cent in volume and value terms, respectively.

PAYMENT ENVIRONMENT AND CHANNEL ANALYSIS

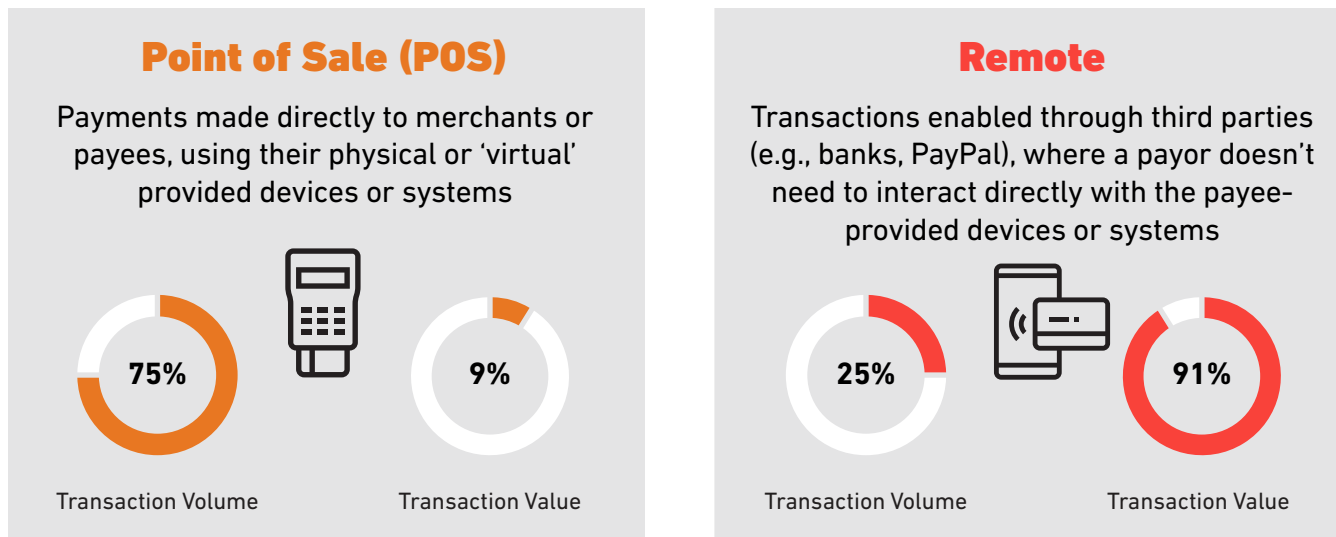
The trend drivers

To better explain the payment trends discussed above, we turn our attention to the payment environments and channels influencing Canadian payment habits. Canadians conduct payments in two main transaction environments, depending on whether they are in close proximity to their intended payees or not. Each environment involves different use cases with distinct payment options.

The first environment includes transactions that have traditionally taken place with close proximity between the payor and payee, or what has commonly been called the POS (point-of-sale, or point-of-service). Today, the POS involves transactions that take place in physical stores or via virtual merchant locations, including online store fronts and in-app commerce. POS instruments include cash, prepaid, debit and credit card transactions, which combine to account for 75 per cent of the total Canadian volume, but only about nine per cent of the total transaction value. POS volume is high because it consists of mostly consumer-initiated payments for lower value shopping and commerce.

In contrast, the remote environment, uses financial institutions or payment service providers as intermediaries that accept payment instructions and move funds to payees through their services. So in essence, the remote environment includes all of the transactions that are not made at physical and virtual payee locations (i.e., via store fronts or payee provided apps). Remote transactions enable payors to initiate transactions virtually anywhere via cheques, EFT and online transfers (e-wallets and electronic P2P transactions). These transactions represent 91 per cent of the total Canadian transaction value, but only 25 per cent of the total volume. A major factor why remote transactions account for so much value is because remote transactions consist of many payments moving to and from commercial enterprises (e.g., businesses, non-profits) and the government for relatively large amounts.

Figure 5: The POS and Remote Transaction Environments



A. Proximity Transactions and the Evolving POS Environment

This section examines payment segments that are associated with POS environments. Our data indicate that, in 2017, there were a total of 16.5 billion POS payments worth over \$868 billion. **Figures 6 and 7** provide a historical overview of POS volume and value.

Overall, a key change in the POS is the growth of card based payments. The market research suggests that convenience and rewards are an important driving force behind this trend.²⁹ Transactions using prepaid, debit and credit cards are now easier, speedier, more available (in emerging channels), and in many cases, more rewarding than using cash. With the POS including e-Commerce transactions, it has become inclusive of many new payment channels. For example, in-app, game consoles, and smart speakers are providing new mediums to facilitate POS transactions. As these environments grow so does the use of card payments.

Cash

A number of trends are working against POS cash use, including changing preferences towards electronic payments, growing e-Commerce, and expanding contactless card use. More than one quarter of cash users indicate they have decreased their use of cash in the past year.³⁰ Despite the headwinds, in 2017, there were a total of 5.9 billion POS cash transactions, worth \$102.5 billion. In the 2017 data, cash was found to account for about 36 per cent of the total volume of all POS transactions, but only about 12 per cent of POS transaction value.

Cash declined by a relatively low rate in 2017 (by about two per cent), continuing a trend first observed in 2016. Prior to 2016, cash use was observed declining at a faster rate (five per cent annually, see **Figure 6**). Cash is being buoyed by the continued use by heavy users, including those that contribute to the underground economy.³¹ We define heavy cash users as those people that use cash for more than 50 per cent of their monthly purchases. On average, heavy cash users spend about \$180 in cash per month, and tend to be younger, lower income, and rural. The market research shows that 16 per cent of 18 to 24 year olds are heavy cash users in Canada.³² In addition, about 40 per cent are from rural and low income households (with less than \$19,000 in income). In terms of geography, the Canadian Prairies have the highest average cash use and the lowest credit and debit card ownership compared to the other provinces.³³

While cash use remains significant in many use cases, consumer preferences have evolved, impacting the traditional uses for cash. For example, cash use for transportation is down by nearly 20 per cent since 2012, as cards and mobile applications have become more prevalent for paying for buses and taxis. Consumers are also using about 20 per cent less cash for lower value food and coffee purchases (compared to 2012), and more debit and credit cards instead.³⁴

Debit cards versus credit cards

Debit card use at the POS accelerated in 2017. Debit card transaction volume grew by seven per cent while debit transaction value grew by over nine per cent. At the same time, credit card growth was somewhat muted in 2017, at about five per cent in both value and volume terms, down from its long-term seven per cent average growth rate. This has enabled debit cards to build a volume edge over credit cards of over one billion POS transactions (5.8 vs. 4.5 billion transactions, respectively). Credit cards, however, continued to thrive at the POS, accounting for about 60 per cent of the total value of POS transactions. The value of POS credit card transactions was about \$500 billion in 2017, nearly double the value of debit card transactions, and more than all of the other payment instruments combined. Fees from POS transactions tend to be based on the value of POS transactions, which helps to explain why merchant groups remain unsatisfied with current credit card transaction fee regulations.³⁵ **Figure 7** shows credit cards' command of POS in transaction value.

29 2017 Personal Cardholder Syndicated Survey (PCS), Ipsos 2018. The PCS data show that respondents ranked credit and debit cards first and second in terms of convenience and rewards.

30 TSI Canadian Consumer Payments Survey, TSI 2018.

31 Cash is one of the main contributors to the underground economy, which was estimated to be worth \$51.6 billion in 2016 by Statistics Canada. The report states that three industries accounted for more than half of underground economic activity: residential construction (26.6%), retail trade (13.5%) and accommodation and food services (12.1%). For more information on the underground economy, please see <https://www150.statcan.gc.ca/n1/daily-quotidien/181012/dq181012a-eng.htm>

32 2017 Personal Cardholder Syndicated Survey (PCS), Ipsos 2018.

33 The Prairies include Alberta, Saskatchewan, and Manitoba.

34 2017 Personal Cardholder Syndicated Survey (PCS), Ipsos 2018.

35 Globe and Mail, accessed on August 31, 2018: <https://www.theglobeandmail.com/business/article-retail-council-of-canada-underwhelmed-by-reduction-in-credit-card/>



Canadian credit card dominance is attributable to a combination of high credit card ownership, commercial credit card transaction growth, rewards, and credit card pre-eminence in the expanding e-Commerce space. Credit card ownership in Canada is higher than most other countries, with about 90 per cent of Canadians owning credit cards (compared to 70 per cent in the US and Europe and only 60 per cent in the UK).³⁶ Credit card use by commercial entities, including businesses and various levels of government, is a notable source of credit card growth. Canadian businesses' preference for credit cards is ascending, as businesses are increasingly being offered similar levels of rewards and benefits that credit cards have traditionally offered consumers.

Rewards are paramount across all credit card users, as 84 per cent of card holders have a credit card that provides some form of reward.³⁷ Canadians are highly motivated by the relatively generous rewards provided by credit cards, which are owed in large part to the high interchange fees.³⁸ Further, rewards also encourage consumers to use their credit cards for larger value purchases than debit cards, where the average transaction size of credit card transactions is much higher than debit cards (\$111 and \$43 respectively). The market research shows that convenience and rewards have helped to create a growing segment of heavy credit card users. About half of credit card users are heavy users, or people that use credit cards for more than 50 per cent of their monthly purchases. Rewards are being best leveraged by heavy credit card users, where nearly all have a rewards credit cards and most tend to pay their monthly balances in full each month.³⁹

Another boost to credit card use is the transition of more commerce from physical store locations to e-Commerce. Credit card company payment products dominate in all of the e-Commerce channels, a topic we cover below. Despite the challenges that credit cards present to debit cards, Canada's unique combination of a domestic debit card brand for physical POS and growing use of credit card brand debit for e-Commerce, has enabled a relatively high overall debit card use compared to other countries (Please see **Featured Analysis B**). Debit card use is also enjoying an upswing in physical POS environments due to contactless card payments, which are discussed below.

Figure 6: POS Volume (in Millions)

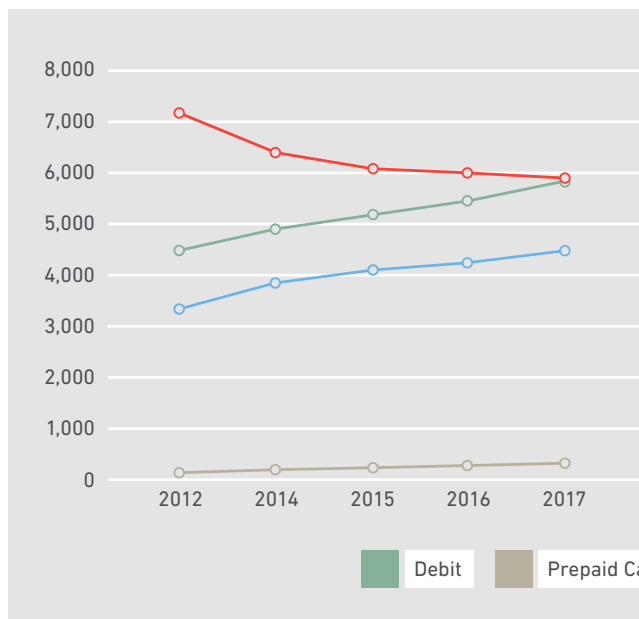
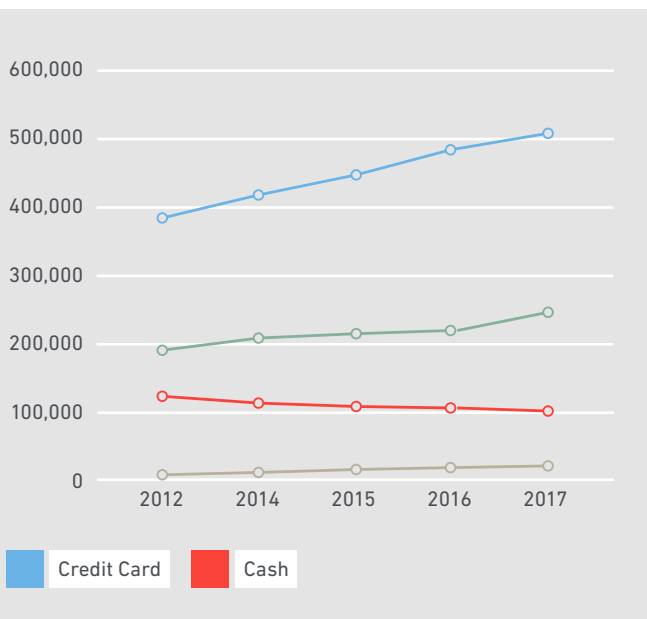


Figure 7: POS Value (in \$Millions)



³⁶ Canadian Payment Methods and Trends: 2017. Payments Canada Discussion Paper No.8, Dec. 2017, pg. 10.

³⁷ Canadian Payment Methods and Trends: 2017. Payments Canada Discussion Paper No.8, Dec. 2017, pg. 10.

³⁸ Ibid.

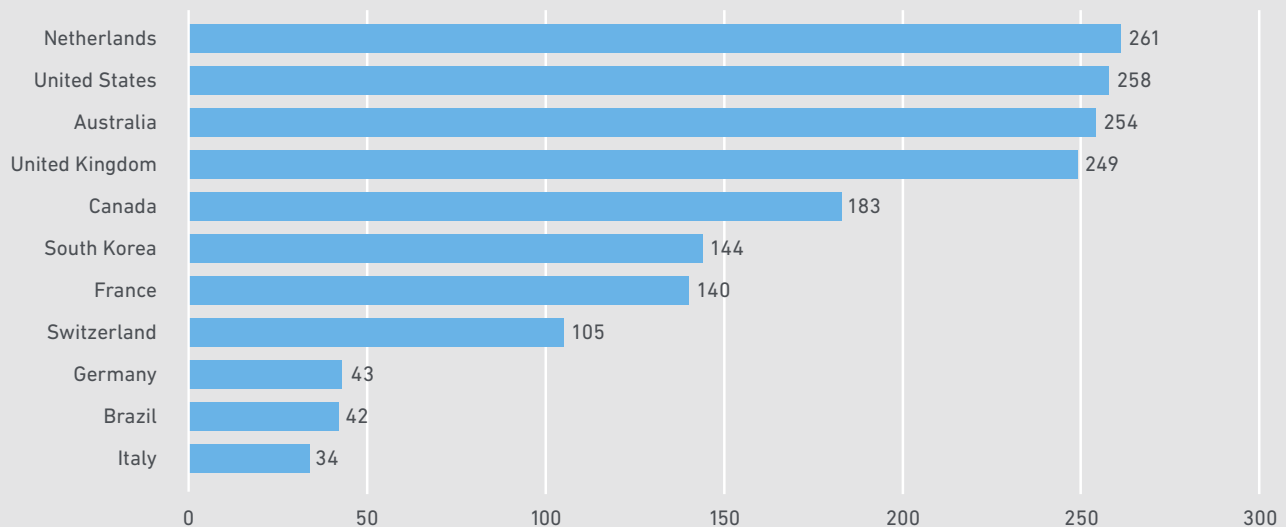
³⁹ More than nine out of 10 heavy credit card users indicated they had a rewards card and that they pay off their full balances each month. In comparison, only 50 per cent of light and medium credit card users pay off their balances each month. 2017 Personal Cardholder Syndicated Survey (PCS), Ipsos 2018.

DEBIT CARD USE AROUND THE WORLD

By Zheren Li, Payments Canada

Payment card usage around the world is growing as payment habits shift towards more online and contactless card-based payment methods. Canada has been described as one of the most cashless societies in the world, due mostly to its use of card payments, and its near universal consumer debit card ownership (about 94 per cent).⁴⁰ However, Canada is actually in the middle of the pack in terms of debit transaction volume per capita relative to other CPMI countries, averaging about 183 transactions per person.⁴¹ The Netherlands, the United States, and Australia lead the CPMI countries in debit transactions where there are, on average, nearly 80 more transactions per consumer than in Canada (see **Figure 1**). The main reason Canada appears to lag is that it is a global leader in credit card use, which competes in most Canadians' wallets with the use of their debit cards.

Figure 1: Debit Card Volume per Capita, 2016



Source: Statistics on payments, clearing and settlement systems in the CPMI countries, Figures for 2016

Featured Analysis B continues...

⁴⁰ 2017 Personal Cardholder Syndicated Survey (PCS), Ipsos 2018.

⁴¹ Committee on Payments and Market Infrastructures (CPMI) countries that serve as a forum for central bank cooperation in related oversight, policy and operational matters. Statistics on payment, clearing and settlement systems for CPMI countries, Figures for 2016. December 2017. Available at: <https://www.bis.org/cpmi/publ/d172.pdf>

Use of domestic vs. international debit card schemes

Debit card schemes can be either domestically or internationally based. Domestic debit schemes operate in a single country or jurisdiction providing a local debit card brand and service. International debit card schemes are typically provided through either Visa or Mastercard. Domestic debit card providers exist in other countries, including the U.S. (NYCE and Star), France (Carte Bleue), Australia (eftpos Australia), and Germany (Girocard). In a number of these countries, the domestic debit schemes compete with Visa and Mastercard debit to be offered by banks and card issuers (e.g., U.S. and Germany). In other countries, domestic debit card schemes were phased-out, giving way to only Visa and Mastercard branded debit schemes (e.g., the UK, Netherlands, and Finland). Canada is fairly unique in its use of its domestic debit scheme. INTERAC is used almost exclusively for physical merchant POS payments, while online debit transactions are dominated by Visa and Mastercard branded debit.⁴²

Contactless debit

Another contributing factor to increasing global debit card use is the “tap-to-pay” or contactless debit card feature. In recent years, contactless debit usage flourished as contactless card issuance grew, and consumers recognized the convenience of contactless. According to our recent survey, nearly 50 per cent of Canadian consumer debit transactions were performed using contactless.⁴³ This suggests Canada is ahead of other mature debit contactless markets, such as the U.K. and Australia, where contactless has grown to account for over 30 per cent of debit transactions.⁴⁴

E-commerce debit transactions

Some countries have high use of debit cards in e-Commerce transactions. For example, in the UK, debit cards accounted for 25 per cent of the volume and nearly 40 per cent of value of e-Commerce transactions.⁴⁵ Similarly, in Australia, approximately 20 per cent of online purchases were made using debit cards.⁴⁶ Canada, in comparison, only makes about ten per cent of online purchases using debit cards or INTERAC Online debit (in terms of transaction value), of which, two thirds is attributable to Visa and Mastercard debit payment products.

Real-time (RT) payments

Payments routed through RT payment systems need not be bound to domestic or international card networks or schemes, and present an alternative for using deposit accounts for POS purchases. In general, RT payment systems are like debit cards, in that RT systems leverage deposit accounts for payment funds. However, RT systems can offer a significant advantage over card networks, in providing faster funds availability to merchants.⁴⁷ This has prompted keen interest by merchants in some schemes, especially where merchants have been able to offer discounts or incentives for using RT payments. This has been particularly successful in e-Commerce transactions. Some examples include, in the U.K. (Paym and Zapp), Netherlands (iDEAL), Denmark (MobilePay and Swipp), and China (Alipay and WeChat Pay), which are all successful schemes that leverage RT and an e-Commerce platforms. As more of the POS environment transitions to e-Commerce, the potential opportunity for RT systems to offer alternatives to payment card networks is expanding.

Nearly 50 per cent of Canadian consumer debit transactions were performed using contactless.

⁴² This dichotomy was largely created by a regulatory intervention called the Code of Conduct for the Credit and Debit Card Industry, which has served, among other things, to preserve INTERAC IDP, as Canada’s domestic provider of POS debit. Requirements on co-badging also enabled Visa and MasterCard debit to take hold for e-Commerce though.

⁴³ Leger Marketing/Payments Canada. 2018 Canadian Consumer Payments and Transactions Survey, July, 2018

⁴⁴ The UK Cards Association. Debit Card Report - December 2016 to February 2017. Available at: http://www.theukcardsassociation.org.uk/wm_documents/Debit%20Card%20Report%20-%20December%202016%20to%20February%202017.pdf and Doyle et al. 2017.

How Australians Pay: Evidence from the 2016 Consumer Payments Survey. Available at: <https://www.rba.gov.au/publications/rdp/2017/pdf/rdp2017-04.pdf>

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Card networks and schemes availability of merchant funds can vary between one to 30 business days depending on a number of factors. RT payments offer an instant, interbank electronic fund transfer, enabling the user to make quicker electronic payments or transfers using alternative platforms.

Contactless

Contactless transactions are defined as using a payment card or mobile device tap to initiate a payment through a POS reader (in physical merchant locations). Below, we discuss a subset of the credit and debit card figures presented earlier in the paper. In 2017, the number of contactless transactions increased significantly, to almost 3.2 billion transactions worth \$104 billion. This represents a 55 per cent increase over 2016, in both volume and value terms. **Figure 8** illustrates the remarkable growth of contactless transactions in Canada. The benefits of contactless payments have become clear, with more than four out of ten contactless card users saying they use contactless payments wherever they are accepted.⁴⁸ We estimate that debit card contactless volume overtook credit contactless volume in 2017, by a slight margin. As such, contactless is clearly a key driver of the recent resurgence in debit card use. Credit cards maintain a distinct advantage in contactless transaction value, where the average contactless transaction is \$50, compared to an average \$18 for debit.

With the recent rate of cash decline slowing, most of the contactless growth is coming at the expense of chip-and-PIN transactions. Indeed, the data show that contactless grew to account for about 29 per cent of all POS card payments in 2017 (see **Figure 9**). This is up from only seven per cent in 2014. In terms of use cases, contactless cards are most frequently used at grocery stores or supermarkets, pharmacies/drug stores, and gas stations.⁴⁹ Other use cases include coffee shops and quick serve restaurants, which tend to be lower in value but higher in transaction volume. Mobile contactless is providing another method to make contactless payments in Canada, however the market research thus far points to a slow uptake. In 2017, about four per cent of cardholders indicated that they had used their mobile device for a contactless payment.⁵⁰ A likely explanation lies in the perceptions of security for mobile contactless, where only 13 per cent perceive mobile contactless payments as being secure.⁵¹ Forty-two per cent of younger Canadians (those aged 18-34) reported using mobile contactless in 2017, providing a bright spot for mobile contactless use.

Figure 8: Contactless Volume and Value (in Millions and \$Millions)

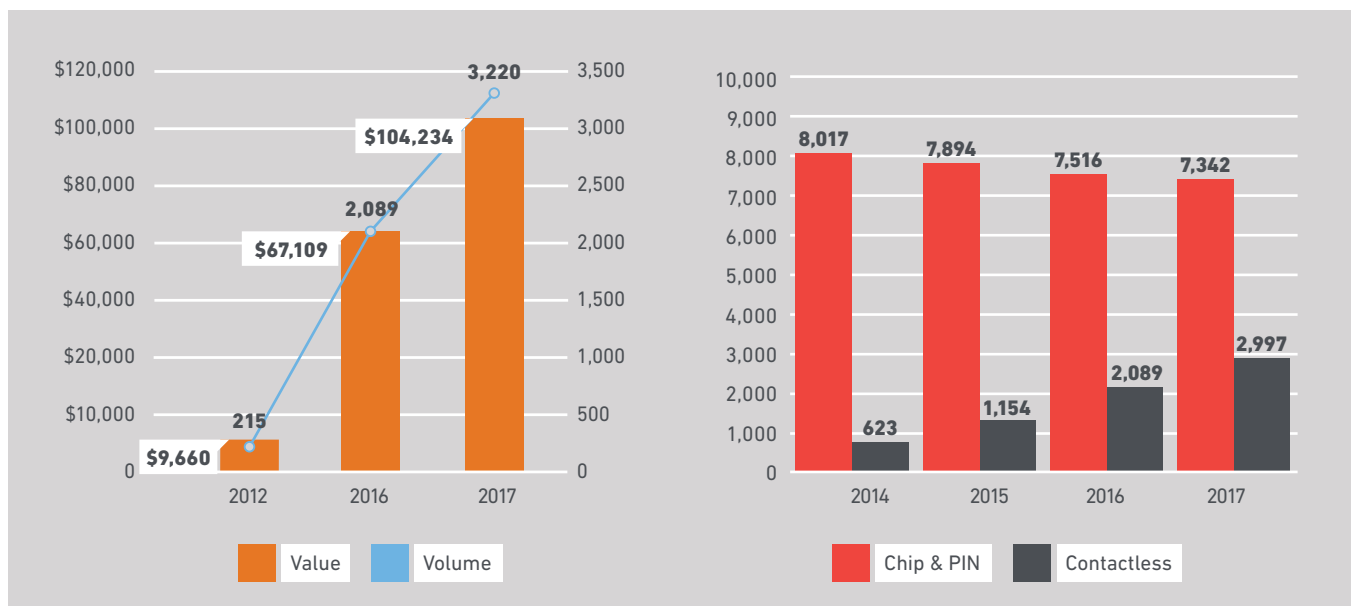
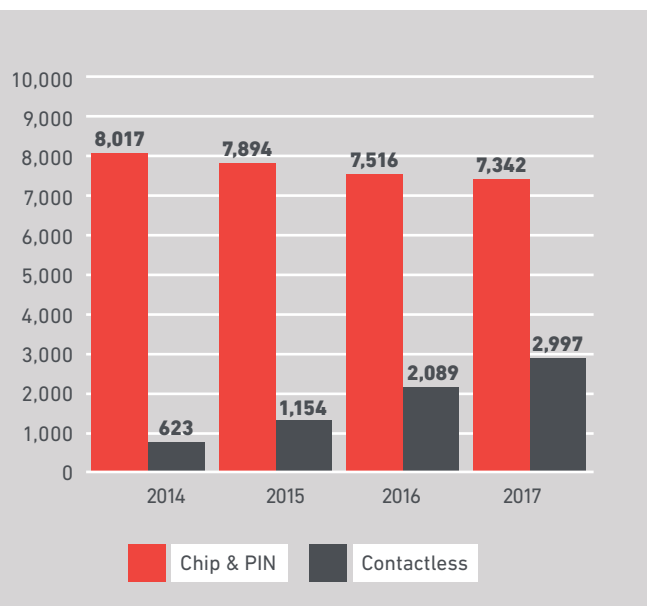


Figure 9: Total POS Card Volume: PIN vs Contactless



48 TSI Canadian Consumer Payments Survey, TSI 2018.

49 Ibid.

50 2017 Personal Cardholder Syndicated Survey (PCS), Ipsos 2018.

51 Ibid.

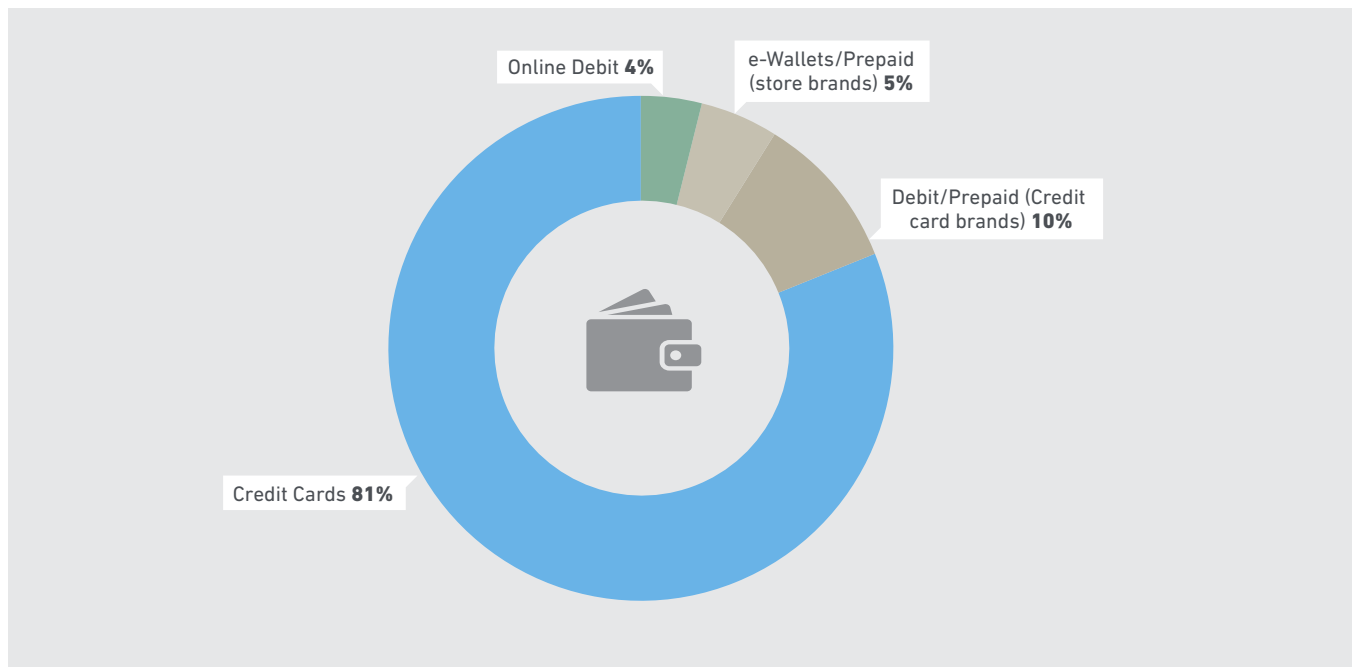
The e-commerce channel dominated by credit cards rails in Canada

E-Commerce is defined as the use of web-based store fronts and applications to procure goods (including digital items) and services from businesses. E-commerce involves the purchase of goods and services online. This may be done through a computer, tablet or mobile device and includes online (web-based) and in-app purchases. In 2017, we estimate that e-Commerce accounted for about \$118 billion in Canadian transactions, accounting for nearly 14 per cent of all the POS transaction value. Our analysis indicates that the majority of e-Commerce value (about two-thirds) is attributable to purchases by commercial entities.

In 2017, transactions that used the payment rails provided by credit card companies (credit card branded payment products) dominated the e-Commerce space, accounting for over 90 per cent of the volume and value of e-Commerce transactions (see **Figure 10**). Our estimates, based on market research data show about 80 per cent of e-Commerce transactions were directly credit card based, while another 10 per cent were based on debit or prepaid cards using mostly the Visa and Mastercard payment networks. Alternatively, INTERAC Online debits, e-wallet transactions (e.g., PayPal) and online store branded prepaid, combined for about 10 per cent of Canadian e-Commerce transactions.

A critical area for e-Commerce growth is through mobile online and in-app transactions.⁵² These transactions take place mostly using phones and tablets and often require the use of application store fronts (e.g., the Apple or Google App Stores). In this environment a “card on file” payment scheme is leveraged to complete transactions, which is done by loading credit card information that is stored for future payments. In-app transactions take place almost entirely via credit card payment products in Canada today, where we find about 95 per cent of transactions use credit card company rails for credit, debit, or prepaid transactions (the remainder uses store brand prepaid cards particular to each app store).

Figure 10: e-Commerce Payment Instrument Use



⁵² 28 per cent of in-app transactions in our sample were completed by those aged 18-34, completing, on average, about five transactions on a monthly basis. *Payments Canada/Leger Marketing 2018 Canadian Consumer Payment and Transactions Survey*

THE ROLE OF REWARDS AND LOYALTY PROGRAMS IN PAYMENTS

By Colin MacIntyre, Payments Canada

Loyalty and rewards programs have been embraced by Canadians. Past market research suggests that around 99 per cent of Canadians belong to at least one loyalty or rewards program.⁵³ In addition, 84 per cent indicate that their primary credit card offers them some form of reward. While rewards have been traditionally centered around travel points, today's rewards might provide cash back, merchandise, gift cards, or even charitable donations. As such, these programs can not only influence how we pay, but also where and what we purchase. With so many of Canada's POS transactions being influenced by rewards, we engaged industry experts to develop an overview of the processes and players that enable rewards and loyalty programs in Canada.

Canada's rewards and loyalty programs

Perhaps the most prevalent form of loyalty programs in Canada are proprietary programs maintained privately by businesses. For example, Sobeys, Esso, Budget Rent a Car, and Toyota all have their own brand of loyalty programs. These businesses are generally seeking to increase sales and learn more about their customers. Some businesses have been able to leverage their loyalty programs to differentiate their business in significant ways, such as Canadian Tire's money program (known today as Triangle Rewards) and Starbucks Rewards' innovative use of mobile devices.

Canada also has thriving broader loyalty programs that involve a coalition of partners and participants. These programs bring together groups of businesses and merchants that help to build collective loyalty through shared user loyalty programs. Some well-known examples include Air Miles, Aeroplan, Scene and PC Optimum.

Featured Analysis C continues...

99 per cent of Canadians belong to at least **one** loyalty or rewards program.

53 Please see: <https://www.cbc.ca/news/business/why-points-just-aren-t-so-rewarding-don-pittis-1.3035628>, accessed on Sept. 19, 2018.

Finally, there are national card based rewards or loyalty programs that depend upon a number of actors, including financial institutions, card issuers, and program providers. These actors work together to offer rewards programs primarily built around the use of credit cards. Credit card rewards programs enable high rewards for cardholders that serve to stimulate use and participation. Credit card loyalty programs are funded primarily by interchange fees that are, to a certain extent, borne by the businesses that accept credit cards. Financial institutions sometimes act as both an issuer and loyalty program, such as for RBC Avion or CIBC Aventura. Other financial institutions form strategic partnerships with existing loyalty programs, such as Scotiabank and Scene, BMO and Air Miles, and both TD and CIBC with Aeroplan.

Rewards points are a recorded pool of value that is typically not denominated in Canadian dollars. Program providers are responsible for the cost of the scheme point redemption (flights, merchandise, etc.), and have a source of capital available from the accumulated rewards stored across their user base. The stored funds supporting loyalty programs can offer providers a useful asset and are not subject to the same liquidity requirements in the Bank Act governing deposit taking institutions.⁵⁴ As such, each reward program seeks to find a balance between the immediacy of the reward payout to users, and the value of the points value accumulated.

In addition, loyalty programs provide an additional layer of data on consumer spending habits that can be used in conjunction with card transaction data to provide for deep consumer insights.⁵⁵ While, improved customer data has helped to add value to loyalty program providers, Canadians' interest in rewards credit cards has grown steadily over the past 10 years.⁵⁶ In 2017, there are more rewards cards in use than ever before and most Canadians have demonstrated a propensity to take advantage of rewards cards by using them frequently and paying their monthly balances off.⁵⁷ Together, these trends ensure that rewards and loyalty programs will continue to influence the purchasing decisions and payment behaviour of Canadians well into the foreseeable future.

Canadians' interest in rewards credit cards has grown steadily over the past 10 years.

⁵⁴ Please see: <http://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gl-ld/Pages/b6.aspx?pedisable=true>, accessed on Sept. 21, 2018.

⁵⁵ Please see: <https://www.theguardian.com/money/2013/jun/08/supermarkets-get-your-data>, accessed on Sept. 21, 2018.

⁵⁶ 2017 Personal Cardholder Syndicated Survey (PCS), Ipsos 2018

⁵⁷ Canadian Payment Methods and Trends (2017), Payments Canada, 2018, pg. 10

B. The Remote Transaction Environment

The following sections discuss remote transactions. Remote transactions include all transactions that do not involve a POS device or application. In the remote environment, payors use a third party, such as a financial institution to route payments to payees via cheques, AFT and other electronic means. Remote transactions serve use cases such as bill payments, person-to-person (P2P) payments and business-to-business (B2B) transactions. In 2017, there were a total of 5.4 billion remote transactions worth \$8.9 trillion. Cheques and EFT dominated the remote transaction environment in 2017, but credit cards and online transfers had strong growth.

Cheque and paper item use waning

In 2017, cheque and paper item volume declined by eight per cent, compared to 2016. As a result, there were 282 million less cheques written in 2017 than in 2016. Consumer and business cheque use declined at similar levels (eight per cent and six per cent, respectively). Less cheques are being used for payments as Canadians embrace more EFT, remote credit card, and online transfer payments. In 2017, Canadian cheque imaging continued its growth, where nearly half of all of the cheques exchanged between financial institutions were images. Given the downward pressure in cheque use, it remains to be seen if cheque imaging offers any sort of countervailing force to slow cheque decline.

Cheque use remains a pillar of remote transactions though, where cheques represent over 45 per cent of the overall remote transaction value. Despite the decline in cheque volume, the total value of cheque transactions continues to grow in Canada. In 2017, the total value of cheques grew by another one per cent, keeping pace with the five year average of 1.5 per cent annual value growth. There are less cheques being written, but the remaining cheques are being written for increasingly higher amounts. In 2017, the average amount of a cheque was up to about \$5,491, almost 50 per cent higher than in 2012 (\$3,685). Here we find the trend being driven much more by commercial cheque use than consumer cheque use.

EFT facilitating more electronic payments

EFT includes remote transactions made through deposit accounts held at Canadian financial institutions, including direct deposits, electronic remittances, pre-authorized debits and other online bill payment transactions (i.e. AFT credits, AFT debits, and EDI). In 2017, there were a total of 2.7 billion EFT transactions worth \$4.6 trillion. EFT transactions dominate remote transactions, as the leading payment type in both volume and value terms.

Overall, EFT transactions bounced back in 2017, after a temporary lull observed in 2016, which had seen growth dramatically off the multi-year trends. The 2017 rebound included four per cent EFT volume growth and expansive 10 per cent growth in EFT transaction value. The growth has placed EFT comfortably ahead of cheque use in both volume and value of remote transactions. 2017 EFT growth was found with both commercial entities and consumers. EFT use remains vastly ahead of the other remote transactions, but online transfers and remote credit card transactions offer alternatives. For example, INTERAC e-Transfers are now being offered for more business payments, small business batch payments and for payroll.



EFT BREAKDOWN – A CLOSER LOOK

By Michael Tompkins and Viktoria Galociova, Payments Canada

EFT is a category of payments that includes AFT credits, AFT debits, EDI and electronic remittances. **Figure 1** provides a description of the EFT payment instruments.

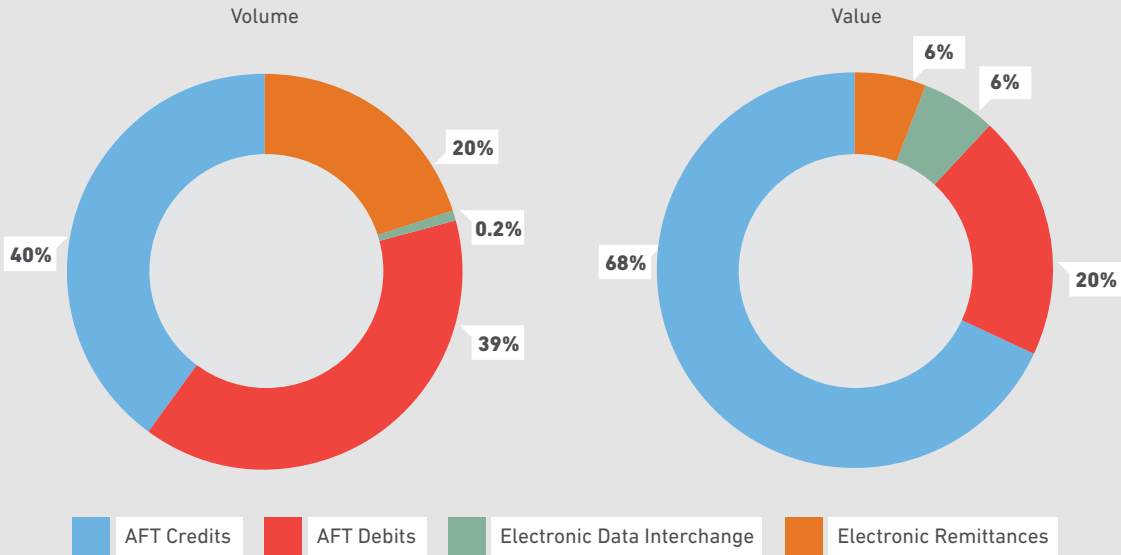
Figure 1: EFT Payment Instruments

AFT Credits	AFT credits represent a diverse set of transactions that involve direct deposit of credit transfers to accounts held at financial institutions. AFT credits provide the underlying transactions for common payments such as payroll, bill and invoice payments, business to consumer payments and account transfers.
AFT Debits	AFT debits are pre-authorized payments managed by agreements between payors and payees. A popular method for paying bills and subscriptions and for loan and mortgage payments.
EDI	EDI is mostly a specialized corporate payment message to facilitate a data rich direct payments. The standardized remittance information has proven useful for managing materials and transactions in complex supply chains, such as for manufacturing and medical materials.
Electronic Remittances	Electronic remittances use a common standard (based on EDI) and a special corporate identification system to route online bill payments to billers. Most commonly offered by larger volume billers, such as utilities and home service providers to ensure timely and accurate receipt of payments.

Featured Analysis D continues...

As can be seen in **Figure 2**, AFT credits constitute the largest share of EFT transactions (at 40 per cent volume and 68 per cent value).⁵⁸ AFT credits include government direct deposits, which in 2017, made up 27 per cent of the total AFT credit volume (and about nine per cent of the total AFT credit value). AFT debits make up the second largest part of EFT transactions, in both volume (39 per cent) and value (20 per cent) terms. EDI makes up only 0.2 per cent of the total EFT volume but six per cent of the total value. Finally, electronic remittances account for 20 per cent of the total EFT volume and six per cent of the total EFT value.

Figure 2: 2017 EFT Payment Instruments



Consumer versus commercial use of EFT

EFT is commonly used by both consumers and businesses to conduct remote transactions. However, the majority (over 70 per cent) of the volume of EFT transactions originate from commercial entities paying consumers or other businesses. Key commercial EFT streams include AFT debits and EDI for B2B payments, and AFT credits paid to consumers for payroll, disbursements, and benefit payments. In total, commercial entities initiate about 10 times the value of EFT transactions as consumers initiate.

Featured Analysis D continues...

58 The Role of Automated Funds Transfer Payments in Canada's Declining Use of Cheques. Available at: <https://www.payments.ca/sites/default/files/2015-role-aft-cheque-decline.pdf>

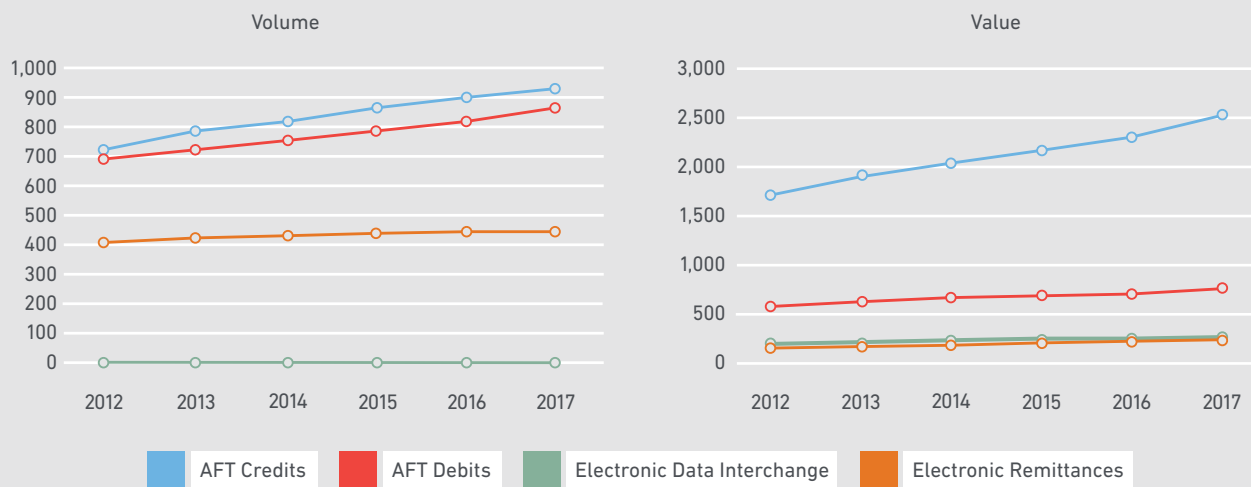
Consumers for their part, initiated about a third of all EFT transactions, or about 760 million transactions. Consumer EFT transactions are mostly electronic remittances to pay billers, which is mostly accomplished through online banking services. Consumers also use many AFT debits for automatic pre-authorized payments (commonly referred to as PADs), to pay for recurring bills and loan payments to financial institutions. According to the market research, 90 per cent of Canadians use EFT to pay for at least one routine household bill or expense each month.⁵⁹

Historical analysis

Figure 3 provides an overview of the extensive growth EFT has experienced over the past five years. Collectively, all of the EFT streams increased significantly since 2012 and have each served to contribute to the growth of the EFT category overall. Since 2012, the EFT payment category increased by 22 per cent and 49 per cent in volume and value terms, respectively.⁶⁰

On the volume side, we see that EDI experienced the highest growth in recent years, increasing by 42 per cent since 2012. AFT credits had 30 per cent growth over the period, making it the second fastest growing EFT type. In terms of value, electronic remittances grew the most at 53 per cent since 2012, followed by AFT credits at 47 per cent growth.

Figure 3: EFT Volume (in Millions) and Value (in \$Billions) Growth by Stream 2012-2017



90 per cent of Canadians use EFT to pay for at least one routine household bill or expense each month.

⁵⁹ Payments Canada/Leger Marketing 2018 Canadian Consumer Payment and Transactions Survey.

⁶⁰ Growing by an average of 4 per cent in volume and eight per cent in value, each year.

Online transfers

Online transfers include online e-wallet and electronic transactions initiated through online services and providers, which are either prefunded or linked to deposit accounts at financial institutions (e.g., INTERAC e-Transfers, some PayPal transactions, and Tilt). In 2017, online transfers only accounted for about one per cent of the total volume and value of Canadian transactions. However, online transfers are the fastest growing payment segment, growing by an average annual growth rate of 45 per cent in volume and 46 per cent in value terms since 2012.

In 2017, online transfers continued their remarkable growth expanding to 261 million transactions worth \$93.5 billion. Traditionally, online transfers have been mostly remote consumer transactions for P2P payments that have historically largely been accomplished through cash and cheques. However, in 2017, business use of online transfers became more firmly entrenched. Consumer and business use of online transfers are covered in-depth below.

INTERAC e-Transfers fared particularly well in 2017, dominating the online transfer payment segment in Canada, accounting for over 90 per cent of the volume and value. INTERAC e-Transfers have 7.4 million active users sending an average of three INTERAC e-Transfers each month. INTERAC e-Transfers serve mostly medium-value payments, with an average transaction size at \$382 and about two-thirds of transactions valued under \$200.⁶¹

Remote credit card transactions

Credit cards are predominantly used in POS environments. However, we find that about 10 per cent of all credit card transactions are used to pay bills, including memberships, subscriptions, insurance, and utilities (what we consider to be remote transactions). We infer that the vast majority of remote credit card transactions are consumer initiated, as most commercial credit card transactions would fall under our definition of POS (e.g., using online environments to book and pay for travel and transit and supplies and materials). The market research confirms that remote credit card transaction use has been showing healthy growth, with the percentage of cardholders using credit cards for recurring bill payments at 43 per cent in 2017 (up from 34 per cent in 2012).⁶² Our analysis indicates that much of this segment growth is coming at the expense of cheques (see **Figures 11 and 12**).

Figure 11: Remote Payments Volume (in Millions)

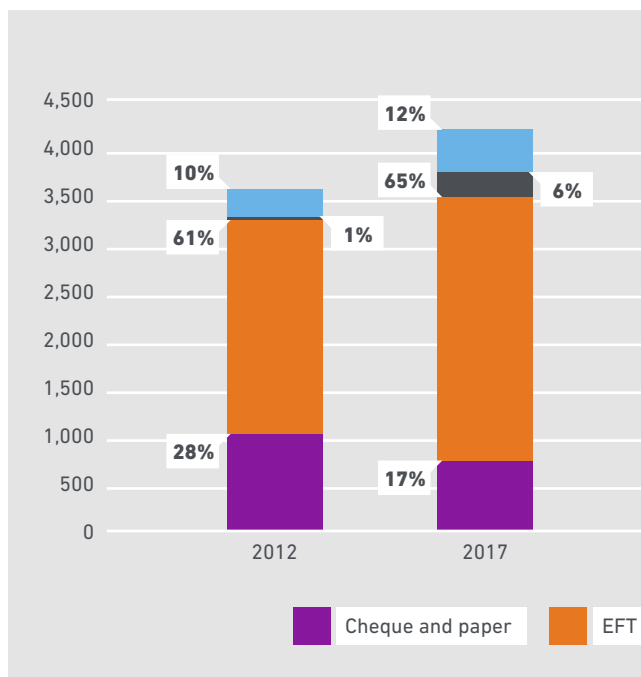
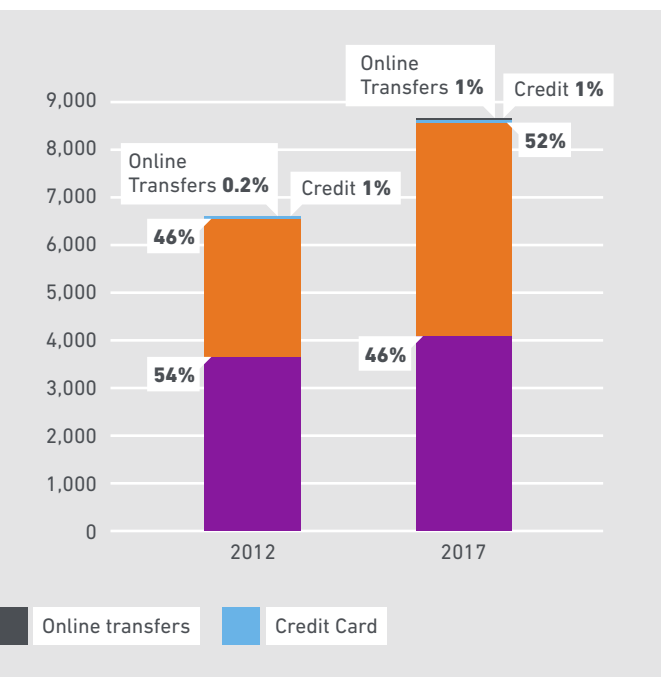


Figure 12: Remote Payments value (in \$Billions)



⁶¹ See: <https://www.newswire.ca/news-releases/INTERAC-e-transfer-platform-delivers-record-usage-in-2017-674811203.html>; accessed on July 17, 2018

⁶² Ipsos, 2017 Personal Cardholder Syndicated Study, 2018. Note: this references proprietary market research acquired by Payments Canada, please see **Appendix II A** for survey methodology.

Remote consumer transactions

In 2017, there were 1.6 billion consumer initiated remote transactions worth \$574 billion. EFT dominates the Canadian consumer remote transaction space comprising of about 50 per cent of all consumer remote transactions. Consumers opt to use EFT transactions to pay commercial entities often without even knowing it. For example, EFT is leveraged whenever consumers use their online/mobile banking services to pay their utilities or transfer funds to accounts held at other financial institutions. Similarly, most consumers are unaware that when they set up pre-authorized debits (using their deposit accounts) to pay federal taxes or for bills such as insurance or car payments they are also choosing to use EFT. According to our market research, four out of five recurring bill payments are completed using EFT.⁶³

All told, consumers made roughly 761 million EFT payments in 2017, which were valued at almost \$368 billion. While consumer EFT use is still down from its high (achieved in 2015), 2017 marked a year where EFT gained back some ground with consumers. Consumer EFT is most under pressure from the growing consumer use of remote credit card transactions for paying recurring monthly bills. Consumer remote credit card transactions grew by four per cent in 2017, to nearly 400 million transactions, worth \$44 billion. Canadian consumers have also been heavy adopters of online transfers, particularly INTERAC e-Transfers. In 2017, consumer online transfer use caught-up with consumer cheque use, where both payment segments represented about 14 per cent of the total consumer remote transactions. With all of the electronic remote transaction growth, consumer cheque use has declined precipitously since 2012. In 2017, there were only about 220 million consumer cheques, compared to about 360 million in 2012, a full 40 per cent decline.

On average, Canadians that use cheques, reported that they wrote two cheques per month, in 2017, worth \$1,574.⁶⁴ The market research suggests that older Canadians are responsible for most of the remaining consumer cheque volume, where 41 per cent of heavy cheque users are over the age of 55. The top two use cases for cheques payments are for rent and P2P payments.⁶⁵

Figure 13: Consumer Remote Transaction Volume (in Millions)

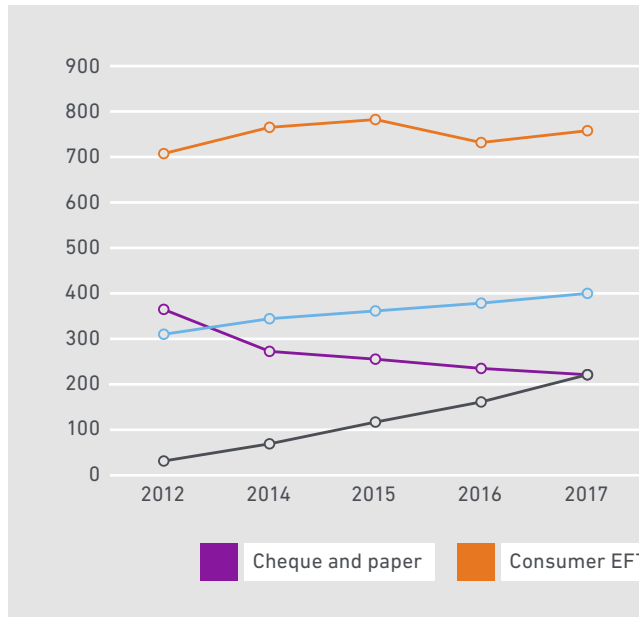
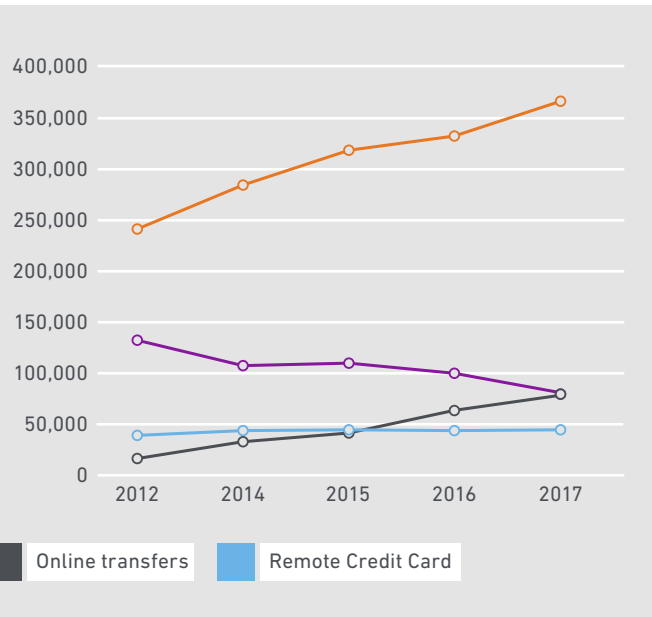


Figure 14: Consumer Remote Transaction Value (in \$Millions)



⁶³ Based on our estimates from the market survey research

⁶⁴ Payments Canada/Leger Marketing 2018 Canadian Consumer Payment and Transactions Survey

⁶⁵ Ibid.

Remote commercial transactions

On the commercial side, we see that EFT dominates the other remote payment segments by an even larger margin than consumer payments. Corporate entities, financial institutions, businesses and government agencies all rely on EFT transactions for their essential payments to staff and other businesses, making EFT a true pillar of digital payments in Canada. In 2017, there were more than 2.5 billion commercial remote transactions identified, worth about \$8.2 trillion. EFT payments have grown to account for almost 80 per cent of the total commercial remote transaction volume. On the value side, EFT moves about 52 per cent of the total remote commercial transaction value.

Cheques are closely behind EFT in remote transaction value, at about 48 per cent. We estimate that there were about 510 million commercial cheques written in 2017, worth about \$3.9 trillion. Despite the recent uptick in cheque decline, cheques remain an important payment instrument for certain commercial transactions, including business-to-business (B2B) payments and real estate transactions (for more details please see the Business Payments Section). Commercial cheque use is largely responsible for the observed growth in the overall total value of cheque payments, while cheque volume is in decline. The average commercial cheque value has grown by about 45 per cent since 2012.

Commercial use of credit cards and online transfers is significant but is well below the volumes and values of EFT and cheques, hence these segments are not charted in **Figures 15** and **16**. These segments are covered in our analysis on Canadian business transactions.

Figure 15: Commercial Remote Transaction Volume (in Millions)

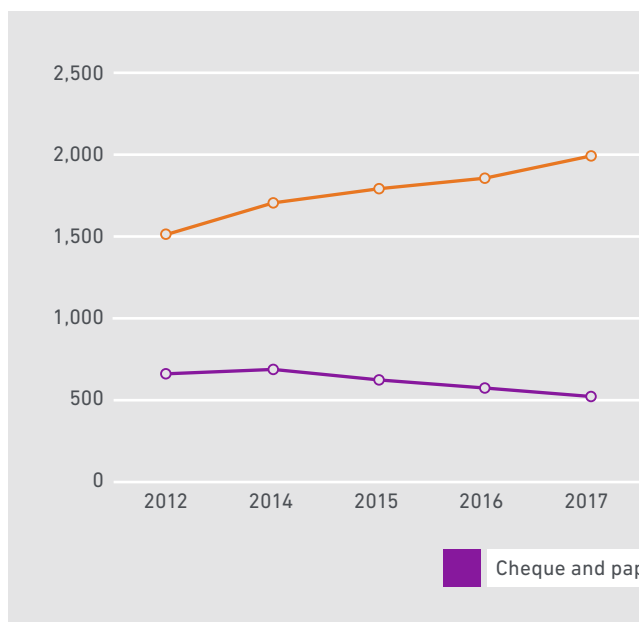
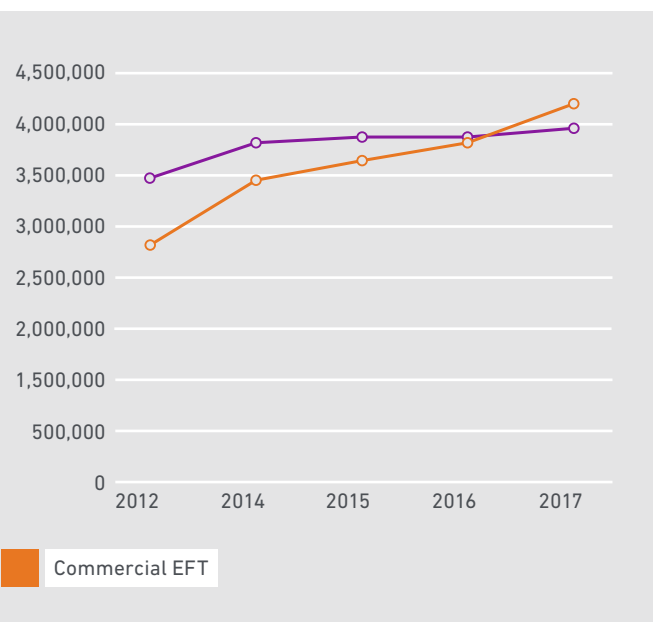


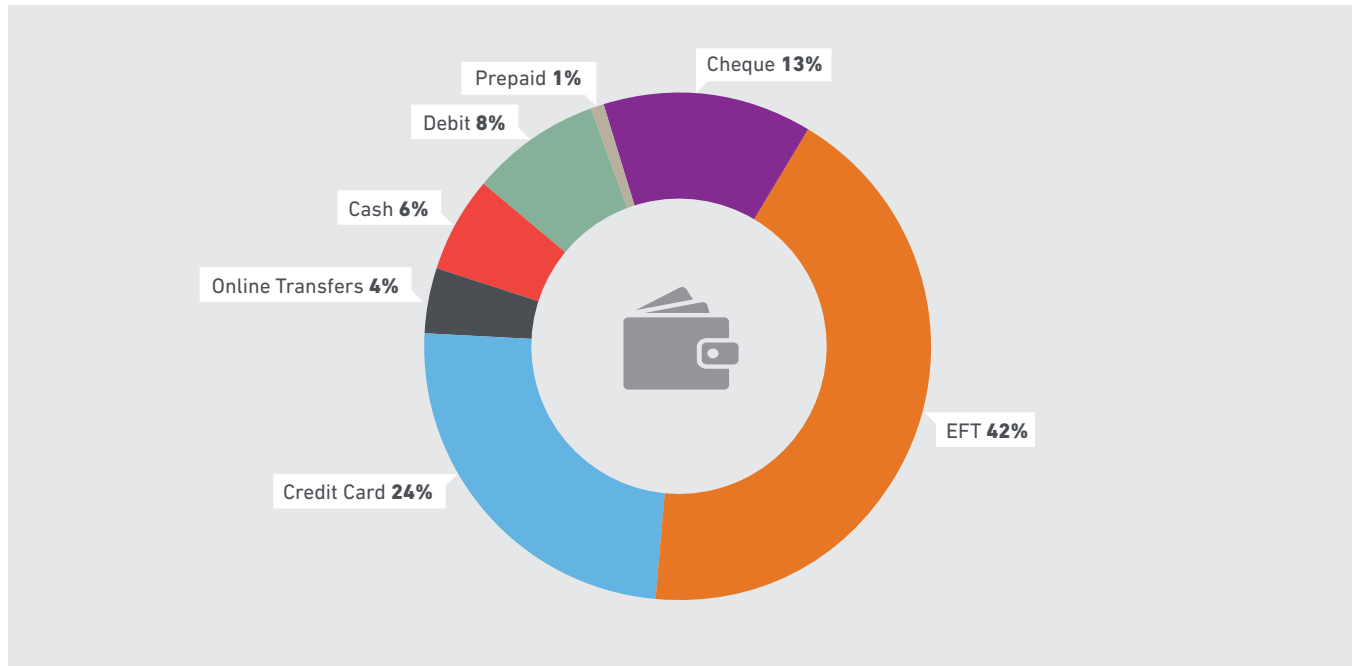
Figure 16: Commercial Remote Transaction Value (in \$Millions)



C. Business Payments

The analysis of commercial payments addresses all non-consumer payments, including those made by local, city, provincial, and federal levels of government. Government payments add large volumes of transactions (for example, the collection of taxes and fees and disbursing benefits and program payments). In this section we only look at business payments in order to focus on this distinct segment of commercial payment users. **Figure 17** provides an overview of the proportion of the total value of business expenditures via each payment segment. The market research highlights how Canadian businesses spent about \$6 trillion in 2017, primarily using three payment segments: EFT, cheques, and credit cards.⁶⁶

Figure 17: 2017 Business Payment Instrument Mix



The data show that Canadian businesses have made great strides away from the use of cash and cheques, but the use of these paper based instruments remains quite significant. We estimate that Canadian businesses spent about 20 per cent of their total expenditures using cash and cheques. EFT and credit cards combined to account for over 70 per cent of business expenditures. In the business space, credit cards can be seen as a disruptor, expanding by 150 per cent in transaction value over the past 10 years to capture nearly a quarter of all business expenditures.⁶⁷

As described above, innovation is a key driving force in the payments landscape today, which is impacting the way consumers pay. In a similar manner, businesses are also starting to alter their payment habits, as innovation has made electronic payments more appealing. Canada is also seeing a growing number of providers offering businesses payment services that enable digital payment sending and receiving. Whether it is through e-invoicing services that provide payment options for recipients (e.g., Zoho and Versapay) or payment initiation services (e.g., Telpay and Hyperwallet). These providers are giving more Canadian businesses options to expand their use of remote digital payments, which is facilitating more EFT and credit card transactions.

⁶⁶ The data include the total payments used by businesses, so it represents a combination of POS and remote transactions. RFI Group's Canada SME Banking and Payments Council and Canada Commercial Banking and Payments Council (RFI Group 2017).

⁶⁷ Comparing 2017 commercial charge and credit card data against 2007. *Passport Card Payments in Canada*, Euromonitor, (reports from 2011 and 2017).

These services are gaining momentum as businesses are demanding more electronic payment processes. From initiation to reconciliation, Canadian businesses are becoming more interested in making their payments processes easier and more efficient. In a recent survey, over half of businesses indicated that they spend too much time on payment processing activities (e.g., tracking and reconciliation) and for many businesses improving efficiencies has become their primary payments related objective.⁶⁸ Research shows that the move to modernized payment systems could help to enable significant efficiencies for Canadian businesses.⁶⁹

Business use of online transfers

Business use of online transfers was robust in 2017, making up a total of four per cent of all business expenditures. Further, our data indicates that business initiated online transfers grew to account for about 16 per cent of the total volume of online transfers. Clearly, service provider efforts to target business payment use cases are proving to be successful.⁷⁰ While businesses use a variety of providers for their online transfers, INTERAC e-Transfers are the most prevalent. Businesses are increasingly accepting INTERAC e-Transfers, and about 17 per cent of small-to-medium sized businesses (SMEs) sent INTERAC e-Transfers in 2017.⁷¹

Business cheque use

In 2017, both large corporations and SMEs reported cheques as their most commonly used payment method (57 per cent and 70 per cent, respectively). Businesses that use cheques were found to have lower annual revenues, fewer employees and longer business tenure, than businesses that do not use cheques.⁷² As such, reaching these older businesses with education and compelling payment alternatives may be a key to promoting future migration away from cheques.

Figure 18 provides the top five areas for business cheque use in 2017. Both SMEs and large corporations indicated payments to professional services as their top area for cheque use. Business cheque use is particularly strong for businesses making payments to government agencies (including for tax purposes), rent payments and payments to other businesses for goods and services (B2B). SMEs differ from large businesses in that they tend to write more cheques for payroll payments to employees (48 per cent and 37 per cent, respectively).

Figure 18: 2017 Top Areas of Business Cheque Use⁷³

Rank	Small and Medium Enterprises	Large or Corporate Enterprises
1	Professional services (56%)	Professional services (45%)
2	Rent (52%)	Government payments/tax (41%)
3	Payroll (48%)	Advertising/media (43%)
4	Government payments/tax (47%)	Rent (40%)
5	Advertising/media (37%)	Payroll (37%)

Many businesses that use cheques may not fully appreciate the “hidden” costs of using paper-based payment instruments. For example, businesses do not fully recognize the opportunity costs of the additional work and back-office processing costs involved in sending and receiving cheques. Please see **Featured Analysis E** for more details.

68 RFI Group’s Canada SME Banking and Payments Council and Canada Commercial Banking and Payments Council (RFI Group 2017).
 69 The research estimates that the economic benefit to Canadians from ISO 20022 adoption could be as high as \$4.5 billion over five years reflecting cost-savings from cheque elimination. Please see: https://www.payments.ca/sites/default/files/2016-economic-benefit-iso20022_1.pdf
 70 For example, INTERAC e-Transfers recently began batch payment processing and PayPal enabled B2B invoicing and payments.
 71 RFI Group’s Canada SME Banking and Payments Council and Canada Commercial Banking and Payments Council (RFI Group 2017)
 72 Ibid.
 73 Ibid.

WHY INEFFICIENCIES REMAIN IN CANADIAN BUSINESS PAYMENTS⁷⁴

By Neville Arjani and Viktoria Galociova, Payments Canada

Canadian businesses transact with their customers and suppliers using a wide range of electronic payment types from a variety of business service providers. Recent research highlights the past progress made in electronic payments, particularly with EFT transactions displacing cheque use in Canada.⁷⁵ Today, there are considerable cost inefficiencies in business payments processing in Canada. In several recent studies, businesses provided details on their payments processing and use of electronic payments.⁷⁶ Below, we compile the results and provide an overview of the studies. The results of each, are generally consistent in affirming the business payment gaps that currently exist, with payments standards, data, and the need for further electronic payments innovation.

Findings

Aggregate payments processing costs for Canadian businesses are estimated between \$3 billion and \$6.5 billion each year.⁷⁷ The potential exists in Canada to reduce these costs significantly through a more standardized and more efficient payments environment. Perhaps most notably, the studies point to a need for ISO 20022 payment messaging standard adoption in Canada. The ISO 20022 standards have the potential to enable integration between payments and enterprise resource planning (ERP) systems to foster straight-through-processing and reconciliation for businesses.

Featured Analysis E continues...

Today, there are considerable **cost inefficiencies** in business payments processing in Canada.

⁷⁴ This is an abridged version of Payments Canada's Payments Perspectives article. Publication pending.

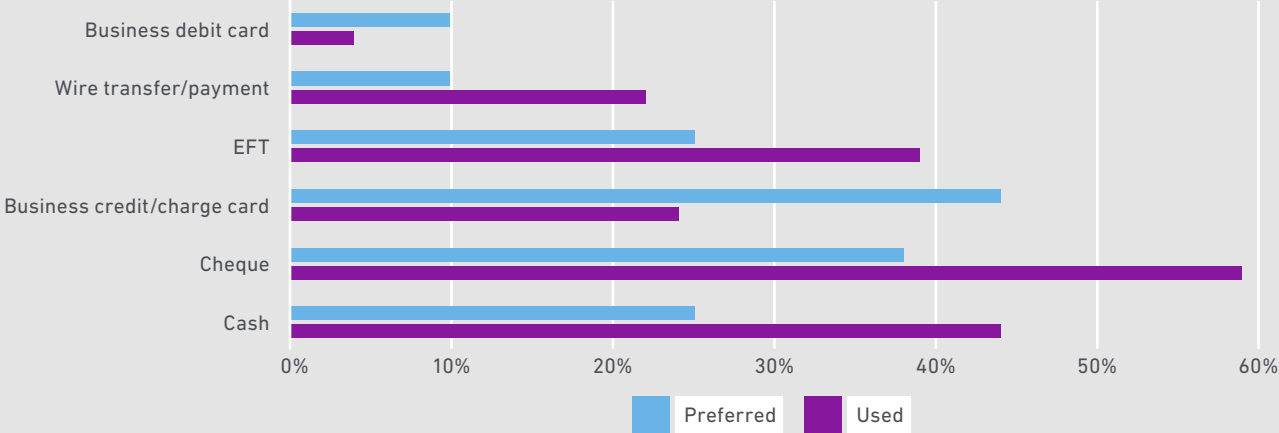
⁷⁵ *The role of Automated Funds Transfers in Canada's declining use of cheques*. Payments Canada, July 2015.

⁷⁶ Focus is on results from three recent surveys by EY/Payments Canada, Leger/Payments Canada and RFI Group.

⁷⁷ EY and Payments Canada. 2018. *How can payments modernization benefit Canadian businesses? Evaluating the cost of payments processing*. (February). Available at: https://www.payments.ca/sites/default/files/report_costs_of_payments_processing_eng_final_2018.pdf

Another key finding is how willing businesses are to change their payment habits. One study found that 69 per cent of businesses currently accepting and writing cheques would be willing to move away from them if a more convenient electronic method were available.⁷⁸ Further, 31 per cent of corporate businesses say that cheques would remain a preferred method to pay for expenses were all options open to them. Businesses payment habits are highly influenced by the payment methods of their customers and their suppliers.⁷⁹ The studies confirm this and a sizeable disconnect between the payments used by businesses and the payments business prefer to use. These findings highlight a key business frustration, that business payment options are limited by the types of payments recipients accept (see **Figure 1**).

Figure 1: Preferred Payment Methods and Payment Methods Used⁸⁰



Featured Analysis E continues...

69 per cent of businesses currently accepting and writing cheques would be willing to move away from them if a more convenient electronic method were available.

⁷⁸ Leger Marketing and Payments Canada. 2018. Payments Pulse Survey: Small business edition. (March). Available at: <https://www.slideshare.net/PayCanada/payments-pulse-survey-small-business-edition-90811660>

⁷⁹ A full 50 per cent indicate that their customers influence their decision to accept new payment methods, and another 29 per cent indicate that suppliers influence their decision to adopt new payment methods.

⁸⁰ This figure includes two questions: "How does the business pay for the following expenses?" and "Which method of payment would the business most prefer to use for the following expenses?" From: Canada SME Banking and Payments Council and Canada Commercial Banking and Payments Council (RFI Group 2018).

Other significant barriers to electronic payment adoption

In addition to the limitations presented by payment recipients, a number of other key barriers to electronic payment adoption were identified in the studies, including:

- *Electronic payment options and reconciliation:* Canadian businesses' continued reliance on cheques has much to do with a view that electronic payment options do not currently provide enough remittance information for efficient transaction reconciliation.
- *Concerns regarding safety and security:* "Safety and security" was ranked as the top payment priority by respondents (49 per cent), ahead of "lower transaction fees" (34 per cent), and "faster payments processing" (14 per cent). Many businesses also expressed concern about providing their bank account information to their customers.
- *Lack of concerted effort to educate on the potential benefits of electronic payment options:* The reasons given for not using electronic payments suggest a certain degree of misunderstanding. Improved awareness of the characteristics and relative merits of the different payment options might go some distance in addressing issues such as security concerns. In addition, the studies showed that the full appreciation of the costs for writing and accepting cheques may be lacking. Electronic payment costs may only be half of the costs to businesses as paper-based payments.⁸¹ A thorough cost-of-payments analysis should include costs from operational, fraud, and security risks.⁸² As such, to promote more electronic payment use, a better concerted education and awareness from the industry including Payments Canada, large businesses and financial institutions may be useful.

⁸¹ Humphrey et al. (2003). What does it cost to make a payment? *Review of Network Economic*, Vol 2, Issue 2 (June).

⁸² For example, remote deposit capture may reduce the overall costs of cheque processing in terms of labor, but it might introduce new operational risks to the business, such as with errors or duplicate cheque deposits. All aspects need to be accounted for to know the full costs for fair comparisons against electronic payment options.



CONCLUSION

Our analysis of the Canadian market research and payments data has provided a detailed overview of the 2017 payments markets and trends. Overall, the most widespread trend observed is how slower forms of payments are giving way to more expedient and more convenient channels, wherever possible. While this is most clear looking at cash and cheque volumes, faster or more convenient electronic channels are also overtaking slower electronic channels. For example, POS contactless card transactions are growing at the expense of traditional POS card transactions (chip-and-PIN). In-app online transactions on mobile devices are also taking the place of e-Commerce using traditional computers. Further, there is evidence that real-time direct payments' speedy access to funds can drive merchants and consumers away from cards in e-Commerce.

While it is clear that continual convenience improvement is a key disrupting force, we also find that rewards and loyalty programs can also be a key payment driver. In Canada, credit cards offer a compelling combination of convenience and rewards, which has resulted in continual annual growth rates, and expansion into almost every common payment use case. Credit cards present a clear challenge to new payment service providers or payment options that wish to offer more efficient payment alternatives via prepaid or deposit account funds.

A challenge also remains in bringing forth greater convenience for remote commercial transactions. Commercial enterprises find convenience in payment methods that are widely accepted and provide for needed payment information. Today, that means a high reliance on cheques and credit cards as commercial enterprises look to pay one another, with a high degree of certainty their payments will be accepted. Both cheques and credit cards also offer businesses easier processes for reconciliation and reporting than other electronic alternatives. Innovative providers are gaining traction in offering digital payment services to businesses, and finding a much more receptive market than in the past, indicating some progress is taking hold.

In any event, the Canadian payment ecosystem is poised for disruption by an environment that will bring core payment system technology and rule changes, regulator interventions, and paytech innovation. These influences will seek to change the ecosystem paradigms and address the challenges we see today. As payment methods and channels adapt, one fact remains clear, that Canadians' preferences for ever faster and more efficient transactions will provide a basis for innovation well into the future.

The most widespread trend observed is how slower forms of payments are giving way to more expedient and more convenient channels, wherever possible.

APPENDIX I:

Detailed Payment Segment Charts

Figure A1: Total Annual CPMT Transactions

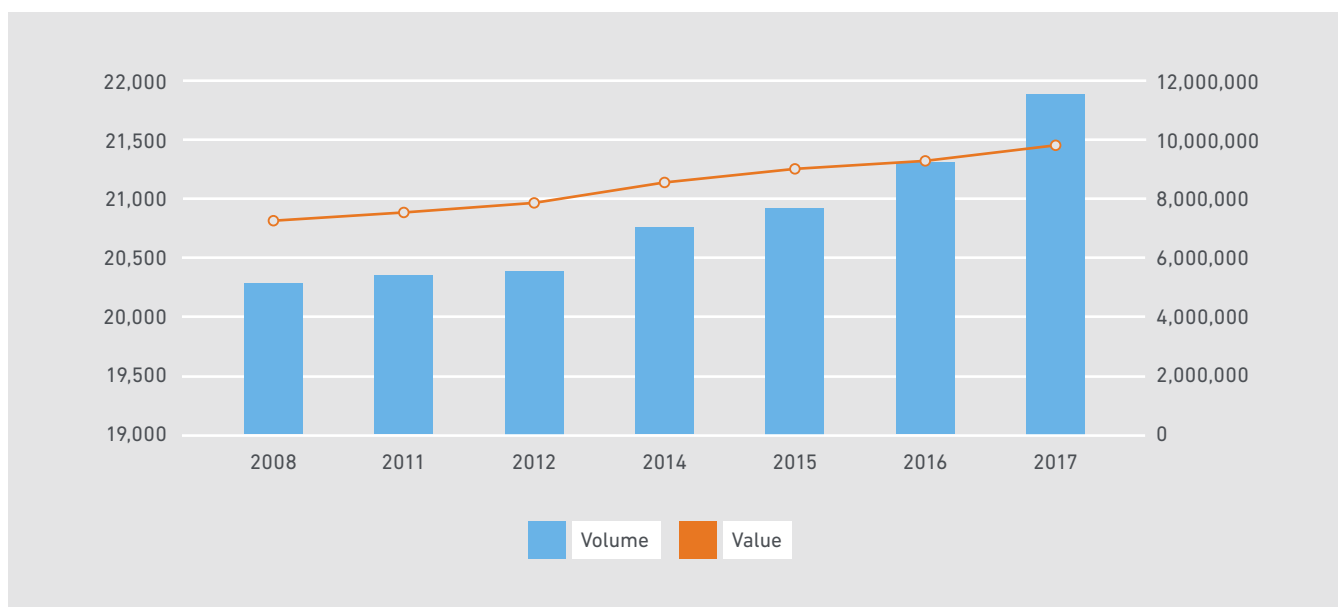
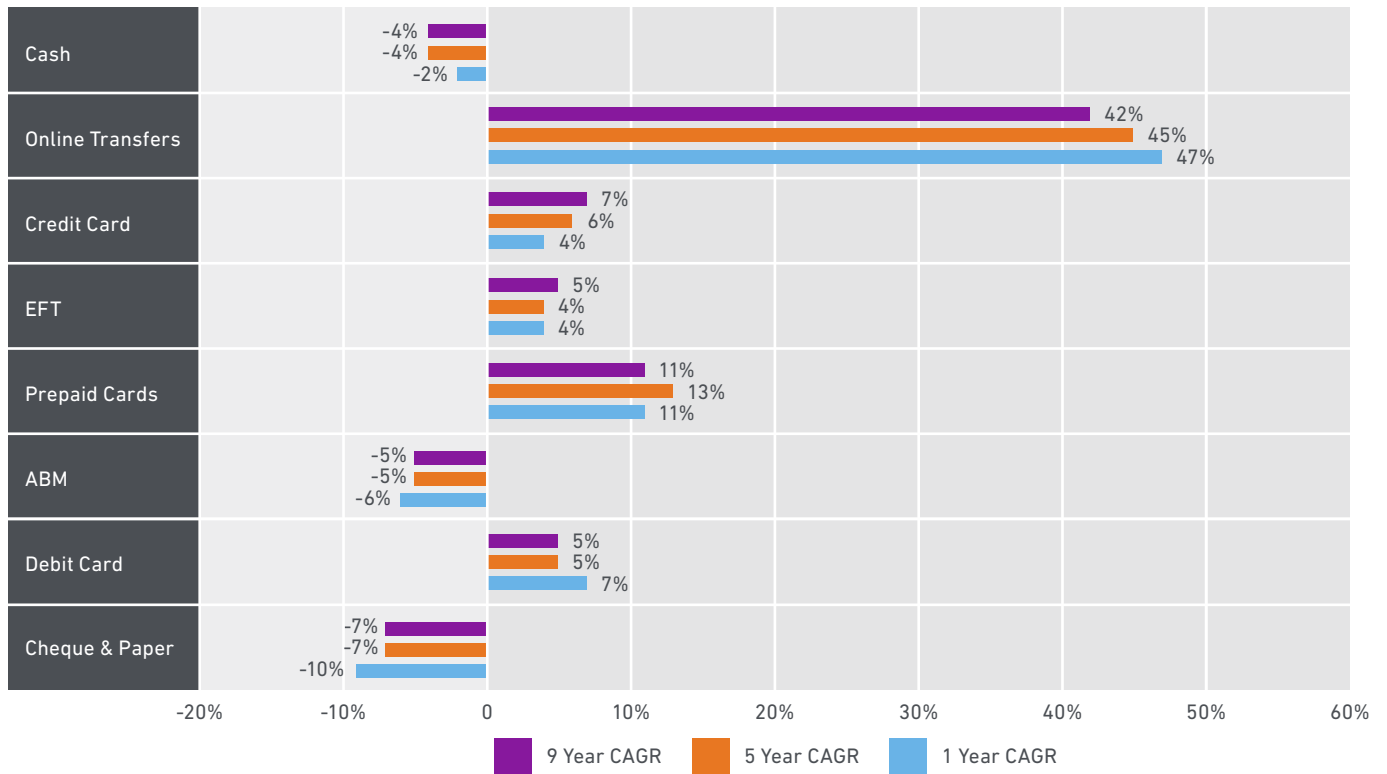


Figure A2: All Segment Annual Totals

Payment Method	Volume (in millions of transactions)				Value (in millions of dollars)			
	2008	2012	2016	2017	2008	2012	2016	2017
Cheques and paper	1,351	1,016	798	734	3,996,090	3,743,843	3,991,849	4,030,697
Debit	3,704	4,370	5,436	5,794	168,579	195,206	225,661	246,499
ABM	880	695	549	531	96,436	80,758	69,598	70,001
Prepaid cards	118	158	262	290	9,784	10,798	19,518	21,990
EFT	1,824	2,230	2,631	2,742	2,284,530	3,190,552	4,167,111	4,555,700
Credit card	2,702	3,762	4,783	4,994	314,123	422,339	510,732	554,268
Online transfers	11	41	177	261	3,266	14,295	68,755	93,513
Cash	9,663	8,070	6,632	6,499	179,099	145,017	116,235	113,910
TOTALS	20,252	20,343	21,268	21,845	7,051,907	7,802,808	9,169,459	9,714,852

Figure A3: All Segment Average Annual Growth

Volume (1, 5 and 9 year CAGR)



Value (1, 5 and 9 year CAGR)

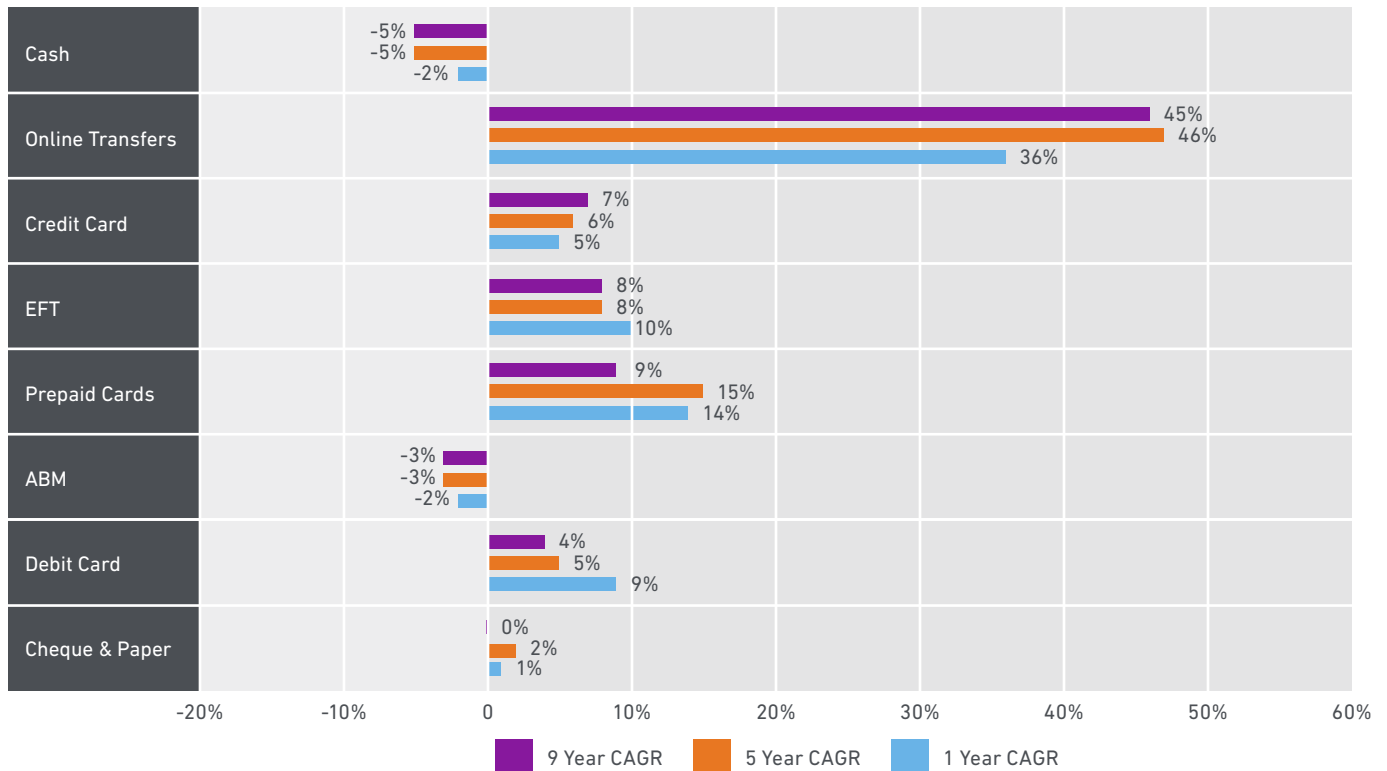


Figure A4: Average Transaction Size

Payment Method	2008	2012	2016	2017	% Change
Cheques and paper	\$2,958.75	\$3,684.88	\$4,998.56	\$5,491.41	86%
Debit	\$45.51	\$44.67	\$41.51	\$42.54	-7%
ABM	\$109.56	\$116.15	\$126.89	\$131.88	20%
Prepaid cards	\$83.20	\$68.52	\$73.34	\$75.83	-9%
EFT	\$1,252.41	\$1,430.74	\$1,583.62	\$1,671.76	33%
Credit card	\$116.28	\$112.25	\$110.23	\$110.99	-5%
Online transfers	\$302.41	\$345.88	\$388.45	\$358.29	18%
Cash	\$18.53	\$17.97	\$17.53	\$17.53	-5%
TOTAL	\$348.21	\$383.56	\$431.68	\$444.72	28%



APPENDIX II:

Methodology, Definitions and Segment Descriptions

A. Methodology

Notes on methodology

The data presented is a combination of Payments Canada system data, payment service providers, scheme operator data and estimates based on market research and in consultation with industry experts.

Payment service providers contributed either by sharing their internal research and data or by providing expertise that enhanced the data set's accuracy. As was assured during the data collection, Payments Canada has made every effort to keep participant data non-discernable, where asked to do so.

This paper leverages the full data set gathered from past efforts (2012, 2014, 2015, 2016), and contains appropriate updates in methodology, data and findings. As such, this paper represents a full update of the previously published data points (including those provided in past papers) and should be viewed as essentially replacing the previous data sets.

Survey market research details and methodology

1. Ipsos Reid PCS

The Personal Cardholder Study (PCS) is completed through an online sample of Canadian cardholders, using Ipsos' Internet panel of respondents. For over 20 years, the PCS has provided an ongoing quarterly survey of cardholders and non-cardholders, covering a variety of credit card metrics and payment trends. The total sample size for the 2017 survey was 12,008 respondents.

2. RFi Group business surveys

RFi Group conducts separate surveys on larger corporate enterprises and small to medium sized enterprises (SMEs). The corporate surveys were in field in May 2017 and November 2017 with a total of 732 individuals being interviewed online. Basic quotas were applied to the sample to ensure that the data is representative of the Canadian commercial population. All respondents had decision-making powers within businesses operating in Canada with global annual revenue of \$10 million to \$500 million.

RFi Group's SME surveys were completed in May/June 2017 and November 2017 with a total of 1,043 individuals interviewed online. Basic quotas were applied to the sample to ensure that the data is representative of the Canadian SME population. All respondents had decision making powers within SMEs operating in Canada with global annual revenue of less than \$10 million.

3. TSI Consumer Survey

Technology Strategies International Inc. (TSI) provides in-depth assessments of consumer payments in Canada, drawing upon a wide range of information resources including desk research, executive interviews and discussions, consumer research and analysis – compiled into an annual report. The consumer survey was field in May 2018 and included a sample size of 2,008.

4. Leger Marketing Inc. Consumer Survey

Leger Marketing Inc. is a full service market research consultancy experienced at providing both quantitative and qualitative research. Leger is a pioneer and leader in web-based research. They have their own proprietary online panel of over 475,000 Canadians. In 2018, Leger acquired an additional panel which includes an additional million millennials. As of 2018, Leger provides Payments Canada with a customized consumer payments survey focused on Canadians' usage of different payment methods in both the POS and remote transaction environments. In this report, we only include Phase 1 of the survey which includes a sample size 2,882 and was field in June 2018.

B. Definitions and Segment Descriptions

ABM payments

ABM data is derived from data found in published proprietary reports and validated with published payment network and CBA data.

CAGR

Compound annual growth rate calculates the annual average growth over multiple years, while taking into account the effects of average compounding growth experienced in each year.

Cash

Total cash was estimated based upon data from Bank of Canada survey research data (the data was also leveraged for their 2013 Methods-of-Payment Survey).⁸³ Estimates from the data establish the mean number of cash transactions per Canadian per day was (.65) and the mean cash expenditure per transaction was \$11.49. We used these numbers to extrapolate to the larger Canadian population to formulate cash payment estimates and adjusted based on the market research suggestion of cash decline in 2014, 2015, 2016 and 2017.

Cheque imaging technology

Several Canadian financial institutions offer apps for remote deposit capture, through the digital representation of the front and back of a payment item (the cheque).

Commercial payments

Commercial payments include transactions that originate from Canadian organizations, businesses and governments.

Consumer payments

Transactions that originate from Canadian households and individuals for paying bills, managing accounts at financial institutions and payments for goods and services.

Contactless

Contactless transactions are defined as using a payment card or mobile device tap to initiate a payment through a POS reader (in physical merchant locations).

Credit card

Credit card data is a combination of consumer and business credit and charge card payments found in proprietary published reports.⁸⁴ Charge cards differ from credit cards primarily in their application of interest. Credit cards charge interest at an annual percentage rate. Charge cards apply full interest charges after a defined period (typically 30 days) so users are more inclined to pay off balances each month.

Debit payments

Debit payments include Payments Canada POS debit and online debit transaction data, INTERAC debit card data and data provided by participants.

⁸³ 2013 Methods of Payment Survey Results, Bank of Canada, April 2014

⁸⁴ Euromonitor International (2017), *Passport: Financial Cards and Payments in Canada*, and TSI (2017), *Canadian Payments Forecast 2017*.



EFT

EFT was calculated using a combination of AFT (debits and credits), electronic remittances and EDI transactions.

ISO 20022

ISO 20022 is an international standard designed to simplify global business communication. The standard enables efficient payments clearing and settlement among financial institutions globally through the use of a common set of messages and language. It is an open standard developed by ISO (International Organization for Standardization).

LVTS

LVTS payments were excluded from the analysis because the report is focused on more common payments made by consumers and businesses.

Online transfers

Online transfers include online e-wallet and electronic Person-to-Person (P2P) transactions initiated through online services and providers that are prepaid or linked to deposit accounts at financial institutions (e.g., PayPal). Includes data and estimates for online and mobile environments used to make remote electronic person-to-person payments and payments to merchants, excluding transactions based on credit and debit cards, which are counted in the credit card and debit card categories).

On-us

Refers to transactions drawing upon direct deposit accounts (e.g. bank checking accounts or business accounts) where both the payor and payee reside at the same financial institution. A variety of payment types, normally associated with Payments Canada cleared payments, are impacted by on-us items, including cheques, debit and EFT. On-us payments do not result in a Payments Canada clearing entry (and do not appear in Payments Canada system data). On-us payments data must be determined from sources other than Payments Canada. On-us amounts were derived from participant data and estimates. The analysis determined on-us payments to amount to approximately 20 per cent more transactions than can be found in Payments Canada data. On-us amounts differ by payment type, such as cheques ~21 per cent, debit ~25 per cent, EFT (20 per cent), etc.

Paper/cheques

Based on Payments Canada ACSS data for cheque and paper items, including paper remittances.

Paytech

Paytechs are a subset of fintechs that focus primarily on providing technology to enable and support electronic payment transactions. This also includes the technology for the acquisition, management, analysis and use of payments-related data.

PFMI

Principles for Financial Market Infrastructures – the global risk standards established by the CPSS/CPMI and IOSCO for regulating payment and security clearing and settlement systems.

Prepaid

Credit card company and store-branded prepaid product data (both open and closed-loop) is based on proprietary publication data. We also include virtual prepaid products, such that might be purchased through mobile device application stores, such as, Apple and Android.

Proximity environment

Point-of-sale or point-of-service transactions include both physical and virtual merchant locations, including online and in-app purchases.

Remote environment

Remote transactions include all transactions that are not made at physical payee locations, virtual payee provided apps or store fronts (a.k.a. the POS).