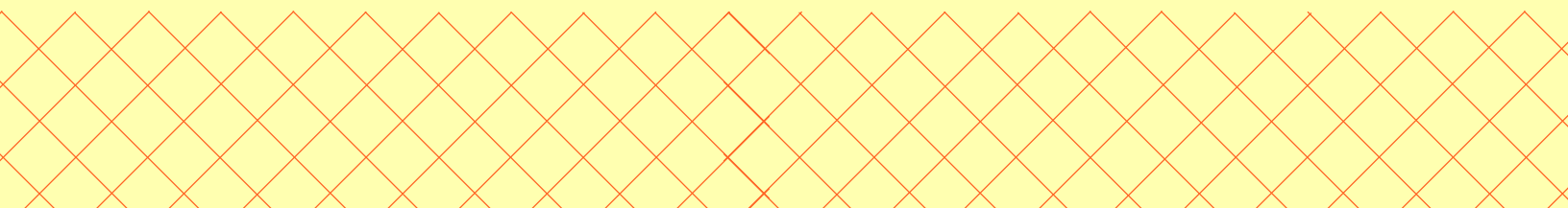


WESTERN HEMISPHERE PAYMENTS AND SECURITIES CLEARANCE AND SETTLEMENT FORUM  
CENTER FOR LATIN AMERICAN MONETARY STUDIES  
THE WORLD BANK

**PAYMENTS AND SECURITIES  
CLEARANCE AND  
SETTLEMENT SYSTEMS  
IN JAMAICA**

2016





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AND SETTLEMENTS SYSTEMS IN JAMAICA



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THE WORLD BANK

*Payments and Securities Clearing  
and Settlement Systems  
in Jamaica*

2016

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[publicaciones@cemla.org](mailto:publicaciones@cemla.org)

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## FOREWORD

Following a request from the Western Hemisphere Finance Ministers, the World Bank launched in January 1999 the Western Hemisphere Payments and Securities Settlement Initiative. The World Bank, in partnership with the Center for Latin American Monetary Studies (CEMLA), first led this initiative, which over the years has evolved into a permanent Forum as a result of the capacity already created throughout the region. The Western Hemisphere Payments and Securities Settlement Forum (WHF) represents a new set of organizational arrangements to give continuity to the efforts started under the initiative and was formally launched in June 2003.

The objective of the WHF is to describe and assess the payments systems of the Western Hemisphere with a view to identifying possible improvement measures in their safety, efficiency and integrity. To carry out this mandate an International Advisory Council was established in March 1999, and is comprised of experts in the field from several institutions. In addition to representatives from the World Bank and CEMLA this Council includes members from the: Bank for International Settlements, Bank of Italy, Bank of Portugal, Bank of Spain, Council of Securities Regulators of the Americas, European Central Bank, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, Inter-American Development Bank, International Monetary Fund, International Organization of Securities Commissions, Securities Commission of Spain, Swiss National Bank and US Securities Exchange Commission. CEMLA acts as Technical Secretariat of the Forum and plays a major role in making the process sustainable and capable of extension to all the countries in the region. Additionally, practitioners in payments and securities clearing and settlement in some countries of the region have participated in the studies under the Initiative, through CEMLA coordination, and this has contributed to the broadening of knowledge and the transfer of know-how within the region. The endeavors of the working groups will maintain the infrastructure created under the Initiative and provide a permanent forum for the countries in the region to discuss, coordinate, and continue the work in the area of payments systems in the Western Hemisphere. The Forum has undertaken a number of activities in order to respond to the Western Hemisphere Finance Ministers' request. These include the preparation of public reports containing a systematic in-depth description of each country's payments clearing and settlement systems; the delivery of recommendations reports to country authorities on a confidential basis; the organization of International Advisory Council meetings to review country studies and provide input for future work; the organization of workshops focusing on issues of particular interest; the creation of a web-page to present the outputs of the Initiative and other information of interest in the payments system area; and the promotion of working groups to ensure a continuation of the project

activity. To assure quality and effectiveness, the Initiative includes two important components. First, all studies are conducted with the active participation of country officials and the Project builds on the existing work being undertaken in the respective countries. Second, the Initiative draws on international and national expertise on the subject, through the International Advisory Council, to provide guidance, advice and alternatives to current practices.

CEMLA

Bank of Jamaica

The World Bank

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## 1. INTRODUCTION

Payment and settlement systems play a crucial role in economic activities by providing mechanisms for economic agents to settle their obligations and transactions that take place in markets. For central banks, payment and settlement systems are determinants of an effective implementation of open market operations and liquidity provision to the financial sector. As a result, payment and settlement systems are fundamental in fostering financial stability and conducting monetary policy.

Jamaica has a well-developed payment and settlement system that was enhanced by a major payment system reform initiated by the Bank of Jamaica in 2005. The enhanced environment is supported by an enabling legal framework that includes the enactment of the Payments Clearing and Settlement Act, 2010 (PCSA) and the Government Securities Dematerialization Act (GSDA), which was repealed in 2012 and replaced by the Public Debt Management Act, and the implementation in 2013 of the Guidelines for Electronic Retail Payment Services (ERPS Guidelines). Other significant efforts occur on a continuous basis thanks to the collaborative framework that the Bank of Jamaica has established with the payments industry in the National Payments Council.

This Report begins with an overview of the recent macroeconomic-financial situation and a brief description of the Jamaican financial sector. It goes on to describe the institutional aspects underpinning the National Payment System (NPS) that embraces all systemically important and prominently important payments and securities clearing settlement systems and arrangements. This is followed by a description of the recent trends in the way that end users,<sup>1</sup> individuals, businesses and the government have access and use of payment instruments, including cash, cheques, electronic transfers, cards and other payment instruments. In addition, a detailed description of the main feature for each existing payment and settlement system, large and retail value, is also reported.

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<sup>1</sup> For the purpose of this report; end users refer to all nonfinancial entities, such as households, businesses and the public administration using, mainly retail, payment instruments. All non-deposit-taking financial institutions are referred to as nonbanks.

The report concludes with a detailed description of securities trading, clearing and settlement systems that serve Jamaica main capital and debt-securities markets, and that are relevant for the implementation of the central bank's monetary policy.

All relevant and existing statistical information related to the recent evolution of the national payment system can be also found as an annex of the report.



## 2. ECONOMIC AND FINANCIAL MARKET OVERVIEW

### 2.1 Economic Overview

Between 2009 and 2014, Jamaica was affected by the global financial crisis (GFC) that impacted the national economy and the economy of its main trade partners. Over this period (Table 1), GDP exhibited an irregular trend, showing a significant decline by 12% (in nominal terms) in 2009, and a downward trend between 2013 and 2014, 3% and 4%, respectively. This trend was primarily attributed to a weak external and domestic demand as well as the influence of heightened uncertainty of economic prospects, worldwide.

Reduction of external demand, was as a result of the global recession impacting exports, while the weak domestic demand resulted from reductions in real income, remittance inflows, a tightening of credit conditions and an increase in domestic unemployment, which together dampened consumption and investment spending. Other factors that impacted growth negatively included restrictions arising from the signing of a Stand-by Agreement with the International Monetary Fund, the implementation of two debt exchange initiatives, the Jamaica Debt Exchange in 2010 and the National Debt Exchange in 2013, coupled with the residual effects of the global recession.

However, within this period of economic turmoil there was a positive growth between 2010 and 2012 (3.17 percentage points in real terms), which was influenced by temporary improved international economic conditions, as well as gradual improvements in domestic demand throughout those years. An upturn in remittance inflows along with increases in real wages also impacted growth in the economy.

In 2014, Jamaica's GDP contracted by 3%, this was influenced mainly by a new decline in domestic demand. The fact that domestic demand declined in that year, is mainly explained by the successful government efforts at fiscal consolidation reducing public expenditure, as well as lower consumer confidence, in the context of a reduction in real wages, affecting household expenditure. As for agricultural production, severe drought conditions affected the production level. Finally, there was a depreciation of the domestic currency in the annual variation of GDP. Despite

Table 1

<b>MACROECONOMIC INDICATORS OF THE JAMAICAN ECONOMY</b>						
<i>Indicator</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
Population (millions)	2.69	2.70	2.70	2.71	2.72	2.72
Population growth (%)	0.35	0.35	0.32	0.27	0.24	0.20
GDP (USD, nominal, billion)	12.04	13.20	14.41	14.78	14.19	13.84
GDP nominal annual growth rate (%)	-12	10	9	3	-4	-3
Inflation rate (%)	10.2	11.7	6.0	8.0	9.7	6.4
Rate of unemployment (%)	11.36	12.38	12.74	13.93	15.25	13.74
Total debt consolidated (USD)	16,029.3	18,313.7	19,040.9	18,330.5	17,759.7	17,747.1
Total debt (% of GDP)	131.6	133.9	131.8	135.6	133.3	130.3
Exports of goods (% of GDP)	11.52	10.08	11.26	11.72	10.96	10.05
Imports of goods (% of GDP)	37.16	34.83	39.78	38.20	37.88	35.26
Current account deficit (% of GDP)	9.3	7.1	13.2	9.3	9.3	8.3
Exchange rate per USD (average)	88.5	87.4	86.1	89.0	100.8	111.2
Exchange rate per USD (end year)	89.6	85.9	86.6	92.8	106.4	114.7

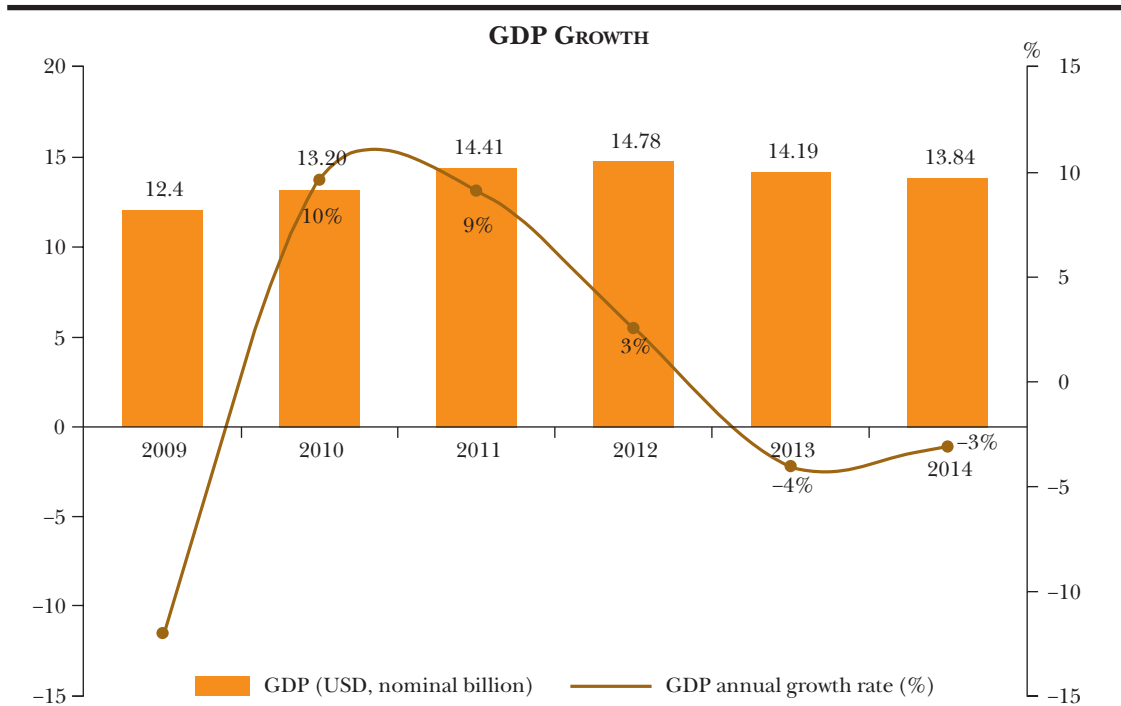
Source: Bank of Jamaica and Statin.

the general contraction of the economy due to a decline in public expenditure and domestic demand, GDP growth was positively impacted by the activity in the construction; hotels and restaurants; and transport, storage and communications industries. In addition, wholesale and retail trade; repairs; installation of machinery and equipment; real estate; and tourism, finance and insurance services industries, all accounted for the largest gross value added on average over the period.

In Figure 1, the uneven trend (brown line) that GDP growth exhibited in recent years can be seen in light of the economic external and internal context in the aftermath of the global financial crisis.

Within this context of global economic volatility, prices have evolved positively with inflation moving from 10.2% in 2009 to 6.4% in 2014 (Table 1). The highest rate of inflation was reported to be 11.7% in 2010 which was influenced by a number of fiscal measures that increased tax rates and transportation costs. Both domestic and international weather-related shocks and the appreciation of the domestic currency impacted the prices of domestic food products, leading to increased levels of inflation. The lowest rate of inflation was recorded in 2011 at a rate of 6%. This was

Figure 1



Note: Current GDP in USD billion in left axis and nominal GDP annual growth (%) in right axis.  
Source: Bank of Jamaica.

reported to be influenced by the moderating impact of excess supply on agricultural prices along with relative stability of the exchange rate, as well as low domestic demand. However, there were increases in the inflation rate by two percentage points in 2012, attributed to the implementation of new tax measures, as well as a shortage in agricultural supplies due to the impact of drought conditions. Inflation further increased in 2013 to 9.7% influenced by the depreciation of the domestic currency and an increase in crude oil prices.

## 2.2 Financial Overview

### 2.2.1 Financial Sector Development

Since the financial sector meltdown in the early 1990s, there have been significant developments in the financial sector. Its soundness can be credited largely to the implementation of micro- and macroprudential policies necessary to reduce systemic risk. Prior to the financial system meltdown, the financial sector grew rapidly. This was attributed partly to the increased number of financial institutions, especially in banking entities

and insurance companies (from 67 in 1989 to 105 in 1995), with the major increases being among building societies and merchant banks. The growth in the GDP of the financial sector rose from 9% in 1987 to 50% in 1994 with an average growth of 17% per year.

Rapid development in the sector since the crisis of the early 1990s has seen a more stable financial system. The key laws governing the sector include the Bank of Jamaica Act and the Banking Services Act. Additionally, the regulatory framework comprises several best practices and guidelines that are observed by regulated entities.

The early 1990s saw a change in regulatory vision, moving from direct control towards a more market-oriented standpoint. In 1991, control over the borrowing, dealing and surrendering of foreign exchange began to diminish. Controls on capital investment (direct and portfolio) by nonresidents also became less rigid and previous restrictions to commercial banks in meeting the domestic currency requirements of customers (as a means of preventing illegal outflow) were also gradually liberalized and then eliminated.

In an effort to rationalize the treatment of Bank of Jamaica (BOJ) losses and regulate the management of foreign exchange, the amended Bank of Jamaica Act was enacted in 1992. The Act also provided statutory recognition to the Department of Bank Inspection and implemented measures for the conduct of more effective monetary policy. The Financial Institutions Act of 1992 along with the Banking Act (1992) introduced stricter measures in terms of banking license, minimum levels of capital, more prudential controls, provisioning for loan losses, the strengthening of supervision and regulation, and mechanisms for identifying and sanctioning the liable. The Financial Institutions Act (1992) also regulated the operation of merchant banks and other near banks that held deposits for the public. However, not all the institutional counterparts adhered to the legislative transformation. The regulation of insurance for instance did not undergo strengthening equivalent to those of bank regulation. Specifically, deposit insurance was not a part of these efforts to secure the integrity of the financial sector.

Over the period 1994-1996, major players in the financial sector began seeking assistance with meeting their obligations. Analysis from international agencies showed that insolvency issues originated from a mismatch of assets and liabilities within the financial sector. Ensuing reports outlined the macroeconomic conditionality that would be attached to a financial package which would support the rehabilitation of the financial sector, as well as an outline of an intervention and reform program that would encompass accelerated legislation which would provide the authorities with the requisite power and flexibility of action.

In 1997, the Financial Sector Adjustment Company (Finsac) was set up as a comprehensive approach to resolving the issues being experienced by the troubled institutions within the sector. Finsac was mandated to assess whether institutions would be provided with recapitalization support based on an agreed rehabilitation plan

or whether acquisition or closure would be undertaken where rehabilitation did not seem a feasible option. They were also given the task of completing the divestment of assets acquired in the process of liquidating entities. Finsac also recovered capital support through the sale of investments in assisted institutions.

By 2005, the financial system registered a considerable strengthening of supervision within the sector. However, the country needed further strengthening of the framework for security dealers, the enhancement of the oversight of conglomerates and the development and constant testing of crisis management systems, as well as an overhaul of the national payment system and the introduction of a central securities depository for fixed-income securities.

### ***2.2.2 Financial Sector Structure***

The BOJ is the sole supervisor of banks and other deposit-taking institutions, while the Financial Services Commission (FSC), which became operational in 2002, is mandated to supervise nonbank financial institutions. Credit unions on the other hand are regulated by the Registrar of Co-operatives. The Jamaica Deposit Insurance Corporation, incorporated in August 1998, provides insurance against the risk of loss of deposits held in insured financial institutions.

Currently Jamaica's financial system can be divided into banks (including commercial banks and other deposit-taking institutions such as building societies and merchant banks<sup>2</sup>) and nonbank financial institutions (hereinafter denominated as NBFIs, including credit unions, insurance companies, and development banks and securities dealers). Besides banks and NBFIs, there are other relevant auxiliary financial institutions such as foreign exchange cambios, remittance and money transfer companies, as well as bill payment agencies that are gaining space in the field of payment and settlement systems as explained in following sections.

Payment and settlement systems are actively used by banks, some NBFIs and other relevant auxiliary financial institutions that need to settle their interbank transactions via the National Payment System. The provision of payment instruments is mainly a shared responsibility of banks and NBFIs.<sup>3</sup>

As can be seen in Figure 2, as of 2014, there were 15 (8%) commercial banks (10) and deposit-taking institutions (of which, 3 building societies and 2 FIA institutions). Additionally, there were 100 (54%) nonbanks financial entities composed of 37 credit unions, 17 insurance companies and 46 securities dealers; and 71 (38%) auxiliary financial institutions (63 foreign exchange cambios and 8 remittance and money transfer companies).

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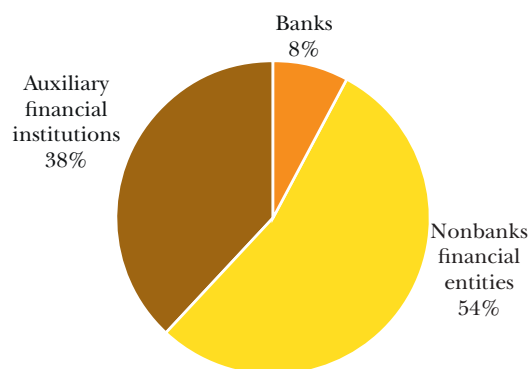
<sup>2</sup> Merchant banks are currently the only institutions licensed under the Financial Institution Act.

<sup>3</sup> Anticipated changes to take place with the legal reform described in section 3.3, other auxiliary financial institutions like money transfer companies

Figure 2

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**FINANCIAL SYSTEM COMPOSITION - 2014**



Note: Banks includes commercial banks and other deposit-taking institutions.  
source: Bank of Jamaica.

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The consolidation of the Jamaica’s financial system has occurred together with the process of strengthening of the micro- and macroprudential policies underpinning a resilient and sound functioning of this economic sector. Within this context, deposits and other main variables such as loans and assets at Jamaica’s financial entities have shown a positive trend (see Table 2). In fact, since 2009 there is an upward trend in both deposits held by banks and by NBFIs. Likewise, credit granted to households, businesses and companies, between 2009 and 2014, there has been a positive trend reflecting the recovery of the domestic economy in recent years. In the same vein, stability of the Jamaica’s financial system after the GFC has remained sound and robust, this can be observed through the unwavering growth of equity in Table 2. Private banks’ registered an average annual growth rate of 4% between 2009-2014. This increase in equity of private banks supported effectively the increase in financial assets.

## **2.3 Recent Developments**

### ***2.3.1 Banking Service Act***

The Banking Service Act (2014) was brought into effect on September 30, 2015 to repeal and replace the Banking Act, the Financial Institutions Act and Bank of Jamaica (Building Societies) Regulations. At the core of the Banking Service Act is a framework that will allow for increased compliance with international supervisory principles embodied in the Basel Committee on Banking Supervision’s Core Principles for Effective Banking Supervision. Enhanced provisions introduced by the Act include, the establishment of supervisory autonomy (certain critical

Table 2

MAIN FINANCIAL SECTOR INDICATOR (USD BILLION)							
	2009	2010	2011	2012	2013	2014	Variation 2009-2014 (%)
<i>Deposits</i>							
Banks and deposit-taking FIA	9.083	10.000	10.412	10.772	10.280	9.890	8.9
Commercial banks	7.709	8.554	8.930	9.271	8.847	8.441	9.5
Building societies	1.229	1.349	1.406	1.416	1.329	1.327	8.0
FIA institutions	0.145	0.097	0.076	0.085	0.104	0.122	-16.4
Nonbank financial entities <sup>1</sup>	0.491	0.557	0.596	0.591	0.550	0.543	10.6
<i>Loans</i>							
Banks and deposit-taking FIA	6.579	6.756	7.038	7.497	7.553	7.143	8.6
Commercial banks	5.527	5.656	5.927	6.403	6.571	6.128	10.9
Building societies	0.944	1.016	1.032	1.033	0.915	0.934	-1.0
FIA institutions	0.108	0.084	0.080	0.061	0.067	0.081	-25.4
Nonbank financial entities <sup>1</sup>	0.413	0.448	0.497	0.525	0.500	0.493	19.5
<i>Assets</i>							
Banks and deposit-taking FIA	14.303	15.242	15.744	15.812	15.361	15.380	7.5
Commercial banks	12.158	13.001	13.356	13.411	13.135	13.103	7.8
Building societies	1.778	1.960	2.142	2.171	1.988	2.008	12.9
FIA institutions	0.368	0.282	0.246	0.230	0.238	0.270	-26.6
Nonbank financial entities <sup>1</sup>	0.630	0.708	0.771	0.768	0.720	0.717	13.7
<i>Equity</i>							
Banks and deposit-taking FIA	1.939	2.218	2.627	2.302	2.252	2.226	14.8
Commercial banks	1.619	1.855	2.213	1.892	1.877	1.842	13.8
Building societies	0.262	0.309	0.359	0.360	0.324	0.331	26.1
FIA institutions	0.057	0.054	0.055	0.050	0.051	0.053	-7.7
Nonbank financial entities <sup>1</sup>	0.106	0.119	0.134	0.133	0.130	0.133	25.4

<sup>1</sup> Nonbank financial entities refer to credit unions only.  
Source: Bank of Jamaica.

supervisory functions transferred from the Minister of Finance to the Supervisor and a Supervisory Committee); licensing and supervision of financial holding companies; issue of an enforceable Code of Conduct on deposit-taking licensees' dealings with their customers; counterparty exposure limits at the financial holding companies and deposit-taking institutions level; and agent banking which allows for the extension of permissible banking services through agents who meet requirements for authorization.

### ***2.3.2 Financial Stability Mandate***

The BOJ Amendment Act, 2015 outlines that the Bank has legal and institutional responsibility for the stability of Jamaica's financial system. As defined in the BOJ Amendment Act, 2015 financial stability in relation to Jamaica refers to: the orderly operation of financial institutions, financial markets and the payment and settlement infrastructure. In addition, it refers to the capability of these components, which make up the financial system, to absorb internal and external shocks without substantial impairment of the financial system and the real economy.

The monitoring of financial stability by the BOJ is done at various levels,

1. Through a Financial Stability Committee which is an established legal body that has the responsibility to coordinate the activities pursuant to the object of financial system stability (see Section 34H, BOJ Amendment Act, 2015).
2. Through a Financial Stability Department which actively monitors and forecasts micro and macro risk factors that may impact financial institutions and by extension, financial system stability.
3. The Payment System Department (PSD) has oversight responsibility of the National Payment System (see Section 3, PCSA, 2010). As part of this responsibility the department monitors and assesses payment systems risks to maintain the stability of financial systems.

The BOJ publishes, on its website, a financial stability report annually. The details of stress tests and assessment of risk factors to financial stability are extensively discussed therein.

### ***2.3.3 Retail Repurchase (Retail Repo) Agreements and Trust Agreement***

A retail repurchase agreement is a repurchase agreement between a securities dealer and an investor, whereby the dealer does not completely and outrightly transfer legal ownership of the underlying securities to the investor. Retail repurchase agreements have become a widespread funding product for securities dealers in Jamaica; however this practice poses particular risks to dealers, investors and by extension the financial system.



The Financial Services Commission has been charged with the responsibility of facilitating the establishment of a trust to mitigate the investors' risk of loss from dealer default, bankruptcy and other legal risks associated with the retail repo product. The retail repo reform process has seen the implementation of the following major changes:

- A new legal and regulatory framework was established on December 31, 2014 through the enactment of the Securities (Retail Repurchase Agreements) Regulations, 2014.
- Since August 31, 2015, all retail repos in Jamaica operate under a trust arrangement involving a third party, referred to as a trustee. The trustee will hold the securities in custody for the benefit of retail repo investors; therefore, the securities will be separated from the assets of the dealers during the term of the Retail Repo Agreement, so that they are easily identified as belonging to the investors.
- Under the new trust arrangement, the two options for funding retail repos are the Jamaican dollar (JMD) and the United States dollar (USD).
- A new minimum transaction size for retail repos was introduced in October 2014. The current minimum of 500,000 JMD and 5,000 USD will be increased on a phased basis, and is scheduled to be increased to 1,000,000 JMD and 10,000 USD effective December 31, 2015.

The documentation supporting retail repo products has been enhanced to provide more disclosure to investors.

## 3. INSTITUTIONAL ASPECTS

### 3.1 Institutional Framework

As noted in the Introduction, payment and settlement systems play a crucial role in economic activity by providing mechanisms for economic agents (hereinafter end users) to settle their obligations and transactions that take place in markets. For the financial system the payment and settlement systems are relevant to serve their customers by operating in the various financial markets, such as interbank, money and capital markets, or by accessing the credit and liquidity facilities that the central bank provides for clearing and settlement of their positions and transactions on a daily basis. Finally, central banks are interested in the well-functioning of payment and settlement systems for an effective implementation of the monetary policy and to maintain financial stability by providing liquidity to markets and institutions.

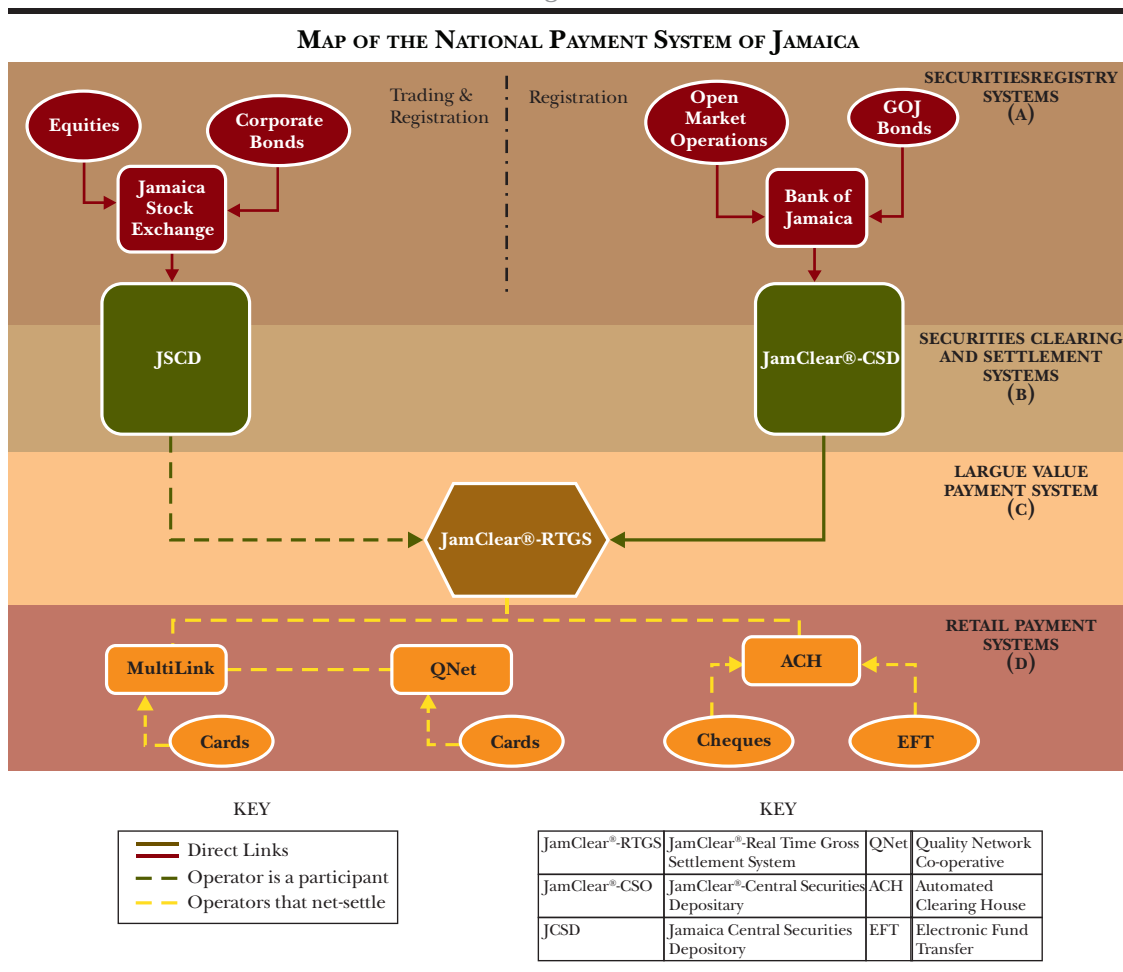
The National Payment System of Jamaica comprises all regulated and overseen payments and securities settlement arrangements that enable the funds to be transferred across the financial system; in doing so, the NPS facilitates the circulation of money both within the country and internationally.

The map of the NPS is shown in Figure 3, which visualizes the various systems, arrangements, interconnections and interdependencies of the national financial market infrastructure.

Section A of the map depicts the systems and arrangements for the registry and trading of financial assets, of which the JamClear<sup>®</sup>-CSD that is administered by the Bank of Jamaica serves as the platform for transactions of government securities (GOJ bonds) and the open market operations (BOJ instruments). Other financial assets, mainly equities and corporate bonds that are traded in the capital market are served through the Jamaica Stock Exchange (JSE).

The clearing and settlement of securities and other financial assets via the NPS (section B), embraces two infrastructures that participating institutions use to settle transactions occurring in the various financial markets. The JamClear<sup>®</sup>-CSD is the registry, clearing and settlement system for domestic issued securities owned and operated by the BOJ. With JamClear<sup>®</sup>-CSD all new issues of BOJ and GOJ securities are dematerialized to eliminate the need for paper certificates. The electronic system provides the

Figure 3



authentic record of ownership of securities bringing efficiency to the issue, management and redemption process in the domestic securities market. The Jamaica Central Securities Depository (JCSO), owned and operated by the Jamaica Stock Exchange (JSE) is the platform to clear equities and corporate bonds. The JCSO provides depository and settlement services for securities traded electronically on the floor of the JSE using a book entry system. This book entry system eliminates the need to physically pass certificates from seller to buyer during trade. Currently, there is no arrangement in the NPS to process other transactions such as foreign currencies and financial derivatives.

At the heart of the NPS, in section C, the JamClear®-RTGS comprises the principal interbank fund transfer system. The JamClear®-RTGS performs its pivotal role for the national financial markets infrastructure by providing the settlement for time critical and large value fund transactions. In addition, the JamClear®-RTGS settles interbank market transactions, financial asset clearing and settlement systems, and also batch payments coming from the clearing of retail payment systems. The JamClear®-RTGS is administered by the Bank of Jamaica.

The retail payment systems are displayed in section D of Figure 4 and it embraces two different systems and one payments arrangement. The automated clearing house (ACH), owned by commercial banks, clears transactions against participants' account and those transactions made on behalf of other payment services providers with indirect access to the ACH. Cheques and electronic funds transfer (EFT) are the instruments mainly processed in this system. As for the MultiLink®, this is the system that processes domestic payment card transactions. Within the retail payments landscape, there is an arrangement among MultiLink® and Quality Network Co-operative (QNET), a company owned by the Jamaica Co-operative Credit Union League, that facilitates the clearing of debit card transactions such as ATM and point of sale transactions, given these arrangements, QNET is able to provide a platform for the clients of credit unions. The clearing of QNET transactions occur through MultiLink® and final settlement of net positions is provided by JamClear®-RTGS.

According to the Bank of Jamaica Payment Systems Oversight Policy,<sup>4</sup> the JamClear®-RTGS, the JamClear®-CSD and the Automated Clearing House (ACH) are systemically important payment systems.

### 3.2 Legal Framework for the NPS

As noted in chapter 2, Jamaica's financial sector comprises deposit-taking and non-deposit-taking financial institutions. The financial sector up to 2014 was governed by the following key legislations:

1. Bank of Jamaica Act<sup>5</sup>
2. Banking Act<sup>6</sup>
3. Financial Institutions Act<sup>7</sup>
4. Building Societies Act<sup>8</sup>
5. BOJ (Building Societies) Regulations
6. Deposit Insurance Act<sup>9</sup>
7. Payment Clearing and Settlement Act<sup>10</sup>
8. Financial Services Commission Act<sup>11</sup>

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<sup>4</sup> <<[http://boj.org.jm/pdf/Payments\\_System\\_Oversight\\_Policy.pdf](http://boj.org.jm/pdf/Payments_System_Oversight_Policy.pdf)>>.

<sup>5</sup> <<<http://boj.org.jm/pdf/bank%20of%20jamaica%20act.pdf>>>.

<sup>6</sup> <<http://moj.gov.jm/sites/default/files/laws/The%20Banking%20Act.pdf>>.

<sup>7</sup> <<http://moj.gov.jm/sites/default/files/laws/The%20Financial%20Institutions%20Act.pdf>>.

<sup>8</sup> <[http://www.boj.org.jm/pdf/Building\\_Societies\\_Act\\_Amended\\_2002.pdf](http://www.boj.org.jm/pdf/Building_Societies_Act_Amended_2002.pdf)>.

<sup>9</sup> <[http://moj.gov.jm/sites/default/files/laws/Deposit%20Insurance%20Act\\_0.pdf](http://moj.gov.jm/sites/default/files/laws/Deposit%20Insurance%20Act_0.pdf)>.

<sup>10</sup> <[http://moj.gov.jm/sites/default/files/laws/Payment%20Clearing%20and%20Settlement%20Act\\_0.pdf](http://moj.gov.jm/sites/default/files/laws/Payment%20Clearing%20and%20Settlement%20Act_0.pdf)>.

<sup>11</sup> <<http://moj.gov.jm/sites/default/files/laws/The%20Financial%20Services%20Commis>>.

9. Securities Act<sup>12</sup>
10. Insurance Act<sup>13</sup>
11. Pensions (Superannuation Funds and Retirement Schemes) Act<sup>14</sup>
12. Cooperative Societies Act<sup>15</sup>

In 2010, the legal framework for the National Payment System was strengthened and harmonized as per international standards as part of the NPS reform strategy. The reform strategy allowed the development of an adequate legal framework to facilitate a safe and efficient functioning of the NPS, which resulted in the enactment of two critical pieces of legislation; the Government Securities Dematerialization Act (GSDA)<sup>16</sup> and the Payment Clearing and Settlement Act (PCSA)<sup>17</sup>. The PCSA provides the overall legal basis for netting, finality and irrevocability of payments, as well as provides the BOJ with statutory powers of oversight over the payment and settlement systems in Jamaica for the smooth operation of the financial markets and the economy as a whole. Other relevant responsibilities for the Bank of Jamaica that the PCSA grants is to ensure that participants operate in continuous compliance with the rules and regulations that underpin the various payment systems with the ultimate objective of engendering and maintaining public confidence in the payment systems and the payment instruments that are routed through the systems.

The GSDA provided the basis for appointing the BOJ as the official registrar of all domestic issues of GOJ Securities. The Bank's responsibility as registrar for electronic issues of GOJ Securities has been assigned to the Electronic Securities Depository Department. The GSDA provided the statutory basis for the immobilization and dematerialization of Government of Jamaica and BOJ securities, and enables their trading and settlement in scripless form through electronic book entry.

The GSDA was repealed and replaced by the Public Debt Management Act in 2012; however, the BOJ still maintains the role as the official registrar of all domestic issues of GOJ Securities. Additionally, this legislation provides the Bank of Jamaica with the responsibility for the overall management of public debt bonds.

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sion% 20Act.pdf>.

<sup>12</sup> <<http://moj.gov.jm/sites/default/files/laws/Securities%20Act.pdf>>.

<sup>13</sup> <<http://moj.gov.jm/sites/default/files/laws/The%20Insurance%20Act.pdf>>.

<sup>14</sup> <<http://moj.gov.jm/sites/default/files/laws/Pensions%20%28Superannuation%20Funds%20and%20Retirement%20Schemes%29%20Act.pdf>>.

<sup>15</sup> <<http://moj.gov.jm/sites/default/files/laws/The%20Co-operative%20Societies%20Act.pdf>>.

<sup>16</sup> <<http://moj.gov.jm/sites/default/files/laws/Government%20Securities%20Dematerialization%20Act.pdf>>.

<sup>17</sup> <[http://moj.gov.jm/sites/default/files/laws/Payment%20Clearing%20and%20Settlement%20Act\\_0.pdf](http://moj.gov.jm/sites/default/files/laws/Payment%20Clearing%20and%20Settlement%20Act_0.pdf)>.

Within the continuous process of strengthening the NPS, and in order to facilitate the structured introduction of innovative electronic retail payment services and by extension enhancing financial inclusion, the Bank of Jamaica developed the Guidelines for Electronic Retail Payment Services (the ERPS Guidelines) in 2012, based on international standards.<sup>18</sup> The policy objectives of the ERPS Guidelines are the following: 1) promoting safety and efficiency; 2) ensuring affordability; 3) ease of access to payment instruments and services; 4) promoting availability of an efficient infrastructure to process electronic payment instruments; and 5) promoting availability of a socially optimal mix of payment instruments.

The ERPS Guidelines provide operating parameters for providers of electronic retail payment services. All entities intending to offer electronic retail payment services in Jamaica are subject to these guidelines and are required to apply to the BOJ for authorization before commencing operations. The Guidelines also provide the framework required to support the development of the payment services sector in Jamaica. BOJ in discharging its responsibility for oversight will apply the Guidelines to promote consistency of treatment for all electronic retail payment services.

### **3.3 The Role of Public Authorities**

#### ***3.3.1 The Role of the Bank of Jamaica***

The Bank of Jamaica was established by the Bank of Jamaica Act (1960) with a mission to formulate and implement monetary and regulatory policies in an effort to safeguard the value of the domestic currency. The Bank of Jamaica is also charged with the responsibility of ensuring the soundness and development of the financial system. The principal objectives of the BOJ outlined under section (5) of the BOJ Act (1960) include

- issuing and redemption of notes and coins;
- keeping and administering the reserves of Jamaica;
- influencing the volume and conditions of supply of credit so as to promote the fullest expansion in production, trade and employment, consistent with the maintenance of monetary stability in Jamaica and the external value of the currency; and
- acting as banker to the Government.

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<sup>18</sup> Guidelines for developing a comprehensive retail payments strategy. World Bank, 2012.

The Primary<sup>19</sup> and Secondary<sup>20</sup> Legislative Acts establishes the supervisory authority of the BOJ which provides the legal and policy considerations for the licensing and supervision of financial institutions.

### 3.3.1.1 General Responsibilities

#### *Issuing of notes and Coins*

Section 14 of the BOJ Act gives the central bank the sole right and authority to issue notes and coins. Section 19 of the Act outlines the functions of the Central Bank in relation to currency. These include

1. arranging for the printing of notes and minting of coins for domestic circulation;
2. issuing, reissuing and redemption of domestic notes and coins; and
3. arranging for the safe custody of unissued stocks of notes and coins and the preparation, safe custody and destruction of plates and paper for the printing of notes and dies for the minting of coins.

The criteria under which these notes and coins issued by the BOJ are considered legal tender is outlined under section 15 of the Act.

#### *Acting as Banker to the Government*

The Bank of Jamaica acts as the banker to the Government of Jamaica; as such this includes maintaining the accounts of the Central Government and the subsidiary accounts of some public sector agencies. As an agent of the Government, the Bank processes the settlement of GOJ securities and also operates an auction for certain GOJ securities. The BOJ also acts as a banker to commercial banks for a clearing house, which provides for the clearance and settlement of transactions between banks.

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<sup>19</sup> The Bank of Jamaica Act, 1960 (amended 1992, 1994, 1995, 2001, 2002, 2004, 2005); The Banking Act, 1992 (amended 1997, 2002, 2004). The Financial Institutions Act, 1992 (amended 1997, 2002, 2004); The Building Societies Act, 1897 (amended 1995, 2002, 2004).

<sup>20</sup> The Bank of Jamaica (Building Societies) Regulations, 1995 (amended 2005); The Building Societies (Licenses) Regulations, 1995; The Banking (Establishment of Branches) Regulations, 1996; The Banking (Amalgamation and Transfers) Regulations, 1996; The Banking (License Fees) Regulations, 2003; The Financial Institutions (Establishment of Branches) Regulations, 1996; The Financial Institutions (Amalgamation and Transfers) Regulations, 1996; The Financial Institutions (License Fees) Regulations, 2003; The Banking (Capital Adequacy) Regulations, 2004; The Financial Institutions (Capital Adequacy) Regulations, 2004.

### 3.3.1.2 Payment and Securities Settlement Systems Oversight

The payment system oversight function was established by BOJ in 2003. All payments systems, instruments and channels fall under the purview of the Bank of Jamaica. The roles and responsibilities of the payments system overseer which rest in the Payment System Department (PSD) were directly linked to the primary objective of ensuring efficient, safe and smooth operations within the payments system.

The primary laws for the PSD to carry out the oversight of NPS in Jamaica are the Bank of Jamaica Act, 2002 (BOJ Act) and the Payment Clearing and Settlement Act (PCSA), 2010. In particular, the Section 27 of the BOJ Act (as amended by section 30 of the PCSA) empowers the central bank to exercise oversight power over the national payment system, including securities settlement systems, for the purpose of preventing and controlling the systemic risk. The BOJ Act mandates the PSD to oversee all payment systems, securities settlement systems, payment instruments, services and arrangements.

Oversight of payment system is centralized in the PSD that has two units, policy and development and compliance and monitoring unit. The PSD ensures that the stakeholders have proper documented operating procedures which govern their treatment of the payment systems, instruments and arrangements in which they partake. In keeping with its supervisory role, the Department also conducts reviews and assessments of operating procedures in an effort to mitigate and resolve challenges encountered by institutions. On an ongoing basis, the Bank ensures that these operating procedures are being adhered to and risk management mechanism are in place to engender the smooth running of the system while promoting safety and efficiency of the systems and protection for end users.

The PCSA allows the BOJ to issue public interest opinions for inducing change for the overall enhancement of any component of the NPS, as well as the prevention and mitigation of systemic risk. Therefore, all system operators must ensure that mechanisms to manage and control systemic risk are in place. The Bank of Jamaica may issue directives to the system operators or to participants in a designated system in extreme situations where the BOJ judges that systemic risk is being inadequately controlled.

### 3.3.1.3 Operation of Payment and Securities Settlement Systems

The BOJ is responsible for the operation of the large value payment system for the final settlement of transactions by participants. Transactions are processed in the JamClear®-RTGS for direct participants or indirectly on behalf of their clients or other payment service providers. The operation of JamClear®-RTGS is therefore crucial for the smooth functioning of the Jamaican financial system. This is in keeping with the Bank's mandate to ensure the soundness and development of the financial system. Likewise, the BOJ is responsible for the management of the NPS participants' deposit accounts.



In the money market, the BOJ also plays a critical role within the JamClear®-CSD that serves as the central securities depository for electronic government securities and Bank of Jamaica trading system.

By means of the operation of the JamClear®-RTGS and the JamClear®-CSD, the Bank of Jamaica contributes significantly to the continuous modernization of the NPS, implementing and renovating electronic and automated features in both systems.

### 3.3.1.4 Financial Supervision

Initially, supervisory functions were performed by the Ministry of Finance. In 1973, the BOJ through the Bank Inspection Department (now the Financial Institutions Supervisory Division) assumed responsibility for examination of all commercial banks. The Protection of Depositors Act (1966) added the responsibility for the supervision of near bank deposit-taking institutions (merchant banks and trust companies). The Financial Institutions Act (FIA) (1992) repealed the Protection of Depositors Act and provided the basis for deepening the scope of BOJ supervision of merchant banks and trust companies and introducing more stringent requirements for these licensees among other things. A revision of the Banking Act enhanced the supervisory scope for commercial banks. Changes included the enhanced minimum capital adequacy standards, the expansion of graduated sanction powers, and tightening of the provisioning requirements for nonperforming assets. The supervision of Building Societies came under the purview of the BOJ in 1994. Credit unions (Registered under the Co-operatives Society Act) were in 1999 designated as ‘specified financial institutions’ which allowed the BOJ to obtain information on the operations of credit unions. The Credit Reporting Act was passed in 2010 and the Credit Reporting Regulations were approved by Parliament in 2011. The BOJ, through the Financial Institutions Supervisory Division, is the designated supervising authority under the Credit Reporting Act and is responsible for reviewing and recommending applications for license to the Minister of Finance and maintaining general supervisory oversight of the credit reporting framework.

Financial Institutions Supervisory Division functions to promote soundness, integrity and stability in the banking system. It also establishes the appropriate policy and operational framework to satisfy the statutory and prudential responsibilities of the BOJ with regard to the supervision of commercial banks and specified financial institutions. The Division provides leadership in the formulation of an appropriate mix of, regulations, guidelines and standards of best practices to safeguard financial soundness. The principal functions of the Division include

- assessing and recommending applications for licenses;
- conducting annual on-site examinations of each licensee in conjunction with continuous off-site monitoring;

- assessing the fitness and propriety of senior management, directors and significant shareholders;
- implementing and/or recommending on supervisory enforcement actions in accordance with statutes and policy;
- continuous reviewing the governing statutes and recommending amendments, as necessary; and
- participating in Jamaica's AML/CFT work program as a member of the national AML/CFT steering committee (in conjunction with the Legal Department).

### 3.3.1.5 Other Functions

#### *Regulation of Money Transfer and Remittance Agents and Agencies*

The year 2004, saw the regulation of the operations of Remittance service providers in fulfilment of international obligations to combat money laundering and the financing of terrorism, as mandated by the Proceeds of Crime Act (POCA). Entities that fall under this legislation are regulated by the Bank of Jamaica subsequent to approval by the Minister of Finance. The BOJ also has supervisory and licensing authority over Cambios (foreign exchange traders) and Bureaux de Change, ensuring compliance with the BOJ Operating Directions and adherence to the POCA.

### 3.3.1.6 Cooperation with Other Institutions

The Bank of Jamaica is responsible for fostering cooperation among NPS stakeholders, other public authorities involved in payment activities or in the clearing and settlement of securities, in addition to modernizing and enhancing existing rules, procedures, arrangements, instruments and services. This is achieved through the National Payments Council (NPC) that was established as an advisory body to the BOJ in the exercise of its payment system oversight function.

The PCSA dictates that the NPC be chaired by the BOJ vested with the authority to issue guidelines and directions to the NPC. The PCSA also provides definition on the scope, representation, and organization of the NPC.

The composition of the NPC, as defined in the PCSA, is broad, which is in line with the international best practices, to involve all relevant stakeholders. Furthermore, the regulation affords flexibility to the BOJ to determine the scope of representation of those entities. This provision of the law can be seen as particularly relevant regarding the evolution of the retail payments market and the potential entry of new payment service providers such as non-deposit-taking institution. Such new providers of payment services need to be fairly represented in the NPC.

Amendments to the Bank of Jamaica Act, coinciding with the Banking Services Act, provide for the establishment of a Financial Regulatory Committee with the objective of facilitating information sharing, coordination and cooperation among

regulatory authorities. This Committee replaces the Financial Regulatory Council, which was established in 2000, with the mandate to develop policies and strategies to facilitate coordination and information sharing between the various supervisory and related agencies operating in the Jamaican financial sector. In addition, to the facilitation of cooperation in the oversight of securities settlement activities, a Memorandum of Understanding (MoU) was drafted between the regulators; BOJ, FSC and the Jamaica Stock Exchange. This collaboration is based on principles of cooperation on equal terms and mutual acknowledgment of national jurisdictions, for coordinated supervision and oversight. This regulatory committee deliberates systems changes and coordinates oversight measures to be taken.

### ***3.3.2 Other Authorities***

#### **3.3.2.1 The Financial Service Commission**

The Financial Service Commission (FSC) has responsibility for the regulation of the non-deposit-taking financial institution sector. The FSC directs the administration of the private pension, securities and insurance laws. In so doing the FSC oversees the registration, solvency of the entities and individuals conducting business in the securities and insurance industries. The FSC is mandated to supervise, investigate and sanction entities falling under its jurisdiction. The main focus of the FSC includes solvency, quality of internal controls, risk management and corporate governance within regulated institutions. In addition, the FSC also has the responsibility to administer the private pension schemes, in Jamaica. The FSC regulates and supervises the non-deposit-taking financial sector pursuant to several acts and regulations:

- The Financial Services Commission Act (FSCA) outlines the duties and responsibilities of the FSC as they pertain to all financial institutions that provide service to the public in the fields of insurance, securities and pensions (prescribed financial institutions);
- The Insurance Act prescribes provisions for the regulation of insurance business in Jamaica;
- The Securities Act provides the requirements for the licensing, regulation and supervision of entities dealing in securities; and
- The Pensions (Superannuation Funds and Retirement Schemes) Act provides the requirements for the licensing, regulation and supervision of private pension funds.

The FSC also handles customer complaints and provides the public with important financial information. Through its Investigation & Enforcement Division, any grievances consumers may have with the practices of the insurance, securities, or private pensions industries may be examined.

The FSC is tasked with both prudential regulation and market conduct supervision, to allow for supervision that is both effective and efficient; the FSC is committed to developing its risk-based supervisory approach.

The FSC issues guidelines that serve as a medium to outline the standards, requirements, procedures, sound principles to be observed by regulated entities. With the guidelines, the FSC has been able to adopt and apply international best practices (such as those outlined by IOSCO, IAIS, IOPS and FATF) to the regulation and supervision of financial markets.

Other methods employed to monitor and supervise the three industries include

- Register and approve all securities, insurance products and private pensions plans;
- Examine company records at least annually to ensure compliance with the regulatory framework;
- Investigate complaints from aggrieved persons including investors; and
- Coordinate public education programs and industry workshops to discuss, introduce, or highlight regulatory requirements and matters.

In general, the FSC employs a number of mechanisms to monitor and mitigate risks. These mechanisms include

- A thorough review of all contracts, obtaining legal advice where legal risks are posed;
- Staff sensitization and training in all relevant laws, procedures and policies;
- Enforcement of procedures and policies; and
- Reviewing and updating laws and policies in a timely manner to ensure that the FSC continues to be relevant as the markets evolve.

Regarding the *securities industry*, the main tools in the supervisory framework that are used to assess the risks faced by dealers are on-site and off-site examinations. The on-site examinations focus on the dealer's controls, procedures, governance structures, system capabilities, competence and resources, settlement and compliance responsibilities. These examinations can also be targeted which are usually triggered by either investor complaints or the discovery of regulatory misconduct during routine desk based reviews, also referred to as off-site examinations. The desk based reviews are used to assess the financial risks of securities dealers through the use of timely and periodic financial reports which are submitted by the licensees as stipulated by the regulations. The focal point of the reviews undertaken is based on the level of capital, stability of the dealers' earnings, changes in funds under management, liquidity management and the potential impact on solvency of the institutions.

In keeping with the prudential standards for the securities industry, dealers are required to clearly define policies and procedures for managing liquidity and implement stress testing as a part their overall governance and risk management culture.

Some of the major areas assessed during the examinations are:

- Compliance with the Securities Act and its attendant regulations, guidelines and bulletins;
- Adequacy of the governance arrangements and the effectiveness of a dealer's control environment to address the inherent risks faced by dealers; and
- Compliance with the anti-money laundering policies and procedures, and guidelines.

The FSC also has a cooperative arrangement with the Ministry of Finance and the Public Service (MoFPS) and the Jamaica Deposit Insurance Corporation (JDIC). The FSC, BOJ, JDIC and the MoFPS are members of the Financial Regulatory Council; these institutions also comprise the proposed Financial System Stability Oversight Committee which is charged with the maintenance of financial stability on a national level.

### 3.3.2.2 The Ministry of Finance and the Public Service

The Ministry of Finance and the Public Service (MoFPS) was established under the Jamaican Constitution of 1962. The MoFPS has overall responsibility for developing the Government's fiscal and economic policy framework; collecting and allocating public revenues and playing an important role in the socio-economic development of the country.

The Ministry operational responsibilities are:

- the preparation and management of the budget;
- financial regulation and anti-corruption;
- public service establishment oversight;
- management of the public debt;
- public sector financial management;
- the collection of revenues, and
- the public bodies oversight.

MoFPS strategic objectives are:

- enabling sound monetary and fiscal policies;
- reduce and maintain the national debt at sustainable levels;
- create an efficient simple and equitable tax system;

- ensure effective regulation of ministries department and agencies, and financial institutions;
- prevent and manage incidents of financial crimes and financing of terrorism;
- effectively investigate and prosecute incidents of corruption and revenue fraud;
- strengthen the HR management capacity throughout the public sector to facilitate an enabling environment;
- improved public financial management towards a higher level of transparency and compliance; and
- create a more efficient, effective and responsive service oriented Ministry.

The MoFPS inclusive of its departments and agencies has principal responsibility for the:

- preparation and management of the national budget;
- financial regulation and anti-corruption;
- public service establishment oversight;
- management of the public debt;
- public sector financial management, oversight of public bodies;
- the collection and allocation of public revenue; and
- the effective management of the macroeconomic program. The MoFPS develops the Government's economic and financial policies.

Through its regulatory agencies, it supervises banks, insurance companies and other financial institutions. The MoFPS is also responsible for the socio-economic development of the country and plays an important role in creating a society in which each citizen has the prospect for a better quality of life.

### 3.3.2.3 The Financial Regulations Division of the Ministry of Finance

The Financial Regulations Division is responsible for the development of the regulatory framework which influences the operations of the country's financial sector. The division seeks to develop an effective regulatory framework for deposit-taking and non-deposit-taking financial institutions and the supervision of the pensions industry, as well as to develop an adequate legislative framework for successfully combating financial crimes. Its core function is to develop the appropriate policies to facilitate prudence, discipline and integrity in the financial industry. The Financial Regulations Division is also tasked with constantly examining financial sector issues as it relates to the ways in which legislation can be enhanced to achieve international standards. In so doing, the division has been working with the supervisory authorities to develop policies, which will contribute to a stable financial sector. Main objectives of this Division are:

- Research issues relating to financial sector regulation and development and keep up-to-date with emerging international financial and economic trends;
- Ensure that all Acts regulating providers of financial services effectively address the developments in the financial sector;
- Evaluate and give recommendations on the economic or policy implications of proposals submitted by various non-governmental organizations, government agencies and financial institutions;
- Facilitate the development of policy to regulate the pensions industry;
- Coordinate with other agencies to ensure that combating financing of terrorism and anti-money laundering issues are addressed;
- Work with supervisory authorities to deal with matters relating to the development and performance of the financial sector; and
- Ensure that all notices, orders and publications pertaining to the financial sector are prepared and gazetted. (This includes exemptions from the Money Lending Act and the preparation of unclaimed bank balances).

#### 3.3.2.4 The Financial Investigations Division

The Financial Investigations Division of the Ministry was established in 2002. The Division has evolved with time and the objectives now focus on the need to deter the use of Jamaica's economy for money laundering and other financial crimes, thereby contributing to a stable financial sector and an investor friendly environment.

With the passage of the Proceeds of Crimes Act, 2007 has come the increased responsibilities of the Division to grant "consent to perform a prohibited act" to financial institutions. A new concept under this legislation, the increase in investigative powers inter alia and the operation of the Asset Recovery Agency which is charged with the responsibility of managing and maintaining assets seized and forfeited from persons deemed to be in possession of criminal property and this is done on behalf of the Government of Jamaica. The main objectives of the Division are:

- Investigate allegations of money laundering, financial crimes and corruption in liaison with other national and regional law enforcement agencies;
- Detect, deter and aid the prosecution of offences committed under the various acts dealing with financial crimes, by causing a reduction of the actual and expected profits that would evolve from such corrupt activities; and
- Collaborate with international bodies in responding to transnational crimes under the Mutual Legal Assistance (Criminal Matters) Act.

### 3.3.2.5 Jamaica Deposit Insurance Corporation

The Jamaica Deposit Insurance Corporation has responsibility for depositor protection, as well as to contribute to the financial system confidence and stability. The JDIC manages a deposit insurance fund and makes recommendations to the Minister of Finance in respect of a policyholder which appears to be in financial distress. It provides financial assistance to restructure or resolve a failed policyholder. The JDIC acts as a receiver, liquidator, or judicial manager of any policyholder its holding company or subsidiary which becomes insolvent upon the approval of the Minister of Finance.

## 3.4 Role of Private Sector Institutions

### 3.4.1 *The Jamaica Bankers Association*

The Jamaica Banker's Association was established as a Non-profit organization that represents commercial and merchant banks in Jamaica.

The main goal is to partner with its members to create and maintain a profitable environment in which their services are valued by their customers. The Association in collaboration with policymakers influence the regulations and laws which affect the banking industry, and keep its members informed about how developments may affect their businesses. The Jamaica Banker's Association also performs the following functions:

- Promotes the interests of the banking industry locally and internationally;
- Provides a forum for its members to agree on issues of common interest;
- Offers training opportunities for persons employed in the banking industry;
- Assists in the development of codes for the standard of conduct of local banking;
- Conducts research and makes recommendations on the requests of Government or private organizations; and
- Improves and develops security protocols and policies for the banking industry.

### 3.4.2 *Jamaica Stock Exchange*

The Jamaica Stock Exchange (JSE) was established in 1968. The JSE is governed by a Board of Directors composed of a representative of the Bank of Jamaica, a representative of the Ministry of Finance, and other shareholders of the JSE.

The JSE's principal mandate is to promote the orderly and transparent operation of the stock exchange and equities market to mobilize capital to facilitate the growth and development of companies, by developing, applying and enforcing the rules designed to ensure public confidence in the stock market and its broker members, as well as providing facilities for stock market transactions.



Through the JSE, only broker-members are authorized to trade both as agents and as principals. In the latter capacity, certain restrictions apply to transactions between a broker and his own client.

### ***3.4.3 The Jamaica Co-operative Credit Union League***

The Jamaica Co-operative Credit Union League established in 1942 is the national association of credit unions in Jamaica. It is a cooperative society owned by its member credit unions.

Its principal mandate is to foster the growth and welfare of credit unions and other cooperative societies, to provide information and guidance to credit union leaders so that the societies they serve will offer the best possible service to the greatest number of credit union members. JCCUL also encourages and promotes the development and maintenance of high standards of cooperative management, operation and supervision. It also seeks to secure legislation conducive to the successful operation of the cooperative movement and represents the credit union movement locally, regionally and internationally.

The JCCUL also owns and manages a credit union debit card switch and is a founding shareholder of JETS Limited.

Through the JCCUL the credit union movement sets financial and operational standards for its member credit unions and provides on-site and offsite supervision of its members.

The JCCUL comprises the trade association and four subsidiaries.

### ***3.4.4 The Building Societies Association of Jamaica Ltd.***

The Building Societies Association of Jamaica Ltd. was incorporated in 1959. Its main objects are

- Promote the interests of building societies in Jamaica and cooperation among member societies;
- Formulate and promote the adoption and observance by building societies regulations and best corporate practices for carrying on their business with a view to securing and maintaining public confidence;
- Advocate and promote such legislative economic and financial measures and reforms as may be conducive to any of the objects of the Association and its members; and
- Facilitate joint action and representation where there is common interest among member societies in relating to regulators, local and international organizations and affiliates relevant to housing, housing finance and other services.

## 4. PAYMENT MEDIA USED BY END USERS

### 4.1 Cash

Under the Bank of Jamaica Act, the central bank has sole authority to issue the currency (notes and coins) of legal tender used in Jamaica, the Jamaica dollar. Section 14 of the Act, states that the Minister of Finance, may after consultation with the BOJ approve the denomination, form and design of notes and coins to be issued by the BOJ. The banknotes are issued in denominations of \$50, \$100, \$500, \$1000 and \$5000, while coins are minted in \$20, \$10, \$5, \$1, \$0.25, \$0.10 and \$0.01.

Cash is the main payment means utilized in Jamaica. Households and small businesses mostly use cash for their everyday and low value payment requirements.

Figure 4 shows the recent evolution of banknotes and coins issued by the BOJ. In 2010 and 2011 cash registered a positive annual growth of 14.1% and 9.6% respectively. It is also worthy to note that between 2012 and 2014 the same rate was negative.

Moreover, cash held per inhabitant remain similar in the period 2009-2014, despite the temporary improvement between 2010 and 2011 given the recovery of domestic demand and the upturn in real wages and remittance inflows. The same tendency was observed for the total amount of cash to GDP, as can be seen in Figure 5

### 4.2 Noncash Payment Instruments

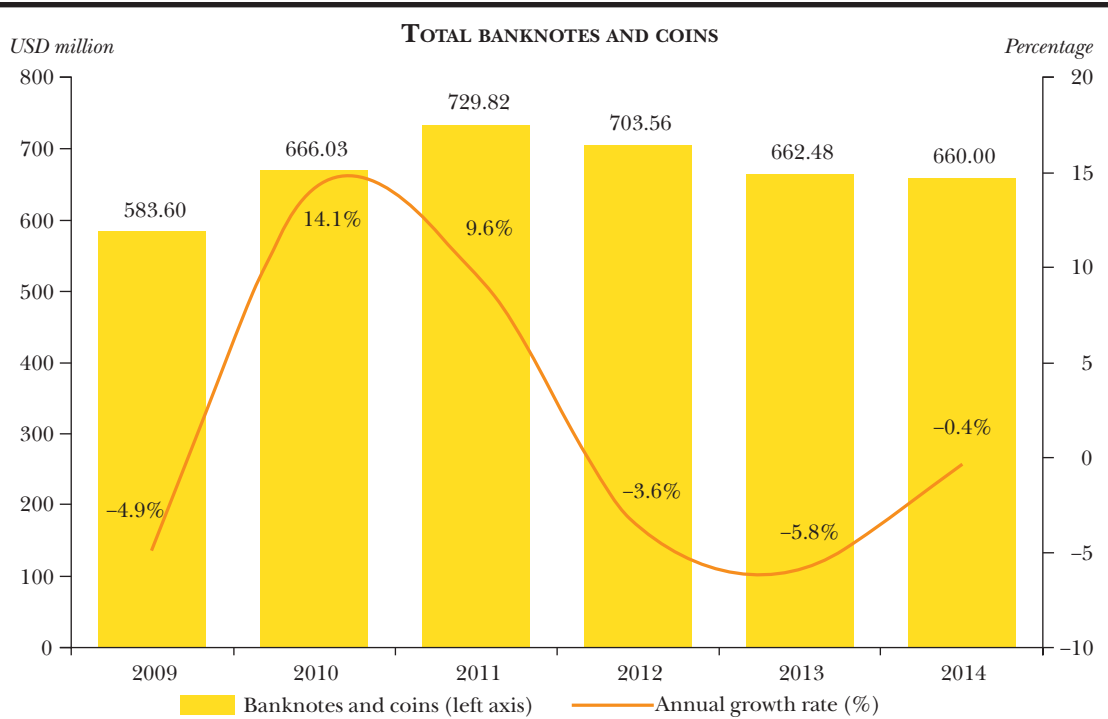
In addition to cash, Jamaicans have access to a variety of noncash payment media options. As noted in section 4.1 cash remains the main payment instrument used in Jamaica; however, the emergence of electronic payment instruments vis-à-vis cash (including other paper-based instruments such as cheques) has been increasing in the recent years.

The fact that noncash payment instruments are gradually adopted by end users<sup>21</sup> reflects an evolution of Jamaicans payment habits aligned with international trends

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<sup>21</sup> Payment media end users refer to all nonfinancial entities, such as individuals, households, businesses and Government. While financial institutions have access to other payment and settlement media, such as required reserves and free reserves at central bank, as well as to deposits held in another financial institutions. For more information see Table A3 in section 7.

Figure 4

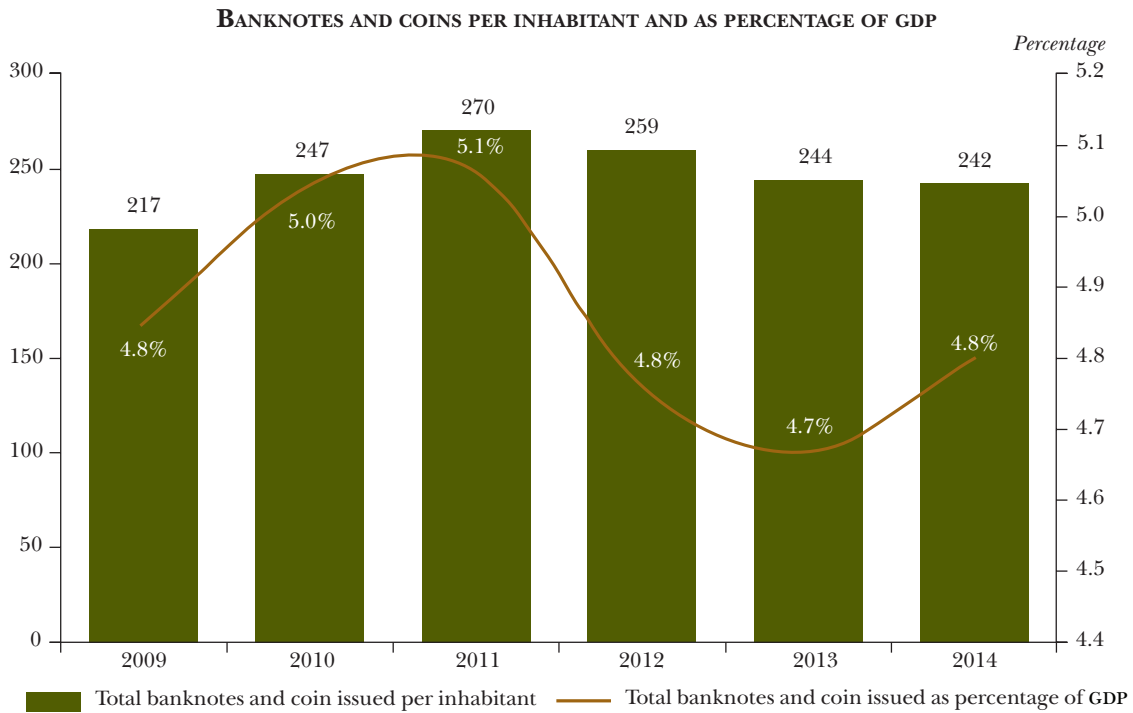


Source: Bank of Jamaica.

of a digitization of financial services in general. The ERPS Guidelines developed by the BOJ has laid the foundations to speed up the process of having more noncash payment instruments available for Jamaicans to meet their day-to-day payment needs.

To illustrate the gradual adoption of noncash payment instruments, including cheques as a paper-based payment instrument, Figure 6 depicts the increasing presence of payment cards and electronic transfers, in the total amount of payment transactions recorded annually in Jamaica, from 2009 to 2014. In more detail, since 2009, card payments (comprised of debit and credit cards) and electronic credit transfers constitute more than three quarters of use of payment means in terms of volume. It can be noted that electronic transfers (credit transfers and direct debits) doubled its relative importance with respect to the other noncash payment instruments between 2009 and 2014. Moreover, the use of cheque shows a steady decline confirming a change in the payment habits of Jamaicans.

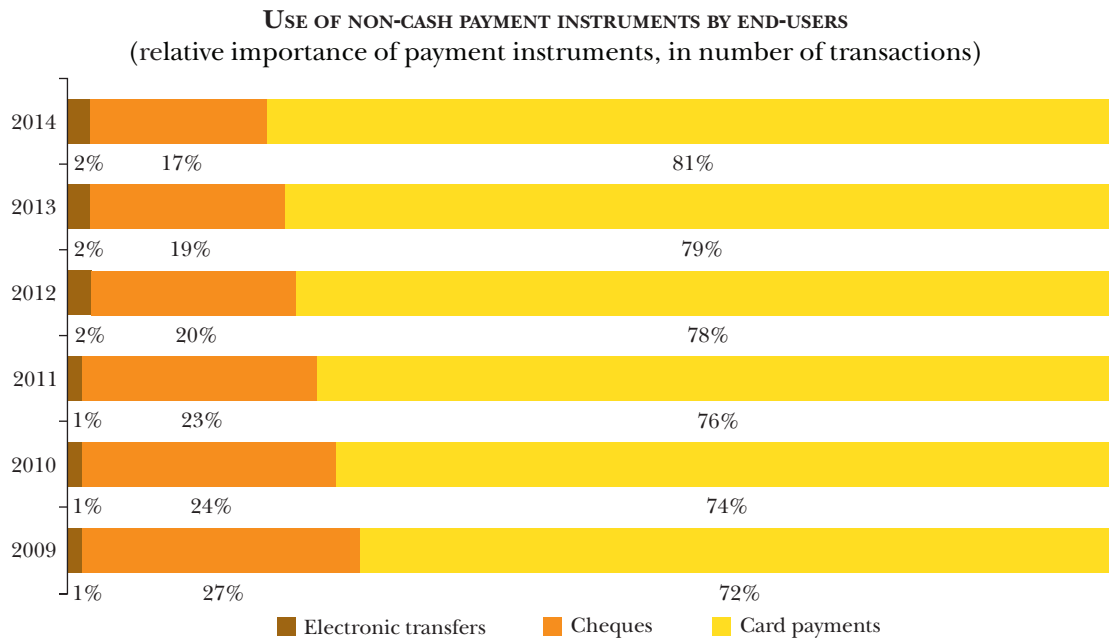
Figure 5



Banknotes and coins per inhabitant in USD.

Source: Bank of Jamaica.

Figure 6



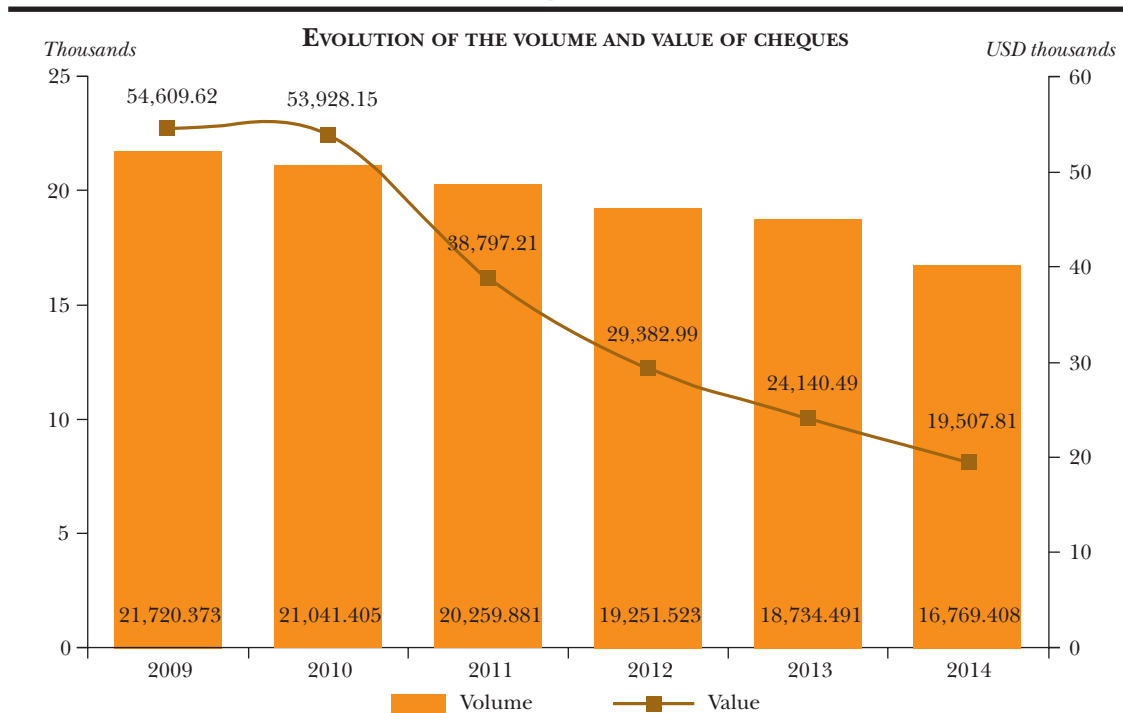
Source: Bank of Jamaica.

### 4.2.1 Cheques

In 2014, cheques continue within the top three most utilized payment instruments in Jamaica, in terms of volume (17% of all transactions), whereas in terms of value it is the first (71% of all transactions). While this shows that cheques are one of the most frequently used payment means in Jamaica, it is noteworthy that compared to other noncash payment instruments, cheques are the only instrument showing a downward trend. From 2009 to 2014 the volume of transaction decreased by 23%, going from over 21 million transactions in 2009 to only 16.8 million transactions in 2014. In terms of volume per capita, in 2009 there were 8.1 transactions carried out with cheques per inhabitant, while in 2014, were 6.2 transactions. More importantly, in terms of value, there was a 64% downturn for that period, that resulted in total value paid with cheques in 2009 being 54.6 million USD and 19.5 million USD in 2014.

The Bank of Jamaica in 2011 implemented a value threshold on direct debits, credits and cheques processed through the ACH. The objective was to minimize the net settlement risk posed to the BOJ by the ACH operations and maintaining the viability of the ACH by reducing the size of the daily net settlement balance. As part of the strategy to reduce settlement risk and increase payment system efficiency, the

Figure 7



Note: Volume of cheques (left axis) and value paid in USD thousands, in right axis.  
Source: Bank of Jamaica.

BOJ, implemented the ACH value threshold on a phased basis, aimed at eliminating 80% of values and 20% of transaction volumes greater than or equal to JMD1mn to alternate means of payments such as JamClear®-RTGS.

#### ***4.2.2 Electronic Transfers***

Electronic credit transfers in Jamaica is comprised of direct payroll deposits, regular government transfer payments as well as any funds transfer initiated electronically by an end user (payer) using a payment instrument to fulfil her/his obligations with another agent (payee).<sup>22</sup>

As seen in Figures 8 and 9, the use of this noncash non paper-based payment instrument has been increasing progressively over the past years.

From 2009 to 2014 the volume of credit transfers increased by 291%, resulting in a higher participation in the composition of all noncash transactions, from 1.1% in 2009 to 2.3% in 2014, as noted in Figure 6. From another point of view, as of 2014, in average 50% of Jamaicans makes a credit transfer per year. On the other hand, the value of these transactions increased between 2013 and 2014 by 22%, representing 5% of all the noncash transactions and 93% of the electronic transfers. Yet, it is important to note that in contrast to the volume of transactions, the value of electronic credit transfers fell between 2010 and 2011, and just after this two-year period of considerable downturn, there have been a recovery in the observed trend in previous years.

Concerning direct debits (electronic automated debit transfers), this payment instrument also showed an upward trend but on a smaller scale when compared to credit transfers. By 2014, direct debit transactions amounted for 456,000 operations compared to 406,000 carried out in 2009, but in between there was a decline like the experienced with credit transfers, in sum the volume of annual direct debits increased 12% for that period. The value of direct debits, however, fell sharply over the last years, falling from 528.9 million USD in 2009 to less than 100 million USD in 2014 (Figure 9).

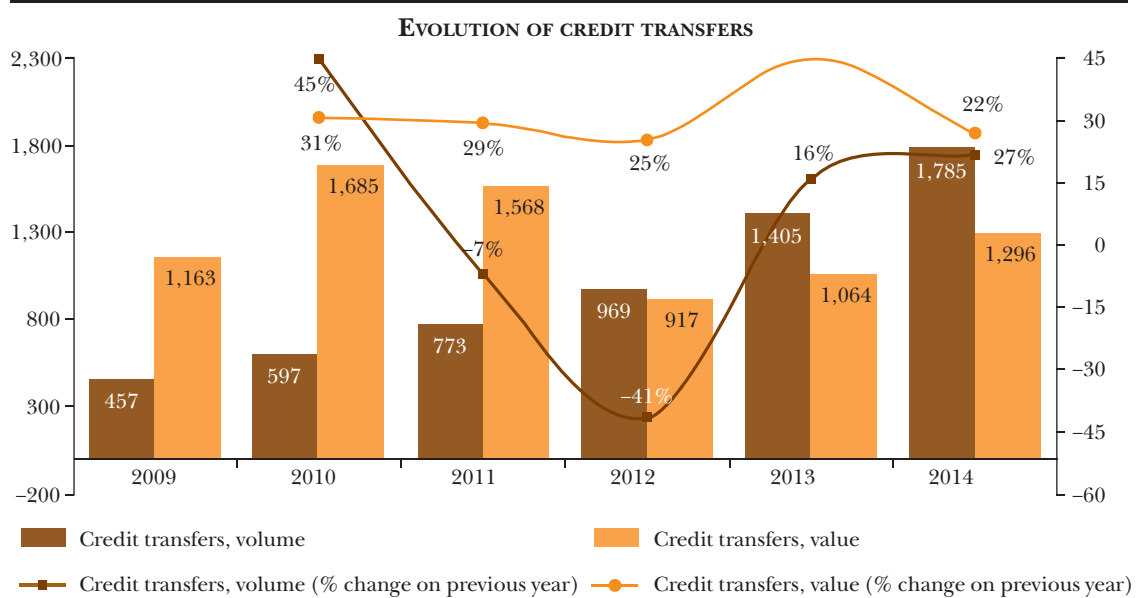
#### ***4.2.3 Payment Cards***

Payment cards are widely accepted in Jamaica. This noncash payment instrument has been fundamental in changing the payment habits related to cash and other paper-based payment instruments. Since the last decade, debit and credit cards are the most important noncash payment instruments (see Figure 6). Its versatility, especially for low value payments such as e-commerce, purchases at supermarkets and

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<sup>22</sup> This noncash payment instrument can be also categorized in credit or debit transfers. When the payee, commonly a commercial outlet or provider, initiates (pulls) the payment, the electronic transfer of funds can be named as direct debit. Those transactions initiated (push) by the payer are referred as a credit transfer.

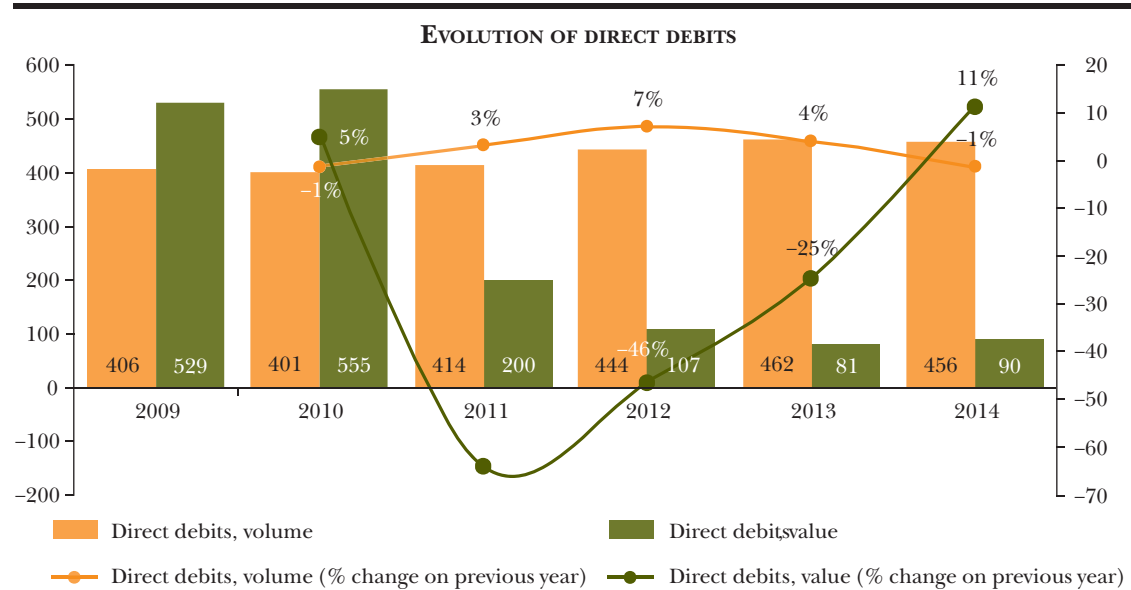
Figure 8



Note: Volume expressed in thousands, value paid in USD millions, in left axis. Percentage change on previous year in right axis.

Source: Bank of Jamaica.

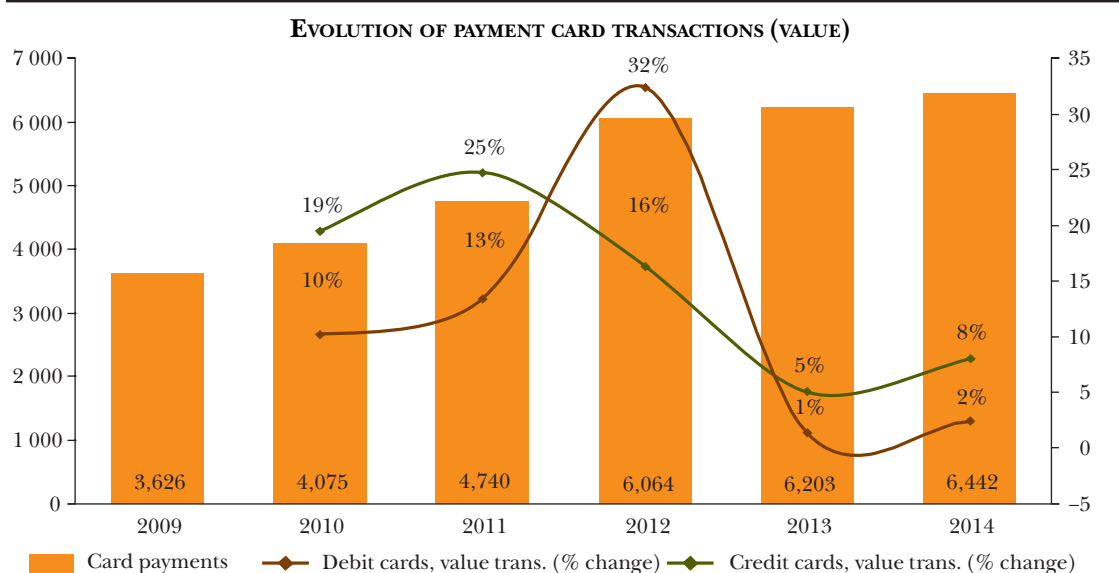
Figure 9



Note: Volume expressed in thousands, value paid in USD millions, in left axis. Percentage change on previous year in right axis.

Source: Bank of Jamaica.

Figure 10



Note: Value paid in USD millions, in left axis. Percentage change on previous year in right axis.  
Source: Bank of Jamaica.

other service outlets such as restaurants and gas stations, make it a favorable payment option used by many households on a daily basis.

In 2009, on average, there were 0.73 payment cards per person; this ratio moved to 1.12 in 2014, representing a major penetration and access of this instrument among end-users payment instruments. Regarding the volume of transactions conducted with payment cards, in 2014, 79% of the 80,000 transactions were performed with a debit card. Parallel to the growth of credit cards issued, (which it is lower than the growth of debit cards) the proportion of credit cards/payment cards transaction has been increasing (see Figure 10).

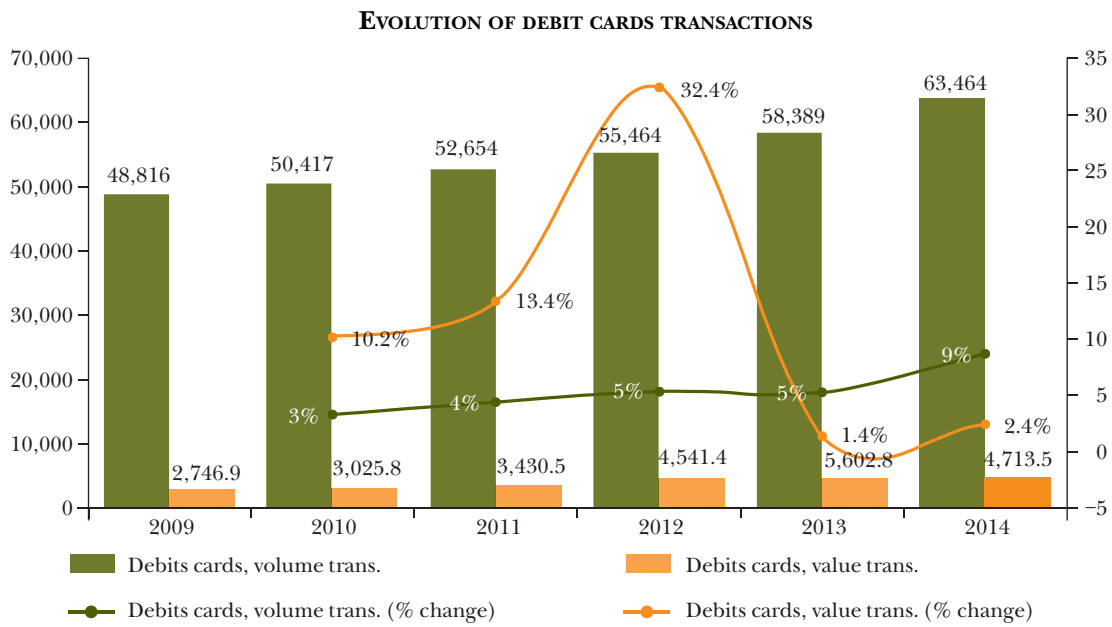
Figure 11 depicts the evolution of the total amount and volume of transactions with debit cards; each year between 2009 and 2014, there was a positive growth at a changing pace.

Regarding the value of the payment cards transaction, in 2014 each credit card carried out payments for 7,613 USD; likewise debit cards are used mainly for medium-value payments, with a year total of 1,697 USD. In general, the amount of transactions made both with debit and credit cards, has maintained positive growth rates since 2009. As can be observed on Figures 11 and 12, the positive trend of payment card transaction reasserts the fact that payment cards are the most common non-cash retail instrument in Jamaica.

Currently, the networks of ATMs and POS have a broad geographical coverage, allowing the increased use of payment cards.



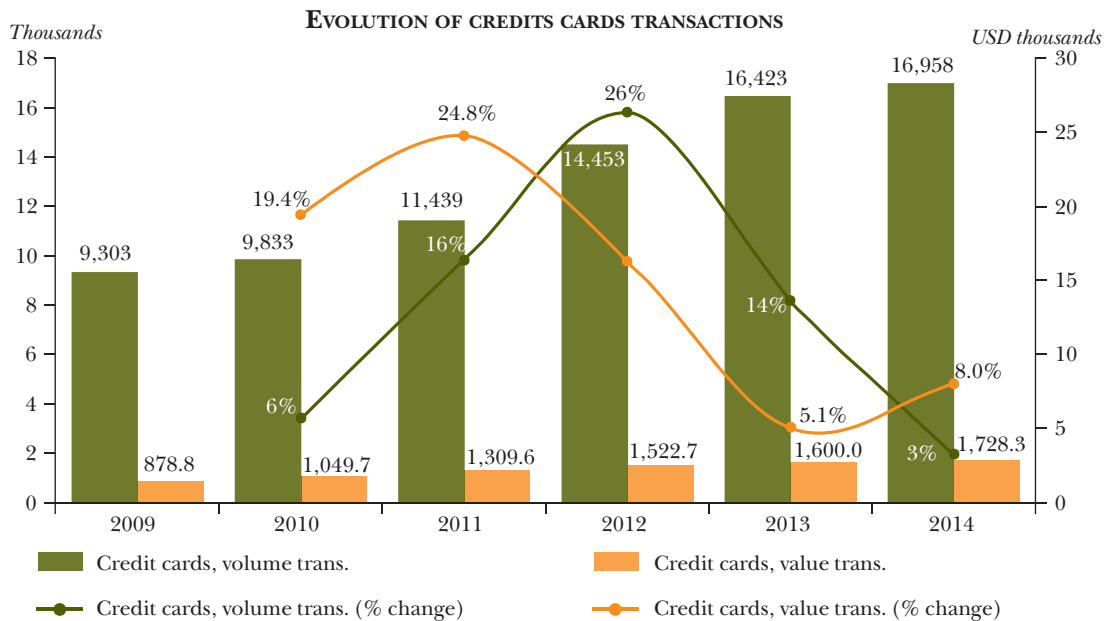
Figure 11



Note: Volume expressed in thousands, value paid in USD millions, in left axis. Percentage change on previous year in right axis.

Source: Bank of Jamaica.

Figure 12



Note: Volume expressed in thousands, value paid in USD millions, in left axis. Percentage change on previous year in right axis.

Source: Bank of Jamaica.

## **4.3 Recent Developments**

### ***4.3.1 Electronic Retail Payment Services***

The BOJ continued to develop the retail payment infrastructure which entailed ongoing assessments of new payment alternatives by payment service providers under the Guidelines for ERPS. As at December 2015, 13 applications were received for the delivery of ERPS, which were at various stages of assessment and two entities were granted authorization to offer selected ERPS and eight entities submitted applications for approval of proof of concept and pilot. Four applications were withdrawn for various reasons. One entity was granted authorization to conduct phase one of the ERPS and approval to conduct a pilot for phase two. As at August 2016, three entities were approved by the BOJ to offer ERPS.

## 5. INTERBANK CLEARING AND SETTLEMENT PAYMENT SYSTEMS

### 5.1 General Overview

In 2003 the BOJ embarked on a process of comprehensive reform of the local payment and settlement systems, the National Payment System Reform Programme, to enhance the safety and efficiency of these systems focusing on

- The implementation of the JamClear®-RTGS that replaced the Customer Inquiry and Funds Transfer System;
- The establishment, in 2005, of the National Payments Council<sup>23</sup> comprised of representatives from all the major stakeholders including financial regulators, financial institutions, the Ministry of Finance, with the BOJ playing a leadership and facilitating role;
- The development of legislation and the implementation of an appropriate legal framework for payment systems; and
- The development of the payment system oversight function at the central bank.

The decision to reform the National Payment System was taken immediately after identifying major weaknesses in the payments system infrastructure of Jamaica. The reform program was aimed at ensuring the stability of the financial system and improving the safety and efficiency of the NPS, resulting, among other outcomes, in the launching of the modern clearing settlement infrastructure the JamClear Systems, comprising the JamClear®-RTGS and JamClear®-CSD, implemented in 2009. With the introduction of JamClear®-RTGS, commercial banks, primary dealers and other financial institutions were able to transfer funds between themselves, for own account or on behalf of clients, in real time on a safe and secure basis.

### 5.2 JamClear®-RTGS

The JamClear®-RTGS is Jamaica's main interbank and large value fund transfer system owned and operated by the BOJ. It is based on a real time gross settlement (RTGS)

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<sup>23</sup> The NPC was established in 2005 to oversee the National Payment System Reform Programme.

design to process large value and time critical transactions. It is seamlessly integrated with JamClear®-CSD and other related linkages, altogether SWIFT-based platforms.

Its primary purpose is to provide a settlement mechanism in which both processing and final settlement of participant payment instructions take place continuously throughout the day. In JamClear®-RTGS, the settlement of funds occurs on a transaction by transaction basis. The transactions are checked for funds availability and settled individually, continuously in real time across BOJ settlement accounts, provided the sending participant has sufficient covering balance or credit. JamClear®-RTGS provides continuous intraday finality for individual payments.

The JamClear®-RTGS application consists of two functional modules: the JamClear®-RTGS and the Payment Origination (PO). The PO system allows participant institutions to enter, control and view JamClear®-RTGS payments and import net settlement generated by clearinghouse institutions. Although, the JamClear®-RTGS and the PO are closely integrated, they are independent of each other.

Through JamClear®-RTGS settlement risk is significantly minimized by ensuring that transfers between participants can only occur where funds are available in accounts held at the BOJ. If a participant has insufficient funds at any time during the day, the transfer will not take place. The JamClear®-RTGS also shows the exact position of all financial institutions during the day, providing an essential management and oversight tool.

Figure 13 shows the evolution of transfers made via JamClear®-RTGS (volume) from 2009 to 2014; the volume of annual transactions more doubled over the period.

### ***5.2.1 Rules and Participants***

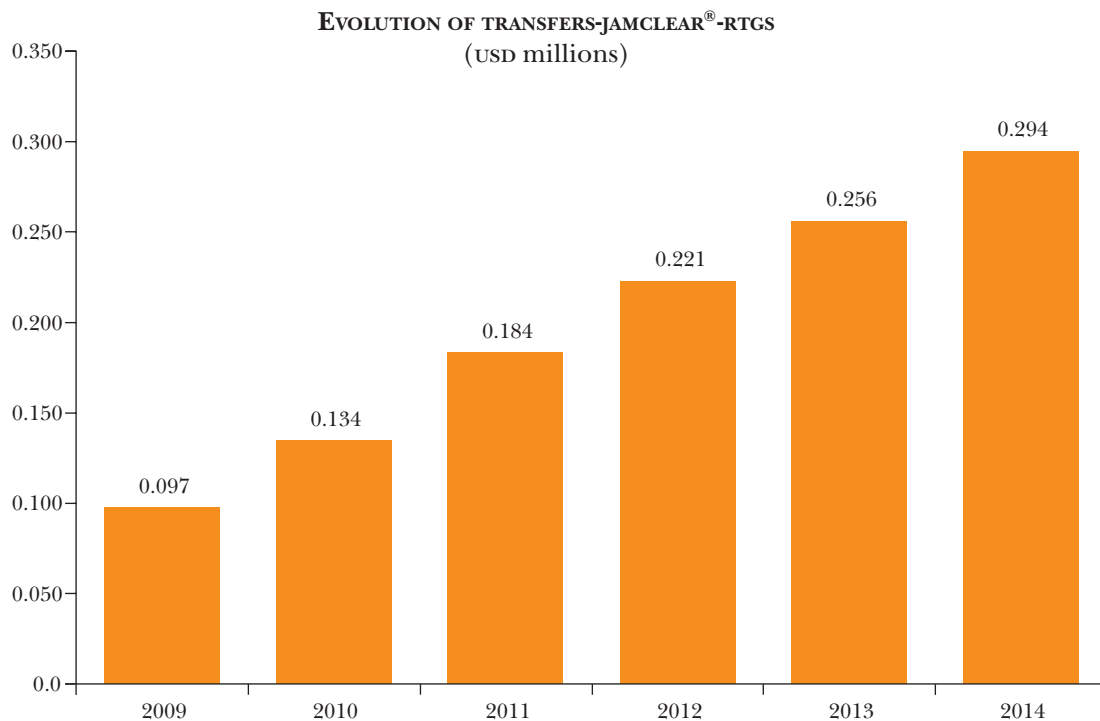
Regulation and procedures of JamClear®-RTGS can be found in the following documents:

- JamClear®-RTGS Participant Rules;
- JamClear®-RTGS User Guides;
- JamClear Access Policy;
- Payment Clearing and Settlement Act; and
- Payment System Oversight Policy. The body in charge of issuing the regulatory framework is Bank of Jamaica.

According to the JamClear®-RTGS Participant Rules document, access to these system services is restricted to entities satisfying the stated requirements to operate an account at the BOJ, as well as the ability of participants to qualify in the following categories:

- settlement account and credit services;
- settlement account only;

Figure 13



Source: Bank of Jamaica.

- agency access to facilitate funds transfers to participants; and
- indirect access through customer accounts through their commercial bank.

Participation in JamClear®-RTGS is open to those institutions duly approved by the BOJ and who have agreed to

- Comply with published rules and applicable procedures;
- Supply documentation required by the BOJ;
- Pay membership, transaction and/or other fees that may be set the BOJ;
- Be in full compliance with the requirements as defined in the PCSA;
- Maintain and comply with the Information System Security Policy, that adequately protects the confidentiality, availability and integrity of all information both within the payments system and their own organization;
- Compliance with the BOJ's Payment Systems Communication Network Connection Agreement;
- Obtain a SWIFT BIC to uniquely identify each participant in the system. Where a participant is not a SWIFT member, they must obtain and hold a Non-connected BIC; and
- Comply with all rules and procedures for the use and maintenance of the e-tokens necessary for gaining access to the payments system.

BOJ is the owner and operator of JamClear®-RTGS and has full responsibility and control of the management of all routine daily activities. In addition, the BOJ is also responsible for

- providing detailed user guide and operational procedures; and
- invoking contingency arrangements for the Payments System.

Participants that generate transactions in the system are as follows:

- Bank of Jamaica;
- Government of Jamaica;
- Commercial banks and merchant banks;
- Building societies;
- Primary dealers;
- Jamaica Central Securities Depository for settlement of equity net positions for JSE participants, and
- Clearing houses operators –Automated Payments Ltd (ACH) and JETS Ltd (MultiLink®).

There are three types of membership categories available to participants: full, restricted members and indirect members. In 2014, there were 21 members in the JamClear®-RTGS, two indirect members, two restricted member and 17 full members.

### Full Members

Full members have direct access and permission to undertake financial transactions with other members; in addition, these participants have access to intraday liquidity facilities and any other credit services provided by the BOJ. Full members include 1) Bank of Jamaica; 2) commercial banks and merchants banks; 3) primary dealers; 4) Jamaica Central Securities Depository for settlement of equity net positions for JSE participants. Restricted members included 1) building societies; 2) cambios; 3) money service providers, and other entity as designated by BOJ.

Regarding the obligations and responsibility of the full members, the JamClear®-RTGS Participants Rules specifies the following criteria and conditions:

- Maintain a settlement account at the BOJ;
- Ensure their obligations to other participants are met by the final cutoff of JamClear®-RTGS;
- Ensure that intraday liquidity received from the Bank is returned before final cutoff in JamClear®-RTGS;

- Maintain a business continuity plan, according to the guidelines provided by the BOJ:
  - a. Resume processing of payments within 30 minutes of an in-house system problem;
  - b. Resume processing of payments within one hour in the event of a major problem requiring the use of their off-site contingency; and
  - c. Transfer processing within one hour to a Nominated agent who will facilitate payment processing on their behalf in the event that they are not able to rejoin the payment system within the time specified above;
- Inform the JamClear®-RTGS operator in the event that their system is likely to be unavailable for more than ten minutes.

### Restricted Members

Restricted members have direct access to JamClear®-RTGS and authorization to undertake financial transactions with other members; however, these participants do not have access to credit or intraday liquidity facilities. Regarding the obligations and lines of responsibility of the restricted members, the JamClear®-RTGS Participants Rules specifies the following criteria and conditions:

- Compliance with the published rules and applicable procedures;
- Maintain and comply with the Information Systems Security Policy, approved by the BOJ, that adequately protects the confidentiality, availability and integrity of all information both within the payments system and within their own organization;
- Sign and comply with the BOJ's Payment Systems Communication Network Connection Agreement;
- Comply with all rules and procedures for the use and maintenance of e-tokens necessary for gaining access to the payment system;
- Ensure their obligations to other participants are met by the final cutoff of the JamClear®-RTGS;
- Maintain a business continuity plan, according to the guidelines provided by the BOJ, that confirms they can
  - a. Resume processing within 30 minutes of an in-house system problem;
  - b. Resume processing within one hour in the event of a major problem requiring the use of their off-site contingency; and
  - c. Transfer processing within one hour to a nominated agent who will facilitate payment processing on their behalf in the event that they are not able to rejoin the payment system within the time specified above;
- Inform the JamClear®-RTGS operator in the event that their system is likely to be unavailable for more than ten minutes.

## Indirect Members

Indirect members are 1) agency/clearing houses; 2) secondary dealers and 3) customers of deposit-taking financial institutions. In the case of agency/clearing houses, they are able to submit multilateral net settlement files through Payment Origination for settlement on members' accounts. The transactions of secondary dealers at JamClear®-CSD are settled on the account of a commercial bank in the system, operating as the settlement agent of the secondary dealer. Regarding customers of deposit-taking financial institutions, they have indirect access to JamClear®-RTGS by instructing their bank to make payments on their behalf to beneficiaries who are customers of a JamClear®-RTGS member.

As at December 2014 there were 21 participants, two of which are indirect members (ACH and MultiLink®). Regarding the obligations and lines of responsibility of the indirect member, the JamClear®-RTGS Participants Rules specifies the following criteria and conditions:

- Maintain a settlement agent agreement with a commercial bank on whose account they will settle securities transactions;
- Ensure their obligations to other participants are met by the final cutoff of JamClear®-RTGS;
- Maintain a business continuity plan, approved by the BOJ, that confirms they can:
  - a. Resume processing within 60 minutes of an in-house system problem;
  - b. Resume processing within four hours in the event of a major problem requiring the use of their off-site contingency; and
  - c. Transfer processing within four hours to a nominated agent who will facilitate payment processing on their behalf in the event that they are not able to rejoin the payment system within the abovementioned specified time;
- Inform the JamClear®-RTGS operator whenever their system is likely to be unavailable for more than one hour.

### *5.2.2 Type of Transactions*

The primary purpose of JamClear®-RTGS is to provide a settlement mechanism in which both processing and final settlement of participant payment instructions take place continuously throughout the day. This ensures finality and irrevocability of payments and in so doing allows for the immediate reuse of funds by receiving participants. JamClear®-RTGS also provides a medium through which the BOJ facilitate intraday liquidity to eligible system participants on a collateralized basis.

The JamClear®-RTGS Participants Rules specifies that the payments allowed in this payment system must be on gross basis. As it relates to the currency of payments, only payment instructions in Jamaica dollar and United States dollar between participants



settling over settlement accounts at the BOJ may be utilized in the JamClear®-RTGS.<sup>24</sup>

All payment instructions must comply with the applicable standard SWIFT format rules as set out in the SWIFT User Documentation for: 1) single customer payment instruction; 2) single bank to bank payment instruction; and 3) multiple customer payments. Likewise, payment instructions must have a value date of the current day or up to 15 business days in the future, or as set from time to time by the BOJ.

It is a requirement that intraday loans from the BOJ must use the collateral accounts in JamClear®-RTGS. In order to achieve effective management of intraday liquidity, the system enables the BOJ to provide intraday liquidity against participant collateral agreed in JamClear®-RTGS system rules. In order to use the intraday loan facility (ILF) the BOJ will have to set a balance in the participant collateral account (amount collateralized according to BOJ rules). The BOJ will enter an ILF to debit the participant collateral account and credit the participant ILF account. This ILF will be automatically returned at final cutoff. JamClear®-RTGS supports banking operations according to various SWIFT formats.

### ***5.2.3 System Operation***

As indicated in previous sections, JamClear®-RTGS consists of two functional modules, JamClear®-RTGS and PO. In JamClear®-RTGS, payment instructions (transfers) are tested for funds availability and are settled individually, continuously in real time, across settlement accounts in the BOJ, providing the sending participant has sufficient covering balance or credit in its account. The PO system allows participant institutions to enter, control and view JamClear®-RTGS payments and import Net Settlement files generated by clearing house institutions.

The JamClear®-RTGS System provides inter-institution payment services for the BOJ and the participants. In providing these services, the JamClear®-RTGS system performs the following general functions:

- message handling;
- payment processing;
- liquidity management;
- queue monitoring and control;
- reporting, and
- complete monitoring of account balances for both the central bank and participants.

The JamClear®-RTGS System supports the following operations:

- inter-participant transfers;

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<sup>24</sup> In the case of participants settling GOJ US bond transactions, JamClear®-RTGS operates in US dollars.

- clearing house settlement, and
- other BOJ transactions affecting participant accounts.

JamClear®-RTGS operates on all normal banking days; that is, any day other than Saturdays, Sundays, public holidays and any other days as notified by the BOJ. The operating schedule starts at 7:30 a.m. and ends at 17:15 p.m., with the initial cutoff at 16:20 p.m. and the final cutoff at 17:05 p.m. The operating schedule may differ, in exceptional circumstances, such as a natural disaster affecting the entire payment system, or as advised by the BOJ. In such an event, participants will ensure that there is no penalty or loss of interest to any party where transactions normally carried out on the affected day have not been processed.

#### 5.2.3.1 Payment Entry and Processing

All payment instructions are originated by the paying bank and may be entered directly into the system by the participant's operations officers, or directly by the participant's back office system.

##### *Direct Payment Entry*

Payment instructions can be entered directly into the system by participants. Access to the JamClear®-RTGS system is gained by using a standard internet browser, such as Microsoft Internet Explorer or Firefox. Once the user is logged into the JamClear®-RTGS system they will be provided with a formatted screen that will capture all the necessary details of the transaction. All such entries must be created in JamClear®-RTGS, Payment Origination Module (PO) by an authorized officer, and must be verified/ approved by a separate officer. Once approved and accepted in PO, the payment instruction will be submitted for settlement.

##### *Straight through Processing*

The straight through processing (STP) facilitate participants accessing the JamClear®-RTGS system directly from their back office systems. The participant's back office system must be capable of sending SWIFT standard messages.

#### 5.2.4 Settlement Procedures

All payments that affect participants' settlement accounts are processed in JamClear®-RTGS. The source of these transactions may be

- Payments originated by participants via STP Gateway, or manually entered in JamClear®-RTGS Payment Origination Module;

- Payments originated by BOJ to debit or credit a participant account; or
- Payments cleared between JamClear®-RTGS and other systems which interface with JamClear®-RTGS (JamClear®-CSD, ICBS, ACH, and MultiLink®).

Each of these transactions will have a transaction type code (TTC). At end of each day, all RTGS transactions are posted to the Central Bank Accounting System (ICBS/CBAS). At start of day, all ICBS overnight transactions that affect participant accounts are posted to JamClear®-RTGS. TTCs will be used to recognize any particular processing of these transactions in ICBS system. ICBS will contain a mapping table between TTC and General Ledger accounts to be able to apply the appropriate accounting entries.

### ***5.2.5 Risk Management Framework***

The JamClear®-RTGS provides a secure mechanism by which large value or time critical payments can be made between participants in real time. The JamClear®-RTGS has risk management controls that facilitate safe and efficient payments. The risk management control mechanisms are the following:

#### **5.2.5.1 Authentication and Validation**

The authentication and validation process for JamClear system are the same. There is a centralized e-tokens and management system within BOJ that enforces security controls using e-tokens to access the JamClear system. E-tokens have a unique password for the participants to gain access to the system. The e-token is also linked to specific IP addresses with controls across the entire infrastructure. An e-token is needed in order to establish the secure connection with the National Payment Systems. Each participant is responsible for managing their e-tokens at the respective institutions.

#### **5.2.5.2 Real-Time Irrevocable Settlement**

To mitigate credit risk, once a payment has been made from bank A to bank B it is irrevocable. If such a transfer was able to be unwound the receiving bank would have to manage the risk that the funds transferred could be recovered by the sending bank. Modern practice does not consider this acceptable, and the JamClear®-RTGS does not provide any method of unwinding such transactions. There is, of course, a legal implication, and the BOJ is in the process of ensuring that the necessary legislation is developed to support irrevocability. Therefore, once received, funds can be considered unencumbered, and can be immediately passed to the beneficiary.

### 5.2.5.3 Centrally Located Queuing Facility

When payment instructions are received by the JamClear®-RTGS system they enter a payment queue to wait for sufficient funds to be available in the Participant's settlement account. Available funds in the settlement account are applied to each payment instruction in the order governed by user-entered priority and by first in, first out sequential processing within the tiered priorities. The participant has full control over the payment queue up until the instruction has settled.

### 5.2.5.4 Automatic Gridlock Resolution

In the JamClear®-RTGS system, gridlock can occur when two or more settlement accounts have pending debits affecting one another's positions. The JamClear®-RTGS automatically performs gridlock checking and resolution at specified periods during the processing cycle. When a gridlock situation is detected, the settlement function provides algorithms for automatically resolving the gridlock without compromising the settlement account positions. The system also facilitates manual gridlock resolution.

### 5.2.5.5 Interactive Monitoring and Management

Participants in the JamClear®-RTGS system have access to real-time monitors of settlement account activity information and their current positions. The monitors allow each participant to manage their liquidity in the most efficient manner. The JamClear®-RTGS Monitoring and Control provides complete online access to settlement account balance information, including opening balance, account activity, and current balance. Inquiry facilities include access to payment instructions, and the details of queued and cancelled payments. Management tools are provided to allow participants to intervene and reprioritize, or revoke payments.

### **5.2.6 Pricing**

The pricing strategy proposed for the BOJ is a two-part pricing where the fixed price component is set to recover part of the initial investment by the central bank, while the variable price component seeks to recover all ongoing costs. Limiting the recovery of the initial investment will fulfil the central bank's goal of developing the financial sector for the benefit of all and recognizing its contribution to the public good. The BOJ will waive all transactions fees in the year of implementation.

The fixed price will be applied as a monthly fee and will be reviewed annually prior to the new financial year and may be adjusted if requirements change or the number of participants changes. The variable price component will be implemented as a charge per transaction within the system. Charges will vary depending on transactions, and the cost of a JamClear®-CSD transaction will recognize that these

generally trigger a JamClear®-RTGS transaction. Transaction cost will recognize the real value to participants of both the reduction of risk within the system, and the benefit received by value being received immediately the transaction is confirmed on the accounts of the BOJ.

The JamClear®-RTGS Participants Rules itemizes that

- Participants acknowledge that the BOJ has the right to set fees and other charges as set out in the JamClear Fee Schedule;
- The BOJ agrees to apply the same fee structure to all participants using the same services within the payment system;
- The participants acknowledge that the BOJ may recover ongoing and variable costs where feasible by volume based charges to participants;
- The participants agree that the BOJ may periodically review its fees and charges, following consultation with, and taking due account of the views of the participants;
- The BOJ reserves the right to charge participants on a cost recovery basis for any additional services rendered to participants.

### **5.3 Retail Payment Systems**

The retail payment systems of the Jamaica NPS are comprised of two systems, the Automated Clearing House which undertakes the clearing of paper-based and electronic transactions of participating institutions on behalf of their clients, and a clearinghouse for debit card payments, MultiLink®. Within the retail payments landscape, there is also a payment switch owned by the Jamaica Co-operative Credit Union League which processes debit card transactions through MultiLink® resulting in final settlement of net positions being provided by JamClear®-RTGS. There is also a payment arrangement between MultiLink® and the Jamaica Co-operative Credit Union League, to process debit card payment transactions for credit union customers.

#### ***5.3.1 Automated Clearing House***

The Automated Clearing House (ACH) is owned by the commercial banks and is managed by JETS Limited through Automated Payments Limited (APL). The Jamaica Clearing Bankers Association was established as the oversight body to implement the rules and by-laws and ensure adherence to the rules governing the operations of the clearing house.

The ACH was established to facilitate the electronic clearing of payment items between commercial banks operating in Jamaica on behalf of their customers. Settlement takes place on the books of the BOJ. The processing time for cheques for

all ACH participants was reduced and synchronized with a three-day recourse period. As a result, bank customers receive good funds after three business days of a cheque deposit instead of the previous five to seven days associated with the manual clearing process.

New instruments and clearing processes which may eliminate physical presentation and speed up clearing and settlement including digital imaging, using cheques as the source of information to create an electronic payment at point of sale or point of deposit and electronic payment products are being considered for future developments.

#### 5.3.1.1 Rules and Participants

The PSCA is the legal framework that guides the ACH in Jamaica. This payment system works as a closed group clearing house, which is only open to Jamaican commercial banks, and in fact the BOJ and commercial banks comprise the sole participants of the ACH operations. The Jamaica Clearing Bank Association Constitution and By-Laws and ACH Member Participation Agreement are the two legal documents which are under the JCBA ACH Paper and Electronic Rules. The JCBA adopted the strategy of the National Automated Clearing House Association (United States) standard which is the international best practice for ACH operations.

#### 5.3.1.2 Types of Transactions

The ACH currently processes cheques, direct debits and direct credit transfers. The ACH is aimed at serving a three phased approach: cheque clearing, electronic origination and cheque truncation. The ACH Rules are modelled on National Automated Clearing House Association Rules and such other rules as the JCBA considers appropriate. The BOJ, commercial banks, the ACH operator comprise the participants of the ACH. The ACH cheque processing phase was implemented in October 2002 and the second phase, ACH electronic items, was implemented in October 2006.

#### 5.3.1.3 Settlement Procedures

The participating depository financial institutions process items through their own proof systems and produce an electronic file. This file is electronically uploaded through the ACH switch and transmitted to the ACH operator. The ACH operator then executes the ACH settlement and distributes the results to the participating depository financial institutions. The participating deposit taking institution is then able to download and transfer the incoming electronic clearing file directly into their host accounting system. This process greatly enhances efficiency of the settlement.

The clearing and settlement process includes the following:

- ACH participants submit files to the ACH operator for clearing and settlement by the scheduled processing windows;
- ACH operator performs the settlement distribution process to produce a net settlement file;
- ACH operator submits a net settlement file to JamClear®-RTGS for financial settlement; and
- the Central Bank review and authorize the ACH net settlement file.

#### 5.3.1.4 Risk Management Framework

The Central Bank maintains oversight of the Automated Clearing House. The risks are managed in the ACH using a comprehensive set of mechanisms. As for the financial risks, the ACH settlement process operates through the BOJ's JamClear®-RTGS thus requiring fully funded accounts at each settlement. All ACH Net Settlement Files are authorized by the BOJ. Concerning operational risk, all potential system failures are attended to by maintaining backup systems with service level agreements. Delays to processing schedules are resolved with the involvement of the BOJ.

In light of market and legal risk, all ACH participants are also required to sign a participation agreement that entails compliance with specific terms for payment authorizations, processing schedules and technical standards.

#### 5.3.1.5 Pricing

The pricing policy is based on operational cost recovery, with provisions for systems maintenance, with the ultimate goal of achieving the least cost per transaction.

ACH fees are charged to participants based on a single fixed fee per transaction item type processed. All major costs for the ACH network are paid for by the operator, APL, thereby centralizing costs with the aim of providing a single fixed fee per unit item processed. This mechanism ensures that the ACH is an equally accessible server to all participants: large and small. The common transaction fee also does not interfere with end consumer marketing efforts.

#### **5.3.2 MultiLink®**

MultiLink® is a retail payment system for payment cards. Its establishment constituted a major achievement in the Jamaican financial services industry due to the introduction of a service platform for debit card payment instruments that delivered noncash retail banking services to/between financial institutions within the domestic market.

The operation of this payment system is under JETS Limited, an electronic banking service company which was registered on December 4, 1995. JETS Limited's primary objective is to reduce costs and increase efficiency for member institutions engaged in the retail payment space, and to provide shared platform services in the form of a joint venture among several of Jamaica's financial institutions. The main functions of the company are to

- maintain participant agreements,
- establish and maintain technical standards,
- operation of network processing systems,
- daily financial settlement – MultiLink® Network, and
- development of new share platform services.

#### 5.3.2.1 Rules and Participants

MultiLink® provides service to licensee members that constitute as clearing participant that are nonshareholder, including one commercial bank and one merchant bank. As for the existing regulations, MultiLink® can also serve other regulated banks. The MultiLink® operations are governed by a set of normative and operational rulebooks developed by JETS. Those are

- JETS Network Rules and Regulations,
- JETS Operating Regulations,
- JETS Technical Standards,
- ISO 8583 Message Format,
- Other Standards and Guides.

#### 5.3.2.2 Type of Transactions

MultiLink® is used by all member institutions. The system utilizes a shared electronic transaction switching network that allows withdrawals at cash dispensers (ATM), electronic funds transfer (EFT) services, facilitates payments by providing debit, point of sale (POS) services, and effects settlement between members. The debit cards used for withdrawing cash or making payments in an EFT/POS environment are fully interoperable among participating members.

Each member is required to secure its net daily settlement obligations by pledging marketable securities to JETS Limited. Settlement takes place on a net basis on the business day following transaction date. The interdependencies and interconnections of the system include the net settlement processing and the central bank as a participant funding.



### 5.3.2.3 System Operation

MultiLink® serves as a debit card network that processes domestic issued debit cards and is based on a real time (24/7) platform. Settlement occurs once daily on a net basis at 13:00 in JamClear®-RTGS. MultiLink® authenticates and validates data by using the following processes:

1. Sending: A customer initiates authenticated debit card transaction at a member terminal (ATM/POS);
2. Processing: A terminal owner creates a financial message with encrypted PIN that is passed to the MultiLink® network for routing to the card issuer;
3. Receiving: A card issuer validates the card and PIN, then decides if funds are available and returns either an approval or decline response through the network to the originating terminal.

The network achieves daily settlement and reconciliation, daily adjustments and corrections and continuous system monitoring.

### 5.3.2.4 Settlement Procedures

MultiLink® settlement process, ISO 8573 messages are exchanged through the network by participants and the results of the net settlement process are posted to the JamClear®-RTGS system for financial exchange by 13:15 p. m. each business day.

1. The stages of clearing and settlement processes are daily settlement cut off by 21:30 p.m.;
2. Net settlement calculation is completed for the prior day's work trade/ transactions;
3. JamClear®-RTGS net settlement posting is affected with the results of the net settlement process for financial exchange by 13:15 p.m. each business day.

The settlement security funds are held by the network to cover a three-day gross issuer exposure.

### 5.3.2.5 Risk Control Management

Concerning financial risks, resulting from MultiLink®, it should be noted that the settlement process occurs through the BOJ's JamClear®-RTGS. All financial transactions are reviewed and authorized by the operator. Settlement exposures are covered by a settlement security provided by each card issuer, sufficient to cover possible peak risks.

The operational risk is also managed in a comprehensive manner. In general, system failures are attended to by maintaining continuous monitoring, contingency backup systems along with service level agreements. Delays in RTGS settlement schedules are resolved through collaboration with the BOJ.

Legal risks are mitigated and managed in keeping with a signed settlement agreement that requires compliance by all participants with specific terms for payment authorizations, processing schedules, technical standards.

### 5.3.2.6 Pricing

MultiLink® Switch and Interchange Fees are charged to the card issuer based on a single fixed amount per item processed. Switch fees are charged monthly while Interchanges are paid on a daily basis.

All major costs for the MultiLink® Network are paid for by its operator, thereby centralizing costs with the aim of providing a single fixed fee per unit item processed.

The current pricing policy aims at ensuring accessibility. The uniform network fee per transaction does not interfere with the market price competition between the participants.

### 5.3.3 *Quality Network Co-operative*

In 1998 the Jamaica Co-operative Credit Union League Limited (JCCUL) implemented a debit card switching system for credit unions. The operations of this debit card switch are carried out by Quality Network Co-operative Limited (QNET), a subsidiary of JCCUL. The debit card switch provided credit unions with an automated system for debit card transactions. One of the key features of QNET is the safety and efficiency of the system given the interconnection to Multilink®.

#### 5.3.3.1 Types of Transactions

QNET manages a switch on behalf of the Jamaica Co-operative Credit Union League Limited for credit unions participating in the system. The types of transactions processed are:

- encashment at ATM machines,
- balance enquiry,
- deposits,
- loan repayment, and
- point of sale transactions.

QNET also acts as the processor for transactions for the JCCUL mobile wallet. In that regard, it facilitates the following transactions:

- Mobile phone top-up,
- Balance enquiry,
- Transfer from shares account to the mobile wallet account,
- People to people transfers,
- Business to business transfers (MVault),
- Purchases at merchants,
- Bill payment,
- Bulk transfer, and
- Remittances (not yet turned on).

### 5.3.3.2 System Operation

Credit unions and other NBFIs are connected to information systems at QNET via a secure connection.

1. The transaction switch has connections to issuer and acquirer systems, as well as ATMs, JETS and Mozido.
2. Electronic messages are sent to host banking system.
3. The host banking system sends an electronic response to the transaction switch.
4. The transaction switch validates and interprets the response message and responds to acquirer.
5. The response allows the acquirer to complete or reject the transaction.
6. At end of day the transaction switch generates detailed and summary settlement reports based on cutoff / settlement periods, with net position for each issuer and acquirer.
7. Reports are used for settlement with the General Ledger system.

### 5.3.3.3 Settlement Procedures

QNET employs a four step settlement procedure:

1. Report generation. The transaction switch generates daily detailed summary settlement reports;
2. Validation and reconciliation. Summary settlement reports are checked and validated against reports from other acquirers to ensure that there are no discrepancies;
3. Adjustment. Reports are adjusted for any exceptions and required adjustments are approved; and
4. The General Ledger files and reports are prepared, checked and approved for dispatch to the accounts department.

JCCUL employs a three step procedure:

1. The accounts department debits or credits the relevant clearing accounts of the issuer/acquirer institutions;
2. The relevant institutions are advised via a settlement report of their position pertaining to that date, for reconciliation in those institutions to be undertaken; and
3. The institution either pays the net debit amount or the net credit is paid to the institution of credit to their withdrawable account.

#### 5.3.3.4 Risk Control Procedures

QNET is a subsidiary of the JCCUL Group, governed by the Group Enterprise Risk Management Policy. The Group ERM program focuses on the management of all risks within the Group. These include strategic, operational, financial, compliance, legal and reputational risks. The main risks to QNET are operational in nature and include IT security (Database, Network, and cybercrime attacks), data accumulation for the settlement process and business continuity. Established controls are in place to address these operational risks associated with internal processes, people, technology and systems. These controls include

- Policies and procedures covering: IT security policies; Logical and Physical Security Policy; Acceptable Use Policy; Internet Use Policy, Email and Communication Policy; incident response; standard configuration; audit/review; data privacy, device management and control, monitoring; user awareness, education and training.
- Information and network security tools: data loss prevention software, network behavior analysis, intrusion detection systems, firewalls, system log monitoring, network access control, email and web security, anti-malware systems, encryption, vulnerability scanning/penetration testing, patch management and fraud prevention software.
- Business continuity plan two back up sites with real time replication and simulations exercises done on an annual basis.
- Settlement procedures for QNET.
- Service level agreements with JCCUL.

Legal risks are covered by contracts that are held by JCCUL with QNET, the credit unions, financial institutions and any other third parties, which also speak to the settlement agreements between the parties.

### 5.3.3.5 Pricing

In the case of the debit card transactions the prices charged is dependent on whether the transactions are proprietary i.e. within the credit union system or they require the use of the MultiLink® network. The pricing policy is driven by the need to ensure that the network pays for itself i.e. transaction prices cover operating costs. In the case of MultiLink® transactions, a fee is charged by the operators of MultiLink® to cover its costs and the costs of the acquirer.

The mobile wallet concept is new and emerging in Jamaica resulting in the pricing system being a work in progress. This policy seeks to ensure that prices are lower than that which is charged by the existing settlement system.

## 6. SECURITIES SETTLEMENT SYSTEMS

The BOJ assumed responsibility for the issue and redemption of treasury bills in 1961, a function that had been administered by the Accountant General since 1945. In December 1963, legislation was passed for the BOJ to take over the functions previously performed by the Accountant General with regard to GOJ Local Registered Stock (LRS) and Debentures which were of longer tenor than treasury bills. The BOJ introduced certificate of securities held (COSH) to replace previous securities which were not transferable. This document came with appropriate features that improved security and was legally transferable. It identified the securities against which the COSH was issued and incorporated an acknowledgment by the BOJ that it held securities on behalf of the buyer. BOJ assisted in the development of secondary market trading by instituting guidelines for the operation of primary dealers in 1994. These dealers were appointed to facilitate the implementation of monetary policy by the BOJ, and to provide continuous underwriting support for all new GOJ treasury bills, LRS and BOJ securities.

The number of brokers in the market increased in tandem with the growth in Government of Jamaica domestic debt instruments. The transparency and yield to clients as well as the speed and low costs associated with the issuing of bonds and notes as opposed to negotiating loans, experienced by the debt issuers were the main drivers in the growth of the market.

### 6.1 Trading

#### *6.1.1 Government Securities*

##### 6.1.1.1 Primary Market (GOJ)

The type of securities issued by the government includes treasury bills; fixed interest rate bonds, variable interest rate bonds, inflation-indexed notes, that are inflation protected by alignment to the consumer price index; debentures; stocks; land bonds, equity investment bonds, national development bonds, national savings bonds and other bonds; promissory notes; and such other documents or writings as are commonly known as securities or designated, by the Minister by order, as securities.

The Public Debt Management Act repealed the Loan Act, and several enactments related to the raising of loans by the government. The Public Debt Management Act provides the legal basis supporting the issuance of Government Securities specifically section 3 and section 14.

Primary issuances of securities issued by Government of Jamaica and the Bank of Jamaica are executed in the local market through BOJ primary dealers which are a subset of the universe of registered securities dealers.

### 6.1.1.2 Secondary Market

The increase in the number of holders of various types of debt instruments resulted in the creation of a secondary market for debt securities. This secondary market allowed individual and institutional investors the flexibility to trade investments for cash and provided an essential underpinning for the Jamaican economy as it provided liquidity, which is an integral component to any advanced financial system.

The trading of Government of Jamaica (GOJ) securities on the secondary market is primarily executed by securities dealers, pension funds, collective investment schemes and commercial banks. As a result, the Jamaica Securities Dealers Association (JSDA) was established in 2002, to monitor, speak and act on all matters relating to the Securities Act<sup>25</sup> and all securities trading.

The BOJ also participates in the secondary market as a purchaser of last resort, to assist primary dealers and commercial banks when these institutions are faced with Jamaica dollar liquidity constraints. The transaction is initiated by the institution that is in need of liquidity and both parties negotiate and agree on the terms of the transaction.

## 6.2 JamClear® - CSD

JamClear®-CSD was implemented in May 2009, replacing the paper-based issue of Government of Jamaica and Bank of Jamaica fixed income securities. With the introduction of JamClear®-CSD, all issues of BOJ and GOJ securities were dematerialized to eliminate the need for paper certificates, with the exception of treasury bills, thereby mitigating the risks associated with the holding, trading, clearing and settlement of paper-based securities. The electronic system provides the authentic record of ownership of BOJ and GOJ securities under the Public Debt Management Act. This brings significant efficiencies to the processes for issuance, management and redemption to the domestic fixed-income securities market. JamClear®-CSD reduces settlement risk and improves the liquidity and efficiency of the secondary markets, with potential savings on public debt service.

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<sup>25</sup> <<http://moj.gov.jm/sites/default/files/laws/Securities%20Act.pdf>>.

JamClear®-CSD is seamlessly integrated with JamClear®-RTGS to allow for delivery versus payment (DVP) settlement. JamClear®-CSD has a *hot link* to the tax database of the Government in order to validate investor information before a client can be registered in the system. This is to ensure that every client is uniquely identified and to satisfy the requirement that all persons doing business with the Government must have a tax registration number (TRN).

The system allows the registration of the following types of issues:

- issues of interest bearing securities;
- issues of discount securities; and
- issue of coupon bearing securities.

The system records and processes the following operations:

- allocation and settlement of auction results on the primary market;
- allocation and settlement of private placements;
- sale-purchase operations;
- repo, reverse repo agreements;
- registration and execution of pledge; and
- transfer of securities which do not imply fund transfers;

And, event-driven operations:

- partial/optional/total redemption of maturing government securities; and
- interest/coupon payment.

The JamClear®-CSD system offers a wide range of depository functions and settlement through the JamClear®-RTGS system using DvP model 1 and model 2, more specifically, the JamClear®-CSD manages securities operations, including

- the registration and settlement of auction results from the primary market;
- sales and purchases;
- exchange of custodian;
- registration, cancellation, and execution of pledges;
- registration, management, and execution of repurchase and reverse repurchase agreements; and
- payment of interest and coupons, registration and payment of partial and full security redemptions.



### ***6.2.1 Rules and Participants***

According to the CSD Participant Rules document, settlement arrangements for the purchase of securities are to be made by primary dealers and commercial banks (the participants). These institutions will be allowed to hold settlement accounts in the JamClear®-RTGS. The objective of providing settlement accounts is to promote settlement of securities transactions among participants in a safe and efficient manner utilizing a DvP system.

The following terms apply to participant settlement accounts:

- Settlement account holders will use these accounts for the purpose of settling approved securities transactions with the central bank and other participants.
- Each account must be prefunded before settlement will be effected. If the account is not funded payment will not be made and any transaction pending for that account will be cancelled at the end of the day.
- Holders of settlement accounts will be required to manage their liquidity efficiently and will be responsible for arranging for any surplus funds exceeding the agreed minimum balance to be transferred from their settlement account.
- No other rights or status are conferred upon settlement account holders.
- The provision of a settlement account is at the Central Bank's sole discretion.

### ***6.2.2 Clearing and Settlement Procedures***

#### **6.2.2.1 Settlement Procedure**

All JamClear®-CSD messages and files are based on the SWIFT class five message formats for securities (ISO 15022). Participants initiate transactions in the JamClear®-CSD by submitting securities transaction messages using a standard internet-based browser terminal or webstation. The JamClear®-CSD is designed to provide full securities management functionality (auctioning, registration, clearing, reporting) in a Non-SWIFT environment. The workstation module in JamClear®-CSD allow participants to enter SWIFT format messages via the webstation interface and also receive and view confirmations.

The CSD has facilities to enter the details of new issues, to amend details and to remove matured issues from the system while retaining a history of changes made to static data and the transactions performed on those securities. The issue data is entered manually in advance of the auction, using information supplied by the issuer in the issue prospectus or any other documents. Based on the issue master data introduced, the participants will enter their bids in the system. Once the bidding process is finished (cutoff date/time exceeded) the JamClear®-CSD will apply the allocation algorithm on the total amount to be issued versus the existent valid bids. The auction results are subsequently processed in JamClear®-CSD. The payments plan

is automatically introduced into the system at the initial placement. Subsequently the JamClear®-CSD users may access the plan and view the present, past and future payment data, and authorized operators may modify them. Any changes to the issue data during its lifetime are logged and details of changes retained, including the identity of the operator(s) involved.

#### *Sale and Purchase Operations*

The sale or purchase of BOJ and GOJ securities is done over-the-counter (OTC) by and with primary dealers and banks, who are participants in the CSD. Participants use the matching function in the JamClear®-CSD to register their sale or purchase transactions. The cash leg is settled through the JamClear®-RTGS using DvP model 1 where sufficient funds are available. All transactions are processed on an individual (gross) basis in the system.

Messages sent by participants (MT543 for the seller and MT541 for the buyer of securities) are received, checked and validated. Messages with errors are rejected and a notification (MT548) is sent to each participant.

Messages accepted are held as order to buy or sell in queue 'WFM - Waiting for Matching'. Orders held in queue are continuously checked with the aim of carrying out the matching. Matching criteria includes: message type, buyer, seller, instrument, number of securities, and value for settlement. If no matching occurs by the cutoff time of the DvP service, the order is cancelled and a notification is sent to the sender of the message (MT548).

#### *Repurchase Agreements*

A repurchase agreement (repo) is a contract to sell and subsequently repurchase securities at a specified date and price also known as repo purchase, or a sale and buyback agreement. The primary objective of a repo is to facilitate the provision of a short-term loan from one party to another, with that loan being collateralized by securities owned by the borrowing party. In this regard, the borrower *sells* securities to the lender for the duration of the loan, with an agreement to *repurchase* those securities at the end of the term of the loan. A repo is comprised of two DvP operations linked together usually called:

- first leg –the sale operation, and
- second leg –the repurchase operation.

Repo operations can be Intraday (the second leg is the same day as first leg) and long term (the second leg is at a future date).

### *BOJ Intraday Repo Facility*

Intraday repo provides settlement of second leg on the same day as the first leg; second leg settlement is started as part of the DvP Service cutoff (closing) procedure. In JamClear®-CSD, only one message is needed to create an intraday repo with the Central Bank operation (MT543). This message is sent by the participant bank, which is the seller of securities in the first leg of the repurchase agreement (beneficiary of loaned funds). This intraday repo with Central Bank is allowed only on the eligible securities selected by the Central Bank. Intraday repo with the Central Bank is allowed only for securities denominated in local currency (JMD). In the case where there are not enough securities in the account of the Participant bank for the settlement of the first leg, the intraday repo with Central Bank operation is automatically cancelled. The steps for a repo are:

1. Participant creates message to CSD to request an intraday repo. A participant can send more than one message during the day. Optionally in the message the return time can be specified. Where not specified, the reverse leg of the intraday repo will be returned at the DvP Service cutoff set in CSD.
2. Once it is determined that the participant has sufficient securities in its account, CSD will send a message to the RTGS, and the RTGS will credit the participant settlement account with the repo amount.
3. Presently when the repo has to be returned, the CSD sends a message to the RTGS. The repo amount will be debited from the participant settlement account.

### *Pledge Management*

The JamClear®-CSD system provides pledge management, registration and execution on the basis of messages received from participants. Pledging of GOJ and BOJ securities means that the securities are banned from being traded freely on the secondary market. In the case of default, the pledgee (the creditor) can resort to pledge execution, i.e. to sell securities to cover the funds credited. The system records all pledges for JamClear®-CSD participants taking into consideration the minimum data necessary to identify each pledge. Any multiple of the minimum tradable amount of a security may be pledged, up to the full extent of the holding.

### *Messages*

Messages sent by participants are received, checked and validated. Messages with errors are rejected and a notification (SWIFT MT558) is sent to the message sender. Messages accepted are held as a pledge order in the queue WFM (waiting for matching). The matching criteria includes: message type, pledger, pledgee, instruments,

number of securities, contract number and contract value. If no matching occurs by the cutoff time of the free of payment service, the order is cancelled and a notification is sent to the sender of the message (SWIFT MT558).

These are transfer of portfolio transactions where the securities are moved from one account to the other without any transfer of money in JamClear®-RTGS. Also, sales of securities between accounts of the same participant will be performed using free of payment messages.

#### *Auction/Offer Module of JamClear®-CSD*

The depository facilitates the initial offer or reopening of existing offers by the issuers of securities (BOJ or GOJ) as required. This is done through the auction module of JamClear®-CSD. Each bond issued is uniquely identified by an ISIN compliant number generated by the issuer. Offer types are

- discount auction,
- interest or coupon auctions,
- fixed rate auctions,
- fixed rate open auctions, and
- private placements.

All auctions/offers are settled through the JamClear®-RTGS system on a gross basis (DvP). Where allocations are not settled by the end of the auction settlement date they will be automatically cancelled by the system. JamClear®-CSD automatically performs coupon/interest and redemption processing as required.

The JamClear®-CSD is an electronic registry (of holders of money and capital market instruments) that manages the life cycle of both BOJ and GOJ fixed income securities. The CSD, coupled with the JamClear®-RTGS ensures that payments for and transfer of all securities traded or purchased with a cash-leg are executed simultaneously, guaranteeing delivery versus payment (DvP).

The integration of the JamClear®-RTGS and JamClear®-CSD allows the efficient management of interest and redemption payments, and maintains a comprehensive record of pledges and repo transactions against securities registered in JamClear®-CSD.

#### *Risk Management Framework*

The JamClear®-CSD Risk management is secured by the following:

- Applying delivery versus payment (DVP) principle;
- Setting trading ceilings managed by the JamClear®-CSD for the participants

- lacking a settlement account with JamClear®-RTGS;
- Clearly defined operating rules subscribed to by all participants; and
- System monitoring by relevant authorities.

The DVP principle is applied in processing messages which require fund transfers, that is, the delivery of securities takes place only if the funds transfer can take place. The model used is DvP model 1 meaning that both the fund transfer and securities transfer are performed on a gross basis.

**Settlement Agents:** Settlement agents are commercial banks only. Non settling participants who do not have a JamClear®-RTGS account must appoint a settlement agent prior to being incorporated into the depository. Only commercial banks and primary dealers have settlement accounts in the JamClear®-RTGS. For the participants who do not have a settlement account, the settlement of securities transactions is performed on the account of the Participant's commercial bank. Participants in this situation are referred to as Non-settling participants. A Non-settling participant can have only one settlement agent settling its payment obligations. Settlement of securities operations cannot exceed the limit of a trading ceiling imparted to JamClear®-CSD by the settlement agent.

JamClear®-CSD manages trading ceiling accounts for currencies defined in the JamClear®-RTGS. The initial limit on a trading ceiling is brought over from one day to the next, if not changed by the settlement agent. During the day, the settlement agent can change this limit, but cannot cause it to go below the current outstanding obligations. After end of day the limit can be adjusted to the new agreed limit.

When setting up a new limit, the settlement agent confirms that funds are available and commits to accept settlement instructions on its account for securities operations performed by the Non-settling participant up to the trading ceiling agreed. For each trading ceiling the JamClear®-CSD maintains three values,

1. the initial value set by the settlement agent;
2. the available value, which is the availability limit for trading; and
3. the reserved value, which contains the value reserved for buying transactions initiated but not yet settled.

Reserved and available values are continuously updated during the operating day for each DvP operation (sale/purchase, repo and pledge execution). In order to ensure effective risk control and timely remedial measures, the system is subject to monitoring throughout the operating day. Thus, the system provides all information necessary for carrying out the day's operations to the relevant authorities.

In addition, in order to enhance securities liquidity management, the accounting space has implemented both first in, first out (FIFO) and first available, first out

(FAFO) queue management for insufficient securities queue. The switching between these queues can be done on request. A *queue policy service* is defined for performing the switch from FIFO to FAFO queue policy.

#### 6.2.2.2 Pricing Policy

At the beginning of the year participants are given a fee schedule. Fees are charged monthly based on transactions processed.

### 6.2.3 Jamaica Stock Exchange

The Jamaica Stock Exchange (JSE) began operations in February 1969 with one of its roles being to promote the development of a vibrant capital market and to ensure orderly trading in listed securities that is stocks, shares or bonds that are traded on a stock exchange. The first official trade on the Jamaica Stock Exchange took place on Monday, February 3, 1969.

In 2009, the JSE launched the Junior Market, which is aimed at encouraging and promoting investment in Jamaica's entrepreneurship, employment and economic development. The Junior Market allows investors to put capital into legitimate small and medium sized entities (SMEs) whose shares may be traded on a special JSE platform. The JSE's online trading platform was launched in May 2015. It allows investors to buy and sell securities listed on the JSE via an online platform. The types of securities traded on the JSE platform are ordinary shares, preference shares and corporate bonds issued by listed companies.

There is a legal basis for which all companies listed on the JSE can issue securities, the companies are authorized/ restricted to issue shares and debentures under the Companies Act (part two) and the Securities Act.

In 2014, there were three new listings on both the Junior Market and the Main Market. The total amount raised on both markets was 1.3 billion JMD; 535.61 million JMD on the Main Market and 817.84 million JMD on the Junior Market. While the total amount rose on all market was 12.4 million USD in 2014.

### 6.2.4 Jamaica Central Securities Depository

The Jamaica Central Securities Depository Limited (JCSD) is a subsidiary of the Jamaica Stock Exchange and was established in 1998. The JCSD provides depository, custody, and settlement services for securities traded electronically on the stock market, as well as registrar, capital distribution and transfer agent services.

#### 6.2.4.1 Rules and Participants

A JCSD participant/ member dealer must: 1) be a licensed securities dealer; 2) be in good standing under the laws pursuant to which it is incorporated, established

and regulated; 3) provide evidence of its financial stability and internal controls, and 4) satisfactorily meet requirements set out for the protection of the JCSD and the other participants.

The JCSD Rules and the JCSD Participant Agreement comprises characterization for the participants that are able to participate in the system that can be summarized as follows:

- **Brokers.** These participants are approved JSE member dealers. They are able to trade listed securities and therefore these Securities will be settled in the JCSD. They can create accounts and view client details, as well as reports.
- **Institutional investors.** These participants are able to create accounts and view their client details. They also have the ability to view reports.

All transactions processed on an investor's account are channeled through the participant/broker to whom their account is linked.

### ***6.2.5 Clearing and Settlement Process***

#### **6.2.5.1 Settlement Procedures**

The settlement of funds is processed in JamClear®-RTGS. Brokers trade on the JSE on behalf of either themselves or their clients. At the end of the trade day a net position is calculated for each broker, either owing or being owed, to be settled three days later, in accordance with the international industry standard known as T+3. The JCSD acts as central counterparty (CCP) in this transaction and on settlement day brokers who are net buyers transfer funds from their account to the JCSD's settlement account in JamClear®-RTGS. When the JCSD's account is fully funded it funds are transferred to the brokers who are net sellers, clearing its account. The JCSD then effects final transfer of Securities traded in its own system moving securities gross from seller to buyer effecting securities settlement in a DvP environment.

#### **6.2.5.3 Securities Transactions**

The following transactions are conducted for equities: buys, sells, transfers (inter/intra-member, inter-CSD), pledges, private placement, stock splits, bonuses, dividend payments, and rights issues.

#### **6.2.5.3 Risk Management Framework**

- Depository software that is closely integrated with JSE trading software. Dealer-participants therefore cannot trade securities they do not have;
- Applying delivery versus payment (DVP) principle, model 2;

- Setting trading ceilings for dealer-participants, as managed by JCSD;
- Clearly defined operating rules subscribed to by all participants;
- System monitoring by relevant authorities (Financial Services Commission).

The Jamaica Central Securities Depository (JCSD) risk management procedures for handling risk issues include

- **Legal risk:** The participant agrees and signs to a JCSD agreement each year which sets out the terms and conditions for being a participant.
- **Financial risk:** Each broker-participant is required to set up a line of credit (LOC) with a commercial bank of their choice under the instruction of the JCSD. The participant will confirm to the JCSD how the LOC can be activated. The JCSD also has resource to all other assets held for the participant.
- **Operational risk:** The JCSD also employs a four eye principle when processing transactions. Each participant can also extract transaction information from the system for reconciliation purposes or they may request reports at particular intervals. Beneficial owners of securities may also view their account balances on-line in real time.

### ***6.3 Use of the Securities Infrastructure by the Central Bank***

#### **6.3.1 Open Market Operations**

The main objective of BOJ's open market operations is to conduct liquidity sterilization and provision operations that will maintain adequate liquidity consistent with attaining and maintaining low and stable inflation. This involves /includes

- Monetary policy through the use of instruments priced at fixed interest rates or at variable interest rates;
- The fixed interest rate and variable interest rate instruments are used for sterilization operations;
- For liquidity provision operations, these are done as repos that are priced at a fixed interest rate, as determined by the BOJ and determined as a spread above the 30-day CD interest rate;
- Sterilization instruments are issued electronically and settled in JamClear®-CSD; and
- Liquidity providing operations settled in JamClear® CSD, after the repo amount and the collateral amount are agreed over the telephone.

All transactions in relation to monetary policy operations are done using the real-time gross settlement system and are settled on the basis of DvP model 1.



BOJ may purchase or sell securities as a part of its monetary policy operations and also conducts repo operations in the secondary market. Transactions are agreed via telephone and settlement effected in JamClear® systems.

The JamClear®-CSD is used to conduct auctions for sterilization instruments issued by BOJ as a part of its monetary policy operations. The systems (JamClear®-CSD and JamClear®-RTGS) are used for same-day settlement of transactions for fixed income securities on a DvP basis. The systems also support the bank's liquidity assessments (forecasting and evaluation) as the Central Bank is able to identify the beneficial owner for the liquidity that emanates from open market operations (OMO) payments. In addition, the systems facilitate real-time settlement and intraday updates on liquidity conditions in the domestic market. To the extent that the OMO instruments are issued in dematerialized forms in the JamClear®-CSD, the ownership for instruments is fully transferrable among financial market participants who can use the instruments for secondary market transactions.

As a part of its OMOs, BOJ provides liquidity to DTIs only, using short-term term repos. The repos provided by BOJ are conducted in accordance with the requirements of Section 23f of the BOJ Act, which stipulates the tenor for loans (maximum of 6 months) and that all loans must be collateralized. Within the context of the stated requirements, standard liquidity operations are conducted via bimonthly repurchase operations with liquidity provided only to DTIs for a tenor of 14-days.

- The DTI submits a bid for the amount required at the operation.
- Each bid is settled at the specified interest rate as determined by the BOJ.
- The Nominal value of the securities to be delivered for the bid is agreed over the telephone.
- Settlement for bids from the repo operation is conducted on the same day using JamClear®-CSD.
- Other repo operations are conducted occasionally with DTIs, and are generally offered at a fixed-price and determined as a spread relative to the 30-day CD rate.

In order to access a BOJ repo operation, Section 23f of the BOJ Act outlines that the Bank accepts government-issued treasury-bills, government-issued bonds, government-guaranteed securities, gold, bills of exchange, promissory notes, and certain types of warrants. In addition, the Bank accepts its certificates of deposits (OMO sterilization instrument) as collateral.

#### ***6.4 Lender of Last Resort***

The BOJ operates as the lender of last resort, as DTIs (includes commercial banks, building societies and merchant banks) are able to access JMD liquidity from the

Central Bank, usually at the end day, to ensure settlement finality for transactions being settled in the JamClear®-RTGS. The BOJ's lender of last resort operations are conducted as per the requirements of Section 23(f) of the Bank of Jamaica Act: all loans are collateralized by various types of securities, including government-issued bonds; with the Act stipulating that the value of the loan not exceeding 75% of the market value of the securities used. Deposit-taking institutions (DTIs) can access JMD liquidity from the Central Bank via a standing overnight facility.

DTIs are the only financial institutions that can access the standing liquidity facilities (overnight repos). All repos are agreed over the counter and settlement occurs in JamClear® Systems. Overnight repos are available on demand in unlimited quantities at a rate determined by the Bank. The interest rate is set at a spread above the 30-day CD rate. Institutions usually provide securities housed in JamClear®-CSD to access overnight liquidity. Settlement is done same day.

The mechanisms of the BOJ to monitor financial system risks are as follows:

1. The BOJ (Amendment Act), 2015 outlines that the Bank has legal and institutional responsibility for the stability of Jamaica's financial system. As defined in the BOJ (Amendment Act), 2015 financial stability in relation to Jamaica refers to; the orderly operation of financial institutions, financial markets and the payment and settlement infrastructure. In addition, the capability of these components that makes up the financial system to absorb internal and external shocks without substantial impairment of the financial system and the real economy.
2. The monitoring of financial stability by the BOJ is done at various levels:
  - Through a Financial Stability Committee which is an established legal body that has the responsibility to coordinate the activities pursuant to the object of financial system stability (see Section 34H, BOJ Amendment Act), 2015.
  - Through a Financial Stability Department which actively monitors and forecasts micro and macro risk factors that may impact financial institutions and by extension, financial system stability.
  - The Payment System Department (PSD) has oversight responsibility of the National Payment System (see Section 3, PCSA, 2010). As part of this responsibility the department monitors and assesses payment systems risks to maintain the stability of financial systems.
3. The BOJ publishes, on its website, a financial stability report annually. The details of stress tests and assessment of risk factors to financial stability are extensively discussed therein.

## **7. STATISTICAL TABLES**

The A series of tables are statistics regarding payment and securities clearing and settlement in Jamaica. They were prepared according to the common methodology of the Western Hemisphere Payments and Securities clearing and Settlement Forum. However, there are some differences from the methodology due to the availability of data. The series B are more general statistics related to the financial sector.

**Series A.**

**Payments and securities clearing and settlement statistics**

Table A1

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Population	2,638.9	2,648.3	2,657.8	2,667.2	2,676.7	2,686.1	2,695.5	2,704.1	2,711.5	2,717.9	2,723.3
GDP (million, nominal)	622.6	700.0	784.2	885.4	997.3	1,065.6	1,154.0	1,241.1	1,315.8	1,430.4	1,529.4
GDP per capita	235,923.5	264,323.7	295,049.2	331,940.7	372,596.7	396,719.0	428,105.6	458,953.4	485,254.5	526,280.3	561,693.4
Consumer price index	13.7	12.6	5.7	16.8	16.8	10.2	11.7	6.0	8.0	9.7	6.4
Exchange rate vs. USD	61.6	65.6	67.2	70.6	80.5	89.6	85.9	86.6	92.8	106.4	114.7
Year-end-of-year Average	61.6	64.6	67.2	70.6	80.5	89.6	85.9	86.6	92.8	106.4	114.7
	61.3	62.5	65.9	69.1	72.9	88.5	87.4	86.1	89.0	100.8	111.2

Source: Bank of Jamaica.

Table A2

**SETTLEMENT MEDIA USED BY NON-BANK FINANCIAL INSTITUTIONS  
AT YEAR-END, NATIONAL CURRENCY, IN MILLIONS**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Banknotes and coin in circulation outside banks	26,644	29,630	35,781	40,675	41,996	44,615	48,477	52,854	54,735	58,641	63,583
Transferable deposits											
Of which:											
In local currency	25,229	19,820	21,478	23,198	34,000	51,721	37,862	44,573	52,614	48,743	43,164
In foreign currency	9,045	10,266	12,875	15,088	15,963	17,289	14,380	14,750	16,977	22,268	23,878
Narrow money supply (M1)	67,823	72,736	86,886	105,555	100,097	107,818	112,234	120,570	133,265	148,734	165,010
Other											
E-money storages	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Software-based	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Network-based	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Outstanding value on e-money storages	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Source: Bank of Jamaica.

Table A3

**SETTLEMENT MEDIA USED BY BANKS  
AT YEAR-END, NATIONAL CURRENCY, IN MILLIONS**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Transferable balances held at the central bank											
Required reserves											
In local currency	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
In foreign currency	106,876	125,495	145,868	133,255	143,503	127,577	226,675	215,345	157,283	161,895	252,313
Free reserves											
In local currency	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
In foreign currency	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Transferable balances held at other banks											
Credit extended by the central bank											
Source: Bank of Jamaica.											

Table A4

**BANKNOTES AND COINS  
AT YEAR-END, IN MILLIONS**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total banknotes and coin issued	32,516.90	35,808.59	42,512.84	47,486.25	49,375.59	52,290.73	57,211.72	63,202.21	65,290.34	70,487.53	75,702.32
Total banknotes issued	31,056.94	34,190.77	40,633.84	45,306.05	46,990.72	49,744.12	54,421.28	60,140.55	61,946.97	66,856.51	71,709.97
Of which:											
\$5,000	NA	NA	NA	NA	NA	2,723.87	4,747.13	5,630.55	5,739.27	5,892.74	5,806.53
\$1,000	21,344.96	23,998.59	29,212.84	34,099.83	36,194.53	36,531.25	38,341.35	42,726.05	44,610.21	48,303.26	52,085.44
\$500	6,962.62	7,341.27	8,389.03	8,239.63	7,653.64	7,202.26	7,833.86	8,126.37	7,793.97	8,680.26	9,640.02
\$100	2,302.42	2,361.34	2,489.22	2,363.87	2,494.70	2,609.27	2,755.01	2,857.86	2,947.46	3,073.86	3,197.68
\$50	446.95	489.57	542.76	602.73	647.85	677.46	743.94	799.73	856.07	906.40	980.30
Total coin issued	1,459.96	1,617.82	1,878.99	2,180.20	2,384.87	2,546.61	2,790.44	3,061.67	3,343.36	3,631.02	3,992.35
Of which:											
\$20	526.78	597.59	720.32	857.97	949.02	1,018.53	1,125.30	1,243.30	1,364.02	1,484.34	1,654.57
\$10	300.63	334.88	396.16	471.70	519.15	552.69	613.78	683.26	756.68	831.85	931.47
\$5	251.30	270.00	305.71	347.21	371.32	399.12	434.58	473.03	512.99	557.95	592.32
\$1	306.88	337.29	375.06	418.27	457.42	486.10	524.28	567.45	612.88	658.32	713.96
25cent	50.75	53.20	55.56	57.70	59.62	61.06	62.60	64.07	65.58	66.76	67.77
10cent	22.84	24.08	25.40	26.58	27.57	28.33	29.11	29.78	30.44	31.02	31.49
1cent	0.77	0.77	0.77	0.77	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Banknotes and coin in circulation held by banks	5,754.41	6,014.37	6,536.48	6,545.73	7,029.88	7,241.35	8,234.00	9,792.85	9,949.45	11,160.35	11,353.59
Banknotes and coins in circulation outside banks	26,643.70	29,630.16	35,780.85	40,674.92	41,995.78	44,614.83	48,476.72	52,853.83	54,734.69	58,641.37	63,583.49

Source: Bank of Jamaica.

Table A5

INSTITUTIONS OFFERING PAYMENT INSTRUMENTS											
AT YEAR-END											
Categories	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Central Bank											
Number of branches or offices	1	1	1	1	1	1	1	1	1	1	1
Number of accounts (banks)	78	75	77	76	76	85	83	72	72	70	59
Number of accounts (nonbanks)											
Value of accounts (JMD billions)	33.92	29.16	32.37	35.60	56.38	74.08	51.40	58.68	69.03	70.26	65.53
Banks											
Number of institutions	6	6	6	6	7	7	7	7	7	7	6
Number of branches or offices	126	123	124	125	129	124	119	118	118	113	104
Number of accounts	206,612	205,038	201,913	194,229	184,937	193,163	200,962	199,876	236,035	273,666	326,621
Value of accounts (JMD billions)	108.13	117.81	140.24	155.69	161.07	170.76	188.87	200.02	234.87	263.16	281.48
Other institutions offering payment services to end users											
Number of institutions	59.0	59.0	57.0	56	55	54	54	50	49	43	42
Number of branches or offices	105.0	123.0	122.0	121	120	122	122	124	124	130	130
Number of accounts	1,356,044	1,468,246	1,576,798	1,682,739	1,810,277	1,904,018	1,909,353	1,930,208	1,991,060	2,062,000	2,129,778
Value of accounts (JMD billions)	37.3	38.9	43.2	48.32	52.95	58.09	57.80	61.63	68.45	75.62	84.94
Electronic money institutions											
Number of institutions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Value of accounts (JMD billions)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Outstanding value on e-money storages	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Source: Bank of Jamaica.



Table A6

**PAYMENT CARD AND ACCEPTING DEVICES  
AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	A. Cards issued in the country										
Cards with a cash function	1,083,012	1,218,779	1,286,491	1,389,860	1,534,553	1,699,515	1,872,387	1,895,819	2,116,311	2,349,950	2,776,854
Cards with a debit function	1,083,012	1,218,779	1,286,491	1,389,860	1,534,553	1,699,515	1,872,387	1,895,819	2,116,311	2,349,950	2,776,854
Cards with a delayed debit function	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cards with a credit function	197,967	156,958	167,598	175,876	190,432	187,611	209,974	196,671	208,774	215,084	227,001
Cards with an e-money function	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Of which: cards with an e-money function which have been loaded at least once	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Total number of cards	1,306,422	1,375,737	1,515,880	1,640,859	1,802,111	1,959,490	2,140,218	2,146,769	2,377,308	2,616,156	3,049,154
Of which: cards with a combined debit, cash and e-money function	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Memo:											
retailer cards											

B. Terminals located in the country

ATM													
Of which:													
AMTs with a cash withdrawal function	302	330	372	378	405	419	430	423	424	445	526		
AMTs with a credit transfer function	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap		
Number of AMTs networks	1	2	2	2	2	2	2	2	2	2	2		
POS terminals													
Of which: EFTPOS terminals	10,484	12,020	13,609	11,319	12,468	13,342	13,233	14,336	16,565	19,666	24,425		
E-money card terminals													
E-money card payment terminals													
E-money card loading/unloading terminals													
Number of EFTPOS networks	1	2	2	2	2	2	2	2	2	2	2		
Nationals													
Regionals													

Source: Bank of Jamaica.

Table A7

**INDICATORS OF THE USE OF PAYMENT INSTRUMENTS AND TERMINALS (VOLUME)  
IN THOUSANDS, SUMMED THROUGH THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
A. Transactions per type of payment instrument											
Credit transfers											
Paper based	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Nonpaper based	nap	nap	0.04	209.63	333.58	456.58	596.94	772.84	969.35	1,405.71	1,785.13
Direct debits	0.00	0.00	0.00	92.36	377.91	406.29	401.07	413.99	443.60	461.65	456.19
Card payments with cards issued in the country	nap	nap	41,085.4	46,918.9	54,612.8	58,119.0	60,250.4	64,093.0	69,916.9	74,812.2	80,421.8
Payments by cards with a debit function	nap	nap	34,024.6	39,659.7	45,873.5	48,815.6	50,417.4	52,653.6	55,463.8	58,389.3	63,463.7
Payments by cards with a delayed debit function	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Payments by cards with a credit function	nap	nap	7,060.8	7,259.3	8,739.4	9,303.4	9,832.9	11,439.4	14,453.1	16,422.9	16,958.2
E-money payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cheques	20,024.4	21,622.2	23,103.2	22,789.2	23,132.9	21,720.4	21,041.4	20,259.9	19,251.5	18,734.5	16,769.4
In local currency	20,024.4	21,622.2	23,103.2	22,789.2	23,132.9	21,720.4	21,041.4	20,259.9	19,251.5	18,734.5	16,769.4
In foreign currency	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other payment instruments	nav	nav	0.04	0.21	0.34	0.45	0.59	0.77	0.96	1.39	1.77
Total number of transactions with payment instruments	0.00	0.00	0.00	0.09	0.35	0.36	0.35	0.36	0.39	0.40	0.41
Of which: cross-border transactions sent	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Memo: Cross-border transactions received	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav

B. Transactions per type of terminal

Cash transactions	nav	26,308.7	30,749.3	34,908.8	36,527.8	37,415.2	38,656.1	41,730.7	44,383.1	47,046.3
ATM cash withdrawals	nav	26,308.7	30,749.3	34,908.8	36,527.8	37,415.2	38,656.1	41,730.7	44,383.1	47,046.3
ATM cash deposits	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
POS payment transactions	nav	11,115.4	12,119.4	14,857.0	18,333.8	19,043.1	20,208.2	21,000.1	22,232.2	22,078.3
E-money payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money card loading-unloading transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money card payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money storage devices payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

C. Transactions at terminals in the country by cards issued in the country

Cash transactions	nav	26,308.7	30,749.3	34,908.8	36,527.8	37,415.2	38,656.1	41,730.7	44,383.1	47,046.3
ATM cash withdrawals	nav	26,308.7	30,749.3	34,908.8	36,527.8	37,415.2	38,656.1	41,730.7	44,383.1	47,046.3
ATM cash deposits	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
POS payment transactions	nav	11,115.4	12,119.4	14,857.0	18,333.8	19,043.1	20,208.2	21,000.1	22,232.2	22,078.3
E-money payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money card loading-unloading transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money card payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money storage devices payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

D. Transactions at terminals in the country by cards issued outside the country

Cash transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM cash withdrawals	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM cash deposits	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
POS payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money card loading-unloading transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money card payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money storage devices payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav

E. Transactions at terminals outside the country by cards issued in the country

Cash transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM cash withdrawals	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM cash deposits	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
POS payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money card loading-unloading transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money card payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money storage devices payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav

Source: Bank of Jamaica.

Table A8

**INDICATORS OF THE USE OF PAYMENT INSTRUMENTS AND TERMINALS (VALUE)  
IN MILLIONS, SUMMED THROUGH THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
A. Transactions per type of payment instrument											
Credit transfers											
paper based	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Non-paper based	nav	nav	2,110.3	37,222.2	65,054.7	102,942.7	147,229.9	135,008.4	81,643.6	107,211.7	144,102.4
Direct debits	nav	nav	nav	17,658.7	32,071.7	46,802.9	48,489.1	17,244.7	9,545.9	8,151.3	9,998.6
Card payments with cards issued in the country	nav	nav	208,891.0	273,543.3	137,418.7	320,874.7	356,196.9	408,122.5	539,712.1	625,241.3	716,329.7
Payments by cards with a debit function	nav	nav	170,758.6	218,266.8	66,598.5	243,102.3	264,455.5	295,363.8	404,188.1	463,964.7	524,145.5
Payments by cards with a delayed debit function	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Payments by cards with a credit function	nav	nav	38,132.5	55,276.5	70,820.2	77,772.5	91,741.3	112,758.7	135,524.0	161,276.7	192,184.2
E-money payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cheques	3,481,654	3,740,587	4,549,208	4,881,825	5,477,638	4,832,951	4,713,320	3,340,440	2,615,086	2,433,361	2,169,268
In local currency	3,481,654	3,740,587	4,549,208	4,881,825	5,477,638	4,832,951	4,713,320	3,340,440	2,615,086	2,433,361	2,169,268
In foreign currency	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other payment instruments	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Value of transactions with payment instruments	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Of which: cross-border transactions sent	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Memo:											
Cross-border transactions received	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav

B. Transactions per type of terminal

Cash transactions	nav	114,159.1	141,815.3	167,038.0	179,377.7	191,712.9	207,258.8	227,973.7	245,706.2	273,890.6
ATM cash withdrawals	nav	114,159.1	141,815.3	167,038.0	179,377.7	191,712.9	207,258.8	227,973.7	245,706.2	273,890.6
ATM cash deposits	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
POS payment transactions	nav	44,332.9	60,034.9	77,990.8	87,986.6	102,910.4	119,824.9	131,665.6	144,133.6	181,469.5
E-money payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money card loading-unloading transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money card payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money storage devices payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

C. Transactions at terminals in the country by cards issued in the country

Cash transactions	nav	114,159.2	141,815.3	167,038.0	179,377.7	191,712.9	207,258.8	227,973.7	245,706.3	273,890.6
ATM cash withdrawals	nav	114,159.2	141,815.3	167,038.0	179,377.7	191,712.9	207,258.8	227,973.7	245,706.3	273,890.6
ATM cash deposits	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
POS payment transactions	nav	44,332.9	60,034.9	77,990.8	87,986.6	102,910.4	119,824.9	131,665.6	144,133.6	181,469.5
E-money payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money card loading-unloading transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money card payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money storage devices payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

D. Transactions at terminals in the country by cards issued outside the country

Cash transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM cash withdrawals	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM cash deposits	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
POS payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money card loading-unloading transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money card payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money storage devices payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav

E. Transactions at terminals outside the country by cards issued in the country

Cash transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM cash withdrawals	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM cash deposits	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
POS payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money card loading-unloading transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money card payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money storage devices payment transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav

Source: Bank of Jamaica.



Table A9

**PARTICIPATION IN SELECTED INTERBANK FUNDS TRANSFER SYSTEMS  
AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Large-value payment systems											
JamClear®-RTGS											
Number of participants	nap	nap	nap	nap	nap	25	24	24	26	26	21
Direct participants	nap	nap	nap	nap	nap	24	23	22	24	24	19
Banks	nap	nap	nap	nap	nap	7	7	7	7	7	6
Central bank	nap	nap	nap	nap	nap	1	1	1	1	1	1
Other direct participants	nap	nap	nap	nap	nap	16	15	14	16	16	16
General government	nap	nap	nap	nap	nap	nap	nap	nap	1	1	1
Postal institution	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Clearing and settlement organizations	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other financial institutions	nap	nap	nap	nap	nap	16	15	14	15	15	15
Other	nap	nap	nap	nap	nap	1	1	1	1	1	1
Indirect participants	nap	nap	nap	nap	nap	1	1	2	2	2	2
Retail payment systems											
Automated Clearing House											
Number of participants											
Direct participants											
Banks	6	6	6	6	6	7	7	7	7	7	7
Central bank	1	1	1	1	1	1	1	1	1	1	1
Other direct participants	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
General government	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Postal institution	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Clearing and settlement organizations	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Other financial institutions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Indirect participants	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
MultiLink													
Number of participants													
Direct participants	4	4	4	4	4	4	4	4	4	4	4	4	4
Banks													
Central bank	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other direct participants	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
General government	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Postal institution	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Clearing and settlement organizations	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other financial institutions	3	3	3	3	3	3	3	3	3	3	3	3	3
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Indirect participants	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Source: Bank of Jamaica.

Table A10

**PAYMENT PROCESSED BY SELECTED INTERBANK FUNDS TRANSFER SYSTEMS (VOLUME)  
IN MILLIONS, AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Large-value payment systems											
JamClear®-RTGS											
All transactions											
Domestic transactions	nap	nap	nap	nap	nap	0.097	0.134	0.184	0.221	0.256	0.294
Cross-border transactions (sent)	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cross-border transactions (received)	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Concentration in terms of volume (%)	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Retail payment systems											
Automated Clearing House											
All transactions											
Domestic transactions											
Credit transfers	nap	nap	0.040	0.210	0.334	0.457	0.597	0.773	0.969	1.406	1.785
Direct debits	0.000	0.000	0.000	0.092	0.378	0.406	0.401	0.414	0.444	0.462	0.456
Card payments	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
ATM transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
E-money transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cheques	10.882	10.671	10.428	10.385	10.091	9.342	8.775	8.326	7.852	7.541	6.991
Other payment instruments	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cross-border transactions (sent)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Credit transfers	nap	nap	nav	nav	nav	nav	nav	nav	nav	nav	nav
Direct debits	nap	nap	nav	nav	nav	nav	nav	nav	nav	nav	nav
Card payments	nap	nap	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM transactions	nap	nap	nav	nav	nav	nav	nav	nav	nav	nav	nav

E-money transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cheques	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other payment instruments	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Concentration in terms of volume (%)	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Multilink													
All transactions													
Domestic transactions													
Credit transfers	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Direct debits	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Card payments													
ATM transactions	5.289	6.402	7.468	8.553	9.518	10.265	10.016	9.832	10.122	10.467	10.873		
E-money transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cheques	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other payment instruments	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cross-border transactions (sent)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Credit transfers	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Direct debits	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Card payments	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cheques	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other payment instruments	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Concentration in terms of volume (%)	32.71	37.50	41.64	44.45	46.84	50.15	50.61	50.82	52.21	52.66	54.08		

Source: Bank of Jamaica.

Table A11

**PAYMENT PROCESSED BY SELECTED INTERBANK FUNDS TRANSFER SYSTEMS (VALUE)  
IN MILLIONS, AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Large-value payment systems											
JamClear®-RTGS											
All transactions											
Domestic transactions	nav	nav	nav	nav	nav	7,406,972	11,002,155	12,497,785	13,328,884	14,209,521	14,605,341
Gross-border transactions (sent)	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Gross-border transactions (received)	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Concentration in terms of value (%)	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Retail payment systems											
Automated clearing house											
All transactions											
Domestic transactions											
Credit transfers	nav	nav	2,110.3	37,222.2	65,054.7	102,942.7	147,229.9	135,008.4	81,643.6	107,211.7	144,102.4
Direct debits	100	100	0.83	17,658.7	32,071.67	46,802.9	48,489.1	17,244.7	9,545.9	8,151.3	9,998.6
Card payments	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
ATM transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
E-money transactions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cheques	1,814,685	1,945,046	2,291,649	2,499,538	2,708,132	2,412,686	2,260,607	1,484,376	1,134,037	1,053,745	974,213
Other payment instruments	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Gross-border transactions (sent)	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Credit transfers	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Direct debits	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Card payments	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav



Table A12

**PARTICIPATION IN SWIFT BY DOMESTIC INSTITUTIONS  
AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Members	2,280	2,229	2,288	nav	nav	nav	nav	nav	nav	nav	nav
Of which: live	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Submembers	3,019	3,060	3,120	nav	nav	nav	nav	nav	nav	nav	nav
Of which: live	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Participants	2,368	2,574	2,697	nav	nav	nav	nav	nav	nav	nav	nav
Of which: live	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Total users	7,667	7,863	8,105	nav	nav	nav	nav	nav	nav	nav	nav
Of which: live	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Source: Bank of Jamaica.											

Table A13

**SWIFT MESSAGE FLOWS TO/FROM DOMESTIC USERS  
IN THOUSANDS, TOTAL FOR THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total messages sent	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Of which											
Category I	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Category II	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Total messages received	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Of which											
Category I	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Category II	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Domestic traffic	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Source: Bank of Jamaica											

Table A14

**NUMBER OF PARTICIPANTS IN EXCHANGES AND TRADING SYSTEMS  
AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jamaica central securities depository											
Total number of participants	16	16	16	16	16	16	16	16	15	17	17
Central bank											
Central counterparties (CCPs)											
Banks											
Other	16	16	16	16	16	16	16	16	15	17	17
Total number of domestic participants	16	16	16	16	16	16	16	16	15	17	17
Central bank											
Central counterparties (CCPs)											
Banks											
Other	16	16	16	16	16	16	16	16	15	17	17
Total number of foreign participants											
Central bank											
Central counterparties (CCPs)											
Banks											
Other											
Source: Bank of Jamaica.											



Table A15

<b>NUMBER OF LISTED SECURITIES IN THOUSANDS, AT YEAR-END</b>											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jamaica Central Securities Depository											
Total number of securities admitted to trading											
Debt securities											
Short-term paper											
Bonds											
Equities	48	49	52	53	58	57	63	66	62	67	72
Other											
Source: Bank of Jamaica.											

Table A16

<b>MARKET CAPITALIZATION OF LISTED COMPANIES IN MILLIONS, AT YEAR-END</b>											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jamaica Central Securities Depository											
Total market capitalization	879,297.3	839,852.8	822,862.4	876,690.6	597,277.0	544,882.6	564,720.7	619,444.8	590,637.4	492,180.0	296,836.9

Table A17

**NUMBER OF EXECUTED TRADES  
IN THOUSANDS, TOTAL FOR THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jamaica Central Securities Depository											
Total number of executed securities trades											
Debt securities											
Short-term paper											
Bonds											
Equities	86,875	75,001	41,921	38,621	30,323	16,113	19,550	24,478	24,562	25,643	20,716
Other											
Total number of executed derivatives trades											
Financial futures											
Financial options											
Other financial derivatives											
Commodity futures											
Commodity options											
Other commodity derivatives											
Source: Bank of Jamaica											

Table A18

**VALUE OF EXECUTED TRADES  
IN MILLIONS, TOTAL FOR THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jamaica Central Securities Depository											
Total value of executed securities trades											
Debt securities											
Short-term paper											
Bonds											
Equities	35,994.85	40,746.68	37,040.99	29,047.42	26,871.21	191.61	121,020.82	222,241.92	266,294.86	17,364.21	15,306.82
Other											
Total value of executed derivatives trades											
Financial futures											
Financial options											
Other financial derivatives											
Commodity futures											
Commodity options											
Other commodity derivatives											

Table A19

## NUMBER OF CLEARING MEMBERS

## AT YEAR-END

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Entity A (CCP or clearing house)											
Total number of clearing members											
Central bank	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central counterparties (CCPs)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	11	11	11	11	11	11	11	11	10	10	12
Number of domestic clearing members											
Central bank	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central counterparties (CCPs)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	11	11	11	11	11	11	11	11	10	10	12
Number of foreign clearing members											
Central bank	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central counterparties (CCPs)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Source: Bank of Jamaica.

Table A20

**NUMBER OF CONTRACTS AND TRANSACTIONS CLEARED  
IN THOUSANDS, SUMMED THROUGH THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JamClear®-CSD											
Total number of contracts and transactions cleared	nap	nap	nap	nap	nap	2.642	16.532	11.804	12.788	15.567	14.764
Number of securities transactions cleared											
Debt securities											
short-term paper bonds	nap	nap	nap	nap	nap	2.072	4.150	2.215	1.621	0.672	0.465
government bonds	nap	nap	nap	nap	nap	0.570	12.382	9.589	11.167	14.895	14.299
Equities											
Other											
Of which: number of the repo transactions cleared											
Debt securities											
short-term paper bonds	nap	nap	nap	nap	nap	2.072	4.150	2.215	1.621	0.672	0.465
government bonds	nap	nap	nap	nap	nap	0.570	12.382	9.589	11.167	14.895	14.299
Equities											
Other											
Of which: number of the outright transaction cleared											
Debt securities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
short-term paper bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
government bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Equities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Number of exchange-traded derivatives contracts cleared											
Financial futures	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Financial options	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Other financial derivatives	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Commodity futures	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Commodity options	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Other commodity derivatives	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Number of OTC derivatives contracts cleared											
Financial futures	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Financial options	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Other financial derivatives	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Commodity futures	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Commodity options	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Other commodity derivatives	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Jamaica Central Securities Depository											
Total number of contracts and transactions cleared	86,875	75,001	41,921	38,621	30,323	16,113	19,550	24,478	24,562	25,643	20,716
Number of securities transactions cleared											
Debt securities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Short-term paper	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Government bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Equities	86,875	75,001	41,921	38,621	30,323	16,113	19,550	24,478	24,562	25,643	20,716
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Of which: number of the repo transactions cleared								
Debt securities								nap
Short-term paper	nap	nap	nap	nap	nap	nap	nap	nap
Bonds	nap	nap	nap	nap	nap	nap	nap	nap
Government bonds	nap	nap	nap	nap	nap	nap	nap	nap
Equities	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap
Of which: number of the outright transaction cleared								
Debt securities	nap	nap	nap	nap	nap	nap	nap	nap
Short-term paper	nap	nap	nap	nap	nap	nap	nap	nap
Bonds	nap	nap	nap	nap	nap	nap	nap	nap
Government bonds	nap	nap	nap	nap	nap	nap	nap	nap
Equities	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap
Number of exchange-traded derivatives contracts cleared								
Financial futures	nap	nap	nap	nap	nap	nap	nap	nap
Financial options	nap	nap	nap	nap	nap	nap	nap	nap
Other financial derivatives	nap	nap	nap	nap	nap	nap	nap	nap
Commodity futures	nap	nap	nap	nap	nap	nap	nap	nap
Commodity options	nap	nap	nap	nap	nap	nap	nap	nap
Other commodity derivatives	nap	nap	nap	nap	nap	nap	nap	nap
Number of OTC derivatives contracts cleared								
Financial futures	nap	nap	nap	nap	nap	nap	nap	nap
Financial options	nap	nap	nap	nap	nap	nap	nap	nap
Other financial derivatives	nap	nap	nap	nap	nap	nap	nap	nap
Commodity futures	nap	nap	nap	nap	nap	nap	nap	nap
Commodity options	nap	nap	nap	nap	nap	nap	nap	nap
Other commodity derivatives	nap	nap	nap	nap	nap	nap	nap	nap
Source: Bank of Jamaica.								

Table A21

**VALUE OF CONTRACTS AND TRANSACTIONS CLEARED  
IN MILLIONS, TOTAL FOR THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JamClear®-CSD											
Total value of contracts and transactions cleared	nap	nap	nap	nap	nap	195,082	1,214,086	1,443,901	2,015,063	5,446,495	3,636,384
Value of securities transactions cleared											
Debt securities											
Short-term paper	nap	nap	nap	nap	nap	123,367	412,961	268,766	242,889	46,684	49,428
Bonds											
Government bonds	nap	nap	nap	nap	nap	71,715	801,124	1,175,135	1,772,175	5,399,812	3,586,955
Equities											
Other											
Of which: value of the repo transactions cleared											
Debt securities											
Short-term paper	nap	nap	nap	nap	nap	123,367	412,961	268,766	242,889	46,684	49,428
Bonds											
Government bonds	nap	nap	nap	nap	nap	71,715	801,125	1,175,135	1,772,175	5,399,812	3,586,955
Equities											
Other											
Of which: value of the outright transaction cleared											
Debt securities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Short-term paper	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Government bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Equities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap



Value of exchange-traded derivatives contracts cleared											
Financial futures	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Financial options	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Other financial derivatives	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Commodity futures	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Commodity options	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Other commodity derivatives	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Value of OTC derivatives contracts cleared											
Financial futures	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Financial options	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Other financial derivatives	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Commodity futures	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Commodity options	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Other commodity derivatives	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	
Jamaica Central Securities Depository											
Total value of contracts and transactions cleared	3,599.0	4,075.0	3,704.0	2,905.0	6,703.0	1,219.0	2,104.0	2,224.0	6,629.0	1,736.0	1,481.0
Value of securities transactions cleared											
Debt securities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Short-term paper	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Government bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Equities	3,599.0	4,075.0	3,704.0	2,905.0	6,703.0	1,219.0	2,104.0	2,224.0	6,629.0	1,736.0	1,481.0
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Of which: value of the repo transactions cleared											
Debt securities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap



Table A22

**NUMBER OF DIRECT PARTICIPANTS IN CSDS  
AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JamClear®-CSD											
Total number of direct participants in CSDs	nap	nap	nap	nap	nap	44	45	47	48	45	43
Central Bank	nap	nap	nap	nap	nap	1	1	1	1	1	1
Central counterparties (CCPs)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central securities depositories	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Banks	nap	nap	nap	nap	nap	9	9	9	9	9	8
Other	nap	nap	nap	nap	nap	34	34	37	38	35	34
Total number of domestic participants in CSDs	nap	nap	nap	nap	nap	44	45	47	48	45	43
Central Bank	nap	nap	nap	nap	nap	1	1	1	1	1	1
Central counterparties (CCPs)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central securities depositories	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Banks	nap	nap	nap	nap	nap	9	9	9	9	9	8
Other	nap	nap	nap	nap	nap	34	35	37	38	35	34
Total number of foreign participants in CSDs											
Central Bank	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central counterparties (CCPs)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central securities depositories	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Jamaica Central Securities Depository										
Total number of direct participants in CSDs										
Central Bank	21	21	19	19	19	19	19	19	19	20
Central counterparties (CCPs)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central securities depositories	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	21	21	19	19	19	19	19	19	18	20
Total number of domestic participants in CSDs										
Central Bank	21	21	19	19	19	19	19	19	18	20
Central counterparties (CCPs)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central securities depositories	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	21	21	19	19	19	19	19	19	18	20
Total number of foreign participants in CSDs										
Central Bank	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central counterparties (CCPs)	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Central securities depositories	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Source: Bank of Jamaica.

Table A23

**NUMBER OF SECURITIES HELD ON ACCOUNTS AT CSDS  
IN THOUSANDS, SUMMED THROUGH THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JamClear@-CSD											
Total number of ISIN codes held	nap	nap	nap	nap	nap	1.04	1.17	0.89	0.85	0.81	0.87
Debt securities											
Short-term paper	nap	nap	nap	nap	nap	0.90	1.07	0.86	0.82	0.73	0.71
Bonds	nap	nap	nap	nap	nap	0.14	0.10	0.03	0.03	0.08	0.16
Equities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Jamaica Central Securities Depository											
Total number of ISIN codes held	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Debt securities											
Short-term paper	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Equities	40.0	41.0	44.0	44.0	45.0	45.0	51.0	52.0	52.0	57.0	62.0
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Source: Bank of Jamaica.

Table A24

**VALUE OF SECURITIES HELD ON ACCOUNTS AT CSDS  
IN THOUSANDS, SUMMED THROUGH THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JamClear@-CSD											
Total value of securities held	nap	nap	nap	nap	nap	161,886	883,671	939,714	942,350	977,465	1,034,020
Debt securities											
Short-term paper	nap	nap	nap	nap	nap	119,947	129,180	99,027	59,309	30,616	31,810
Bonds	nap	nap	nap	nap	nap	41,939	754,491	840,687	883,041	946,849	1,002,210
Equities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Jamaica Central Securities Depository											
Total value of securities held	87,929	82,796	81,475	87,131	59,330	55,243	64,938	85,539	81,165	76,609	55,780
Debt securities											
Short-term paper	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Equities	87,929	82,796	81,475	87,131	59,330	55,243	64,938	85,539	81,165	76,609	55,780
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Source: Bank of Jamaica, and JCS.

Table A25

**NUMBER OF DELIVERY INSTRUCTIONS PROCESSED  
IN THOUSANDS, SUMMED THROUGH THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total number of delivery instructions	nap	nap	41,921	38,621	30,323	16,114	19,561	31,216	24,575	25,453	20,732
JamClear®-CSD											
DVP transactions	nap	nap	nap	nap	nap	0.06	0.59	0.89	0.43	0.11	0.06
Debt securities	nap	nap	nap	nap	nap	0.06	0.59	0.89	0.43	0.11	0.06
short-term paper	nap	nap	nap	nap	nap	0.03	0.05	0.03	0.02	0.01	0.0
bonds	nap	nap	nap	nap	nap	0.03	0.54	0.87	0.41	0.10	0.06
Equities	nap	nap	nap	nap	nap	na	na	na	na	na	na
Other	nap	nap	nap	nap	nap	na	na	na	na	na	na
Free-of-payment transactions	nap	nap	nap	nap	nap	1	10	13	13	12	15
Debt securities	nap	nap	nap	nap	nap	1	10	13	13	12	15
short-term paper	nap	nap	nap	nap	nap	1	5	7	6	5	4
bonds	nap	nap	nap	nap	nap	0	5	6	7	6	11
Equities	nap	nap	nap	nap	nap	na	na	na	na	na	na
Other	nap	nap	nap	nap	nap	na	na	na	na	na	na
Jamaica Central Securities Depository											
DVP transactions	nap	nap	41,921	38,621	30,323	16,113	19,551	31,202	24,562	25,441	20,716
Debt securities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
short-term paper	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Equities	nap	41,921	38,621	30,323	16,113	19,551	31,202	24,562	25,441	20,716
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Free-of-payment transactions	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Debt securities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
short-term paper	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Equities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap

Source: Bank of Jamaica.



Table A26

**VALUE OF DELIVERY INSTRUCTIONS PROCESSED  
IN MILLIONS, TOTAL FOR THE YEAR**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total value of delivery instructions	nap	nap	3,704	2,905	6,703	51,645	747,295	970,888	973,841	1,838,685	3,390,195
<b>JamClear®-CSD</b>											
DVP transactions	nap	nap	nap	nap	nap	2,739	87,918	83,941	81,740	37,350	40,569
Debt securities	nap	nap	nap	nap	nap	2,739	87,918	83,941	81,740	37,350	40,569
Short-term paper	nap	nap	nap	nap	nap	1,687	10,821	4,868	5,809	12,129	9
Bonds	nap	nap	nap	nap	nap	1,052	77,097	79,074	75,932	25,221	40,560
Equities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
<b>Free-of-payment transactions</b>											
Free-of-payment transactions	nap	nap	nap	nap	nap	47,687	657,273	884,723	885,472	1,799,599	3,348,145
Debt securities	nap	nap	nap	nap	nap	47,687	657,273	884,723	885,472	1,799,599	3,348,145
short-term paper	nap	nap	nap	nap	nap	38,189	279,079	359,494	241,045	80,574	45,637
bonds	nap	nap	nap	nap	nap	9,499	378,194	525,228	644,427	1,719,025	3,302,509
Equities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Other	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
<b>Jamaica Central Securities Depository</b>											
DVP transactions	nap	nap	3,704	2,905	6,703	1,219	2,104	2,224	6,629	1,736	1,481
Debt securities	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
short-term paper	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
bonds	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Equities	nap	nap	3,704	2,905	6,703	1,219	2,104	2,224	6,629	1,736	1,481



## 7.2 Tables ps selected interbank funds transfer systems

Table PS1

FEATURES OF SELECTED INTERBANK FUNDS TRANSFER SYSTEMS														
System	Type	Settlement	manager	Owner/ CB	RTT	R	C	Degree of centralization	Pricing	Closing time		Standard money		
										for same day	Cutoff third-	opening	closing	
	L+R	RTGS							V	16.	16.	07.	16.	
JamClear@- RTGS										45	45	20	30	45

Source: Bank of Jamaica.

Table PS2

PAYMENTS PROCESSED BY SELECTED INTERBANK FUNDS TRANSFER SYSTEMS. VALUE OF TRANSACTIONS TOTAL FOR THE YEAR																							
System	Number of transactions																						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
JamClear@- RTGS	nap	nap	nap	nap	nap	0.097	0.133	0.184	0.220	0.256	0.294	nap	nap	nap	nap	nap	nap	nap	37.11	37.53	20.03	16.16	14.58

Source: Bank of Jamaica.

Increase in the number of transactions  
(% change on previous year)

Table PS3

**PAYMENTS PROCESSED BY SELECTED INTERBANK FUNDS TRANSFER SYSTEMS.  
VALUE OF TRANSACTIONS  
IN MILLIONS, TOTAL FOR THE YEAR**

JamClear®-RTGS	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Value of transactions											
nap	nap	nap	nap	nap	nap	7,406,972	11,002,155	12,497,785	13,328,884	14,209,521	14,605,340
Average value per transaction											
nap	nap	nap	nap	nap	nap	76,023,527	82,361,326	68,028,115	60,445,714	55,473,871	49,761,642
Increase in the real value of transactions (% change on previous year, adjusted by CPI)											
nap	nap	nap	nap	nap	nap	-10.20	36.83	7.60	-1.35	-3.09	-3.61
Value of transactions as a percentage of GDP (in %)											
nap	nap	nap	nap	nap	nap	18.7	25.7	27.2	27.5	27.0	26.0

Source: Bank of Jamaica.

Table PS4

**PARTICIPATION IN SELECTED INTERBANK FUNDS TRANSFER SYSTEMS  
AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JamClear®-RTGS											
Total number of participants											
nap											
Of which: direct participants											
nap											
Concentration ratio in terms of volume											
nap											
Concentration ratio in terms of value											
nap											
Source: Bank of Jamaica.											

### 7.3 Tables TRS, Selected Exchanges and Trading Systems

Table TRS1

<b>FEATURES OF SELECTED EXCHANGES AND TRADING SYSTEMS</b>			
<i>System</i>	<i>Owner / manager</i>	<i>Market / products</i>	<i>Trading</i>
JGSD			<i>Operating times</i>
JamClear®-CSD			<i>Relation with CCP</i>
Source: Bank of Jamaica			

Table TRS2

<b>TRADES EXECUTED ON SELECTED EXCHANGES AND TRADING SYSTEMS, NUMBER OF TRANSACTIONS</b>											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JamClear®-CSD											
Jamaica Central Securities Depository	86,875	75,001	41,921	38,621	30,323	16,113	19,550	24,478	24,562	25,643	20,716
	<i>Increase in the number of transactions (% change on previous year)</i>										
JamClear®-CSD											
Jamaica Central Securities Depository	nap	-11,874	-33,080	-3,300	-8,298	-14,210	3,437	4,928	84	1,081	-4,927
Source: Bank of Jamaica											

Table TRS3

<b>TRADES EXECUTED ON SELECTED EXCHANGES AND TRADING SYSTEMS, VALUE OF TRANSACTIONS (total for the year)</b>											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jamaica Central Securities Depository											
<i>Value of transactions in millions</i>	35,994.853	40,747	37,041	29,047	67,027	12,192	21,021	22,242	66,295	17,364	15,307
<i>Value of transactions as a percentage of GDP (in %)</i>											
Source: Bank of Jamaica											

Table TRS4

**PARTICIPATION IN SELECTED EXCHANGES AND TRADING SYSTEMS  
AT YEAR-END**

System	<i>Total number of participants</i>											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
JCSD												
JamClear®-CSD												

Table TRS5

**SECURITIES LISTED IN SELECTED EXCHANGES AND TRADING SYSTEMS  
AT YEAR-END**

System	<i>Number of securities listed</i>											<i>Market capitalization</i>	
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014		
JCSD													
JamClear®-CSD													

## 7.4 Tables CCP, Selected Central Counterparties and Clearing Houses

Table CCP1

### FEATURES OF SELECTED CENTRAL COUNTERPARTIES AND CLEARING HOUSES AT YEARD-END

<i>Entity</i>	<i>CCP or clearing house</i>	<i>Owner/ manager</i>	<i>Relation with exchange</i>	<i>Relation with CSD</i>	<i>Intraday margining</i>	<i>Products cleared</i>	<i>Currencies</i>	<i>Securities settlement agent</i>	<i>Cash settlement agent</i>	<i>Links to other CCPs</i>
JGSD JamClear®- CSD	Bank of Jamaica	Government of Jamaica	Industry Regulator	Industry Regulator	nap	Equity and Bonds	JMD	nap	Stockbrokers	nap

Table CPP2

### TRANSACTIONS CLEARED BY SELECTED CENTRAL COUNTERPARTIES AND CLEARING HOUSES. NUMBER OF TRANSACTIONS TOTAL FOR THE YEAR

<i>Entity</i>	<i>Number of transactions</i>													<i>Increase in the number of transactions (% change on previous year)</i>									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
JGSD JamClear®- CSD																							



Table CPP3

**TRANSACTIONS CLEARED BY SELECTED CENTRAL COUNTERPARTIES AND CLEARING HOUSES.  
VALUE OF TRANSACTIONS  
TOTAL FOR THE YEAR**

JCSD	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Value of transactions											
Average value per transaction											
Increase in the real value of transactions (% change on previous year, adjusted by CPI)											
Value of transactions as a percentage of GDP (in %)											
JamClear®-CSD											
Value of transactions											

Table CPP4

**PARTICIPATION IN SELECTED EXCHANGES AND TRADING SYSTEMS  
AT YEAR-END**

Entity	Total number of participants											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
JCSD												
JamClear®-CSD												

### 7.5 Tables CSD, Selected Central Securities Depositories

Table CSD1

**FEATURES OF SELECTED CENTRAL SECURITIES DEPOSITORIES**

System	Type of securities held	DOM, B, C, G	Owner/manager	Securities held	Settlement system	Closing time for same day transactions	Links to other CSDs	Type of Settlement	Delivery lag (T+n)	Intraday finality mechanism	DVP	Currencies	Cash settlement agent
JamClear®-CSD	DOM, B, C, G	CB	JamClear®-CSD	DEPEND	1:00PM	REALTIME	nap	DVP	TRADE DATE+3	No	Model 1	JMD & USD	CB
Jamaica Central Securities Depository	DOM	O	DEPEND	1:00PM	REALTIME	nap	DVP	TRADE DATE+3	No	No	Model 1	JMD & USD	CB

Source: Bank of Jamaica.

Table CSD2

**TRANSACTIONS PROCESSED BY SELECTED CENTRAL SECURITIES DEPOSITORIES.  
NUMBER OF TRANSACTIONS  
TOTAL FOR THE YEAR**

System	Number of transactions														Increase in the number of transactions (% change on previous year)							
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JamClear®- CSD	nap	nap	nap	nap	nap	1,060	9,477	12,845	12,023	10,491	13,063	nap	nap	nap	nap	nap	nap	794.1	35.5	-6.4	-12.7	24.5
Jamaica Central Securities Depository	nap	nap	41,921	38,621	30,323	16,113	19,551	31,202	24,562	25,441	20,716	nap	nap	nap	-7.9	-21.5	-46.9	21.3	59.6	-21.3	3.6	-18.6

Source: Bank of Jamaica.

Table CSD3

## TRANSACTIONS PROCESSED BY SELECTED CENTRAL SECURITIES DEPOSITORIES.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<i>Value of transactions</i>											
JamClear@-CSD	nap	nap	nap	nap	nap	50,426	745,191	968,664	967,212	1,836,948	3,388,714
Jamaica Central Securities Depository	nap	nap	3,704	2,905	6,703	1,219	2,104	2,224	6,629	1,736	1,481
Average value per transaction											
JamClear@-CSD	nap	nap	nap	nap	nap	47,572	71,303	68,773	72,304	153,437	218,275
Jamaica Central Securities Depository	nap	nap	nap	-22.0	131.0	-81.8	72.6	5.7	198.1	-73.8	-15.0
Increase in the real value of transactions (% change on previous year, adjusted by CPI)											
JamClear@-CSD											
Jamaica Central Securities Depository											
Value of transactions as a percentage of GDP (in %)						47.3	596.1	735.0	676.0	1,006.3	1,685.0
JamClear@-CSD											
Jamaica Central Securities Depository											

Source: Bank of Jamaica.

Table CSD4

**PARTICIPATION IN SELECTED CENTRAL SECURITIES DEPOSITORIES  
AT YEAR-END**

<i>System</i>	<i>Total number of participants</i>													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014			
JamClear®-CSD						44	45	47	48	45	43			
Jamaica Central Securities Depository	21	21	19	19	19	19	19	19	19	18	20			

Source: Bank of Jamaica.

Table CSD5

**SECURITIES HELD ON ACCOUNT AT SELECTED CENTRAL SECURITIES DEPOSITORIES  
AT YEAR-END**

<i>System</i>	<i>Value of securities held</i>													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014			
JamClear®-CSD														
Jamaica Central Securities Depository														

## 7.6 Series B, General Statistics

Table B1

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>NUMBER OF FINANCIAL ENTITIES AT YEAR-END</b>											
Central Bank	1	1	1	1	1	1	1	1	1	1	1
Total financial system	65	63	62	62	62	61	59	57	56	50	48
Banks											
Of which:											
Public banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Private banks	6	6	6	6	7	7	7	7	7	7	6
Foreign capital banks	4	4	4	4	4	4	4	4	4	4	3
Branches of foreign banks	1	1	1	1	1	1	1	1	1	1	1
Non-banks financial entities											
Building societies	4	4	4	4	4	4	4	4	4	3	3
Licencees under the Financial Institution Act	5	5	5	4	3	3	2	2	2	2	2
Credit unions	50	48	48	48	48	47	46	44	43	38	37

Source: Bank of Jamaica.

Table B2

**NUMBER OF BRANCHES  
AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Central Bank	1	1	1	1	1	1	1	1	1	1	1
Total financial system	230	246	246	246	249	246	241	242	242	243	234
Banks											
Of which:											
Public banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Private banks	126	123	124	126	129	124	119	118	118	113	104
Foreign capital banks	123	119	120	120	118	113	108	107	106	101	80
Branches of foreign banks	1	1	1	1	1	1	1	1	1	1	1
Non-banks financial entities											
Building societies	48	47	47	45	47	49	49	50	50	50	50
Licencees under the Financial Institution Act	6	10	10	9	5	5	4	4	4	4	4
Credit unions	50	66	65	66	68	68	69	70	70	76	76

Source: Bank of Jamaica.

Table B3

**NUMBER OF FINANCIAL SECTOR EMPLOYEES  
AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Central Bank	522	490	487	550	504	589	608	605	586	562	567
Total financial system	7,158	6,896	7,309	7,418	6,404	6,493	7,030	7,721	7,675	7,180	6,638
Banks											
Of which:											
Public banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Private banks	5,625	5,391	5,856	5,846	5,047	5,129	5,704	6,065	6,038	5,746	5,421
Foreign capital banks	5,405	5,172	5,624	5,607	4,774	4,766	5,309	5,618	5,573	5,282	4,437
Branches of foreign banks	77	77	80	74	73	77	74	73	72	63	61
Non-banks financial entities											
Building societies	1,345	1,270	1,202	1,331	1,159	1,160	1,139	1,525	1,520	1,324	1,098
Licensees under the Financial Institution Act	188	235	251	241	198	204	187	131	117	110	119
Credit unions	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav

Source: Bank of Jamaica.



Table B4

**FINANCIAL SYSTEM, ASSETS  
IN BILLIONS, AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Central Bank	nav	nav	nav	nav	nav	310.1	371.2	370.9	315.5	342.7	505.7
Total financial system	nav	nav	nav	nav	nav	814.8	833.1	874.4	941.0	1,040.4	1,159.1
Banks											
Of which:											
Public banks	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Private banks	nav	nav	nav	nav	nav	566.1	579.7	600.9	646.9	726.9	815.7
Foreign capital banks	nav	nav	nav	nav	nav	507.3	521.4	536.3	579.5	652.5	671.3
Branches of foreign banks	nav	nav	nav	nav	nav	16.0	15.7	19.4	18.2	18.1	16.0
Non-banks financial entities											
Building societies	nav	nav	nav	nav	nav	159.3	168.3	185.5	201.5	211.6	230.3
Licencees under the Financial Institution Act	nav	nav	nav	nav	nav	33.0	24.2	21.3	21.3	25.3	31.0
Credit unions	nav	nav	nav	nav	nav	56.5	60.8	66.7	71.3	76.6	82.2

Source: Bank of Jamaica.

Table B5

**FINANCIAL SYSTEM, DEPOSITS  
IN BILLIONS, AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Central Bank											
Total financial system	320.9	348.0	400.9	457.0	481.3	524.2	551.2	580.1	638.9	698.5	752.3
Banks											
Of which:											
Public banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Private banks	228.2	246.3	282.9	321.1	334.0	357.1	379.1	400.1	444.8	487.5	523.8
Foreign capital banks	216.7	227.8	263.9	301.4	307.6	326.1	344.0	363.5	407.1	443.1	433.7
Branches of foreign banks	7.21	9.05	8.86	6.40	6.33	7.58	11.71	9.76	8.43	10.77	10.75
Non-banks financial entities											
Building societies	58.79	64.08	73.59	84.42	93.29	110.09	115.89	121.78	131.44	141.35	152.23
Licencees under the Financial Institution Act	11.44	12.14	14.02	17.15	14.52	13.02	8.36	6.56	7.85	11.12	13.94
Credit unions	22.48	25.47	30.35	34.41	39.56	44.04	47.87	51.62	54.80	58.56	62.34

Source: Bank of Jamaica.

Table B6

**FINANCIAL SYSTEM, LOANS  
IN BILLIONS, AT YEAR-END**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Central Bank	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Total financial system	166.86	198.60	234.30	299.26	367.97	387.65	384.34	405.33	457.73	519.82	553.99
Banks											
Of which:											
Public banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Private banks	113.37	132.10	153.45	195.10	246.17	256.39	251.34	266.04	307.48	362.12	380.97
Foreign capital banks	110.06	127.61	148.40	188.58	231.10	237.75	232.41	245.19	284.04	333.19	319.34
Branches of foreign banks	0.91	1.45	0.95	1.37	0.47	1.06	2.11	2.07	2.67	3.82	2.53
Non-banks financial entities											
Building societies	29.28	36.52	43.78	58.97	76.16	84.58	87.31	89.34	95.88	97.38	107.17
Licencees under the Financial Institution Act	6.85	8.67	11.15	14.21	10.82	9.69	7.19	6.89	5.63	7.09	9.25
Credit unions	17.36	21.32	25.93	30.98	34.83	36.98	38.50	43.06	48.75	53.23	56.59

Source: Bank of Jamaica.

Table B7.

FINANCIAL SYSTEM, EQUITY IN BILLIONS, AT YEAR-END											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Central Bank	4.19	3.01	4.54	5.84	5.11	8.84	10.39	13.10	11.72	7.65	8.90
Total financial system	67.20	73.87	84.62	93.61	95.91	114.43	125.46	148.09	143.22	158.72	176.47
Banks											
Of which:											
Public banks	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Private banks	41.27	44.92	51.91	56.87	62.67	76.33	84.10	100.62	92.86	105.05	117.26
Foreign capital banks	37.13	40.69	47.33	51.97	54.59	65.51	71.85	87.30	79.18	90.84	90.13
Branches of foreign banks	2.27	1.93	1.86	1.91	2.55	3.25	3.37	3.71	3.52	3.88	3.92
Non-banks financial entities											
Building societies	15.40	16.37	18.54	21.20	20.40	23.49	26.51	31.11	33.37	34.43	37.93
Licencees under the Financial Institution Act	5.79	7.11	7.91	8.33	4.66	5.12	4.67	4.76	4.67	5.38	6.05
Credit unions	4.73	5.47	6.26	7.21	8.18	9.49	10.18	11.61	12.32	13.86	15.22

Source: Bank of Jamaica.

## LIST OF ABBREVIATIONS

ACH	Automated clearinghouse
AML/CFT	Anti-money laundering and combating the financing of terrorism
APL	Automated Payments Limited
ATM	Automated teller machine
BOJ	Bank of Jamaica
CD	Certificate of deposit
DTI	Deposit-taking institution
DVP	Delivery-versus-payment
EFT	Electronic funds transfer
ERPS	Electronic retail payment services
FAFO	First available, first out
FIA	Financial Institutions Act
FIFO	First in, first out
Finsac	Financial Sector Adjustment Company
FSC	Financial Services Commission
GOJ	Government of Jamaica
GSDA	Government Securities Dematerialization
ICBS/CBAS	Central bank accounting system
ILF	Intraday Loan Facility
JamClear®-CSD	JamClear Central Securities Depository
JamClear®-RTGS	JamClear Real-Time Gross Settlement System
JCCUL	Jamaica Co-operative Credit Union League
JCSD	Jamaica Central Securities Depository
JDIC	Jamaica Deposit Insurance Corporation
JMD	Jamaican dollar
JSE	Jamaica Stock Exchange
MoFPS	Ministry of Finance and the Public Service
NCUS	National Union of Co-operative Societies
NPC	National Payments Council
NPS	National Payment System

OMO	Open market operations
OTC	Over-the-counter
PCSA	Payments Clearing and Settlement Act
POCA	Proceeds of Crime Act
POS	Point of sale
PSD	Payment System Department
QNET	Quality Network Co-operative
RTGS	Real time gross settlement system
SIPS	Systemically important payment systems
STP	Straight through processing
TRN	Tax registration number
TTC	Transaction type code

## GLOSSARY

In January 2001, the Committee on Payments and Settlement Systems (CPSS) of the Bank for International Settlements published the first edition of a glossary that included payment and securities clearing and settlement terms. This glossary can be found on its web page: <[http://www.bis.org/cpmi/glossary\\_030301.pdf](http://www.bis.org/cpmi/glossary_030301.pdf)>.

The Western Hemisphere Payments and Securities Clearing and Settlement Forum, based on the glossary produced by the CPSS, has also produced a uniform glossary of terms in Spanish with the objective of avoiding unnecessary proliferation of terms and definitions. This glossary in Spanish can be found on the Forum web page: <[http://www.forodepagos.org/pdf/Glosario\\_whi.pdf](http://www.forodepagos.org/pdf/Glosario_whi.pdf)>.

**Central bank money** A liability of a central bank, in this case in the form of deposits held at the central bank, which can be used for settlement purposes.

**Central counterparty (CCP)** An entity that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the performance of open contracts.

**Central securities depository (CSD)** An entity that provides securities accounts, central safekeeping services and asset services, which may include the administration of corporate actions and redemptions, and plays an important role in helping to ensure the integrity of securities issues (that is, ensure that securities are not accidentally or fraudulently created or destroyed or their details changed).

**Clearing** The process of transmitting, reconciling and, in some cases, confirming transactions prior to settlement, potentially including the netting of transactions and the establishment of final positions for settlement. Sometimes this term is also

used (imprecisely) to cover settlement. For the clearing of futures and options, this term also refers to the daily balancing of profits and losses and the daily calculation of collateral requirements.

Clearing house	A multilateral system or arrangement that provides its participants with clearing services for payment instructions, securities transactions, derivatives transactions, and in some cases, settlement services. See also FMI.
Confirmation	A process whereby the terms of a trade are verified either by directly involved market participants or by a central entity.
Custody	The safekeeping and administration of securities or other assets on behalf of others.
Deferred net settlement (DNS)	A net settlement mechanism which settles on a net basis at the end of a predefined settlement cycle.
Delivery versus delivery (DvD)	A securities settlement mechanism that links two securities transfers in such a way as to ensure that delivery of one security occurs if and only if the corresponding delivery of the other security occurs.
Delivery versus payment (DvP)	A securities settlement mechanism that links a securities transfer and funds transfer in such a way as to ensure that delivery occurs if and only if the corresponding payment occurs.
Final settlement	The irrevocable and unconditional transfer of an asset or financial instrument, or the discharge of an obligation by the FMI or its participants in accordance with the terms of the underlying contract. Final settlement is a legally defined moment.
Financial market infrastructure (FMI)	A multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling or recording payments, securities, derivatives or other financial transactions.
Intraday liquidity	Funds which can be accessed during the business day, usually to enable financial institutions to make payments in real time.



Large-value payment system (LVPS)	A funds transfer system that typically handles large-value and high-priority payments.
money settlement	An act between two or more parties for the discharge of monetary obligations.
Net credit (or debit) position	A participant's net credit or net debit position in a netting system is the sum of the value of all the transfers it has received up to a particular point in time less the value of all transfers it has sent. If the difference is positive, the participant is in a net credit position; if the difference is negative, the participant is in a net debit position. Depending on the circumstance, these net positions may be calculated on a bilateral or multilateral basis.
Net settlement system	A funds or securities settlement system in which final settlement of transfer instructions occurs on a net basis at one or more discrete, pre-specified times during the processing day.
Netting	The offsetting of obligations between or among participants in the netting arrangement, thereby reducing the number and value of payments or deliveries needed to settle a set of transactions.
Nonbank financial institutions	Regulated and authorised financial institutions that are not constituted as commercial banks but provide financial and payment services.
Oversight	A central bank function whereby the objectives of safety and efficiency are promoted by monitoring existing and planned payment, clearing, settlement and related arrangements, assessing them against these objectives and, where necessary, inducing change. These arrangements include financial market infrastructures and other payment, clearing, settlement and reporting arrangements and activities, both within and across jurisdictions (encompassing systems and activities involving large-value and retail payments, foreign exchange settlement, securities and derivatives clearing and settlement, multilateral netting and collateral management) as well as retail payment instruments or schemes. The scope of oversight

differs between central banks but usually includes FMIs, with oversight being conducted domestically and through cross-border cooperation.

Payment instrument end-user	All nonfinancial entity, including individuals, businesses and the Government (public administration offices and agencies), that utilizes payment instruments to settle their obligations against other nonfinancial or financial entities.
Payment order (instruction) message	An order or instruction sent by a payer –or, in some systems, a payee– ordering the execution of a payment transaction.
Payment system	A set of instruments, procedures, and rules for the transfer of funds between or among participants; the system includes the participants and the entity operating the arrangement.
Payment <i>versus</i> payment (PvP)	A settlement mechanism that ensures that the final transfer of a payment in one currency occurs if and only if the final transfer of a payment in another currency or currencies takes place.
Real-time gross settlement (RTGS)	The real-time settlement of payments, transfer instructions or other obligations individually on a transaction-by-transaction basis.
Repurchase agreement (repo)	A contract to sell and subsequently repurchase securities at a specified date and price.
Retail payment system	A funds transfer system that typically handles a large volume of relatively low-value payments in such forms as cheques, credit transfers, direct debits and card payment transactions.
Securities settlement system (SSS)	An entity that enables securities to be transferred and settled by book entry according to a set of predetermined multilateral rules. Such systems allow transfers of securities either free of payment or against payment.
Straight through processing (STP)	The automated end-to-end processing of trades and/or payment transfers, including the automated completion of

confirmation, matching, generation, clearing and settlement of instructions, without the need for re-keying or reformatting data.

Systemically important payment system (SIPS)

A payment system which has the potential to trigger or transmit systemic disruptions; this includes, among other things, systems that are the sole payment system in a jurisdiction or the principal system in terms of the aggregate value of payments, and systems that mainly handle time-critical, high value payments or settle payments used to effect settlement in other FMIs.

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