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Dollarization in the Maldives

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Abstract

This paper aims to evaluate the degree of dollarization in the Maldivian economy. Utilizing three measures identified from the literature on the subject, dollarization ratios have been constructed to assess the degrees of deposit and credit dollarization, prevalent in the local economy. To this end, data on the currency composition of deposits held at and credit extended by the commercial banks in the Maldives from 1990 to November 2015 (obtained from the Maldives Monetary Authority), have been scrutinised to study dollarization trends over the 25 year period. Further, the paper will explore the causes and reasons for the high degree of dollarization, and posit explanations for the identified trends.

1. Introduction

Dollarization[1] refers to the extensive use of foreign currency in a country, either in place of the local currency or alongside the local currency. Foreign currency may serve all three purposes of money; that is as the medium of exchange, a unit of account and a store of value. When the country has abandoned its local currency and uses a foreign currency as the legal tender, the country is officially or fully dollarized. Conversely, when a country uses foreign currency extensively for financial transactions and as holdings of financial assets, then the country is partially dollarized.

The rufiyaa is the legal tender in the Maldives, and the country has maintained an exchange rate policy since 1994 that pegs the rufiyaa to the US dollar. Despite the exchange rate peg, the Maldives has a liberal capital account and there are no official

1 In this paper, the term dollarization will generally be used to refer to partial or unofficial dollarization and official dollarization will be referred to as that or full dollarization.

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exchange rate controls. Both residents and non-residents can freely import and export capital through the foreign exchange market. There are also no restrictions in the Maldives on holding of foreign currency by residents or non-residents, and Maldivians are free to maintain foreign currency accounts both at home and abroad, and businesses and individuals often hold rufiyaa and US dollar accounts in domestic banks.

The foreign exchange market in the country is regulated by the Monetary Regulations issued by the Maldives Monetary Authority. This stipulates that except for international transactions of goods and services, all financial transactions in the country are carried out in rufiyaa. However, the regulation makes an exception to this rule in the case of payment of taxes, fees and levies to the government by foreign income earning sectors and foreign parties in the country. These payments have to be made in foreign currency if mandated by the government. Further, an annual license (known as the money changer's license) from the MMA is required if a business wishes to engage in the selling and buying of foreign currencies.

The use of foreign currency, specifically the use of the US dollar, is quite extensive in the Maldives. While the rufiyaa is the legal tender, the US dollar also serves to fulfil the three basic functions of money. Therefore, both currency substitution (foreign currency used as a medium of exchange and unit of account) and asset substitution or financial dollarization (foreign currency used as a store of value) are prevalent in the country.

The dollarization of loans, normally referred to as credit dollarization, is also high in the Maldives. This is also an outcome of the high deposit dollarization and the high degree of openness of the economy, with the country highly dependent on imports and exports contributing to a significantly large proportion of the GDP. Further, the low levels of domestic savings in the country and the ability of foreign banks to borrow from their headquarters to on-lend in the Maldives have also contributed to the high level of credit dollarization in the country.

A thorough analysis of the degree and magnitude of dollarization in a country is important in evaluating the choice of exchange rate regime. This is because high levels of dollarization can undermine the effectiveness of monetary and exchange rate policy. To shed some light into the degree of dollarization in the Maldives, this paper analyses the extent of dollarization in the Maldives by examining different measures of dollarization.

2. Measurement of Dollarization

The most common measurement of dollarization is the ratio of foreign currency deposits in the domestic banking system to broad money. Another related measure is the ratio of foreign currency deposits to total deposits. However, these measures of dollarization may be grossly underestimated, as they cover only the foreign currency deposits in the banking system. The foreign currency deposits in the banking system are generally a good indicator of the extent of dollarization in a country. However, foreign currency in circulation in the domestic economy (which will show the level of currency substitution) and foreign currency deposits held abroad by the country's residents are equally important to gauge the full extent of dollarization in the country. Due to the predominance of the US dollar in the Maldivian economy, it is widely accepted that foreign currency holdings and transactions outside the banking system are common, and so is the holding of foreign currency deposits abroad. However, in most of the developing countries, as is the case in the Maldives, data on foreign currency in circulation and foreign currency deposits held abroad by residents are not available. The lack of such data has been one of the serious impediments in the empirical research on developing countries. As Calvo and Vegh (1992, p. 21) noted:

> In the final analysis, the relevance of currency substitution is an empirical issue … At the empirical level, the study of currency substitution faces a fundamental problem: there is usually no data available on foreign currency circulating in an economy. Therefore, the importance of currency substitution is basically unobservable.

However, there have been various attempts to calculate the amount of foreign currency in circulation indirectly. Erasmus, Leichter, & Menkulasi (2009) used the local currency multiplier as a proxy for the foreign currency multiplier to estimate the foreign currency in circulation in Liberia. By using the foreign currency in circulation, a broader measure of dollarization was obtained, which is the ratio of foreign currency in circulation and foreign currency deposits to Effective Broad Money (EBM). EBM differs from broad money in that the former includes foreign currency in circulation. A measure of loan dollarization, which is the ratio of loans denominated in foreign currency to total loans, is also a useful indicator. Public debt dollarization is another indicator of dollarization, and is measured as the ratio of foreign currency denominated public debt to the total public debt of the country (Levy-Yeyati, 2006).

Reinhart, Rogoff and Sevastano (2003) used a much broader measure of dollarization in a study of dollarization in developing countries, by constructing a composite index of three indicators of dollarization. These are foreign currency bank deposits as a percentage of broad money; total external debt as a percentage of GNP; and foreign currency denominated or linked domestic debt of the government as a percentage of total domestic debt of the government. Each of these indicators are measured as indices that have a value from 0 to 10, allowing for a composite index to measure the degree of dollarization on a scale of 0 to 30.

The various indicators of dollarization that have been used to analyse dollarization are summarised in Table 1.

Table 1: Measures of Dollarization

Dollarization ratio [a]	**Definition**
DR1 = FCD / BM	Foreign currency deposits (FCD) in the domestic banking system as a percentage of broad money (BM) which is M2
DR2 = FCD / TD	FCD in the domestic banking system as a percentage of total deposits (TD)- this ratio is known as deposit dollarization
DR3 = (FCC + FCD) / EBM	Foreign currency in circulation (FCC) and FCD as a percentage of EBM-EMB is BM plus FCC
DR4 = FCL / TL	Loans denominated in foreign currency (FCL) as a percentage of total loans (TL)
DR5 = FCPD / TPD	Foreign currency denominated public debt (FCPD) as a percentage of total public debt (TPD)
DR6 = Composite Index (DR1; ExD / GNP; FCDDG / TDDG)	Composite index of three indicators of dollarization: i) foreign currency bank deposits as a percentage of BM; ii) total external debt (ExD) as a percentage of GNP; and iii) foreign currency denominated or linked domestic debt of government as a percentage of total domestic debt of the government (TDDG)

[a] Since there are several measures of and no standard names for different measures, in this paper, dollarization ratios are labelled as DR1, DR2, DR3, DR4, DR5 and DR6, for ease of use.

Of the dollarization ratios listed in Table 1, only DR1, DR2 and DR4 can be calculated for the Maldives, due to the lack of required data for other ratios. As such, DR3 cannot be calculated as data on foreign currency in circulation is not available for the Maldives. Some studies have attempted to calculate foreign currency in circulation by using the local currency money multiplier, assuming that it will be the same as the foreign currency multiplier. However, given that in the Maldives, domestic transactions in foreign currency are not widespread, it is unrealistic to assume that the money multipliers for the two currencies will be the same. The dollarization ratio DR5 is also not calculable for the Maldives, as data on foreign currency denominated public debt are not available. Nor is the dollarization ratio DR6, which is the composite index of dollarization put forward by Reinhart et al. (2003), able to be constructed for the Maldives, as the data on the foreign currency denominated domestic debt of the government has some data issues that cannot be resolved.

3. Degree of Dollarization in the Maldives

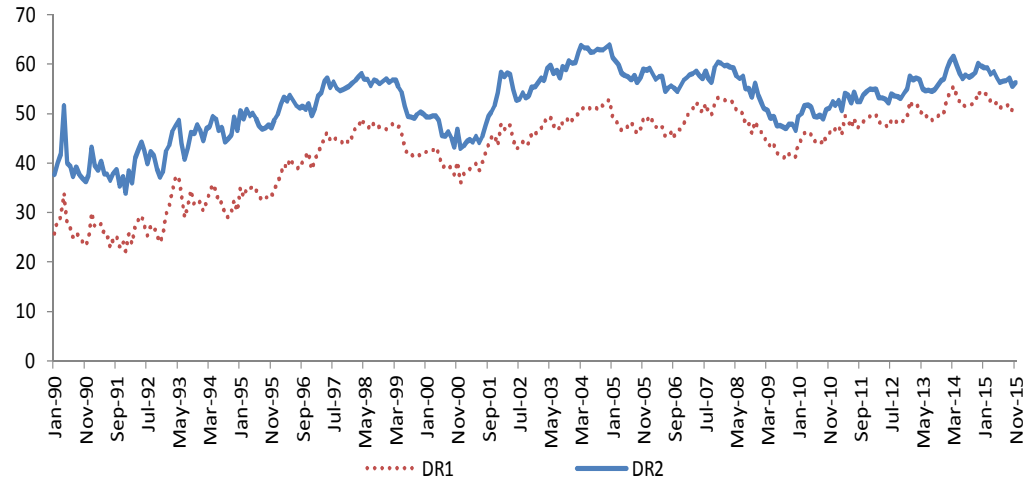
3.1 Deposit Dollarization

According to Baliño, et al.(1999), a dollarization ratio, as measured by the ratio of foreign currency deposits to broad money, higher than 30 per cent indicates that the economy is highly dollarized. In the Maldives, the dollarization rate has remained over 30 per cent since the mid-1990s. This measure of dollarization only includes onshore deposits, necessarily excluding offshore deposits and foreign currency in circulation in the economy because such data are not available for the Maldives.

As mentioned before, the ratios of foreign currency deposits (onshore) to broad money (DR1) and foreign currency deposits (onshore) to total deposits (DR2) are the most easily available and used indicators of dollarization. The developments in these ratios are shown in Figure 1. In the analysis of dollarization in the Maldives, this paper will use DR2, as this is a better indicator than DR1. This is because DR1 underestimates the relative weight of foreign currency in the banking system as broad money includes only the local currency in circulation and not the foreign currency in circulation. The levels of dollarization in the Maldives are seen, in Figure 1, to have remained extremely high, especially over the last 15 years. The high dollarization ratios can be attributed to several factors, including the dominance of the tourism sector, the import dependence of the economy and the lack of restrictions on holding foreign currency and foreign

currency accounts in commercial banks. Four episodes of declines in dollarization ratios are observed. The first episode started in early 1999, but the decline became more pronounced in the year 2000, before rising again in mid-2001. The second episode of decline in the dollarization rate started after the 2004 Indian Ocean tsunami, when there was an abrupt decline in tourism flows. The rate rose again in late 2007, but not to the pre-tsunami levels, and again started declining over 2008 and 2009. Since then there has been a steady increase in the ratios until the end of 2013, after which the dollarization ratios is seen to be gradually trending downwards. However, the dollarization ratio as measured by DR1 and DR2 still remains within a 50 – 60 per cent range.

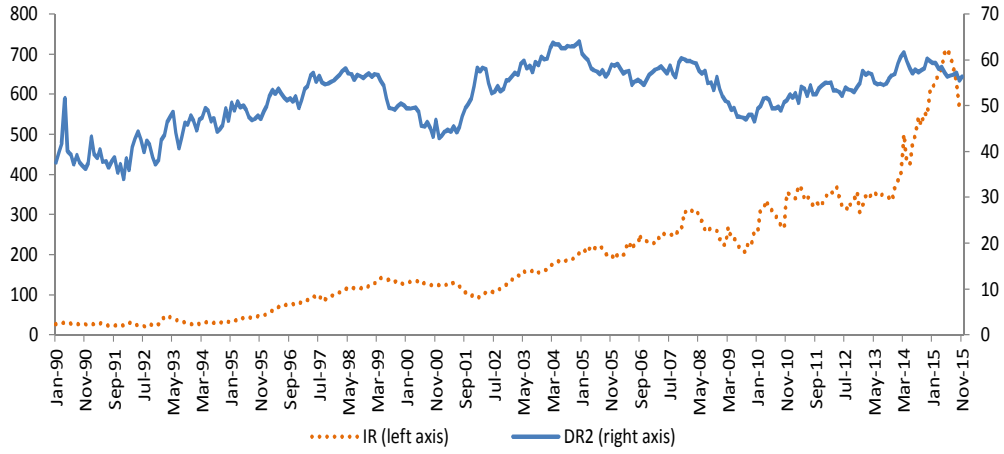
Figure 1: Degree of Dollarization in the Maldives, 1990–2015
(percent)



Source: Maldives Monetary Authority

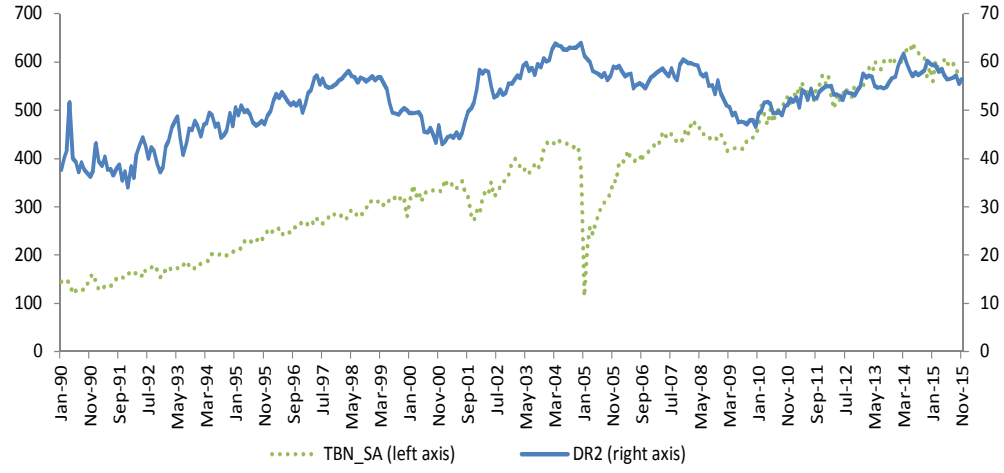
In the dollarization literature, a fall in the dollarization ratio is taken as an indication of macroeconomic stability and low inflation (Levy-Yeyati & Sturzenegger, 2001a). However, in the case of the Maldives the fall in dollarization ratios are associated with macroeconomic instability, especially following shocks to the tourism sector and international reserves. This can be seen in Figures 2 and 3. The dollarization ratio tracks both international reserves and tourism flows (indicated by seasonally adjusted bed nights) relatively closely.

Figure 2: Dollarization Ratio (DR2) and International Reserves (IR), 1990–2015
(millions of US dollars; percent)



Source: Maldives Monetary Authority

Figure 3: Tourist Bednights, Seasonally Adjusted (TBN_SA) and Dollarization Ratio (DR2), 1990–2015
(thousands; percent)



Source: Maldives Monetary Authority

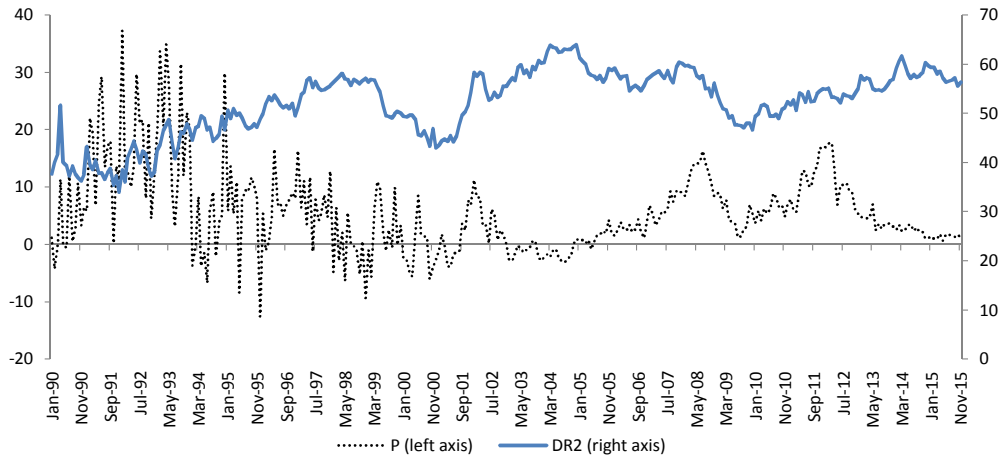
Tourism growth naturally leads to greater foreign exchange flows and the dollarization of deposits. As the main inputs to tourism require dollars (imports and the wages of expatriates) as do taxes paid to the government, deposit dollarization is inevitable. Further, with increased foreign exchange flows into the country with the growth in tourism, international reserves also increases. The correlation coefficients reported in Table 2 also shows that both international reserves and tourist bed nights are positively and highly correlated with dollarization ratio.

Table 2: Correlation Coefficients

	Dollarization Ratio (DR2)
International Reserves	0.5
Tourist Bednights (SA)	0.6
Inflation rate (P)	-0.3

According to the literature on dollarization, there should be a strong positive relationship between the dollarization ratio and the inflation rate. However, this relationship is not strong for the Maldives, as can be seen from Figure 4. This is further supported by the

Figure 4: Dollarization Ratio (DR2) and Inflation Rate (P), 1990–2015
(percent)



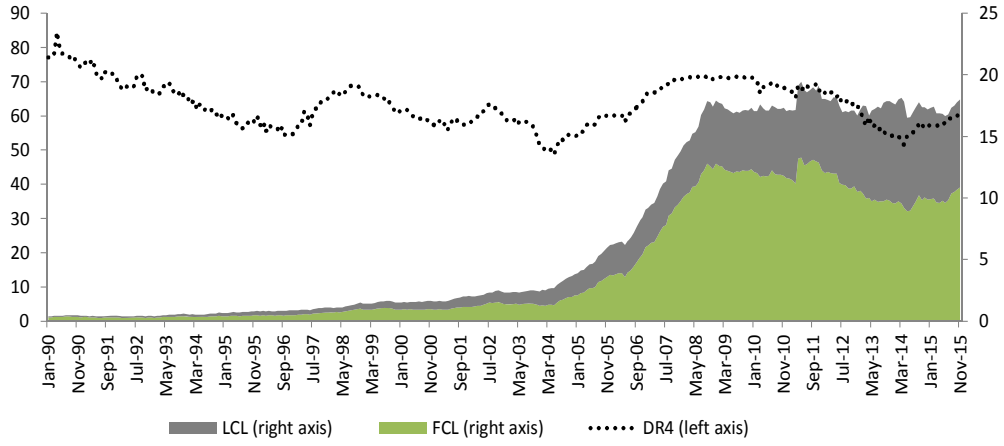
Source: Maldives Monetary Authority

correlation coefficient between the inflation and dollarization rate, which is negative and low (Table 2). The negative relationship can be explained by the public perception that high inflation is a sign of macroeconomic instability and leads to dollar shortages in the country. This may drive foreign currency deposits offshore or out of the domestic banking system. Given that the dollarization measure used in the study excludes the offshore foreign currency deposits and foreign currency in circulation, the positive relationship between inflation and dollarization may not be evident, even if such a relationship truly exists.

3.2 Credit Dollarization

The dollarization of loans, normally referred to as credit dollarization, is also high in the Maldives. Figure 5 show the levels of foreign currency and local currency loans together with the loan-dollarization ratio, DR4. This is simply the ratio of foreign currency loans to total loans by the commercial banks in the Maldives. Although loan-dollarization ratio has fallen from a high of above 70 per cent in the early 1990s, with the growth in rufiyaa loans in recent years, the ratio still remains above 50 per cent.

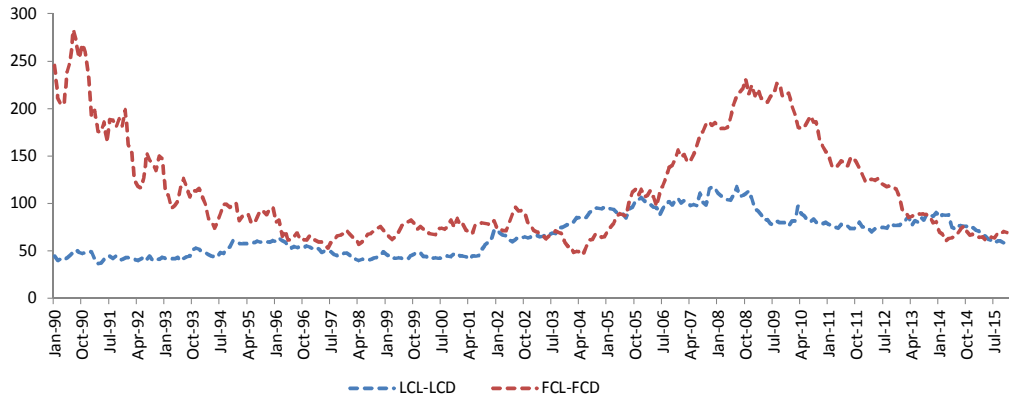
Figure 5: Dollarization Ratio (DR4) and Foreign Currency Loans (FCL) and Local Currency Loans (LCL), 1990–2015
(percent; millions of rufiyaa)



Source: Maldives Monetary Authority

There are several reasons for the high level of credit dollarization in the Maldives. They include the high level of deposit dollarization; low level of domestic savings; the dominance of foreign banks in the financial sector; and the high degree of openness of the economy. Due to the high level of deposit dollarization in the Maldives, banks seek to match their foreign currency position by extending foreign currency loans. In addition, there is a huge demand for foreign currency loans as most of the investments in the country are highly import intensive. The low level of domestic savings, especially in rufiyaa and the dominance of foreign commercial banks in the country also encourages credit dollarization as they mainly borrow from their headquarters in foreign currency to on-lend to the domestic market. Close to 60 per cent of credit extended by the commercial banks is denominated in foreign currency (US dollars) and of that, about 70 per cent goes to the tourism sector. Given this high level of credit dollarization, the loan to deposit ratio of commercial banks in foreign currency remain high, leaving the banking system vulnerable to dollar liquidity shocks. Foreign currency loan to deposit ratio which rose dramatically during the period 2004-09, has steadily declined since the peak of over 200 per cent in 1999. The decline is largely explained by the stagnant growth in credit to the private sector by the commercial banks, especially in foreign currency following the Global Financial Crisis coupled with the growth in foreign currency deposits as the economy recovered. In contrast, loan to deposit ratio in domestic currency, which has remained at relatively moderate levels throughout the period is shown in Figure 6.

Figure 6: Foreign Currency Loan to Foreign Currency Deposit Ratio (FCL-FCD) and Local Currency Loan to Local Currency Deposit Ratio (LCL-LCD), 1990–2015
(percent)

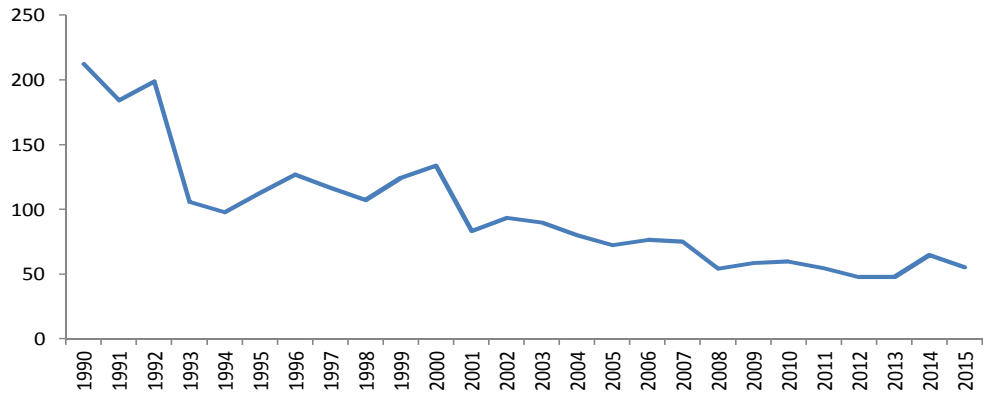


Source: Maldives Monetary Authority

The high level of dollarization in the country raises important issues for the financial sector of the country, in terms of the management of liquidity and solvency risks in the banking system. In a highly dollarized economy, the function of the central bank to act as a lender of last resort is limited. This is because the central bank cannot directly control the foreign currency component of the broad money and the money supply becomes endogenous. As a result, the banking system is required to keep sufficient international reserves to cover foreign currency deposit liabilities.

As regards the solvency risks, this may be because of balance-sheet effects of exchange rate changes due to a currency mismatch between the assets and liabilities of the banks, or due to the effect of foreign currency lending on non-foreign currency earning sectors. The latter poses a threat to financial sector viability in the event of an exchange rate devaluation, which would essentially increase the repayment burden for borrowers of foreign currency loans (Goldstein & Turner, 2004). In the case of the Maldives, as discussed above, over 70 per cent of the foreign currency loans are extended to the largest foreign currency earning sector—the tourism sector. However, the remaining 30 per cent, which was equivalent to about 15 per cent of GDP in 2010, continue to carry a risk for the banking sector in the event of a devaluation of the exchange rate.

Figure 7: International Reserves Coverage of Foreign Currency Deposits 1990–2015
(percent)



Source: Maldives Monetary Authority

As seen in Figure 7 above, the international reserves coverage of foreign currency deposits in the banking system has declined substantially over the period 1990–2015. Since 2001,

the international reserves of the currency as a share of foreign currency deposits have been below 100 per cent. In the last few years, the ratio has fallen to around 60 per cent except in 2014 when it stood at 64 per cent. The lower the reserve coverage, the less able the central bank will be to prevent a liquidity crisis in the event of a sustained shock to the country's balance of payments.

4. Conclusion

The dollarization ratio as measured by the ratio of foreign currency deposits to total deposits has remained high in the Maldives. The dollarization ratio used in this paper is limited in the sense that it does not include foreign currency in circulation and offshore foreign currency deposits by residents. However, it still provides an adequate indicator for analysing the dollarization process in the country, given that the legal and institutional framework has not changed significantly during the period under analysis.

The analysis of the degree of dollarization conducted here showed that it has remained high in the Maldives over the past decades. Unlike in most other highly dollarized economies, in which dollarization rose following severe macroeconomic imbalances and high and persistent inflation rates, such economic factors do not appear significant for the Maldives. Rather, dollarization has followed the growth in tourism and it has been driven by institutional and structural factors in the economy.

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