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CERT WORKING PAPER

*Reducing Cash Usage in the
Caribbean by 50 per cent
in Five Years*

November 2019

The background of the cover features a warm orange-to-yellow gradient. At the bottom, there are several thick, curved, overlapping bands in shades of orange and white. In the bottom right corner, there is a small, semi-transparent image of a modern building's glass and steel facade.

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EXECUTIVE SUMMARY

Advances in technology are continually changing how people make payments. The study provides a roadmap for the regulators of the payments infrastructure, typically the central bank, for deepening the use of digital means of payments. The findings confirm that in the Caribbean while cash remains the dominant means of payments, the use of payments methods such as credit and debit cards has been growing. Debit cards, in particular, seem to be the preferred alternative. The results of an online survey on Caribbean payment methods suggest that, like in other jurisdictions, cash is the preferred method for low value transactions, credit cards for large value transactions and debit cards for transactions in the intermediate range. The survey also indicates that Caribbean populations are very much aware of digital currencies, in particular Bitcoin, and generally accept that in the future there will be less use of cash.

Drawing upon the experiences of other countries which have more rapidly adopted digital payments, the paper provides some recommendations for reducing the use of cash. These include: implementing broad-based public awareness and educational campaigns regarding the different payment methods and their costs and benefits; developing e-government initiatives; encouraging merchants to adopt cash-less payments; and assessing and improving payment infrastructure. Central banks may also wish to learn from the Central Bank of The Bahamas and the Eastern Caribbean Central Bank key considerations in designing and implementing a central bank digital currency.

1.0 INTRODUCTION

During the last decade, there has been a growing shift globally from the use of traditional means of payment (i.e. cash and cheques) towards the use of digital payment methods. Sweden is most advanced in this cashless revolution, where cashless is defined as an environment in which cash is not a generally accepted means of payment. The increased access to digital payment platforms offers the opportunity to rapidly scale up access to financial services using mobile phones, retail point of sales, and other broadly available access points, when supported by an appropriate financial consumer protection framework. Indeed, the convenience of using digital payments has gradually increased in popularity, but the use of cash by some segments of the population still has a key role in Caribbean society.

In Sweden, over 90 percent of the population use debit cards while access to the National Instant Payments system is increasing. Similar trends are emerging in other Nordic countries, South Korea and China, among other countries. These trends are being driven by rapid innovations in financial markets and payment systems technology and growth in debit and credit cards, mobile wallets and mobile phone applications. In response to these global developments, the Caribbean region is also gradually shifting away from cash and other traditional payment methods (primarily bank cheques), to electronic means of payment.

Regional central banks must investigate what these trends mean for Caribbean economies in terms of the net benefits of reducing cash usage while increasing digital payments. This transition will likely be gradual, given the region's cash-centric culture, which is exemplified by the fact that while cheque use is falling, the overall demand for cash remains strong. The focus of this paper is twofold: (1) to examine the payments landscape in a sample of Caribbean economies to compare cash use versus digital payment methods over the past decade and (2) to identify a suite of practical strategies that regional central banks can employ and/or advocate for to reduce cash usage by fifty percent over five years.

A micro-based online payments survey conducted Caribbean-wide as part of this investigation points to a groundswell of support, awareness and appreciation of alternative payment methods. However, cash is still the preferred choice for conducting small value transactions primarily because of its wide acceptance, convenience, no or low cost, and ease of availability. Debit cards are seen as a substitute for cash, especially for slightly intermediate-value transactions. Debit cards are much easier to use, more practical and less costly than other forms of payment of digital payment. Credit cards are preferred for large value transactions and for online purchases of goods and services from abroad. From a policy perspective, concerted efforts will be required to ensure that as steps are taken to reduce cash usage in the Caribbean, those segments of the population that rely on cash to conduct their daily lives are catered for and that digital payments become available for everyone.

The findings of the paper provide useful insights into the trends in cash usage and digital payment methods in Caribbean countries. The available data indicate that Caribbean countries still demonstrate a preference for cash, but the use of cheques has declined considerably in the majority of countries. The reduction in cheque usage is reflected in higher credit and debit card transactions. The key recommendations that may be initiated in the short term include: (1)

Consideration for a more in-depth analysis of consumer payments habits and preferences using face-to-face interviews to ensure that a wider cross section of the population are captured; (2) Implementing a broad-based public awareness and educational campaign about the benefits of greater use of digital payments (3) Accelerating the development of e-government initiatives to improve the effectiveness and efficiency of tax collection and the ease of doing business and (4) Building on the platform of the Eastern Caribbean Currency Union (ECCU) Fintech Pilot Project to inform similar regional initiatives aimed at reducing cash use.

This paper is organised as follows: After the introduction, the next section briefly examines the benefits and costs of cash. Section 3 describes the main trends in cash usage and other forms of payment in a sample of regional economies. Section 4 presents the results of the micro-based online payments survey. Section 5 surveys the experiences of other countries in their quest to reduce cash usage. This informs the discussion in the next section (Section 6) on possible strategic interventions to reduce cash use in regional countries. Section 7 concludes and provides some recommendations.

2.0 BENEFITS AND COSTS OF CASH USAGE

Physical cash (i.e., notes and coins) plays an important role in the lives of many people and businesses in the Caribbean given our cash-centric culture. Therefore, while many developed and emerging countries are already moving towards a reduction in cash usage, the debate surrounding the pros and cons of this initiative in the Caribbean has not yet started in earnest. Meanwhile, payment methods continue to evolve with expanding options for making quick, convenient and efficient payment.

The benefits of cash are well known. The main ones usually cited are acceptance as a medium of exchange, ease of use and anonymity.

However, credible arguments can be advanced in favour of a reduction in cash, particularly that criminal activity, including money laundering and terrorism financing, would be significantly affected, since cash is the main mode used for these transactions. For example, a campaign to reduce cash use in Israel is expected to shrink the underground economy by reducing criminal activity and tax evasion. The ability to pay taxes via digital or online payment platforms offers the benefits of speed, increased transparency and higher tax collections. Other benefits, such as reduced processing time and less fraud have redounded to governments adopting digital payments methods.

The main disadvantages of reduced cash usage include loss of seigniorage revenue, exposure to cybersecurity and other risks, with the attendant risks to the efficiency of monetary policy initiatives and financial system stability.

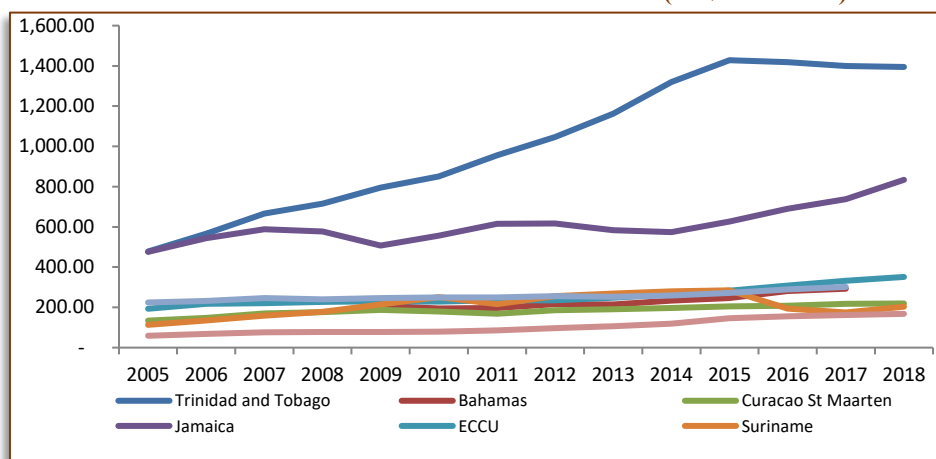
3.0 TRENDS IN CASH USAGE AND DIGITAL PAYMENT METHODS

This section examines the trends in cash usage and the other forms of payments in regional countries over the past decade or so.

Currency in Circulation

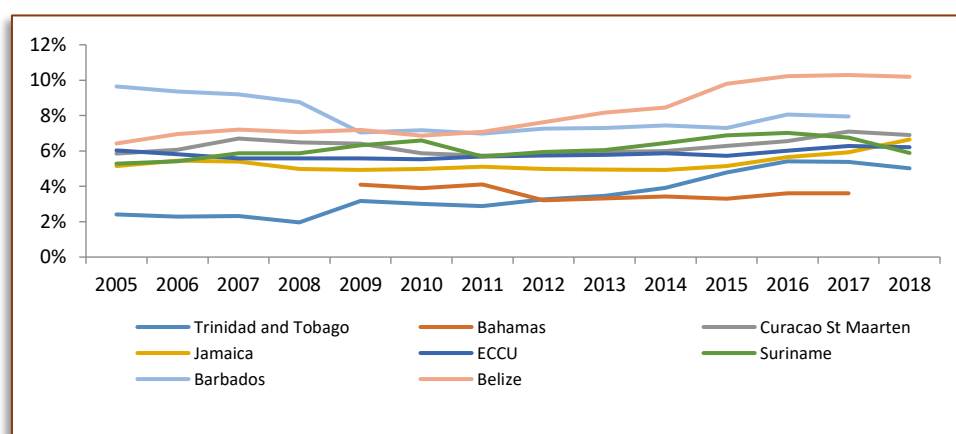
As shown in **Figure 1**, the total value of notes and coins in circulation¹ (currency held by the public) in the majority of the countries has generally exhibited an upward trend. In particular, currency held by the public grew significantly faster in Trinidad and Tobago and Jamaica than in the other countries. In fact, currency held by the public in Trinidad and Tobago increased steadily until 2015 after which it declined slightly. However, **Figure 2** illustrates that as a percentage of nominal GDP, the trend in cash usage observed in **Figure 1** is more subdued. Meanwhile, interestingly in Belize, there appears to be an increasing amount of cash being held or used by the public as a proportion of overall market activity since 2010. The amount of cash usage as a percentage of GDP was highest in Belize (10.0 per cent) and Barbados (8.0 per cent) in 2018, compared to the average for the other countries (5.0 per cent). The Caribbean ratios are generally high when compared with those of some other countries; the ratio is less than 1.0 per cent in Sweden, 3.0 per cent in the U.S. and 5 per cent in the U.K.

FIGURE 1: VALUE OF CURRENCY IN CIRCULATION (US\$ MILLIONS)



Source: Regional Central Banks

FIGURE 2: CURRENCY IN CIRCULATION TO NOMINAL GDP



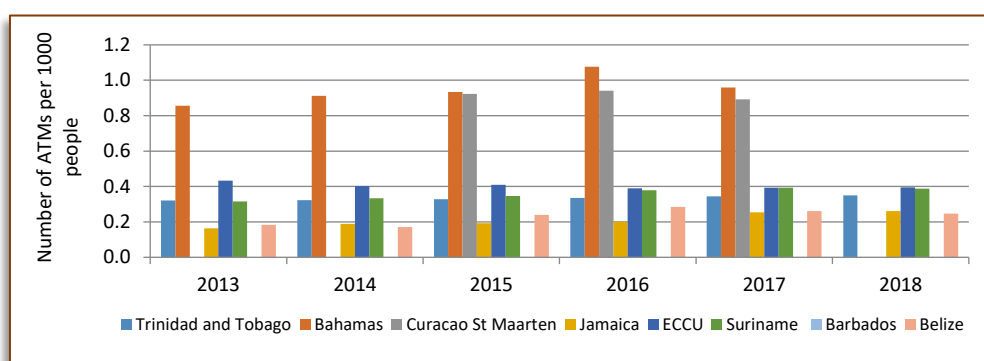
Source: Regional Central Banks

¹ Notes and coins in circulation measures the total values of currency in circulation net of bank cash. Trinidad and Tobago and Barbados (1 cent coin), Jamaica (1, 10 and 25 cent coins) and the ECCU countries (1 and 2 cent coins) have removed small coins from circulation.

Automatic Teller Machines (ATMs) reinforce cash usage in Caribbean countries, as they are a convenient means for the public to acquire cash. **Figure 3** shows the number of ATMs per 1000 persons in the sample countries. In this regard, the Bahamas and St. Maarten and Curacao clearly stood out, with a high degree of ATM penetration. Jamaica and Belize has the lowest ATM availability, but has recorded a steady increase in the number of ATMs per capita over the past five years. In the U.S., U.K. and Canada, the comparable levels of ATM availability are higher, with estimated penetration rates ranging between 1.5 to 2 ATMs per 1000 persons. The trends in the value of ATM transactions (as a percentage of nominal GDP) mirror the trends in currency held by the public to nominal GDP.

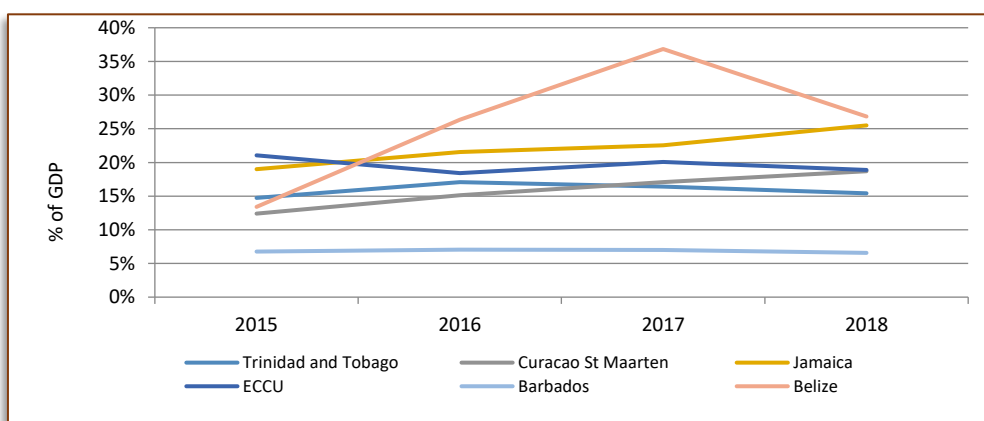
Figure 4 indicates that Caribbean countries (particularly Jamaica and Curacao/St. Maarten) generally use ATMs to secure cash to conduct their transactions. However, in the last three years, Trinidad and Tobago, and the ECCU have recorded moderately lower cash withdrawals from ATMs. However, Belize experienced an increase in their ATM withdrawals over time from 2013 to 2017, to then have a considerably decline in 2018. This may be the beginning of an emerging trend, presumably due to safety concerns and the fees attached to ATM withdrawals. In any event, it is expected that over time ATM use will diminish, as the public becomes more comfortable with the speed and convenience of digital methods of payment.

FIGURE 3: ATM PENETRATION



Source: Regional Central Banks

FIGURE 4: VALUE OF ATM WITHDRAWALS

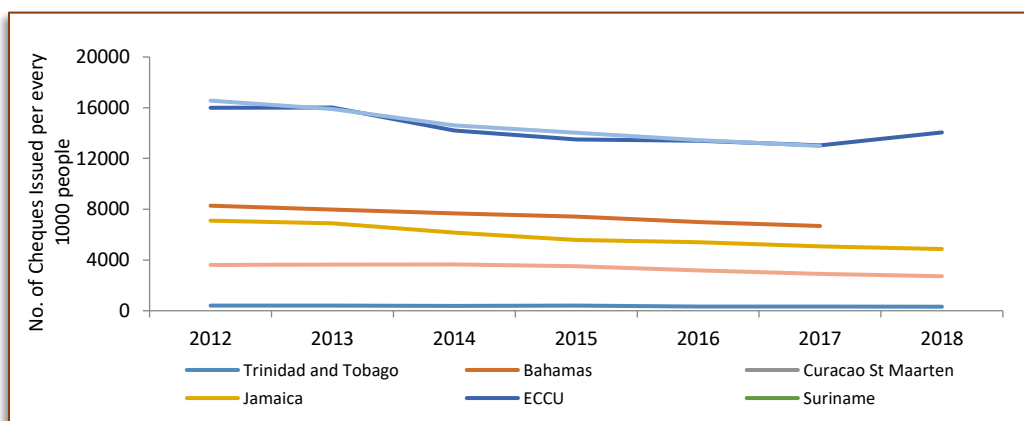


Source: Regional Central Banks

Cheque usage

Figure 5 shows a broad-based decline in number of bank cheques used on a per capita basis. Cheques are acknowledged across the financial industry as inefficient and costly. Barbados and the ECCU countries continue to record the highest level of cheques issued in the region, while Trinidad and Tobago² has the lowest level of cheques issued per capita.

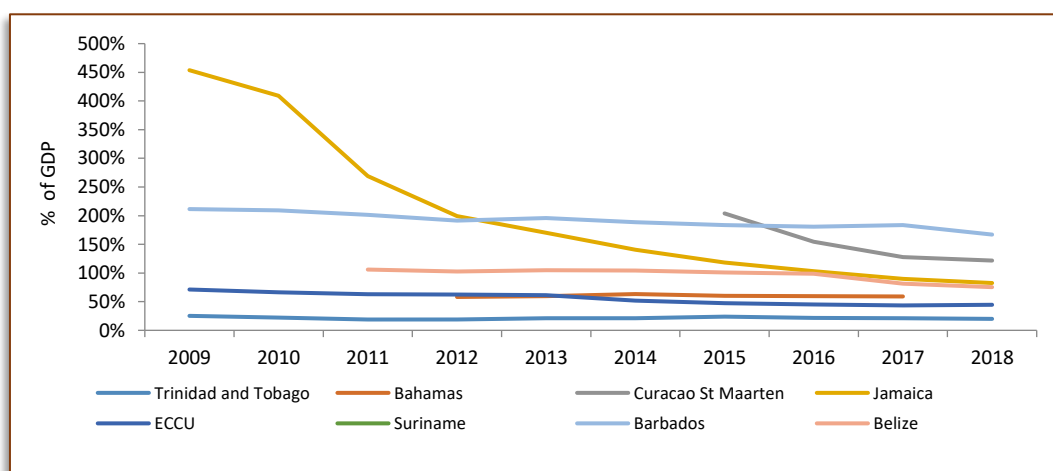
FIGURE 5: NUMBER OF CHEQUES ISSUED



Source: Regional Central Banks

While cash still appears to be a popular form of payment, the use of cheques is decreasing (Figure 6). Indeed, Jamaica clearly demonstrates this trend, recording a five-fold decline in the value of cheques encashed as a percentage of GDP.

FIGURE 6: VALUE OF CHEQUES ENCASHED



Source: Regional Central Banks

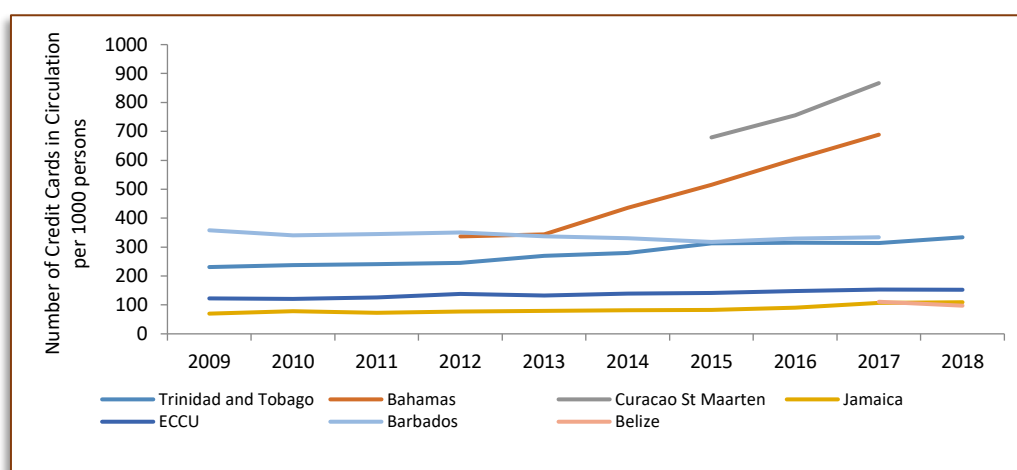
Debit and Credit Cards

Figures 7 and 8 generally reveal an increasing number of persons per capita holding debit and credit cards. It is likely that the increased usage of debit and credit cards over the last decade serves as the replacement for cheques as a traditional payment method. From Figure 7, Curacao & St. Maarten and Bahamas exhibit the highest number of credit cards in

² The cheques issued for Trinidad and Tobago include only manager's cheques.

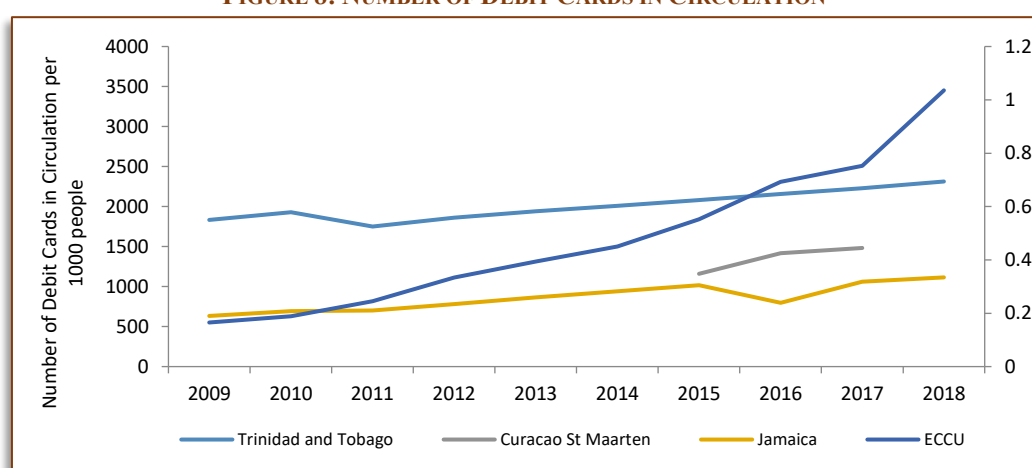
circulation, while Jamaica experienced the slowest per capita growth of credit cards in circulation. In terms of debit cards, **Figure 8** reveals that from 2010, the ECCU showed a steep increase in the number of debit cards in circulation, as this payment method has become increasingly popular to conduct domestic and online international purchases.

FIGURE 7: NUMBER OF CREDIT CARDS IN CIRCULATION



Source: Regional Central Banks

FIGURE 8: NUMBER OF DEBIT CARDS IN CIRCULATION



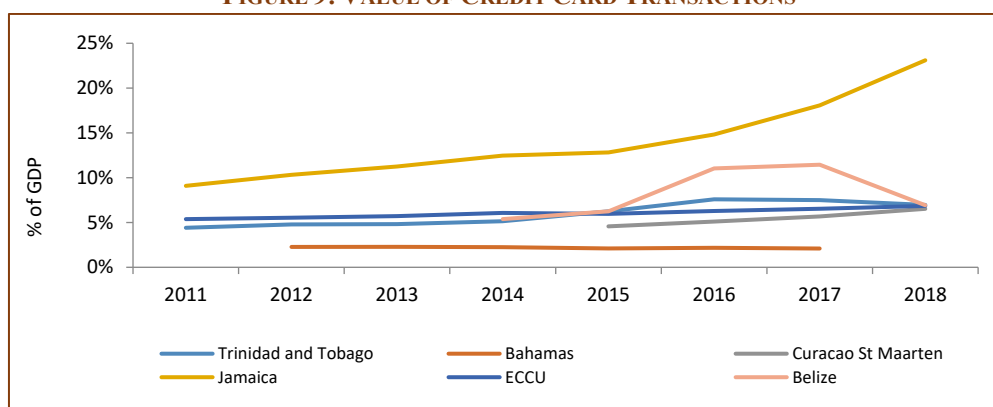
Source: Regional Central Banks

The number of debit cards issued outpaced credit cards, perhaps because credit cards are a form of borrowing requiring bank customers to satisfy lending criteria, whereas debit cards are based on customers' own funds at financial institutions. Furthermore, other disincentives such as annual fees and increasing instances of credit card fraud may prohibit wider use of credit cards. This trend of increased use of these digital forms of payment might also indicate greater financial inclusion, as more individuals obtain access to bank accounts. The increase in credit cards in circulation is consistent with the overall increases in the value of credit card transactions. Although Trinidad and Tobago reported the highest number of credit cards in circulation, Jamaica reported highest value of credit card transactions as a percent of GDP.

While the payments data for the regional economies examined point to a slow but steady move towards digital payments methods, the countries are at varying levels of adoption and some countries have made greater strides than others. However, it is important to note

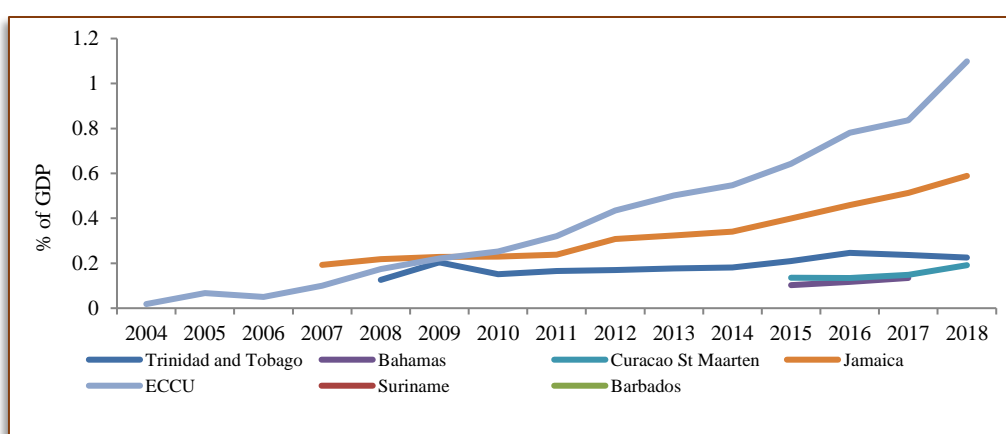
that ECCU has embarked on a Fintech pilot project whose objectives are to advance economic growth, resilience and financial inclusion for the member countries. Significant progress has been made towards the development of a digital version of the Eastern Caribbean dollar with the ultimate goal being to reduce the use of physical notes and coins. The outcomes of this project can serve as a useful stepping-stone for the other regional countries³.

FIGURE 9: VALUE OF CREDIT CARD TRANSACTIONS



Source: Regional Central Banks

FIGURE 10: VALUE OF DEBIT CARD TRANSACTIONS



Source: Regional Central Banks

4.0 RESULTS OF THE ONLINE SURVEY ON PAYMENT METHODS

To better understand consumers' perspectives, payment habits and attitudes towards cash and other forms of payment, a micro-based payments survey was administered online in October 2019. A total of 1103 responses were received, with a country participation distribution as follows: Barbados (58 percent), St. Kitts and Nevis (9 per cent), Belize (9 per cent), Trinidad and Tobago (8 per cent), The Bahamas (6 per cent), Curacao and St. Marten (4 per cent) and Guyana (3 per cent).

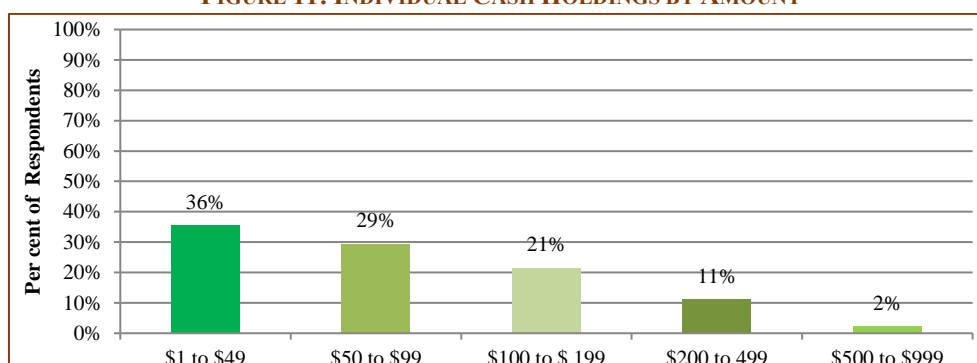
The majority of the respondents were female (68 per cent), compared to males (32 per cent). Most respondents had achieved tertiary level education. Approximately sixty per cent were in

³ Regional economies have been making strides towards enhancing the public's use of digital payment methods. For instance, the Central Bank of Trinidad and Tobago has issued an e-money policy in November 2018 and domestic commercial banks provide free access to electronic banking services. In addition, the Central Bank of the Bahamas has initiated a digital currency project.

the age range of 26 to 45 years, 19 per cent were under 17 years and 12 per cent were over 55 years. The majority of respondents (79 per cent) fell between 17 years and 45 years, unsurprisingly, high ownership and usage of smart phones for everyday tasks was reported. Furthermore, some 93 per cent of respondents had access to and used the internet daily. This high internet access and use seems to provide *prima facie* evidence of a technologically-savvy population, with perhaps strong awareness of and appreciation for digital payment methods.

Since the survey was conducted online, it is uncertain the extent to which it is representative of persons from rural communities who may be less likely to have access to broadband and mobile connectivity. This limitation of the survey must be kept in mind when interpreting attitudes to digital payments from the survey results.

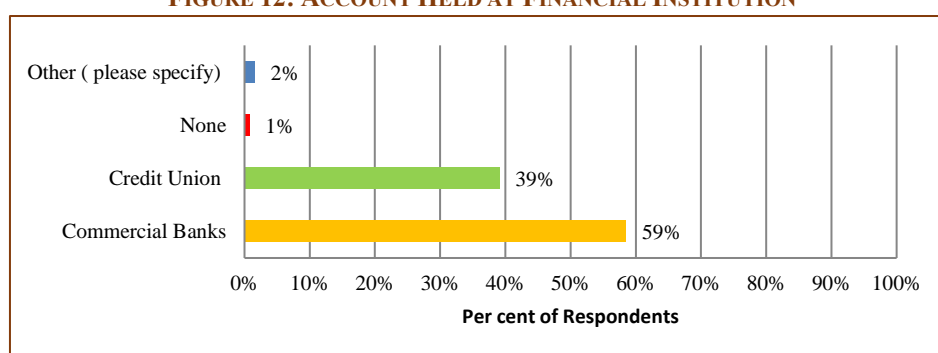
FIGURE 11: INDIVIDUAL CASH HOLDINGS BY AMOUNT



Source: Caribbean Economic Research Team Payments Survey – October 2019

The survey showed that persons generally do not hold large sums of cash. As shown in Figure 11, 36 per cent of respondents held cash of no more than \$45 while only 2 per cent of respondents held cash over \$500. This result is reflective of the observation that persons generally do not feel safe carrying around large amounts of cash and prefer to execute large-value transactions using either a credit card or a cheque.

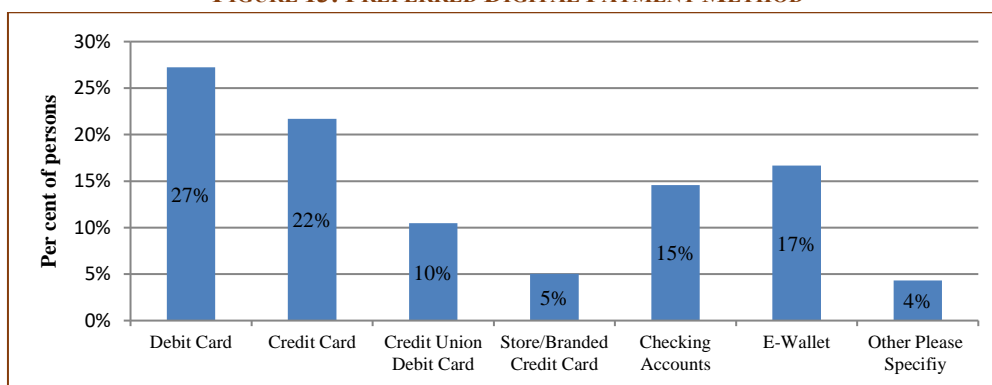
FIGURE 12: ACCOUNT HELD AT FINANCIAL INSTITUTION



Source: Caribbean Economic Research Team Payments Survey – October 2019

A positive indication of the degree of financial inclusion may be inferred from the responses to question 9, as shown in Figure 12. It was indicated that a combined 98 per cent of respondents held accounts at a commercial bank (59 per cent) and/or a credit union (39 per cent). Admittedly, this result may be influenced by persons holding accounts at both commercial banks and credit unions.

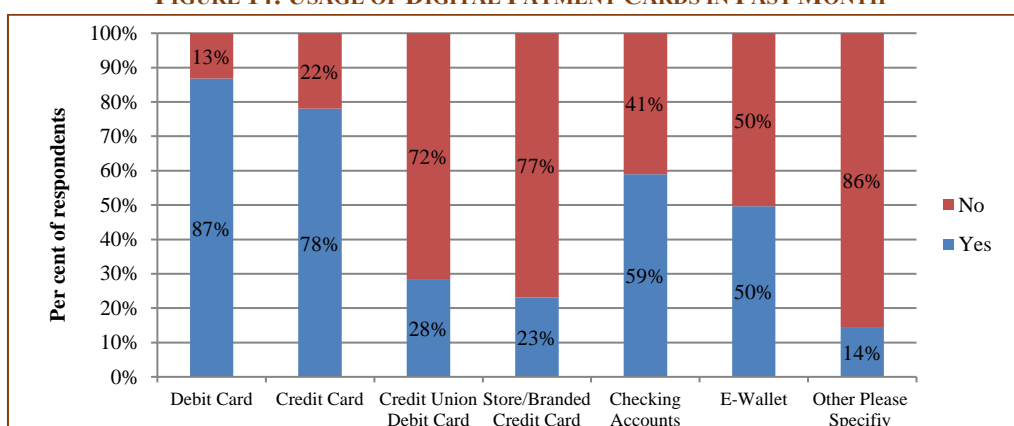
FIGURE 13: PREFERRED DIGITAL PAYMENT METHOD



Source: Caribbean Economic Research Team Payments Survey – October 2019

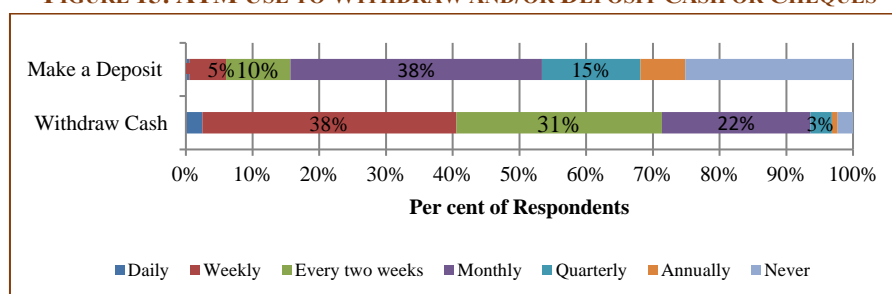
The debit card is the most popular means of payment among the survey respondents (Figure 13). The responses also indicate that use of debit cards (27 per cent), credit cards (22 per cent) and credit union debit cards (10 per cent) are the primary forms of digital payment. Furthermore, 87 per cent of respondents have used debit cards in the past month, compared with 78 per cent (credit cards) and 59 per cent (chequing accounts), respectively (see Figure 14).

FIGURE 14: USAGE OF DIGITAL PAYMENT CARDS IN PAST MONTH



Source: Caribbean Economic Research Team Payments Survey – October 2019

FIGURE 15: ATM USE TO WITHDRAW AND/OR DEPOSIT CASH OR CHEQUES

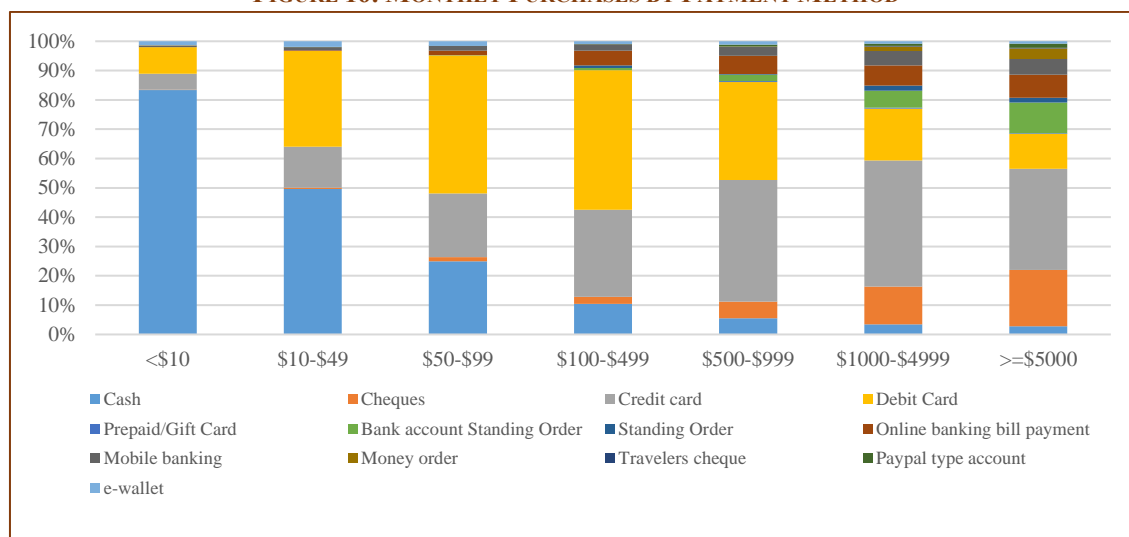


Source: Caribbean Economic Research Team Payments Survey – October 2019

A corollary to the responses to the question on the amount of cash holdings is the frequency of use of the Automatic teller machines (ATMs) to withdraw cash or deposit cash or cheques. The survey found that the majority of cash withdrawals occur weekly and bi-weekly (Figure 15), which may suggest that these withdrawals are associated with weekly and/or bi-weekly workers or withdrawals of cash for everyday spending. However, an interesting result is that

only 2 per cent of respondents made daily cash withdrawals and an even smaller percentage used the ATMs to deposits of cash or cheques. This may be reflective of the use of cash for small and typical day-to-day transactions and the use of digital payments for other larger value transactions. Furthermore, only 10 per cent of respondents stated that deposits are made weekly, but 38 per cent made bi-weekly deposits. More importantly 25 per cent of respondents never made deposits at all using an ATM.

FIGURE 16: MONTHLY PURCHASES BY PAYMENT METHOD

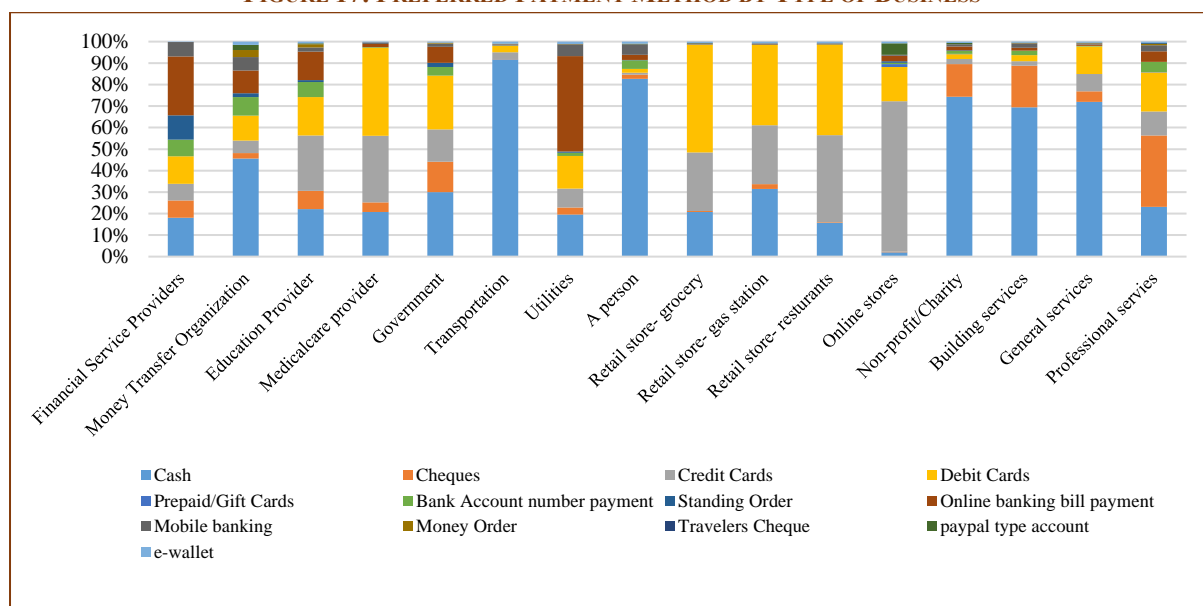


Source: Caribbean Economic Research Team Payments Survey – October 2019

The main conclusion that may be drawn from **Figures 16 and 17** is that cash and debit cards (represented by the light blue and yellow bars) are the principal forms of payment used by the respondents on a monthly basis. According to **Figure 16**, cash is the main form of payment for small-value transactions between \$10 and \$49. As the transaction size increases, there is a switch from cash as the dominant payment method to primarily debit cards for payments between \$50 and \$500. For those transactions greater than \$500, the respondents indicated their greater use of credit cards and cheques.

Figure 17 further illustrates the preference for using cash to conduct certain types of transactions (i.e., money transfers, transportation services, personal payments, charitable donations, building and general services) and debit cards higher value transactions (medical care, government services, groceries, gas station, retail shopping). As expected, credit cards are mainly used to make online purchases and for similar domestic transactions as previously stated for debit cards. Cheques are used primarily for payments for professional services.

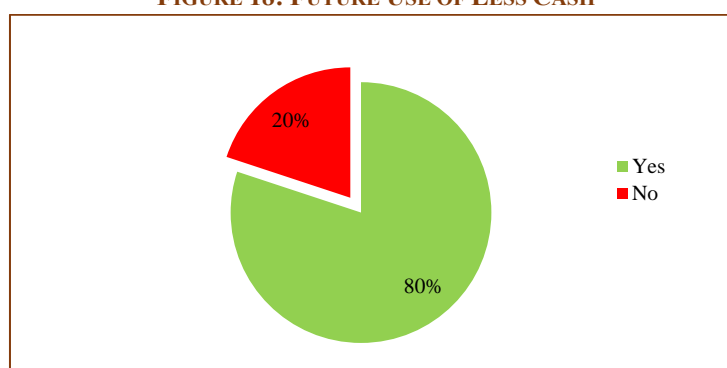
FIGURE 17: PREFERRED PAYMENT METHOD BY TYPE OF BUSINESS



Source: Caribbean Economic Research Team Payments Survey – October 2019

Several of the Caribbean commercial banks and central banks aim to reduce the use of cheques in their respective financial systems. It is thus noteworthy that cheques appear to be used by individuals for purchases where a record of such a transaction might be needed. In addition, the limited overall use of cheques as indicated by the results of this survey suggest that this payment method may be propagated by business and government transactions rather than personal transactions.

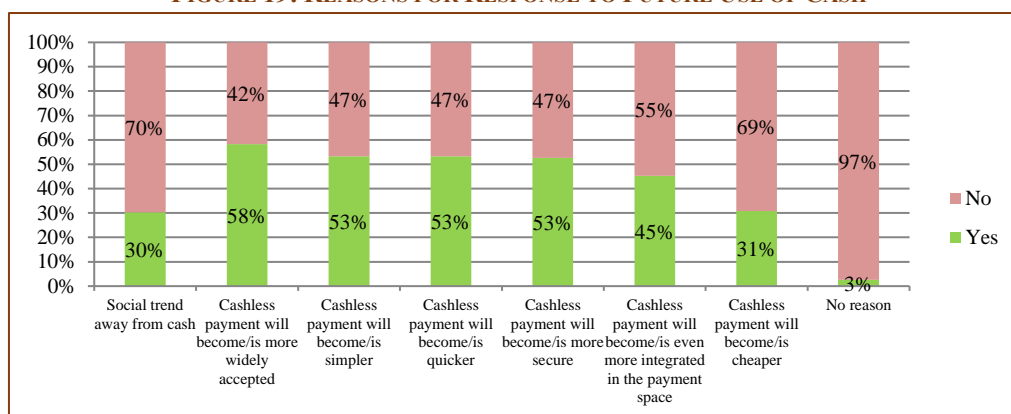
FIGURE 18: FUTURE USE OF LESS CASH



Source: Caribbean Economic Research Team Payments Survey – October 2019

Figure 18 illustrates that 80 per cent of respondents are likely to reduce cash usage overtime. The main reasons highlighted were that cashless payments (i.e., digital payment methods) will become more widely accepted (58 per cent), simpler (53 per cent), quicker (53 per cent) and more secure (53 per cent). Interestingly, approximately 70 per cent of respondents were of the view that digital payments are not likely to be cheaper or that the trend towards increased use of digital payments will not be associated with a shifting of preferences away from cash (see Figure 19).

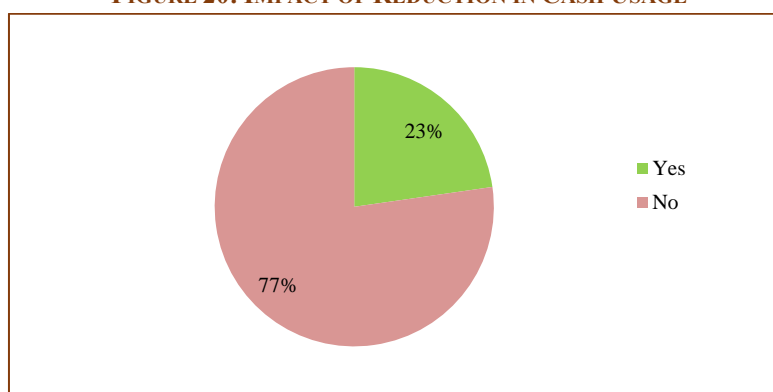
FIGURE 19: REASONS FOR RESPONSE TO FUTURE USE OF CASH



Source: Caribbean Economic Research Team Payments Survey – October 2019

An overwhelming response of 77 per cent of respondents is likely not being adversely affected by a reduction in cash in the future. However, cash still has a critical role to play in the payments landscape, especially for certain segments of the population who live in rural areas or conduct informal transactions (household services). The main reasons indicated by the 23 per cent of respondents who expressed they would be adversely affected by a reduction in cash are easy availability, wide acceptance, convenience, lack of trust of digital payment methods, cultural preference, absence of associated fees and costs, and security concerns with digital payment methods.

FIGURE 20: IMPACT OF REDUCTION IN CASH USAGE



Source: Caribbean Economic Research Team Payments Survey – October 2019

The preliminary findings from the online survey are that cash is still a popular form of payment, but its appeal is likely to diminish in the future. Debit cards are seen as a substitute for using cash, especially for slightly higher-value transactions. This may be because debit cards are much easier to use, more practical and less costly than other forms of payment of digital payment such as credit cards and online banking. With regard to credit cards, this form of payment is preferred for large value transactions and for making online purchases of goods and services from abroad.

It must be pointed out that there are some limitations with the survey, as it may not be fully representative of a wide cross section of the Caribbean population. The reasons for this are as follows:

- i. The link was largely loaded on the websites of the CARICOM central banks, which may be biased to a certain segment of the population, usually the younger, more educated and relatively wealthier persons.
- ii. The survey is likely to have excluded the older segment of the population who may not have access to the broadband internet and smart phones.
- iii. The minimum sample size required for each country is important to ensure that the results are statistically sound. Based on the online survey, with the exception of Barbados with over 600 responses, all the other countries were way below what would be considered an ideal sample size. For example, for countries of the ECCU, the minimum sample size to be representative is 500.

While this online survey provides an initial assessment of individuals' perspectives, payment habits as well as the perception and attitudes towards cash and other various forms of payment, it may not be a true representation. Therefore, it would be prudent to consider a face-to-face interview survey where the target groups are selected in order to ensure that all segments of the population are covered by the survey.

5.0 CASE STUDIES

Both developed and developing countries are adopting non-cash policies towards the minimisation and/or elimination of cash in order to enhance the efficiency and effectiveness of their economic and financial systems. In many countries the main drivers are the Government and the Central Bank with an additional push coming from a diverse set of players entering the payments market. In addition, consumers are increasingly demanding digital payments methods and services. Sweden, the United Kingdom and China are among the world's top ten "cashless" countries, while India, South Korea and Israel have recently embarked on the cashless revolution. Kenya and Haiti provide useful practical examples of how financial inclusion can be enhanced with technological advancements in digital payments to provide opportunities for the large segment of the unbanked population.

5.1 SWEDEN

Sweden is widely recognised as the leading country in the move to become a cashless society. Sweden's journey includes the widespread adoption of payment cards in the 1950s, the digitalisation of bank accounts in the 1960s and the setting up of the internet infrastructure and internet banking in the mid-1990s. The main factors contributing to the cashless society in Sweden are a robust card payment system, strong internet infrastructure, a popular mobile payments app, supportive legal framework and a cultural mistrust of cash. The rapid decrease in cash has been market-driven, and Government has not passed laws to protect cash use. It is therefore legal for retailers to refuse to accept cash since payment cards are widely accepted.

Sweden's high penetration of mobile smartphones and internet use drove the introduction of the BankID 2003 project, which further integrated the public on an electronic platform. BankID is an online platform that facilitates the identification of citizens which allows companies, banks and government agencies to authenticate and conclude agreements with

individuals over the internet. It was originally developed by a consortium of large banks and is used by Government authorities, businesses, banks and individuals across the country as the principal system for digital identification, including signing transactions and agreements. BankID was then made accessible on mobiles (not necessarily smartphones).

The use of cash has also been decreasing each year because of the banks' refusal to handle cash and the closure of bank branches and ATMs. In fact, more than half of all banks are cashless. According to the Cash & Card World Swedish Report, "In the past 10 years, the country's biggest banks have closed around 250 bank branches, with most local branches no longer offering manual cash-handling services. Furthermore, of the more than 1,600 commercial bank branches in Sweden, around 900 of them are cashless and their roles are rapidly evolving. Indeed, the transition of the Swedish economy to a cashless one was predominantly driven by banks as opposed to Government or central bank policies.

5.2 UNITED KINGDOM

The UK government has played a significant role in guiding the country's move to a cashless society. In the United Kingdom, studies have shown that cash has fallen from 62.0 per cent of all payments by volume in 2006, to 40 per cent in 2016, and is predicted by the industry to fall to 21 per cent by 2026⁴. Cash represented only 15.0 per cent of the total value of consumer spending in 2015. Based on a survey done in 2017⁵, two-thirds of people were making more payments digitally than they did five years earlier.

Some of Government's initiatives to support digital payments include:

- Increasing competition among non-bank payments firms by levelling the playing field and reducing barriers to entry.
- Creating a regulatory regime that supports competition.
- Implementing policies that have reduced the cost of cards for consumers through shaping two EU regulations and implementing them in a way that maximises benefits for consumers.
- Supporting the UK's evolving payments landscape.

The government and regulators have indicated that they are committed to ensuring that digital payments work for everyone who uses them, and will explore where possible whether government could take further steps to support the growth of digital payments⁶.

5.3 CHINA

The Chinese government has been the main driver of China's transition to a cashless society. In 2016, the value of mobile payments in China was approximately US\$9.0 trillion. This reached US\$38.0 trillion at the end of 2017. The government-controlled companies Ali

⁴ HM Treasury – Cash and Digital Payments in the New Economy: Call for Evidence, March 2018

⁵ 'Consumer Omnibus Survey', Cash Services UK, 2017

⁶ HM Treasury – Cash and Digital Payments in the New Economy: Call for Evidence, March 2018

pay, (the mobile payment service of Ant Financial, which is the financial arm of Alibaba Group Holdings) and WeChat, (the mobile payment service of Tencent Holdings Limited) are the two top technology giants that have revolutionised the payment system. China has gone a step further as the authorities are also pushing for AI based facial recognition payment systems⁷. It is through these two companies that China has achieved its reduction in cash⁸. The companies accounted for Yen\$27.1 trillion in online transactions in 2017. The key drivers which facilitated these mega-firms were the improved retail coverage and promotional campaigns which advanced three selling points of cashless payments: convenience, security and protection from counterfeiting. The improved retail coverage stemmed from the Peoples' Bank of China's supportive regulation in setting up a new clearing entity called Net Union through which payments service participants were instructed to route their transactions.

Finally and importantly, China has employed a financial inclusion strategy geared towards having the unbanked and financially underserved gain access to these facilities through digital payment platforms.

5.4 INDIA

India has taken bold steps to reduce the use of cash. India is a very cash intensive country, with a cash to GDP ratio of approximately 9.0 per cent and more than 90.0 per cent of transactions being cash-based. India's population prefers cash in order to avoid high transactions costs of up to 3.0 per cent on electronic payments as well as to escape sales tax. As part of the Government's plan to cut tax evasion, undermine the shadow and illegal economy and move citizens to reduce their use of cash, India withdrew its 500 and 1000-rupee notes from circulation in 2016. The government also cut transactions costs on electronic payments, and increased the number of point-of-sales terminals (which doubled, in 1.5 years) and smartphone application (mobile payment). Other measures included: removing service tax on cashless transactions below 2000 rupees, announcing a monthly jackpot for people conducting cashless transactions in government services and providing cash back on transactions. This has led India's cash in circulation to decrease from 12.2 per cent of GDP to 8.8 per cent of GDP between 2016 to early 2018. It was against this background the use of mobile wallets increased by 300 per cent. This increase was, however, against a very low base of digital transactions⁹.

With regard to its e-government initiatives, India has also launched "The Digital India Programme" which is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. Thus, the Government of India through the Ministry of Electronics and Information Technology (MeitY), envisages paperless, cashless and faceless services across the country, especially in rural and remote parts of India. MeitY further envisages common e-Governance infrastructure that will offer end-to-end transactional experience for a citizen, businesses, as well as internal government functions, which includes accessing various services and making payments and

⁷ The system uses "Liveness" an AI algorithm and a system of 3D cameras that recognizes a person by analyzing about 600 facial features, this data is then matched with government database and after the identification of the person is confirmed, the amount is deducted from his/her bank account.

⁸ UBS (2018), The road to cashless societies

⁹ Reserve Bank of India: Payment System Press Release.

receipts through electronic modes. The Apex Committee on Digital India has recommended a targeted and time bound approach to implementing digital payments for citizens across all the e-Services of Government Ministries and Departments. Against this backdrop, MeitY has notified Guideline for Electronic Payments and Receipts (EPR), intended for Central Public Sector Undertakings, State Governments, Government of India Autonomous Bodies, and Municipalities for expeditiously implementing appropriate mechanisms to enable electronic payments and receipts¹⁰.

5.5 ISRAEL

The main motive behind Israel’s plan to limit cash usage and other paper-based payments was to reduce the size of the informal economy, which was estimated at about one-fifth of economic activity. This objective was achieved by promoting alternatives to cash usage for the entire population, which included a framework to use debit cards while making provisions for those citizens who did not have bank accounts. A key element of the strategy was the gradual implementation of proposals to allow the public to become accustomed to the changes.

On 18 March 2018, the Law for Reducing the Use of Cash, 2018 (the “Law”) was published in the Official Government Gazette of Israel. The primary intent of the Law is to limit the use of cash, as a way to fight crime and money laundering, and to enable the use of advanced and efficient means of payment. The Law sets out a number of prohibitions and restrictions on the use of cash and checks, distinguishing between transactions to which a dealer (any person who sells an asset or provides a service during the course of his business) is a party and transactions between private individuals. In addition, the Law limits the ability to use cheques for transactions, wages, contributions, loans and gifts.

In addition to the above, the Law promotes the use of electronic means of payment by authorising the Minister of Finance to determine rules obligating dealers to possess specific means used to read charge cards, requiring dealers to record means of payment and obligating purchasers of real estate rights to declare the means of payment of the consideration. The Law entered into force on January 1, 2019.

5.6 KENYA

Kenya’s M-Pesa mobile-transfer and payments services serves as an encouraging example of the possibilities for expanding non-cash payments when payments technologies can be adapted to suit the existing infrastructure (A.T. Kearney, 2018). Kenya’s approach to digitisation has been to allow regulation to follow innovation, referred to as the ‘test and learn’ approach, and to support the mechanisms for financial inclusion while managing the emerging risks. M-Pesa has required a combination of innovative telecommunication and banking initiatives, as well as a sound regulatory environment to enable the development of innovative financial products. Indeed, the progress on financial inclusion in Kenya is built on the improvements in the regulatory environment. The regulatory reforms have been accompanied by enhanced consumer protection, which has created a better

¹⁰ Website - Government of India, Ministry of Electronics and Information Technology.

environment for the reduction of cash usage across the economy and the monitoring of AML/CFT risks.

Over the past decade, the expansion of the retail electronic payments infrastructure has extended to virtually the entire economy, including government services. Indeed, a large unbanked population previously shut out from formal banking services are now included, thereby increasing the transition from the uncertainty of the informal economy. In particular, these developments were driven by the launch of the M-Pesa platform in 2007, which over the past decade has evolved from a simple money transfer technological platform to include virtual savings products and credit markets, micro insurance, investments in government securities and as a useful monitoring mechanism to track fraudulent flows into personal accounts. It is estimated that about 67 per cent of the persons using virtual savings and credit products are between 18 years and 34 years.

The M-Pesa platform, which was created by a telecommunications company (Safaricom) and a commercial bank (Commercial Bank of Africa), was built on a pre-existing platform that enabled mobile-phone customers to trade pre-paid airtime. This feature facilitated the rapid adoption of M-Pesa by both agents and consumers. The pre-existing legal framework included the Central Bank of Kenya Act, which authorised the Central Bank of Kenya (CBK) to supervise the national payments infrastructure and the Communications Law, which already recognised electronic units of money. The latter provided the legal basis for the telecommunications company to store monetary units in mobile phone SIM cards. With the national payments and settlement bill still to be proclaimed into law, the CBK developed guidelines to guide the market. In addition, legal experts from the CBK developed a trust account at the Commercial Bank of Africa, which became the payments platform. The trust account was supervised by the CBK and the electronic money stored on the mobile phone SIM cards were simultaneously loaded into the trust account at the commercial bank. In other words, the trust account was not the Safaricom business account and it couldn't access the funds. In the event Safaricom went bankrupt these funds would be protected from its creditors.

M-Pesa eventually evolved from using a common trust account for all users to providing a connection with individual users' savings accounts. The CBK issued regulations to allow this connection between M-Pesa and individual savings accounts at commercial banks. This resulted in the subsequent growth in bank customers using M-Pesa, which benefitted the banks and improved financial inclusion. In addition, banks and telecommunication companies were able to collect transactions and savings data from customers, which allowed the evaluation of customer behavior that generated individual credit scores and the customizing the pricing of credit. The CBK issued further guidelines to address liquidity risk designed to mitigate financial stability concerns. The telecoms company was also able to vet customers using vetting criteria based on financial soundness. Steps were also taken to mitigate operational risks which include hardware or software problems, malicious attacks or human error that may cause the system to break down or malfunction giving rise to financial exposures and possible losses. In the latter stage of its development, M-Pesa expanded from domestic money transfers to cross border remittance services to neighbouring countries.

5.7 HAITI

Haiti has a Gross Domestic Product (GDP) per capita of \$870 in 2018, and a Human Development Index ranking of 168 out of 189 countries in 2018 (World Bank). Haiti is a very cash-intensive country, as only approximately 32 per cent of Haitians are banked. It is the poorest country in the Western Hemisphere and its economy relies heavily on remittances. Thus, Haiti provides a sounding board for financial inclusion advocates and policy makers.

Mobile money in Haiti is guided by the Central Bank's preference for a bank-led model.

The push by the regulator as well as the incentives provided by the Bill and Melinda Gates foundation and USAID aided in the development of mobile money. Mobile money became available in Haiti in 2010. Since then, there have been varying changes and challenges in the payment space. There have been various providers of mobile money. One of the largest suppliers has been Digicel's MonCash mobile wallet, which replaced the Tcho Tcho Mobile product in July 2015. According to one report, by March 2018, MonCash had more than 900,000 customers, 2,200 active agents and carried out 7.1 million transactions, amounting to 44 million US dollars. MonCash customers can perform transactions, such as cash-in, cash-out, peer2peer, and make payments. Reports point to the use of mobile money for the transfer of some government welfare payments to individuals, the distribution of financial aid by international bodies and the payment of small loans to financial service providers.

Despite the success of mobile money in Haiti, various reports have identified areas where improvements can be made. One such area is that of the size of the wallets. According to the established legal provisions, the following transactions are authorized: mini-wallet with a maximum value of 4,000.00 Haiti Gourde (HTG); and a full wallet with an initial maximum value of 10,000.00 HTG. It has been suggested that these figures are too small. There is need for a dependable local agent network so that potential clients can participate in the system. According to a 2017 report the MonCash agents were mainly based in urban areas, thus making it difficult for persons in the rural areas to use the service. There is also need for communication between the different systems. As of 2018 there was no interoperability between MonCash and Lajaon Cash (another major service provider). Another issue is mobile network infrastructure. Rural communities can be disadvantaged when national telecommunication coverage is limited.

In September 2015, the World Bank Board of Executive Directors endorsed a new strategy to support the Government of Haiti's efforts to provide economic opportunities for all Haitians and to reduce poverty in the country. This new strategy also aims to improve access to basic services, energy and finance. Recognising the economic, financial and social benefits of financial inclusion, the Central Bank of Haiti in June 2019, convened discussions with Bitt, a Barbados-based fintech company on the likely benefits of a blockchain-based Central Bank Digital Currency. The Central Bank of Haiti noted that they are "considering a pilot to create a digital version of the Haitian Gourde, which aims to improve the domestic payments system and promote financial inclusion in Haiti. The Government and Central Bank of Haiti can leverage financial technology to maximise the benefits and reduce the cost of inbound remittances. According to the World Bank data, remittances to low and middle-income countries are on track to reach US\$551.0b in 2019. For Haiti, it is estimated that over US\$3.0b

is received by the country in the form of remittances. The World Bank estimates that as much as 19.0 per cent is paid in fees for those remittances. The use of financial technology such as digital currency, mobile wallets can significantly reduce the cost associated with financial transactions including remittances.

6.0 A FRAMEWORK FOR STRATEGIC INTERVENTIONS

This section proposes a framework for developing strategic interventions for reducing the volume and value of cash transactions while increasing the use of non-cash or digital payment instruments. The framework addresses demand side and supply side factors that determine the adoption and use of non-cash payment methods. On the demand side, there is a need to deploy strategies that would incentivise consumers towards a behavioural shift away from cash to non-cash payment options. To effectively address the demand side barriers to using non-cash payment alternatives, one must first understand the factors that make cash so attractive. On the supply side, infrastructural and other constraints that inhibit consumers' ability to effect payments using non-cash payment methods must be addressed to make non-cash payments possible and feasible for consumers.

The Caribbean region may draw upon the demand and supply sides strategies of other countries in devising its own tailored strategy. Broadly, some of the most effective strategic interventions being implemented by other countries may be classified as follows: **demand side initiatives** include policies that directly restrict access to or use of cash for certain transactions; fiscal or other incentive programmes that increase the relative benefits or reduce the relative costs of using non-cash payment media; public education and financial literacy programmes to address consumer misperceptions about the relative advantages and disadvantages of cash versus non-cash payment options; and policies that provide safeguards and are intended to engender consumer confidence and trust. Meanwhile, **supply side measures** include legislative and regulatory reforms that create a supportive environment for the development of non-cash payment instruments, as well as, the enhancement of the payments infrastructure to accommodate digital and non-traditional payments transactions.

In developing a strategy for reducing the use of cash, it is recommended that due consideration be given to engendering financial inclusion. This requires ensuring that the interventions result in a mix of payment options, with appropriate design features, to cater to the various needs of different segments of the consumer population and create a diversified payment landscape. Therefore, the interventions discussed in this study do not aim to achieve the complete elimination of cash from the society. To that end, a broad outline of strategic interventions follows that may be considered for inclusion in national strategies tailored to meet the needs and fit the circumstances of individual member countries. Finally, the proposed approach largely aligns with and endorses proposals emerging from ongoing research work at the regional level, such as that of the CARICOM FinTech Work Group (2019).

DEMAND SIDE INTERVENTIONS

Survey data show that consumers who use cash often do so because of perceived benefits or advantages of using this medium over other payment options, or out of habit. Fung, Huynh

and Sabetti (2012, p. 3) report that a 2009 Bank of Canada Method of Payments Survey conducted for Canada shows that the use of payment cards was determined by considerations for safety and credit card rewards, among other factors. Fung et al. (2012, p. 3), citing research by Arango, Huynh and Sabetti (2011), note that the choice of cash over other payment options was related to speed or convenience and lower costs of using cash, among other considerations.

Restrict Access to or Use of Cash for Certain Transactions

Among the extreme policies introduced in recent years to curb the use of cash is the removal of certain denominations of notes and coins from circulation, such as India's 2016 demonetisation initiative that targeted large denomination notes. The direct removal of currency—particularly large notes—from circulation motivates consumers to explore non-cash alternatives for facilitating certain payments.

Other jurisdictions, including a number of European countries, have instituted caps on the allowable value for cash transactions, thereby encouraging consumers to switch to non-cash instruments for making larger payments, while other countries have placed limits on cash withdrawals (A.T. Kearney, 2018).

Fiscal or Other Incentive Programmes

Government is often one of the largest payers and/or payees in an economy, which presents a prime opportunity to lead the shift towards use of non-cash instruments. Policymakers could mandate that payments to governments, including for example, taxes, government fees and other payments made by large commercial entities for government goods and services, be made only using non-cash instruments. Other government customers could be provided with a variety of non-cash payment options. Appropriate incentives, such as VAT rebates on payments made with non-cash instruments, could be introduced to increase the relative benefit of non-cash payments.

Several countries have either enacted legislation to govern credit/debit cards fees or have introduced reimbursement schemes to encourage businesses to adopt electronic payments. In India, the Government has implemented a plan, for two years, starting January 1 2018, to absorb the costs of merchant discount rate (MDR) on debit cards, BHIM UPI or Aadhaar-enabled payment transactions up to Rs 2,000. The Malaysian Central Bank has also sought to address the costs merchants face when adopting cashless payment systems. Since 2013, it has capped the cost of credit transfer services, and imposed ceilings for interchange fees and established a market development fund to expand the point-of-sale terminal network until 2020. Similarly, the European Union's (EU) Interchange Fee Regulation, which came into force in June 2015, limits the fees which credit card issuers can charge a merchant's payment service provider. There is a cap of 0.2 per cent of the transaction value for consumer debit cards, and 0.3 per cent for credit cards.

Government benefit programmes also offer a unique opportunity for public policy initiatives to target a reduction in cash usage. Rather than cash or cheque payments, benefits could be disbursed to programme beneficiaries via direct deposit or stored value cards. Such an initiative would need to be combined with financial inclusion programmes to ensure

recipients have access to a bank account to safeguard the benefit programme's effectiveness and avoid further disadvantaging vulnerable groups.

In Trinidad and Tobago one public welfare programme, the Targeted Conditional Cash Transfer Programme (TCCTP), more commonly called the food card has since 2006 (August) distributed the benefits to households via electronic means. Replicating this mode of delivery for other programmes that currently use cash can further aid in reducing cash usage.

Public Education and Financial Literacy Programmes

Any public policy initiative for reducing the use of cash ideally should be complemented with a public education programme¹¹ to ensure successful implementation. Initiatives to reduce the use of cash are more likely to gain acceptance among the public if authorities consult with and educate the public on the purpose and implementation of the initiatives.

Research using micro-level survey data on consumer spending behaviour shows that there exist consumer misperceptions about the relative advantages and disadvantages of cash versus non-cash payment options. The Netherlands' public education campaign, "Klein bedrag, pinnen mag" – translated as "small amount, please use your debit card" – sought to dispel consumers' misperceptions that retailers did not accept cards for payment of small transaction values (Jonker et al., 2017, p. 28). More broadly, financial literacy programmes may allay consumer fears regarding issues such as security and privacy, build consumer trust and confidence in the payments system, introduce consumers to new payment technologies and empower them to be able to use non-cash instruments.

Safeguards: Cyber Security, Consumer Protection and Data Privacy Policies

A comprehensive framework for shifting the economy to a new non-cash paradigm must mitigate the risks associated with non-cash payment instruments to ensure the robustness of the payments system. While the move to non-cash payments is in part predicated on the dangers or risks of using cash, non-cash instruments also harbour risks. Crippling cyber-attacks, hacking and abuses in the use of individuals' private information obtained from retailers and social media sites have raised the alert on the security of the data we generate in our everyday lives. Research suggests that, for consumers, there may be a trade-off between ease of use of non-cash payment methods and concerns over security. For example, Fung, Huynh and Sabetti (2012, p. 13) suggest that concern over lack of merchant verification for use of contactless-credit cards likely negatively impacts consumers' use of this type of instrument, although the ease of use for this type of instrument should, in theory, make it desirable as a payment option. Central banks must act to allay these concerns by improving safety of payments infrastructure but must also issue guidelines on cyber security for the benefit of users and providers alike.

¹¹ In an effort to educate and increase understanding of financial issues and initiate ongoing public discussion of financial and economic matters throughout the region, the ECCU member governments designated October as Financial Literacy Month in 2002 and designated the ECCB to spearhead the project.

Policymakers must balance consumers' legitimate security and privacy concerns with a need for transparency and efficiency in financial transactions. The anonymous nature of cash transactions appeals to those who view with suspicion technology-enabled payment instruments that allow tracking of consumer actions and that are at risk of fraud. The anonymity and untraceable nature of cash is appealing in the informal economy as it facilitates hiding transactions from fiscal authorities. By some estimates, the size of the informal sector could be in the range of 20 to 50 per cent of GDP in some Caribbean countries (Peters, 2017; Vuletin, 2008), making the transparency offered by non-cash instruments an important characteristic from a policy and welfare perspective for countries in their bid to reduce the size of this sector. Policy initiatives such as the European Union's 2016 General Data Protection Regulation seek to offer safeguards and protections to individuals regarding their personal information and may serve as a useful model for designing data protection policies for the region as a component of the cashless strategy.

SUPPLY SIDE INTERVENTIONS

Supply side interventions aim to create the enabling environment for the convenient use of non-cash instruments at low cost. This requires building the appropriate payments system infrastructure and establishing other necessary preconditions for the uptake of digital payment technologies in the transition to cashlessness.

Legal and Regulatory Framework

The existing legal and regulatory frameworks are inadequate for ensuring the stability of the financial system amid the fast-paced evolution on account of financial and technological innovation. The financial services landscape has been transformed in recent years with the emergence of fintech firms that are disrupting the financial services industry. The lines between the incumbents (traditional banks and other financial institutions) and recent entrants that leverage technology to offer new financial products and services are blurring, which is posing a challenge for regulators. Frameworks must be modernised to accommodate innovation and new firms into the sector that can further develop financial services. Care must also be taken to ensure that features of the legal and regulatory frameworks do not favour one set of financial services providers over others. For example, it may be necessary to design deposit insurance schemes that extend coverage not only to clients of incumbent firms but also to other firms entering the market to provide similar services. This will prevent biasing customers' preferences towards firms that offer deposit insurance protection for customers' funds.

Policymakers may wish to establish a regulatory framework that creates an environment for collaboration and experimentation among various types of firms in the financial services sector. Activity in the financial services sector is not only characterised by competition among incumbents and disruptors but also by collaboration. There have been attempts at collaboration between incumbents and disruptors in the provision of financial services and products but obstacles remain to the effectiveness of these partnerships. An increasingly popular concept for facilitating such collaboration, innovation and experimentation is the regulatory sandbox.

Payments System Infrastructure

One key aspect of going cashless is developing the digital payments system infrastructure to facilitate new forms of digital payments. A case in point is China's establishment of a parallel clearinghouse specifically to facilitate internet-based payment services (Zhang, 2017). Another approach has been to widen the available payments infrastructure by expanding the number of point-of-sale terminals. A number of countries, including Malaysia in 2014 and Poland in 2017, have established "acceptance development funds" to finance these expansions in the payments network (A. T. Kearney, 2018, p. 26).

The reduction in cash usage and the concomitant adoption of increased use of digital payments in Caribbean economies will require sweeping changes to the current legislative framework, particularly with respect to ensuring consumer protection and the detection of fraud. **Box 1** provides a preliminary look at the steps being taken by four central banks with respect to payments infrastructure to facilitate greater regulatory and supervisory oversight of all forms of digital payments. The current suite of legislation in these countries encompasses provisions for e-money transfers and payments, but gaps still exist related to digital currencies and virtual currencies.

Box 1:
REGULATORY REFORM OF THE PAYMENT SPACE IN SELECTED CARIBBEAN COUNTRIES

Belize

The existing legislative framework comprises of the 2017 *National Payment System Act (NPSA)*, *Central Bank Act*, *Bills of Exchange Act*, *Electronic Transactions Act*, *Electronic Evidence Act*, and the *Treasury Bills Act*. This has been strengthened recently with the creation of the Automated Payments and Securities System (APSSS), which is owned and operated by the Central Bank and connects all banks in a local network to make electronic payments quick, safe and secure. The system's components include: (i) the Automated Clearing House (ACH), for electronic clearing and settlement of retail payments; (ii) the Real Time Gross Settlement (RTGS), to enable large-value payments; and (iii) the Central Securities Depository (CSD), to enable liquidity management custody and registry of ownership of government securities. Also effective July 1st, 2019 the Central Bank introduced fees for transactions processed through the APSSS. These fees which were initially covered and subsidized by the Central Bank are intended to offset the costs associated with maintaining and upgrading the system and have been designed to encourage the usage of the more efficient payment instruments and represent minimal fees to financial institutions¹⁶. Nonetheless, according to anecdotal evidence, financial institutions have passed these costs to consumers, sometimes in a non-proportional manner.

The steps being taken to improve the supervision of the payments system include the collaboration with the World Bank on a strategic plan for improving the framework for oversight and capacity building.

Barbados

The Central Bank of Barbados (CBB) is in the process of undertaking comprehensive amendments to the Payments System Act, with the *National Payments System Act of Guyana (2018)* providing the framework for the amendments. A key feature of the reforms is the establishment of a National Payments Council and a Tribunal, the latter as an offshoot to settle payments disputes, to advise the CBB on the regulation and oversight of the payments system. The new legislation is expected to cover, *inter alia*, payments using e-money, payment wallets and mobile devices, online payments, smart cards and digital currencies.

Eastern Caribbean Currency Union

The current legislative framework does not encompass provisions for digital currencies or virtual assets and the ECCB are expected to undertake a comprehensive review of the existing legislation covering the payments infrastructure. The aim of the review is to make recommendations that will ultimately inform legislative changes for the improvement, supervision, operation and administration of the payment sector, while fostering an environment for innovation. In addition, the adoption of the Principles for Financial Market Infrastructures (PFMI) and development of criteria for the designation of funds transfer and settlement systems in the ECCU.

Trinidad and Tobago

In Trinidad and Tobago, the payments system is governed by the *Central Bank Act (CBA)* and the *Financial Institutions Act (FIA 2008)*. The current legislation provides for the issuance and transfers of e-money, but does not address the regulation and supervision of new financial services developments, such as crypto-currency and virtual assets, new players or entities such as Fintech firms wishing to offer a range of new products and services or traditional ones in a new way. The measures to be undertaken by the central bank to improve the regulation and supervision of the payments system are:

1. Development of an e-money policy that allow other entities in addition to those licensed under the FIA to issue e-money. As such, the issuance of e-money regulations which will allow non-bank non-financial entities to issue e-money;
2. Development of a Fintech Policy to accommodate these new financial innovations in a safe manner;
3. Revision to Payment System guidelines which address the registration and oversight of Payment System Operators and Payment Services Providers who are not licensed commercial banks and non-banks;
4. Revision to the Central Bank Act to capture the new developments in the payments space;
5. Development of a comprehensive Payments Systems Act.

7.0 STRATEGIES FOR REDUCING USAGE – FROM THE PERSPECTIVE OF GOVERNMENTS, DIGITAL SERVICE PROVIDERS, BUSINESSES, CONSUMERS

A successful strategy for reducing the use of cash requires participation of all important stakeholders in the financial services industry. This section explores some of the key areas in which stakeholders may contribute towards the overall strategy for reducing cash usage. It outlines some specific interventions that may be adopted by each group of participants in the payments system.

PUBLIC SECTOR

As discussed previously, there is wide scope for government participation in the drive towards adopting non-cash payment instruments and serving as a catalyst in the transformation of the payments landscape in the Caribbean.

Adoption of Non-cash Payments Technologies for Transactions with Government

Governments could adopt policies to digitise the many types of payments to residents, including such extensive fiscal outlays as public servants' salaries and social welfare benefits payments. In addition, programmes could be developed with the appropriate incentive structures to encourage customers to favour non-cash instruments when making payments to the government.

E-government services could be developed or expanded to facilitate the transacting of business with government (such as filing and paying taxes, applying and paying for various services, among others) digitally. Policies could be targeted at specific sectors, such as the public transit system, which would be geared towards facilitating and accepting non-cash payments for transit fares. Several other sectors and areas may be considered for similar targeted interventions.

Fiscal Incentives

Government could use fiscal policy as part of its tools for driving the cashless transition. Fiscal incentives such as the waiving of taxes on non-cash transactions or imposing taxes on cash transactions above a certain threshold could be adopted to encourage a substitution away from cash usage. Governments could consider a subsidy programme for the adoption of non-cash payment technologies by micro and small enterprises as a way to contribute towards expanding the coverage and reach of the payments system for non-cash payments. The VAT rebates previously discussed offer another option for the design of fiscal incentive programmes that encourage the use of non-cash payment instruments.

Build an Ecosystem for Collaboration with Stakeholders on Initiatives

Strategic partnerships between government and other stakeholder groups would be required to ensure successful implementation of the cashless strategy. The legislative and regulatory reforms needed to create the enabling environment and requisite safeguards for successful implementation of the strategy would require collaboration with other regulatory bodies, such as central banks. Furthermore, public-private partnerships could be instrumental

in the modernisation of the payments system infrastructure. Government programmes that foster innovation and encourage collaboration between banks and fintech firms can result in the creation of new digital payment platforms that facilitate non-cash payments. New digital payment platforms could target the development of solutions to the unique challenges faced by micro and small enterprises in particular, in their efforts to adopt non-cash payment technologies. The government's partnerships could also be the vehicle for capitalising acceptance development funds.

In addition, governments as well as central banks could work in tandem with private sector entities on public education, and financial literacy and inclusion programmes to develop a population that is comfortable with digital technology.

Digital Service Providers

Digital service providers are an important stakeholder group for a successful cashless strategy. Also important are the internet service providers (ISPs) to ensure reliable cutting edge services to engender public confidence in the payment system. They play a pivotal role in expanding the menu of non-cash payment offerings available to users. Digital service providers could collaborate with other stakeholders such as government, traditional banks and regulators to help develop new instruments or facilitate the diffusion of payment innovations throughout the economy. They could also serve as contributors into the *acceptance development funds* that seek to expand the payments network. Service providers also have a responsibility to engage in their own promotional campaigns to bring awareness of new digital payment options to new and existing customers. They may make greater use of such incentive programmes as card rewards/loyalty programmes that encourage the use of card instruments as they increase consumers' perceived benefits of using these instruments.

BUSINESSES

Businesses, particularly the micro and small enterprises segment where uptake of non-cash payment technologies is slow, could partner with fintech firms and other application developers for low-cost non-cash technologies that may be feasibly adopted. Public education campaigns to bring awareness to businesses' acceptance of non-cash media could remove any misperceptions that the public may have about retailers' willingness to accept these payments. Businesses may also be encouraged to transact their payments to their suppliers and vendors, and for their payroll and other outlays using digital payments as far as practicable. The Reserve Bank of India in its quest to reduce cash usage has promoted a policy to allow businesses, through their banks, to issue prepaid cards to their workers through which their salaries could be paid.

CONSUMERS

Consumers have not only a right to protections—such as of their personal data—but also a responsibility to become informed about financial services and payment technologies and their associated benefits and risks. Informed consumers, who are armed with knowledge and an understanding of the benefits and disadvantages of alternative payment instruments, would be better positioned to make choices that are more likely to lean towards non-cash

instruments. Within the enabling environment, consumers should take advantage of opportunities available to them to use non-cash alternatives in conducting their financial transactions – from arranging direct deposit for paycheques and other receipts to making online/digital payments for utility bills, payments to governments and others, where these services are available.

8.0 CONCLUSION AND RECOMMENDATIONS

This paper examines the payments landscape in eight economies (including the ECCU) to identify practical and workable strategies to be championed by the regional central banks to incentivise Caribbean countries to reduce cash usage in favour of digital payment methods. The preliminary findings are that the value of cash (i.e., currency in circulation) has exhibited an upward trend over the sample period and appears to be keeping pace with the expansion in GDP, which indicates that cash is still very much a preferred method of payment. However, the share of cheque-based transactions to GDP across countries has declined, an outcome that is likely to continue with the further development, implementation and adoption of mobile and digital payment solutions. In addition, debit and credit card transactions have grown steadily in most countries. It is suggested that given the cash-centric nature of Caribbean countries, the strategies employed must take into account the likelihood of some resistance in the initial stages, especially among the population ages 55 and over. In this regard, it is important for the central banks to ensure that a certain level of physical cash is available and accessible for individuals who wish to use cash as a main payment method. The benefits of a cashless and/or reduced cash society are undeniable.

Therefore, CARICOM central banks, governments and policy makers should embark on a structured programme to develop and implement strategies that would capitalise on such benefits in order to transform their economies.

Therefore, the following recommendations are proposed in the near term:

1. Given the less than desirable coverage of the online survey, it is recommended that the central banks consider a more in-depth analysis of consumer payments habits using face-to-face interviews to ensure that a wider cross section of the population are captured.
2. Undertake broad-based public awareness and educational campaigns regionally aimed at all segments of society. This is very important, given the cash-centric culture of the regional economies. Both the financial sector supervisors and service providers must work to provide customers with the necessary information regarding the different payment methods as well as the costs and benefits.
3. Accelerate the development of e-government initiatives aimed at improving the effectiveness and efficiency of tax collection and the ease of doing business. This can have a positive impact on the ease of doing business ranking for the regional countries.

4. Use the ECCU Fintech Pilot Project as a guide for the development of similar regional initiatives aimed at reducing the use of cash.
5. Increase the adoption of cash-less payment means by merchants – this can be done by lowering the infrastructure and transactions costs of traditional point of sales machines; and/or through encouraging the development of payment apps, which have lower costs.
6. Ensure the integrity of the payments infrastructure – the Central Bank, in providing guidelines and regulations for payments providers, needs to ensure the integrity and resilience of the different payment platforms. Central Banks may also want to assess the current payment infrastructure to see if other platforms, such as Instant Payments, are more efficient and cost effective.
7. Protect the choice of the consumers and the vulnerable in society – as the economy gravitates towards a less-cash one consideration has to be given to those who choose to pay via cash - due to factors such as poverty, lack of access or unfamiliarity with technology. Any policy directives must ensure that persons have access to cash and cash payment options if they need it.
8. Ensure that internet service providers (ISPs) provide the citizens of the region with the most reliable and up-to-date telecommunications platforms to enable the efficient use of cashless payments methods.

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