Chapter 2

ROLE OF PAYMENT AND SETTLEMENT SYSTEMS IN MONETARY POLICY AND FINANCIAL STABILITY: BRUNEI DARUSSALAM

By
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1. Introduction

With the consent of His Majesty the Sultan and Yang Di-Pertuan Negara Brunei Darussalam, Autoriti Monetari Brunei Darussalam (AMBD) was established on 1 January 2011 as the central bank of Brunei Darussalam. The four principal objects of AMBD (Section 4 of the AMBD Order, 2010) are to:

- Achieve and maintain domestic price stability;
- Ensure the stability of the financial system, particularly by formulating financial regulation and prudential standards;
- Assist in the establishment and functioning of efficient payment systems and to oversee them; and
- Foster and develop a sound and progressive financial services sector.

The recent global financial crisis demonstrated how interconnected countries have become and how the financial sector has strong linkages to the real sector of the economy. Financial stability is becoming a very important prerequisite for a healthy economic system, and thus requiring the safety and efficiency of the payment and settlement system (PSS), as a vital part of the financial sector's infrastructure, to be reliable and dependable.

As a member of ASEAN, Brunei Darussalam is supportive of the ASEAN Central Banks' initiatives to strengthen the regional payment and settlement

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system infrastructure which include enhancing consumer protection and education in money remittance; developing an electronic payment for retail payment in ASEAN; and also identifying the feasibility of establishing an ASEAN exchange clearing house and central securities depositories. The continuous cooperation in this area will contribute not only to increasing the integration of financial system but also in helping to uplift the standard and development of the payment and settlement system of a number of ASEAN members whose payment and settlement system infrastructure is relatively less developed. Thus, if the progress of these initiatives can be sustained, the monetary policy of all the ASEAN member countries will be more effective and their financial system will be more resilient to external shocks.

This study will give an outline of the status of the payment and settlement system operating in Brunei Darussalam, the observance of Brunei's PSS in compliance with the Financial Market Infrastructure Principles issued by Committee on Payment and Settlement System (CPSS) of the Bank for International Settlements (BIS). It will also discuss how to move the PSS forward domestically and regionally in order to enhance the role of the PSS in supporting monetary policy implementation as well as in promoting financial stability.

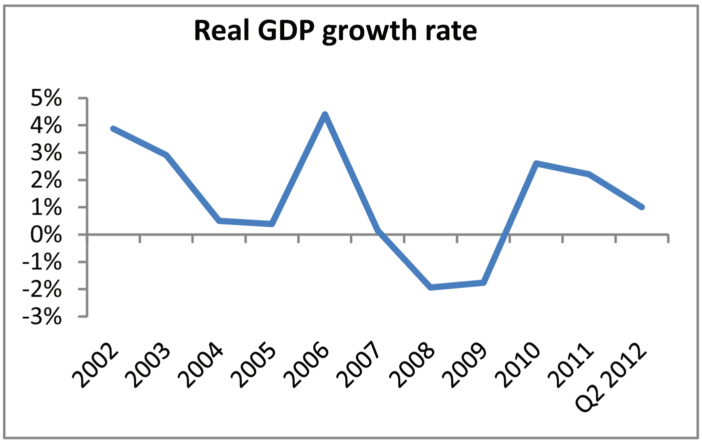
Following the introduction in this first section, Section 2 provides the description of the economy of Brunei Darussalam, brief background of the country's monetary policy and financial landscape, and the state of Brunei Darussalam's PSS. Section 3 will discuss the literature review, touching on the interconnectedness between a safe and efficient PSS, monetary policy, and financial stability. Section 4 will offer some assessment of the payment system in Brunei Darussalam with reference to the Financial Market Infrastructures Principles. Section 5 will discuss the policy implications derived from this study, and lastly Section 6, will give the conclusion of this paper.

2. Economy, Monetary Policy, Financial Landscape and PSS in Brunei Darussalam

2.1 Economy

Brunei Darussalam is a small, open economy whose major exports are crude oil and liquefied natural gas. The oil and gas sector accounts for approximately 45% of its 2011's real GDP. The global financial crisis coupled with the maturing of several oil fields in the country have led to GDP contractions of 1.9% and 1.8% for 2008 and 2009, respectively.

Figure 1



Source: Department of Economic Planning and Development.

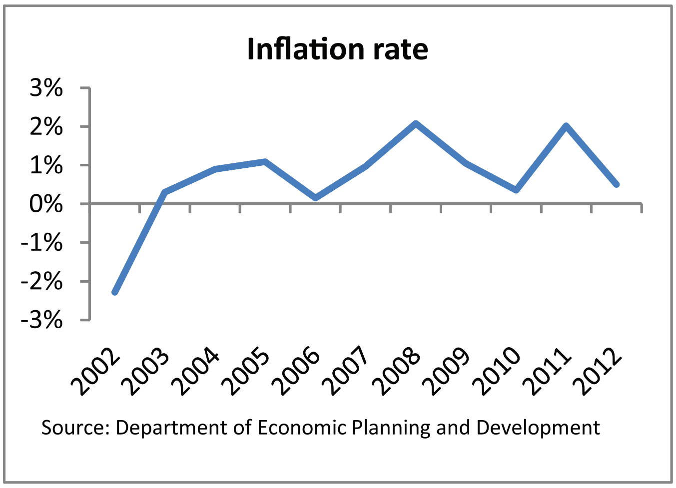
Growth in 2010 and 2011 rebounded to the levels near 2.4%, the 5-year average before the crisis. The economy was allowed to weather through the crisis with no stimulus measures from the government. Brunei's economy has proved to be resilient bouncing back after the height of the financial crisis was over. Government and private sector activities also provide stimulus to the economy in times of lower oil production in the country.

Brunei's population is 393,372 according to 2011 population census, with the per capita GDP of about US$41, 520 (2011).

2.2 Monetary Policy

The monetary policy of the Sultanate is a currency board system whereby, under the Currency Interchangeability Agreement (CIA) signed in 1967 between Brunei Darussalam and the Republic of Singapore, the Brunei dollar is at one-to-one parity with the Singapore dollar. Under the currency board system, every Brunei dollar in circulation is required to be 100% backed up by foreign assets. This system imposes strong monetary discipline contributing to the country's macroeconomic stability and low inflation rate environment.

Figure 2



Inflation generally remained within the 0 to 2% range. The government did not undertake any stimulus measures to boost the economy during the crisis. This along with Brunei government subsidies for a range of goods and services, and the appreciation of the Brunei dollar served to keep inflationary pressures low. As the currency is in parity with the Singapore dollar, any monetary policy actions taken by the Singapore authorities to combat inflation will also benefit Brunei since it is also highly dependent on imports, just like Singapore.

2.3 Financial System Landscape

Table 1
Financial System in Brunei Darussalam as at September 2012

Type	Number	Assets	
Islamic Trust Fund	1	BND20.4 Billion	
Islamic Bank	1		
Conventional Banks			
• Local	1		
• Foreign Branches	6		
• Restricted	1		
Finance Companies		BND2.1 Billion	
• Islamic	1		
• Conventional	2		
Licensed International (offshore) Bank	4	BND98.9 Million	
Insurance Companies & Takaful		BND1.2 Billion	
• Takaful	4		
• Conventional	9		
International Insurance Companies	1	BND162.8 Million	
		BUY	SALE
Money Changer Companies	24	BND94.4 Million	BND108.6 Million
Remittance Companies	21	BND508 Million (money remitted)	

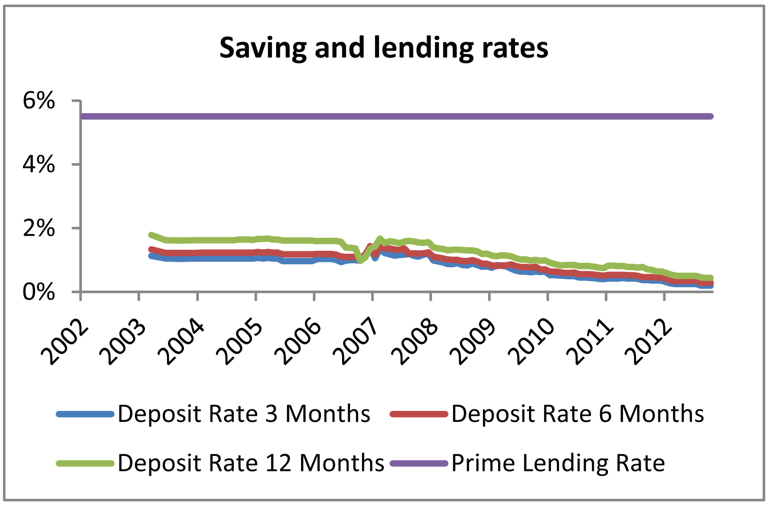
The above table shows the types of financial institutions in Brunei and their total assets. Clearly, the main financial intermediary is the banks with total assets reaching BND21 billion. The country operates a dual financial system of both conventional and Islamic finance and Islamic banks have been growing impressively with a market share of 37% since its inception in the early 1990s. Finance Companies are the second biggest financial intermediation followed by insurance activities. Finance companies are engaged in the business of car financing, the major component of consumer goods financing. Brunei currently does not have a stock exchange and the payment and settlement system operating in the Sultanate is at a basic level.

The Brunei government launched its first Sukuk[2] programme in the form of the Al-Ijarah in 2006 with the primary aim of developing the domestic capital market. The goal is to expand the volume of issues and the range of maturities over time in order to build up a yield curve and bench mark securities, as a foundation for broader money and capital. The issue programme was initiated strictly for market development purposes and not to finance government spending, given the large fiscal surpluses of the government. The issuances are of maturity of 3 and 12 months and are done in book entry form to primary dealers based on contractual arrangements with the primary dealers.

Before the establishment of the AMBD, the Brunei Currency and Monetary Board (BCMD) was the agent to the government in administering the sukuk issuances but this task is now taken over by AMBD. The primary dealers for government sukuk are all the banks in Brunei. The secondary market is yet to be developed pending the setting up of several necessary infrastructures, including Brunei's own securities payment and settlement system. In the absence of securities central depositories and clearing system in Brunei, an external service provider was appointed to carry out the above functions. The gap between trade confirmation and securities payment/deliveries is T+2. For redemption, the ABMD usually will notify the payment agent T-3 to make principal and rental payment on the maturity date.

2. Sukuk is similar to a conventional bond which means financial certificate. Sukuk Al-Ijarah is a financial certificate backed by the lease of a certain types of assets.

Figure 3



The prime lending rates have remained constant throughout the past 10 years. Savings rates however declined following the global trend especially during the aftermath of the global financial crisis. The savings rates rarely diverged with Singapore's rates as moving deposits between the two countries are considerably easy. Loan rates on the other hand are geographically inelastic as loans between the two countries are not close substitutes.

As a follow-up to the expiry of the deposit guarantee given during the global financial crisis, a deposit protection scheme was established on 1 January 2011 upon the enactment of the Deposit Protection Order, 2010. This scheme is administered by Brunei Darussalam Deposit Protection Corporation (BDPC) under the umbrella of the Ministry of Finance. All the banks and finance companies operating in Brunei are required to be members of BDPC. The scheme provides protection of up to B$50,000 per depositor per member institution. Definition of depositors includes individuals, joint accounts as well as business accounts. This deposit protection scheme serves as one of the financial safety net for the public

The establishment of the AMBD in January 2011 as the central bank of Brunei Darussalam brought the tasks of implementing monetary policy and supervising the financial institutions under one roof. As one of the principal objects of the AMBD is to ensure the stability of the financial system, the AMBD monitors the situation in the Euro Zone closely and has identified the impact of possible contagion effects and shocks to Brunei's financial system. So far, the financial institutions in Brunei do not have direct exposure to European government debts and they remain sound, well capitalised, highly liquid and profitable.

2.4 Payment and Settlement Systems

At present, Brunei Darussalam does not have a centralised national payment system. Due to the small size of the local economy, population and low level of business volumes, the payment and settlement system in Brunei Darussalam is not highly developed and predominantly consists of retail payments using cheques and paper instruction transfers. Furthermore, the non-existence of a central bank for 26 years since Brunei's independence in 1984 has resulted in the practice of well-preserved peer responsibility in the financial markets where players individually and collectively assist each other. The commercial banks are the main providers of banking services ranging from basic payment and transfer services to remittances and serve the transactions needs of individuals and businesses in the economy.

The government sector accounts for about 30% of employment in Brunei. Consequently, the payment of government employees' salaries and benefits plays an important part in the retail payment services offered by banks. Currently, these payments are effected by the government providing payroll schedules to the banks so that funds can be transferred from government accounts held at the banks to the employees' accounts.

The government contributes to the efficiency of the payments systems by providing payments to employees and suppliers of government-issued contracts and purchases via electronic means to the banks, which are able to offer and support such services. The Brunei government has also introduced the Treasury Accounting and Financial Information System (TAFIS) on 2nd March 2002, as a progressive step towards the utilisation of automated and technologically advanced payment (TAP) channels. Another government institution overseeing the retirement benefits fund of Brunei employees is progressing towards an automated reconciliation system for transactions within their accounts held within banks that are able to support such mechanism.

A major portion of the settlement of purchasing and services transactions in Brunei Darussalam is made by cash (banknotes and coins). Cash payments remain the most convenient method for making small-value payments when payment is made at the point of sale. However, larger transactional amounts are settled in non-cash or ‘cashless’ instrument – the larger the amount, the higher the tendency. This is partially attributed to the obvious risks associated with handling large amounts of cash. Technology has also contributed to the increasing ease of access to bank accounts for purposes of cash withdrawals, such as the use of automated teller machines (ATMs), debit cards and credit cards. Furthermore, cash dispensers are geographically and widely available to support the population’s need to use cash for daily transactions.

The major payment system in Brunei Darussalam is the cheque clearing and settlement system owned by the Brunei Association of Banks (BAB). Hong Kong and Shanghai Banking Corporation (Brunei) was appointed as the management bank to operate the clearing house based on a cost-recovery principle whereby all the expenses incurred in the provision, management and operation of the clearing facilities will be borne by BAB. HSBC (Brunei), however, can directly collect the expenses due from each member of the BAB its proportion of the expenses.

All the banks are SWIFT members and most use it for urgent domestic payment as well as for international payments. The large international banks have regional tariffs with SWIFT, so extra usage is relatively cheap. There are no liquidity management facilities provided by HSBC (Brunei) and the settlement cycle for the paper cheque normally takes four days, which is the standard in the service agreement between HSBC (Brunei) and the banks. Due to this arrangement, all banks centralise their interbank payment activities in their accounts with HSBC (Brunei) for the efficiency of their own liquidity management and maintain credit balance with HSBC (Brunei) for fund settlements. The banks’ interbank payment activities are managed through their accounts with HSBC (Brunei) and they maintain credit balance with HSBC (Brunei) for fund settlements. To conduct its operations and financial activities, the AMBD itself opens accounts with commercial banks and maintain credit balance in these accounts.

In addition to cash, most banks offer retail banking products including credit and debit cards and internet-based payment schemes. Banks maintain their own credit card processing and database system to support payments and settlement. Credit cards issued in Brunei are Visa and MasterCard and utilise the PLUS, CIRRUS and Maestro network. Transactions made through these networks are settled by the card associations and billed to either the acquiring or issuing banks.

Credit card transactions made through ATMs and credit card terminals of the issuing bank are generally settlement using in-house systems without processing by the card associations.

Internet banking transactions are settled in a similar manner. The cut-off times and types of transactions offered by banks would vary. Development of these internet-based delivery channels are performed by the head offices of the international banks that also monitor the activities and ensure that the high security levels are maintained.

The activities of the current cheque clearing house are govern by two sets of service agreements among relevant parties, including (1) the service agreement between HSBC (Brunei) and the BAB; and (2) the bilateral service agreement between HSBC (Brunei) and the individual banks, which include the service standard, interbank tariff and clearing time schedule, etc. As the management bank of the clearing house, HSBC (Brunei) is obligated to submit several standard reports, including the annual audit report on the clearing function, to the BAB's Sub-Committee of Payment System and the BAB for their information.

Section 44 of AMBD Order, 2010 provides the AMBD with the authority to have oversight and supervise the PSS. The current oversight of the system is more of prudential objective which is to ensure the soundness of the individual financial institutions. The users are basically self-regulated. Section 43 of AMBD Order, 2010 allows the AMBD to provide facilities, including intra-day credit to payment, clearing and securities settlement systems, if the need arises. This provision so far has never been activated.

In terms of ensuring financial stability, the AMBD, apart from its regular supervision of the financial institutions, can also provide a Lender of Last Resort (LOLR) facility to the financial institutions operating in Brunei Darussalam. The details of the LOLR are spelled out in Section 52 of AMBD Order, 2010. The LOLR facility may be provided for up to 90 calendar days, but must be repaid within 180 calendar days and are only extended against collateral from the borrower. The AMBD in turn may impose remedial measures to be undertaken by the financial institutions in exchange for access to this facility. In addition, under Section 52 of the AMBD Order, 2010, the AMBD may act as the agent to the Brunei government in extending emergency lending from the government to insolvent financial institutions to preserve the stability of the financial system, so long as the lending does not conflict with the objects and functions of the AMBD.

The AMBD is currently embarking on a project for the establishment of a national payment system seeking to improve the efficiency of the PSS and also to mitigate the associated risks. The future plan may include the creation of an AMBD-owned system that would enable the AMBD to conduct oversight of the systemically important payments as well as to provide Delivery vs Payment (DvP) of debt securities through the future implementation of a Central Securities Depositories (CSD).

3. Literature Review

3.1 Relations of PSS in Monetary Policy and Financial Stability

The importance of safe and efficient PSSs is widely accepted as they are needed for the efficient functioning of financial markets and the economy (CPSS, 2005). The tasks of handling both large and small transactions means transactions in PSS must be cleared on time to avoid delay which otherwise may cause instability in the financial system. Furthermore, efficient PSS enables the flow of emergency liquidity to financial institutions that are facing a financial crisis.

An efficient PSS also has a vital role for the effective transmission of monetary policy because it provides reliable transfer of funds and securities during the operation of the monetary policy in the interbank market as well as in open market operations.

The key benefits of an efficient PSS for monetary policy and financial stability can be listed as follows (World Bank and International Monetary Fund, 2002):

- The elimination of float (funds that have been debited to the payer's account, but not credited to the recipient's account);
- The effective operation of an interbank money market, in which financial institutions can efficiently manage their liquidity, and in which the central bank can conduct open market operations;
- The elimination of credit exposures between banks, and the reduction of their liquidity exposures;
- The opportunity for banks to maintain lower overnight balances with the central bank; and
- The ability to reduce or eliminate settlement risk arising from transactions in other financial markets, such as for securities or for foreign exchange.

3.2 Relations between PSS and Monetary Policy

Schmitz (2006) pointed out that the interaction between payment systems and monetary policy is a two-way street. The design of the instruments used in monetary policy affects the demand for central bank money as well as the efficiency and stability of payment systems.

The two-way relationship between PSS and monetary policy can be summarised as follows:

1) Payment system design, efficiency and safety affect the speed and predictability of the demand for money and the efficacy of some monetary policy instruments; and
2) Monetary policy influences the liquidity available in the payment system and its opportunity cost to settle payment obligations. As explained by Schmitz (2006), the opportunity cost refers to the cost of getting Central Bank (CB) money (money base), calculated as the wedge between the overnight interbank interest rate and the remuneration (if any) paid by the CB.

The efficiency of the payment system cannot be downplayed for it is an important factor to enable monetary policy decision made based on an accurate situation. Schmitz (2006) gives an example where, let say, a liquidity shortage happens as a result of an operational incident in the payment system causing banks to borrow funds in the overnight market, with the potential of increasing the overnight rates. This one-off incident can trigger uncertainty in the overnight rates. Thus, it can cause confusion to the policymakers whether the resulting rise in overnight rates is due to a systemic liquidity crunch or a temporary shock in the payment system. Therefore, Schmitz points out that a stable and smooth functioning payment system will enable a smooth conduct of monetary policy.

For a central bank to achieve a successful monetary policy through an effective intermediate target, namely, for example, through the emergence of a deep and liquid money market, the payment system also needs to be as effective and efficient.

3.3 Testing for Correlation between PSS and Monetary Policy

Humphrey (1995) proposed that the relationship between PSS and money supply can be observed through the equation MV = PT. The money supply (M) multiplied by its velocity (V) is equal to the price level (P) multiplied by the number of economic transactions (T). PT is the nominal aggregate level of economic activity (or nominal GDP). Increase in the velocity of money to some extent reflects the efficiency of the PSS whereby higher velocity of money means faster turnover of money stock to meet transactions needed for a given level of economic activity. Thus, an increase in efficiency of PSS, for example, due to the availability of different modes of payment aside from cash-payment or payments can be settled in a much faster time, reduces cash-holding time by households.

Table 2

	2005	2006	2007	2008	2009	2010	2011
Nominal GDP (B$ million)	15864.1	18225.8	18458.4	20397.9	15611.4	16867.3	20579.2
Money supply (B$ million)	3575.6	3962.6	3851.2	4386.1	5390.5	3817.1	4233.5
Velocity	4.4	4.6	4.8	4.7	2.9	4.4	4.9

Table 3

	2005	2006	2007	2008	2009	2010	2011
Nominal GDP (B$ million)	15864.1	18225.8	18458.4	20397.9	15611.4	16867.3	20579.2
CIC (B$ million)	704.7	739.9	848.8	921.8	954.5	1,023.7	1,690.0
Velocity	22.5	24.6	21.7	22.1	16.4	16.5	12.2

As can be seen in Table 2, there is no clear trend in the velocity of money, although in the earlier years of the period studied, the velocity seemed to be increasing slightly. Overall it has been constant around 4%. It could be that the substitution between cash and non-cash payment is even out in the money supply, thus causing a constant velocity of money.

When currency in circulation is used in the calculation of the velocity, the downward trend of velocity of money is obvious due to the decline in nominal GDP in 2009 and 2010, as compared to the previous year. Meanwhile the rapid decline of the velocity in 2011 is attributed to the introduction of new banking regulatory requirement, known as Asset Maintenance Ratio (AMR) whereby banks are required to keep aside a certain portion of their assets in an eligible asset of which one of them is the Brunei currency. Thus, the demand for Brunei dollar was unusually high towards the end of 2011.

Therefore, the study finds inconclusive evidence to relate the efficiency of the PSS and to changes in the velocity of money. Furthermore, the AMBD is not actively managing money supply which causes the relationship between the PSS and velocity of money to be irrelevant.

3.4 Relations between PSS and Financial Stability

McVanel and Murray (2012) stated that the PSS is a key financial market infrastructure in which most financial transactions are cleared, settled and recorded. These activities support the efficient functioning of the financial system. However, the PSS may also be a channel where systemic risks are transmitted. The failure of one participant to meet its obligations can render other participants incapable of meeting their obligations and the knock-on effect of the failed payment can cause a liquidity crunch and loss of confidence in the financial system, leading to financial instability.

Therefore, an efficient and safe PSS enhances the stability of markets and promotes wider financial stability by reducing risks in the transaction process and allows better management of risk, e.g. through the redistribution of risk (Bank of England, 2012). For example, the securities settlement systems reduce credit risk by ensuring that securities are delivered only when payment is received with finality (delivery-versus-payment). Central counterparties (CCPs) and payment systems can reduce credit and liquidity risk by netting payment or financial exposures. These activities serve to reduce operational risks through the standardised processes they introduce.

3.5 Testing for Correlation between PSS and Financial Stability

An analysis is carried out on the relationship between financial depth and PSS transactions in Brunei Darussalam. Recent studies found that financial deepening can contribute to financial stability, helping countries to limit swings in asset prices and find alternative source of funding (IMF, 2011). In this study, the financial depth ratio may be measured as Money Supply/Nominal GDP. Money supply becomes a proxy to public trust in the financial system as whole, since people will continue to keep their money in savings and fixed deposits as long as the financial system remains stable.

PSS transactions are measured as the use of cashless payment instruments in the country which include cheques, credit transfers, payments by credit/debit cards, and direct debit. The results of the analysis are shown below:

Table 4
PSS Transactions

	2005	2006	2007	2008	2009	2010	2011
Nominal GDP (B$ million)	15864.1	18225.8	18458.4	20397.9	15611.4	16867.3	20579.2
Value of Clearing House Transactions (B$ million)	n.a.	n.a.	n.a.	n.a.	102.0	99.0	114.2
Financial depth ratio (Money supply/GDP) (%)	22.5	21.7	20.9	21.5	34.5	22.6	20.6
Use of cashl ess payment instruments (no. of transactions in millions)	n.a.	n.a.	n.a.	n.a.	6.9	7.2	7.4

It appears that financial depth is relatively constant except for the unusual increase in 2009 most likely due to the decrease in GDP as oil productions declined resulting from plant refurbishment. The value of clearing house transactions as well as use of cashless payment instruments showed an upward trend since 2009. However, it seems that the data available does not support the theory regarding the positive relationship between an efficient PSS and financial stability. The possible explanation is that it might be due to the break in GDP growth in 2009 and 2010 causing the results for financial depth ratio to be out of the normal range.

4. Assessment of Current PSS Framework

The systemically important payment and settlement system in Brunei Darussalam is the Automated Cheque Clearing House (ACH) that mainly processes cheque payments. Since the country currently does not have corporate bond market or stock market or securities market, the assessment on the observance of Financial Market Infrastructure Principles will be done based on the ACH features and operations.

Therefore, the following assessments will only cover the FMI principles that relate to the PSS:

Principle 1: Legal Basis

The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions. An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.

As described in the PFMI report, legal risk is the risk of the unexpected application of a law or regulation, usually resulting in a loss, and it can also arise if the application of relevant laws and regulations is uncertain. It also includes the risk of loss resulting from a delay in the recovery of financial assets, or a freezing of positions resulting from a legal procedure.

The two basic pieces of legislation relevant to the PSS are the AMBD Order, 2010 and the Banking Order, 2006.

The AMBD Order Clauses 4 (1) c, 36 (1) (a), 36 (1) (g), 36 (2), 38, 43, 44, 52 (3) and (4) and 55 give explicit authority to the AMBD to, inter alia, (AMBD, 2013):

- Assist in the establishment and functioning of efficient payment systems;
- Develop and manage an inter-bank funds system;
- Provide for the development and maintenance of necessary infrastructure;
- Provide, at cost, custodial and registry facilities and set the conditions for their operations;
- Provide facilities for payment clearing and settlement;
- Ensure the safety soundness and efficiency of payment systems;
- Be exclusively responsible for the regulation, licensing, and oversight of payment, clearing and securities settlement systems;
- Require any payment system operator to be licensed and to adhere to conditions set;
- Regulate and oversee the issue and quality of payment instruments;
- Conduct inspections of premises of payment systems operators and participants;

- Require information from payment systems operators and participants;
- Require collateral to support liquidity facilities provided to a bank; and\
- Specify how a bank or financial institution shall clear and settle its balances.

The relevant clauses of the Banking Order, 2006 include:

- Sections 59-63 regarding actions of the AMBD when a bank becomes insolvent;
- Section 99 "Clearing House and Settlement of Balances between Banks", which (under the amendments caused by the AMBD Order) gives the AMBD the mandate to establish, oversee and control the activities of a national clearing house; and
- Section 101 gives direction on the priority of liabilities in an insolvent bank, which can affect finality.

Other Legal Framework Components

Other significant pieces of legislation already exist, making the framework of Laws relevant to the payment systems in Brunei relatively complete. These include (AMBD, 2013):

- Electronic Transactions Act (Revised, 2008)
- Criminal Asset Recovery Order (2012) which replaces the AML Act (2000)
- Consumer Protection Order (2011) which excludes financial services
- Securities and Market Order (due to be enacted by 2013 and which replaces the Securities Order of 2001)
- Money-Changing and Remittance Businesses Act (1995).

There is currently no legislation on Data Protection and Privacy, but this has been discussed, and for the Credit Bureau a special notice under the Banking Order was issued by the AMBD to assure suitable Data Protection measures are observed.

The Companies Act (1984), and as amended, contains provisions relating to bankruptcy and liquidation which may have an impact on finality of payment. There does not appear to be any clear statement about payment finality or netting in the banking legislation. This is the one major gap that needs to be filled. Clauses 59 and 62 of the Banking Order, 2006 may enable the AMBD to impose finality conditions on payments made by a bank which is in the insolvency process. Article 168 of the Companies Act implies that transactions (which can be interpreted to include payments) may not be executed after a winding-up order has been made, but does not seem to imply claw back of payments. The powers of Liquidators under the Act do not appear to permit claw back of payments already made, other than as a result of a court order. However, there is no explicit statement about this and it would be worthwhile to ensure that, in the context of the RTGS, there is no uncertainty about the irrevocable nature of settlements made in the CB money.

Furthermore, although the ACH has service contract clearly stating the procedure but there is no clear rules on delay or failure of payment. Thus, the area of the PSS legislation and regulatory framework that needs to be addressed is on the legal settlement finality to reduce legal risk and avoid the potential conflict of laws such as the insolvency law.

Principle 2: Governance

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

A formal clearing house agreement was signed between the BAB and HSBC in 2011 to formalise the governance arrangements. Whilst it is clear who is the owner of the ACH system, the service agreement does not really state who will be responsible in times of delay or failure of the settlement or where the defaulting banks can get liquidity support. The clearing house rules clearly specify that neither the management bank nor the BAB will be liable for the settlement or sub-settlement obligations for any defaulting bank to any other bank.

With regards to payment delay or failure, it is however clear what the AMBD can do if an ACH participant runs into short-term liquidity difficulty. The AMBD Order, 2010 provides the following provisions:

- Provision 36(1) (g) says that the ABMD may 'develop and manage an interbank funds system and establish the requirements for its participants.'
- Provision 43 – Payment System Facilities. The provision says that the 'Authority may provide facilities, including intra-day credit, to payment, clearing and securities settlement system, and their participants, to ensure the safety, soundness and efficiency of such system, without prejudice to

the development and management of an interbank fund system under Section 36(1)(g).

- Provision 52 – Lender of Last Resort. It gives the AMBD the power to grant financial assistance to eligible banks and financial institutions not exceeding 90 days as long as they are solvent and can provide collaterals as set by the AMBD.

The role of the BAB Sub-Committee on payment and settlement system should be made more transparent and laid out more clearly so that the regulator and payment participants are aware of the extent of their responsibilities. Furthermore, it will also ensure that the operation and business of the ACH runs smoothly and there are people who look after the development of the ACH in terms of innovating system, expanding its capacities, and ensuring adequate risk management are in place.

Principle 3: Framework for Comprehensive Management of Risks

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operations, and other risks.

The operating agreement signed between the BAB and HSBC (Brunei) and subsequently the service agreement between HSBC (Brunei) and the ACH participants stipulates a clear framework to especially manage the legal and operation risks of the PSS. For one, it enables the BAB to manage its risks as owner of the payment system by setting the powers and responsibilities of the management bank of the ACH, i.e. HSBC (Brunei). To manage the operations risks, the agreement clearly specifies the HSBC (Brunei)'s roles in terms of providing the clearing house equipment, software, personnel, operating procedures, procuring insurance in connection with the management of the clearing facilities as well as lays out what functions still remain with the BAB. The latter encompasses setting the clearing house rules, deciding the improvement to the clearing house equipment and software as recommended by HSBC (Brunei), and reimbursing HSBC (Brunei) of all expenses incurred by HSBC (Brunei) in the provision, management, and operation of the clearing facilities.

In terms of managing the legal risk, the 'confidentiality' clause in both agreements plays a critical role to negate the perception that the management bank has a market advantage over the other banks due to its knowledge of the liquidity position and the customer profiles of those banks whose payments go through the ACH. For this purpose, the agreements stipulates that a strict Chinese wall is established in the management bank's operations whereby any information pertaining to the clearing facilities are only known to the staff operating the facilities and these staff are required to sign a declaration of confidentiality so that they are aware of the confidentiality obligations.

The corresponding service agreement between HSBC (Brunei) and other banks, on the other hand, provides a comprehensive framework to manage the legal and operation risks in terms of clearly stipulating the responsibilities of the management bank with respect to operating the clearing facilities, providing the rules of the clearing house as set by the BAB, establishing the operating procedures, service levels and charges, and dispute settlement.

The current missing link in the risk management framework is a comprehensive provision for managing the credit and liquidity risks of the PSS in Brunei. Although the service agreement to some extent mitigates liquidity risk since the management bank will cut off a defaulting bank from the clearing house settlement on the same day, the clearing house, however, is not in a position to offer temporary liquidity support to the defaulting bank. Thus, the other banks waiting for the payment may have to bear some liquidity crunch. Nevertheless, as mentioned before, the legal framework to support the management of credit and liquidity risks is already in place, especially as provided in the AMBD Order, 2010. The next step is laying out more comprehensive procedures for payment finality and making sure the availability of temporary liquidity support.

Principle 4: Credit Risk

An FMI should clearly measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence.

Credit risk to the ACH is minimal since settlement is carried out in settlement accounts held by HSBC (Brunei) for each bank. However, these accounts are not kept funded. Once the banks know their net positions, those in debit transfer funds from accounts in Singapore to HSBC in Brunei via SWIFT (or HSBC internal funds transfer) to cover the settlement. Although this process can result in late funding, there has never been a situation where the settlement was held up overnight.

The final account postings are done by the paying and collecting banks on the evening of Day 3.

Principle 5: Collateral

An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

This principle is not yet practiced in Brunei's PSS since liquidity lending for the PSS is yet to be established. However, provisions for accepting collateral against short-term credit facility provided by the AMBD is already in place, namely in Provision 39 of the AMBD Order, 2010 on 'Open Market and Credit Operations' and also Provision 52 on 'Lender of Last Resort'.

Principle 7: Liquidity Risk

An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities. An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

The current set up of the ACH does not impose liquidity risk to the operator because the risk is only faced by the creditors.

Further enhancement to the PSS can be carried out in the future to activate the inter-bank markets as well as payment system facilities as provided for in 36(1)(g) and 43 in the AMBD Order, 2010. Subsequently, more active liquidity management will be forthcoming, and thus the need to follow Principle 7 closely.

Principle 8: Settlement Finality

A FMI's rules and procedures should clearly define the point at which settlement is final. A FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk.

Settlement positions are calculated by the Clearing House by 3 pm. Settlement is carried out in settlement accounts held by HSBC (Brunei) for each bank. However, these accounts are not kept funded. Once the banks know their net positions, those in debit transfer funds from accounts in Singapore to HSBC in Brunei via SWIFT (or HSBC internal funds transfer) to cover the settlement. Although this process can result in late funding, there has never been a situation where the settlement was held up overnight. The final account postings are done by the paying and collecting banks on the evening of Day 3 of presenting the cheques.

The Companies Act, 1984, and as amended, contains provisions relating to bankruptcy and liquidation which may have an impact on the finality of payment. There does not appear to be any clear statement about payment finality or netting in the banking legislation. This is the one major gap that needs to be filled. Clauses 59 and 62 of the Banking Order, 2006 may enable the AMBD to impose finality conditions on payments made by a bank which is in the insolvency process. Article 168 of the Companies Act implies that transactions (which could be interpreted to include payments) may not be executed after a winding-up order has been made, but does not seem to imply claw back of payments. The powers of Liquidators under the Act do not appear to permit claw back of payments already made, other than as a result of a court order. However, there is no explicit statement about this and it would be worthwhile to ensure that, in the context of the RTGS, there is no uncertainty about the irrevocable nature of settlements made in CB money.

Principle 9: Money Settlements

A FMI should conduct its money settlements in CB money, where practical and available, to avoid credit and liquidity risks.

All payments in the ACH are currently settled in commercial bank money since the AMBD does not provide intra-bank settlement service. Credit risk to the ACH is minimal since settlement is carried out in the settlement accounts held by HSBC (Brunei) for each bank. The current set up of the ACH does not impose liquidity risk to the operator of the ACH, i.e. HSBC (Brunei) because the risk is only faced by the creditors of the settlement.

Further enhancement to the PSS can be carried out in the future to activate the inter-bank markets as well as the payment system facilities as provided for in 36(1)(g) and 43 in the AMBD Order, 2010. Subsequently, more active liquidity management will be forthcoming, and thus the need to follow Principle 7 closely.

However, there can still be some inherent risks faced by the PSS participants since the settlement accounts are held with one commercial bank, and if the commercial bank faces illiquidity or insolvency, it can affect the accessibility to the settlement accounts. Nevertheless, these risks are mitigated with overall strict supervision and regulation of the banks by the AMBD which ensures the banks are liquid and practise sound operations.

Principle 10: Physical Deliveries

A FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

There is a clear rule stated in the service agreement regarding the delivery of inward cheques and CD file for each Paying Bank after the cheques are sorted.

Principle 13: Participant-default Rules and Procedures

A FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.

The default rule of the ACH is clearly stated in the service agreement between the management bank, HSBC and the other banks. If any bank does not have sufficient funds in its settlement account on any given day and cannot, at once, make arrangements to cover the deficit, all banks will be notified of the defaulting case. The defaulting bank's clearing for the day will be deleted from the clearing house settlements and its clearing figure adjusted with all other banks interested.

Meanwhile, if the defaulting bank remains in default of its settlement obligation, the ACH may refuse clearing facilities for this bank and it may be suspended from the clearing facilities upon agreement by the Chairman of the BAB. Once the suspension is in effect, the management bank will notify all the other banks regarding the suspension so that the other banks will not receive further articles drawn upon or negotiated through the bank. Clearing facilities may be restored to the bank under suspension once approved by the Chairman of the BAB and upon payment of all its settlement obligations.

Principle 15: General Business Risk

A FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

There is no clear indication whether the BAB has performed any assessment on the current business model of the ACH although there have been anecdotal evidence that the Sub-Committee of Payment System under the BAB discussed payment-related proposals, initiatives for efficiency enhancement, technical problem and interbank payment transaction tariff; and approval from the BAB is required for their implementation.

Principle 17: Operational Risk

A FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

To manage the operations risks, the agreement between the BAB and HSBC (Brunei) as well as the service agreement between HSBC (Brunei) and the other banks spell out clearly the responsibilities of all parties in the agreements, and the procedures for clearing. At the same time, HSBC (Brunei) as the management bank can consult the BAB, as the owner of the ACH, to clear up any operational problem or to improve certain procedures, thus mitigating the losses from operational risks. HSBC (Brunei) is also required under the agreement with the BAB to prepare a contingency plan in the event of inaccessibility of the clearing facilities either the physical building or the system.

Principle 18: Access and Participation Requirements

A FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

The ACH is fairly open since all members of the BAB can join the ACH as stated in the Clearing House Rules whereby “each member of the Association shall be entitled to the use of the Clearing Facilities.”

Principle 21: Efficiency and Effectiveness

A FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.

It is yet to be ascertained whether regular review of the effectiveness and efficiency of the ACH have been done by the BAB but its seems that they are thinking about having an independent ACH with a view of the AMBD taking a more central role in terms of co-owning the clearing house as well as being involved in the settlement process. The ACH has been in operation for 10 years and so far there has been no major issue or any failure reported to the AMBD or Ministry of Finance (the authority responsible for regulating and supervising the banks before the establishment of the AMBD). Therefore, the current arrangement of the clearing house can be considered as broadly efficient and effective in terms of laying out the rules and procedures in meeting the requirements of its participants and in response to the current market demands.

However, there is room for improvement in the ACH that includes shortening of the cheque clearing cycle of currently 4 days, and also further use of cheque truncation to reduce collection time from bank branches and the need to return rejected cheques.

Principle 23: Disclosure of Rules, Key Procedures and Market Data

A FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. The relevant rules and key procedures should also be publicly disclosed. A FMI should disclose clear description of the system design and operation, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they incur by participating in the FMI.

The rules and procedures are fully disclosed to the participants in the service agreement of the ACH, including members' rights and obligations. Upon request, the clearing house provides the clearing house data, such as value and volume of cheques cleared to the AMBD.

5. Policy Implications

Since Brunei Darussalam adopts a currency board arrangement, there is no active implementation of monetary policy. Unlike other central banks, Brunei has limited ability to influence the interest rate since the issuance of currency must always be 100% backed up with foreign assets. Therefore, the avenue for achieving price stability is done through effective anchoring of the Brunei dollar to the Singapore dollar at one-to-one parity which has been made possible by the signing of the CIA between Brunei Darussalam and Singapore. As both countries are very open economies and rely heavily on exports and imports, the management of currency as the main thrust of Singapore's monetary policy has underpinned the macroeconomic stability in both countries. Since monetary policy is quite dormant in Brunei, the connection between the monetary policy and the payment system is rather weak, and thus it is believed that the payment system has a greater role for financial stability in the country.

The current PSS arrangement operates like a self-regulatory organisation and, despite the smooth operation of the system, it does not capture other large value payments that are being transmitted by paper instructions through SWIFT as well as government payments that are being handled by Ministry of Finance. Furthermore, the clearing cycle of 4 days can be made shorter and certain risks elements such as operational, credit and liquidity risks need to be addressed to make the ACH more efficient and to reduce the risks of financial instability.

With the establishment of the AMBD, the legislation on the PSS becomes more comprehensive. The next step is to set up an independent oversight department to oversee the payment system currently operated by HSBC (Brunei) and the national payment system in the future. A comprehensive oversight legislation similar to what the neighbouring countries already have in place, can reduce uncertainty as provisions from the different legislations are brought together to give the AMBD complete oversight functions. In the meantime, while waiting for the enactment of relevant laws, the urgent aspect that can be addressed by the AMBD is to advise the ACH on the stipulation of the settlement finality which will enhance trust in the financial system.

As stated in the AMBD's Monetary Policy Statement in 2012, "high on the AMBD's agenda will be the enhancement and further strengthening of the financial sector infrastructure. To this end, the modernisation of the national payment and settlement system is especially crucial in the AMBD's efforts to further develop the capital market." Hence, the AMBD is determined to launch its Payment and Settlement Payments Blueprint in the coming months, not only as a positive step towards building a safe, efficient and modern PSS, but also to bridge the financial infrastructure gap which will facilitate the development of other financial markets and instruments, such as Islamic finance instruments, bond market, re-insurance, and stock exchange.

6. Conclusions

Being a country with small population, Brunei's financial system is quite basic as compared to other neighbouring countries. The banking system has about 85% share of the whole financial system. Therefore the most important payment system in the country is still payment by cheques which are cleared through the ACH owned by the BAB. The ACH thus can be categorised as the main FMI in Brunei. Apart from the issuance of government Sukuk and some private bond issuance, the capital market is still underdeveloped, thus explaining for the absence of a securities settlement system and central securities depositories in Brunei.

Having a currency board system as the monetary policy thrust in Brunei limits the connection between the payment system and the monetary policy. The strict discipline of having to at least have 100% foreign assets back-up to every currency issued prevents the AMBD from actively influencing the interest rate. Nevertheless, an efficient PSS is still vital to the AMBD when it starts to manage liquidity in the banking system actively together with its need to fulfill its objectives of ensuring the stability of the financial system as well of assisting in the establishment and functioning of efficient payment systems and overseeing them.

The assessment of the ACH against the FMI principles issued by the CPSS found that the ACH, at the current form and operating environment, can satisfactorily fulfill many of the established principles, but with differing degree of observance. The principles generally observed are those relating to general organisation (Principle 1-3), default management (Principle 13), general business and operational risk management (Principle 15 and 17), access (Principle 18 and 19), and transparency (Principle 23). Meanwhile, the areas that need attention are in meeting credit and liquidity risk management (Principle 4 to 7) due to the absence of clear payment finality and liquidity support arrangements. Given that the law allows the AMBD to provide the PSS with liquidity support, if needed, the next step is to lay out the operational guideline to activate these provisions.

The AMBD is pressing on with its agenda to modernise the PSS and the move cannot be more timely given the continuing financial uncertainties in certain part of the world. This entails enhancement of the PSS where, firstly safety of the PSS in Brunei must be strong enough to overcome the negative spillovers from the global financial difficulties; and secondly, the PSS needs to be more efficient if Brunei is to develop a deeper and wider financial system, enabling it to tap into the vast investment capital which are shifting away from the troubled regions.

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