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Financial Interconnectedness and Financial Sector Reforms in the Caribbean

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Prepared by Sumiko Ogawa, Joonkyu Park, Diva Singh, and Nita Thacker[1]

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Abstract

Financial sector linkages have increased continuously in the Caribbean with cross border capital flows and financial conglomerates dominating the financial system. While the greater interconnectedness can heighten systemic risks and likelihood of contagion, it can have positive impacts provided the regional authorities take steps to prevent the systemic risk. In this context, financial sector reform measures aimed at bolstering and harmonizing prudential regulations in line with international best practices, the strengthening and enhancement of financial sector supervision to include cross border linkages through consolidated supervision, increased cooperation across supervisors in the region, and the establishment of deposit insurance and crisis resolution frameworks will be critical to maintain financial sector stability and minimize the repercussions of any negative shocks.

JEL Classification Numbers: F36, G21, G22, G23, G28

Keywords: financial interconnectedness, financial sector in the Caribbean region, regulatory and supervision system

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I. INTRODUCTION

Financial sector linkages have increased continuously in the Caribbean with cross border capital flows and financial conglomerates dominating the financial system.[2] This has occurred largely through foreign banks' dominant presence, mainly by Canadian banks, and foreign participation in insurance markets and pension funds, securities trading abroad and direct borrowing of domestic firms in international markets. However, most of these developments have been sui generis, without any formal agreements, with the exception of the Eastern Caribbean Currency Union (ECCU), where there is a common central bank (based on the 1983 Agreement) and common stock and government securities markets. Barbados, Jamaica, Organization of Eastern Caribbean States (OECS) and Trinidad and Tobago, also have an agreement to cross list securities on their stock markets.

While increased financial integration has facilitated the flow of funds and financial intermediation, and allowed the Caribbean countries to overcome scale constraints, the increased interconnectedness has also built systemic risks and increased the likelihood of contagion. This was evident most recently when the collapse of the CL Financial Group sent repercussions throughout the Caribbean region. The collapse of the CL Financial Group highlighted two important broader issues. First, there is little information and systematic analysis of the interconnectedness between financial institutions and the systemic risks arising from this interconnectedness. Second, there is a critical need for financial sector reforms, including to: (i) enhance supervision on both banks and non-banks, and harmonize supervisory standards; (ii) develop a coordinated approach to supervision; and (iii) ensure closer cooperation and information sharing among supervisors.[3]

The main focus of this paper is to investigate the degree of interconnectedness in the financial sector and the vulnerabilities posed by such interconnectedness. The paper also discusses the current state/structure of institutional arrangements for financial sector supervision in the different countries in the region and the reforms needed to strengthen supervision and contain spillover effects in the event of negative shocks. In light of the interconnectedness of the financial sector, reforms should aim at enhancing supervision that transcends national boundaries. Harmonized supervision and cooperation on supervisory and regulatory issues, including deposit insurance and crisis resolution frameworks at the

[2] The Caribbean countries covered in this paper are The Bahamas, Barbados, Belize, the Eastern Caribbean Currency Union (ECCU) countries, Guyana, Jamaica, Suriname and Trinidad and Tobago. The ECCU consists of Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and two British territories of Anguilla and Montserrat; the OECS consists of the ECCU countries and British Virgin Islands.

[3] Following the CLICO crisis, the Caribbean Community (CARICOM) Heads of Government, at their July 2009 meeting requested regional central banks and other stakeholders to put in place a framework for regional financial stability to increase resilience both to exogenous shocks and to intra-regional stresses.

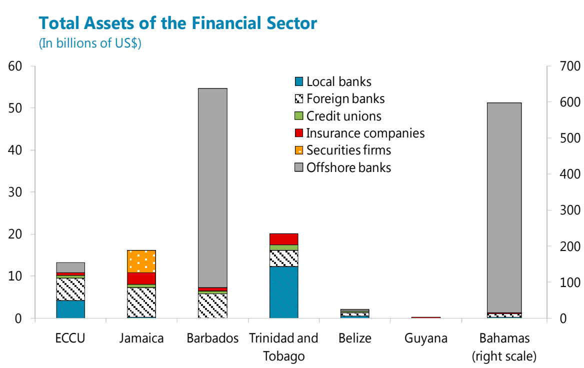
regional level, are seen as critical to prevent regulatory arbitrage and strengthen financial sector stability.

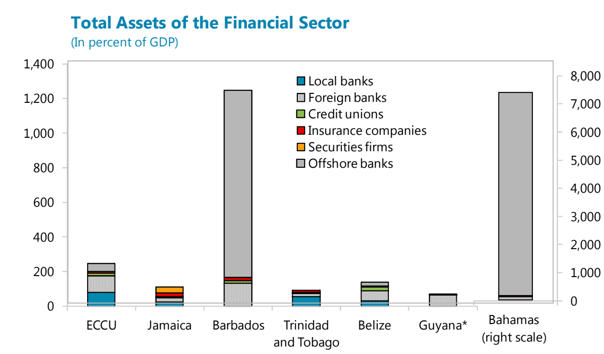
The paper is organized as follows. Section II gives an overview of the structure of the financial sector in the Caribbean and recent developments. Section III analyzes the cross border linkages using the principles of network analysis; given the paucity of data on these linkages, we use several different data sets to understand the nature and depth of the linkages and the implications for systemic risk. Section IV reviews the current status of financial sector supervision in the region. Section V provides some recommendations for harmonizing and standardizing prudential regulations to limit regulatory arbitrage and discusses some areas where this would be most beneficial[4], and Section VI provides main conclusions.

II. Structure and State of the Financial Sector in the Caribbean[5]

A. Structure of the Financial Sector

The financial sector in the Caribbean is large relative to the size of the economies and dominated by banks, although non-bank financial institutions (NBFIs) are becoming important. The total assets of the financial sector, excluding offshore banks, amount to 124 percent of the regional GDP, with the banking system accounting for some 91 percent and non-bank financial institutions such as credit unions and insurance companies accounting for the rest. The Bahamas and Barbados have significant offshore banking sectors, equivalent to 72 times and 11 times their respective economies, far outstripping the size of the onshore sector. Some of the ECCU countries also have offshore banking sectors, although on a smaller scale of 45 percent of the sub-region's GDP.





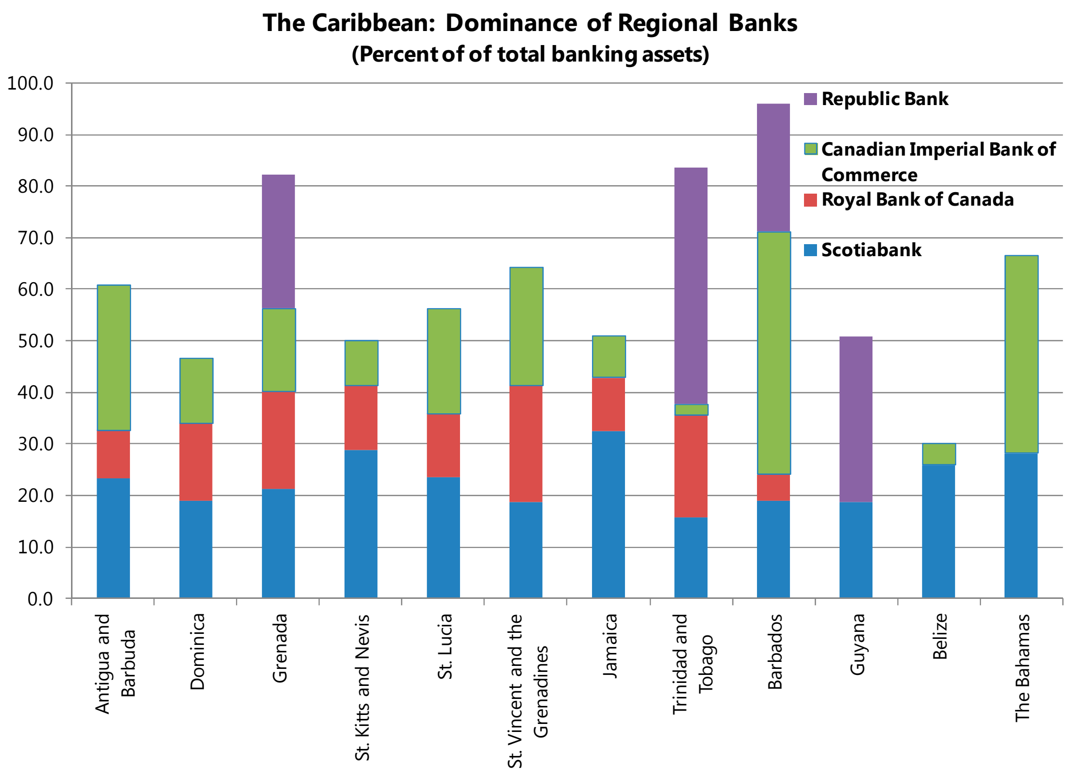
Source: Country authorities and Fund staff calculations.

Note: ECCU: as of end-2011, Jamaica: as of March 2012, Barbados: as of March 2012, Trinidad and Tobago: as of June 2012, The Bahamas: as of 2011, Belize: as of March 2012, Guyana: as of March 2012.

[4] To overcome data gap issues and develop pragmatic recommendations, we used policy-related documents such as the previous FSAP reports and financial stability reports of several countries.

[5] Numbers throughout this section exclude Suriname, for which financial system data was largely unavailable.

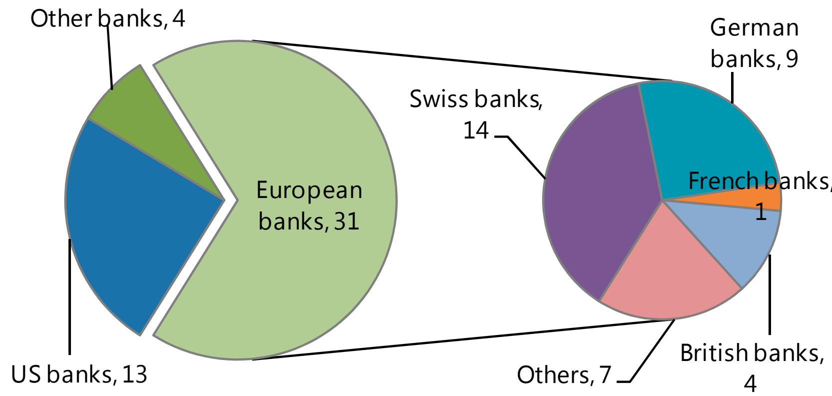
The size of the onshore banking sector varies quite significantly across countries. The Bahamas has the largest onshore banking system, equivalent to 150 percent of its GDP, while Jamaica is at the other extreme, with a banking sector equivalent to just under 50 percent of its GDP. The ECCU's banking sector, as an aggregate, amounts to about 176 percent of the union's GDP. Foreign banks, primarily Canadian, play a leading role throughout the Caribbean, accounting for about 60 percent of banking system assets. European and U.S. banks are also important but their activities are concentrated in the offshore centers of the Bahamas and Barbados.



Source: Bankscope and Fund staff calculations.
Note: ECCU (June 2011); Trinidad and Tobago (March-April 2011); Jamaica (December 2010); The Bahamas (April 2011); Barbados (2010); Belize (September 2011); and Guyana (Republic Bank: 2010; and Scotia Bank: October 2011).

Caribbean: Foreign Claims by Nationality of Reporting Banks, 2012Q3
(Immediate Borrower Basis, US$ billions)

U.S. and European banks concentrate most of their claims in the offshore centers of The Bahamas and Barbados.



Source: BIS International Banking Statistics.

Credit unions are becoming increasingly important, especially as banks have tightened lending standards following the global financial crisis. While overall assets of credit unions amount to just 7 percent of regional GDP, their importance varies widely among countries. The largest credit union sectors are in Dominica (39 percent of GDP) and Montserrat (36 percent of GDP). Other countries with a significant credit union sector are Barbados (17 percent of GDP) and Belize (21 percent of GDP), while in Grenada, St. Vincent and the Grenadines, and St. Lucia they range from 13 to 19 percent of GDP. The insurance sector is dominated by regional conglomerates, and its assets account for about 17 percent of regional GDP. Sagicor, headquartered in Barbados, has the largest insurance network in the region with total assets estimated at US$5.3 billion. In addition to the Caribbean region, it also operates in Latin America, the United Kingdom and the United States. Guardian Life, headquartered in Trinidad and Tobago, has US$3.4 billion of assets under management. The largest insurance sectors are in the Bahamas, Barbados, Jamaica and Trinidad and Tobago.

The offshore banking sector is by far the largest with assets equivalent to 10.8 times the regional GDP, but concentrated largely in two countries. The Bahamas is the largest sovereign offshore financial center (OFC) in the region, and the fourth largest in the world after the Cayman Islands (a territory of the United Kingdom), Hong Kong SAR, and Singapore. Offshore banks account for 98 percent of the Bahamas' US$598 billion financial sector, or 7,220 percent of the Bahamian GDP. To put this in perspective, Singapore's financial system is only 1.5 times the size of the financial sector of the Bahamas, while its economy and population are 32 times and 15 times larger, respectively. Barbados is the other major sovereign OFC of the region, with US$47 billion in offshore bank assets, representing 87 percent of its financial system or 1,082 percent of GDP.

In contrast to the onshore banking sector, there is limited information on the non-bank and offshore banking sectors. The Caribbean Confederation of Credit Unions and World Council of Credit Unions publish annual data on credit unions, but this only covers the sizes of membership and broad balance sheet measures (e.g. assets, and loans), with little information on financial soundness indicators. Data on other non-bank and offshore financial institutions is even more scarce, restricting analyses of these sectors.

Financial Sector Overview in the Caribbean Region

(1) Structure of Financial System: Total Assets (US$ millions)

	ECCU	Jamaica	Barbados	T&T	Bahamas	Belize	Guyana	Caribbean total
Banks	9,509	7,268	5,768	17,891	12,100	1,319	1,590	55,445
Local	4,232	3,468	0	N.A.	2,800	449	N.A.	10,949
Foreign	5,277	3,800	5,768	N.A.	9,300	870	N.A.	25,015
Credit unions	682	803	730	1,524	300	306	21	4,366
Insurance companies	637	2,907	699	4,768	2,500	97	157	11,765
Securities firms	N.A.	5097	N.A.	N.A.	N.A.	N.A.	N.A.	5,097
Offshore banks	2,402	N.A.	47,390	N.A.	582,900	301	N.A.	632,993
Total	13,230	16,075	54,587	38,855	597,800	2,022	1,768	724,337

(2) Structure of Financial System: Total Assets (Percent of GDP)

	ECCU	Jamaica	Barbados	T&T	Bahamas	Belize	Guyana	Caribbean total
Banks	176	49	132	73	150	89	64	95
Local	79	24	0	N.A.	35	30	N.A.	19
Foreign	98	26	132	N.A.	115	59	N.A.	43
Credit unions	13	5	17	6	4	21	1	7
Insurance companies	12	20	16	19	31	7	6	20
Securities firms	N.A.	35	N.A.	N.A.	N.A.	N.A.	N.A.	9
Offshore banks	45	N.A.	1,082	N.A.	7,220	20	N.A.	1,080
Total	245	109	1,246	158	7,404	137	71	1,236

(3) Structure of Financial System (Number of institutions)

	ECCU	Jamaica	Barbados	T&T	Bahamas	Belize	Guyana	Caribbean total
Banks	40	7	7	8	8	5	6	81
Local	14	2	0	2	3	1	3	25
Foreign	26	5	7	6	5	4	3	56
Credit unions	57	44	35	129	10	13	25	313
Insurance companies	61	14	30	45	100	13	15	278
Offshore banks	N.A.	N.A.	54	N.A.	83	6	N.A.	143
Total	>200	65	126	182	201	37	46	815

Source: Country authorities and Fund staff calculations
Note: ECCU: as of end-2011, Jamaica: as of March 2012, Barbados: as of March 2012, Trinidad and Tobago: as of June 2012, The Bahamas: as of 2011, Belize: as of March 2012, Guyana: as of March 2012.

B. Recent Developments in the Financial Sector: Impact of the Global Crisis

The 2008–09 financial crisis had a mixed impact on the banking sector in the Caribbean: with banks in the ECCU, especially the indigenous banks, being particularly hard-hit, while banks elsewhere weathered the crisis relatively well (see Appendix 1 for selected financial soundness indicators).[6]

In the ECCU region, asset quality has deteriorated, with reported nonperforming loan ratios more than doubling from end-2007 to 14 percent at end-September 2012. With rising credit risk and declining liquidity, profitability has declined markedly for the entire sector, with the ratio of return on average assets falling to 0.7 percent at end-September 2012 (cumulative of four quarters) from 2.6 percent in 2007. Over the same period, the ratio of return on average equity fell by about 15 percentage points to 7.4 percent. The capital-to-risk-weighted-assets ratio for indigenous banks (18.4 percent as of September 2012) has remained well above the ECCB's prudential threshold of 8 percent, although there is reason for caution, as this ratio is likely to be overstated given weaknesses in loan classification standards and low provisioning standards in the region.

The relative resilience of the banks in the non-ECCU region was in part due to high capitalization and sound profitability in pre-crisis years. Most banks also maintained sufficient liquid assets and were dependent on deposits and equity, which limited their funding risks. Nevertheless, banks' loan portfolios began deteriorating by the end of 2009, and NPLs have risen since then, and some countries' NPL ratios have remained over 10 percent. These developments have led to a reduction in profitability, but capital-adequacy ratios remain robust. High NPL ratios also led banks to be more selective in providing new loans. This behavior, combined with weak economic activity and high unemployment rates, resulted in sluggish credit growth in recent years.

Credit unions in many countries are also facing challenges in managing their credit risk related to NPLs. Some smaller credit unions have problem loan portfolios substantially in excess of prudential norms, but they are too small to pose a systemic risk to the overall financial sector. Inadequate regulation of this sector was one of the reasons behind rapid asset growth and the weak risk management framework. Insufficient information and the large number of institutions also pose challenges to supervision. In this context, some authorities (e.g., The Bahamas, Barbados, and the ECCU) are trying to strengthen the supervisory system of this sector.

Insurance companies have recorded lower premiums and experienced a reduction in investment income in recent years, reflecting weaker demand for insurance and the difficulties experienced by policy holders in making payments under low economic growth.

[6] Data for NBFIs is not available enough to do a systematic analysis of these institutions.

In particular, the insurance sector was affected by the collapse of the CL Financial Group, the largest insurance company in the region. This group's total assets were estimated at about US$16 billion, equivalent to around 30 percent of the Caribbean region's GDP, operating in at least 28 countries. CL Financial was regarded as a successful example of financial integration of companies within the region. Weak corporate governance, high interest rate annuity products with corresponding high risk investments, and high leverage led to the collapse of the group, bringing significant spillover effects to the Caribbean region (see Box 1).

III. Degree of Interconnectedness and Implications for Systemic Risk

A. Interconnectedness and Financial Stability

The increase in global interconnectedness has given rise to a number of studies on the nature and implications of interconnectedness, especially for financial sector stability and systemic risk. Interconnectedness is seen in the literature as a "double edged sword" which, on the one hand, could increase risks, but on the other hand, could also help diffuse the impact of shocks given the scope for risk diversification in an interconnected "network." For example, Allen and Gale (2005) argued that interconnectedness does not necessarily lead to increased contagion. They showed that, in the absence of financial frictions, more interconnectedness increases the scope for risk diversification, allowing any shock to be diffused through the entire network and thus minimizing the impact on any one particular institution or region. Leitner (2005) developed a model of financial networks in which linkages can spread contagion, but can also have positive effects because they may induce private sector bailouts, where liquid banks bail out illiquid banks because of the threat of contagion.

However, subsequent studies have found that, in the presence of financial frictions, higher interconnectedness increases the chances of contagion and systemic risk (Battistion, 2009, Gai and Kapadia, 2008, Minoiu and Reyes, 2011). Caballero and Simsek (2010) presented a model of fire sales and market breakdowns. They showed that shocks to asset prices make more banks within the financial network become distressed, which increases each (non-distressed) bank's likelihood of being hit by an indirect shock.

This risk from interconnectedness was particularly significant in emerging and low income countries. Credit channels in these countries were impaired as pressures on large financial institutions resulted in a pullback of cross-border lending, notably trade finance activities, and a loss of parent bank support for local lending. Constraints on long-term funding severely limited local banks' capacity in areas such as shipping and aviation trade finance, as well as infrastructure finance. Local asset markets (foreign exchange, equities, and bonds) came under renewed strains through capital outflows, deteriorating liquidity, and a re-pricing that could have a knock-on impact on local financing conditions.

Box 1. The Collapse of the CL Financial Group

The collapse of the Trinidad and Tobago-based CL Financial Group in January 2009 represented a major financial shock to the Caribbean region, given the dominance of this group in the insurance sector. CL Financial started out as a holding company for Colonial Life Insurance Company (Trinidad) Limited (CLICO) in 1993. But, over time, its subsidiaries group expanded its activities into a wide range of sectors including banking, insurance, energy, beverages, and real estate. At end-2007, the group's assets stood at US$16 billion, equivalent to about 30 percent of the Caribbean region's GDP. The collapse of the group and especially its insurance arm had spillover effects in all 15 CARICOM states except for Jamaica and Haiti, with exposures as high as 17 percent of GDP (in the ECCU). CL Financial's rapid expansion during the mid 2000s was fueled primarily by deposit-like annuity products sold by its insurance subsidiaries—CLICO and British American Insurance Company (BAICO). Both companies used an aggressive market strategy to raise funds by offering their depositors substantially higher returns than banks, while evading stricter banking regulation and supervision. These funds were then channeled to finance real estate and other investments, which were adversely affected by the global financial crisis.

The resolution process has been slow and piecemeal, and only Belize, Cayman Islands, and Suriname have made notable progress. Elsewhere in the Caribbean, progress includes the sale of CLICO Mortgage Finance Company (Barbados), and the sale of part of BAICO (the ECCU). After delays, resolution strategies started to take form in 2012: policyholders with investments less than TT$75,000 received a full reimbursement in early 2012. The Government of Trinidad and Tobago launched CLICO Investment Fund (CIF) to compensate CLICO investors and policy holders, and plans to establish a new insurance company to take over CLICO and BAICO insurance policies. The new insurance company will take over the traditional life insurance portfolio of CLICO, but 'bad' assets will remain with CLICO until they can be properly resolved. The ECCU announced it had sourced financing, including from the Government of Trinidad and Tobago, to resolve annuity holders.

This episode highlighted a number of gaps in financial sector supervision and related safety nets in the region. CLICO's failure revealed its inadequate risk management and weak corporate governance system. The existing supervisory framework was not adequate to detect the company's excessive risk taking activities and complex related party transactions in a timely manner, implying the need for more sophisticated supervision of financial conglomerates. Most Caribbean authorities have been forced to intervene on this issue, in order to minimize the negative impact to policy holders and creditors. While these actions can contribute to stabilizing the financial system in each jurisdiction, they may also increase the risk of "moral hazard" in market participants' behavior. This clearly suggests that an ex ante approach to mitigating systemic risk, through consolidated risk-based supervision, is crucial to ensure financial stability. The authorities' bailout might entail significant fiscal resources, adding pressure to already high public debts in many Caribbean countries. Increased fiscal burdens, along with other debilitating factors such as sluggish tourism sectors and elevated commodity prices, will weigh on economic activities in the region.

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1. See also Box 1 in IMF (2011c) and the Selected Issues Paper of Trinidad and Tobago (2011d) for more details.

B. Stylized Analysis on Interconnectedness in the Caribbean Region

The widespread impact of the collapse of the CL Financial Group attests to the negative spillover impact of interconnectedness in the Caribbean and underscores the importance of preventing this in the future. There have been some efforts to study the interconnectedness in the Caribbean region (Worrell and Lowe, 2011, Panth et al, 2008). However, an in-depth analysis of the Caribbean region has been largely absent either because of the difficulty in obtaining sufficient data or because the region is not deemed as systemically important from a global perspective. Notwithstanding the limited data availability, this paper tries several different ways to model interconnectedness in the region and provides recommendations on financial sector reforms to minimize systemic risks, especially those posed by interconnectedness.

As in the rest of the world, financial linkages have continued to increase in the Caribbean region. Motivation for financial linkages includes risk diversification, search for higher yield and a desire to increase market share, as well as increased integration in the real sector, including effects from formal arrangements like the CARICOM Single Market and Economy (CSME). Financial conglomerates and other institutions with complex ownership structures tend to control a large market share simultaneously in several countries of the Caribbean. For example, the four largest banking groups (see Table) control about 75 percent of total banking sector assets in the region.

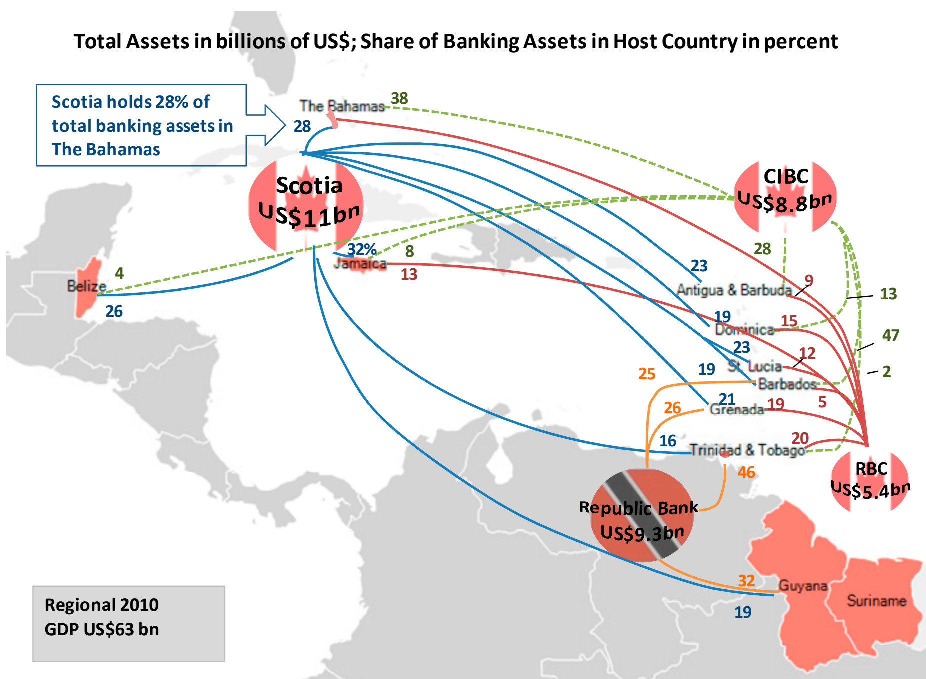
Major Financial Conglomerates With Cross Border Operations in the Caribbean
As of end-2010

	Assets (US$ mil.)	No. of Caribbean Countries	Percent of Total Caribbean Banking Sector Assets
RBC Financial	11686	20	22
Scotia Bank	10145	21	20
First Caribbean International Bank	9766	18	19
Republic Bank	9315	6	14
SAGICOR Financial Group	4867	22	NA
First Citizens Bank	4015	4	8
Guardian Holdings	3281	4	NA
JMMB	1318	3	NA

Source: Caribbean Center for Money and Finance Newsletter, March 2012

In terms of market share (measured as percent of total assets of the banking sector), Scotia Bank dominates the banking sector in Antigua and Barbuda (23 percent), The Bahamas (28 percent), Grenada (23 percent), and Jamaica (32 percent). The other two Canadian banks—CIBC and RBC—also hold significant market shares in several Caribbean countries. The only large regional bank—the Trinidad and Tobago based Republic Bank—has a large presence in Guyana in addition to controlling nearly half the market share in its home country. The high level of concentration is partly due to the small size of individual countries as well as the region as a whole, and the presence of several branches or subsidiaries of the same financial companies across the region is a pattern often seen in small states.[7] While the presence of Canadian banks has enabled the region to benefit from Canada's strong supervisory and regulatory framework, this high degree of interconnectedness with foreign banks suggests that if a large shock were to hit the source country (a core node), the shock may reverberate through the links to the rest of the network and could pose a risk to several Caribbean countries simultaneously.

In addition, within the ECCU sub-region, the indigenous banking sector is interlinked through cross-shareholdings, the interbank market, and public sector exposures. The Eastern Caribbean Financial Holding Company, the parent company of Bank of Saint Lucia, is also a majority shareholder of Bank of St. Vincent and the Grenadines. Those two banks, along with the National Bank of Dominica, Antigua Commercial Bank and St. Kitts-Nevis-Anguilla National Bank, comprise the largest shareholders of Eastern Caribbean Amalgamated Bank (formerly Bank of Antigua). Many of the governments and national insurance schemes are also among the shareholders of indigenous banks. At the same time, many indigenous banks are exposed to the public sector. At end-2011, public sector exposure of indigenous banks reached over 20 percent of their total assets on aggregate, compared to about 5 percent for the foreign banks in the sub-region. Furthermore, the public sector is an important provider of deposits, accounting for about 30 percent of total deposits for indigenous banks (about 5 percent for foreign banks).[8]



Source: Bankscope and Fund staff calculations.

[7] According to IMF (2013), small states' financial sectors tend to have less depth (apart from those with off-shore financial centers, OFCs) and (despite greater foreign presence) more concentrated banking sectors.

[8] Similar data is not available for the non-ECCU Caribbean, precluding a comparison.

In terms of the non-bank sector, after the collapse of the CL Financial Group, Sagicor now has the largest insurance network with operations in 22 countries. While data on market share in individual countries are not available, Sagicor's expansive network in the Caribbean suggests that it plays a critical role in the region. The two largest shareholders of Sagicor are the National Insurance Board of Barbados and Republic Bank Limited. The remaining shareholders are individuals and companies, mainly in the Caribbean region. In terms of credit exposure, Sagicor holds the bulk of its investment securities and lending portfolio in the Caribbean region, making it vulnerable to sovereign credit risk (see tables).[9] In the case of Guardian Life, an insurance group headquartered in Trinidad and Tobago, 17 percent of total assets are in Jamaican dollars (see figures).

Sagicor's Key Investment Portfolio (Total: US$ 3,599 million)

Key Investment Portfolio	Amount (US$ million)	Share in Investment Portfolio	Credit Rating (S&P)
Government of Jamaica	1,123	31%	B-
Government of Trinidad and Tobago	144	4%	A
Government of Barbados	183	5%	BB+
Bank of Nova Scotia	130	4%	AA-
Government of USA	102	3%	AA+

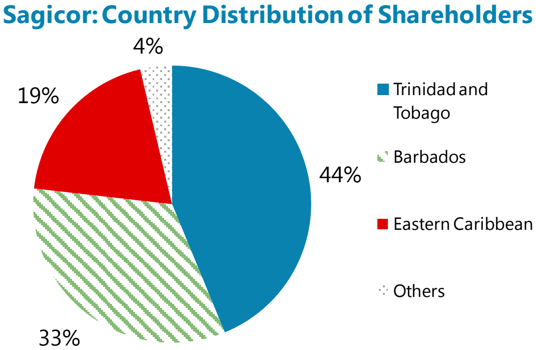
Source: Sagicor's annual report (2011)

Sagicor's Lending Portfolio - Geographical Distribution (Total: US$ 556 million)

Country / Region	Amount (US$ million)	Share in Lending Portfolio	Credit Rating (S&P)
Barbados	193	35%	BB+
Jamaica	129	23%	B-
Trinidad and Tobago	94	17%	A
Other Caribbean	75	13%	...
USA	65	12%	AA+

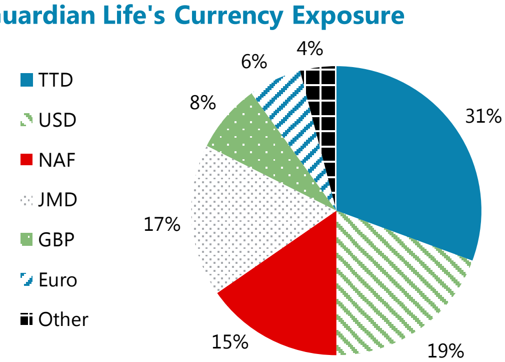
Source: Sagicor's annual report (2011)

Sagicor: Country Distribution of Shareholders



Sources: Sagicor's annual report (2011)

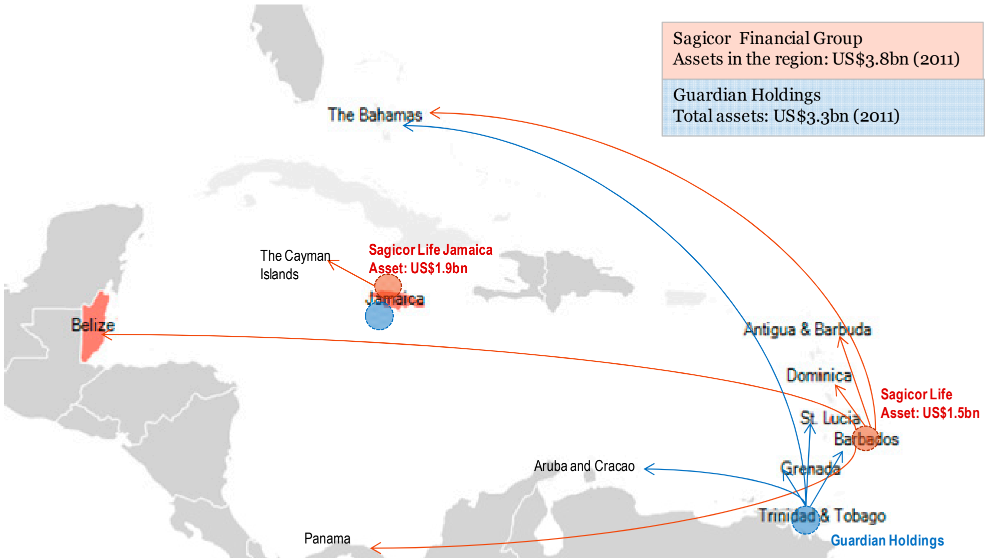
Guardian Life's Currency Exposure



Sources: Guardian Life's annual report (2011)

[9] Jamaica and Barbados are rated non-investment grade by S&P. The lending portfolio, albeit smaller size than investment portfolio, has higher concentration ratio in the Caribbean region.

Regional Insurance Companies' Presence



Source: Annual reports of Sagicor Financial Group and Guardian Holdings.

C. Quantitative Analysis of Interconnectedness

We applied a number of concepts and measures from network analysis to assess the interconnectedness in the Caribbean and its implications for financial stability.[10] One of these measures is "in-degree interconnectedness," which is measured by the recipient's share of "active" links from sources to the total number of potential links, where a link is considered "active" if the stock of the recipient's cross border liabilities is above 0.2 percent of the recipient's GDP. By normalizing a link to the recipients' GDP, this approach emphasizes the importance of a link from the perspective of a recipient rather than a source (see IMF 2011a). Thus, a higher in-degree index implies that the recipient on average has smaller exposure to its source countries, abstracting from the cross-border distribution of claims. This measure captures the notion of diversification in a network by emphasizing the importance of the link from the perspective of the recipient country. Another measure often used in the literature is the Herfindahl-Hirschman Index (HHI). This index measures the degree of "concentration" or the importance of links from the perspective of the source country, and complements the direct measure of interconnectedness (in-degree index) that does not distinguish sources by their sizes beyond the threshold. This is calculated by squaring the share of each creditor in a country's foreign liabilities and then summing the resulting numbers, with higher numbers indicating greater concentration of sources.

[10] It would be also useful to find the nature of regional interconnectedness by analyzing interbank transactions or liquidity links between countries. However, there is not enough data to this end in the Caribbean region.

International consolidated banking statistics from the BIS are used to calculate the two indices for the period 2001–2011. These data cover the international financial claims of banks in 25 reporting countries on a consolidated basis. They show the claims of domestically-owned banks, excluding the positions within the consolidated groups, broken down by type, sector of borrower, remaining maturity, and country of exposure. The data on the exposure by country of immediate borrower, which provides the quarterly stock of claims by the nationality of reporting banks, was used to assess the existence of links and the level of concentration between those reporting countries and the Caribbean countries.[11] Overall there has been a general increase in interconnectedness, with some setbacks since the global financial crisis.

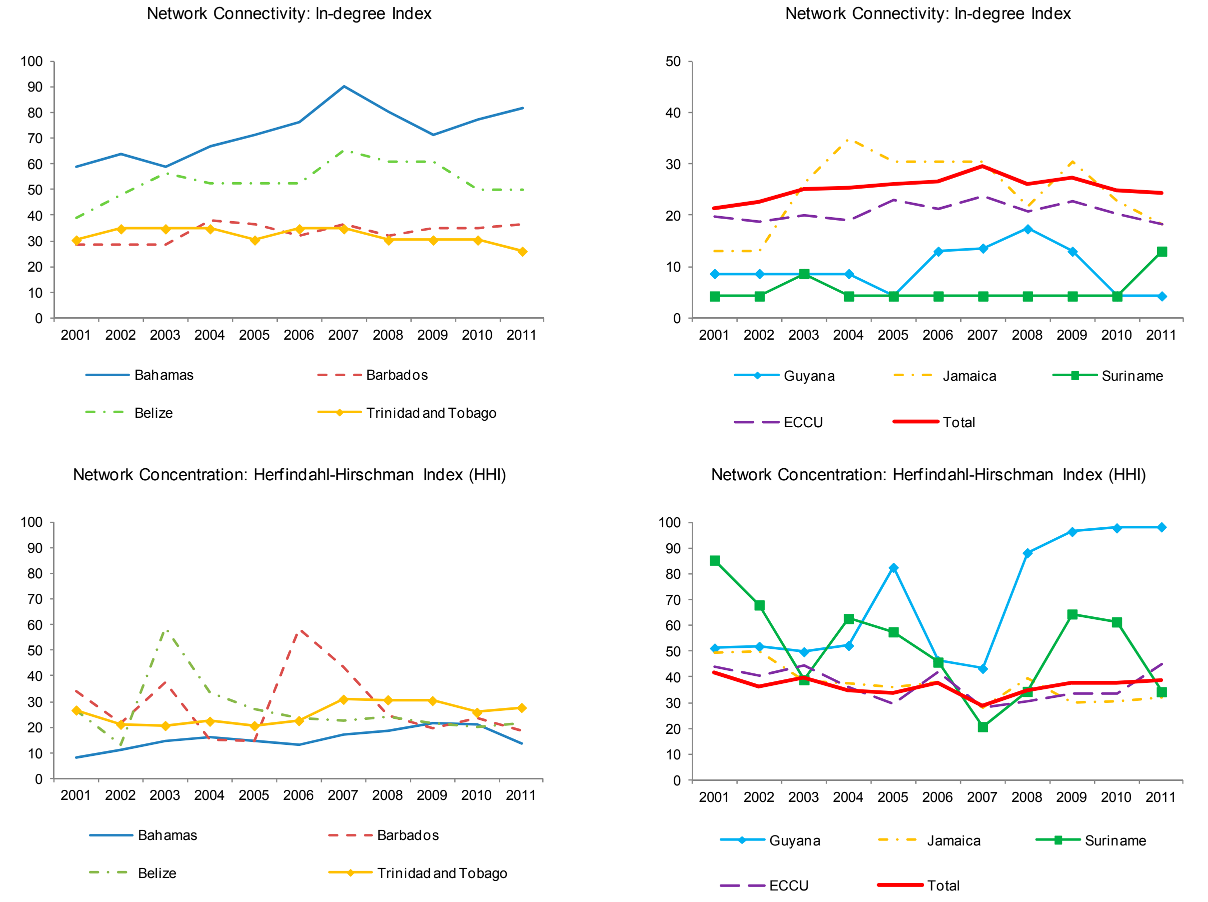
The in-degree index is higher and has been increasing more markedly in The Bahamas and Barbados, likely reflecting their significant offshore financial sectors and inflows from Europe. While Belize also saw increases in the index in 2003 and 2007, its index has been on a downward trend in recent years. Much of these changes are due to the fact that the claims of some European and Latin American banks fluctuated around the threshold of "active" claims. Jamaica saw a rise in the index in the early 2000s as the claims from some of the existing source countries increased above the threshold of "active" links, but its index has been on a declining trend since 2004. The level of interconnectedness remained relatively stable over the last decade in the rest of the region.

The concentration index is on a declining path or remained relatively low in larger Caribbean economies, reflecting greater diversity in financial linkages. The HHI index is generally higher in countries less interconnected due to a small number of links playing significant roles, as in the case of Guyana where the claims from Mexico increased to over 90 percent of overall claims in recent years[12]. Changes in the size of claims from one source country can have a significant impact: for example, the spike in the index for Barbados in 2006–07 reflects the increase in claims of UK banks, and for Belize in 2003, the increase in claims from Switzerland.

[11] All the countries except Antigua and Barbuda and St. Kitts and Nevis are covered by the immediate borrower basis data. The results are affected by the lack of consistent availability of the data throughout the period analyzed. Canada is excluded from the analysis given the lack of sufficient time-series data.

[12] The drop in HHI for Guyana in 2007 is due in part to the non-availability of data for Mexican banks.

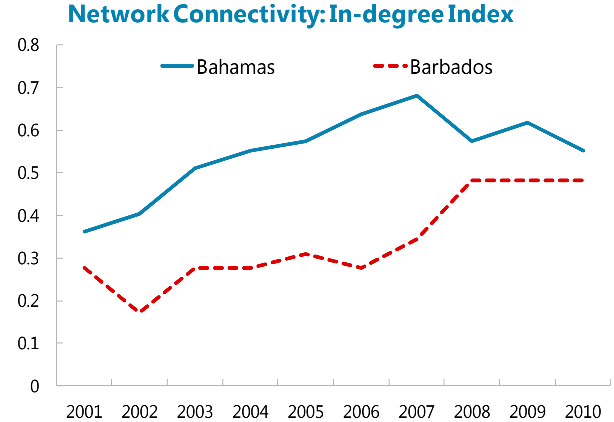
Indices of Network Connectivity
(BIS Consolidated Foreign Claims by Nationality of Reporting Banks)



Source: BIS and Fund staff calculations.

We also analyzed the Coordinated Portfolio Investment Survey (CPIS) database, which reflects year-end data on portfolio investment holdings (equity and debt securities) reported by participating economies. Among the countries included in this study, only The Bahamas and Barbados report these data.[13] The analysis (2001–10) confirms the results from the BIS data, that is, that interconnectedness has generally increased in the last decade in the Bahamas and Barbados.

Network Connectivity: In-degree Index

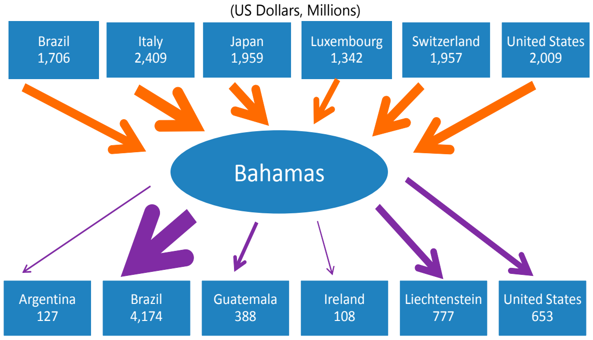


Sources: CPIS and Fund staff calculations.

[13] In general, the CPIS data overemphasize the importance of financial centers compared to the BIS consolidated statistics. This is because sources operating in a financial center are considered residents in the CPIS, whereas they are consolidated back to their country of origin in the BIS consolidated statistics.

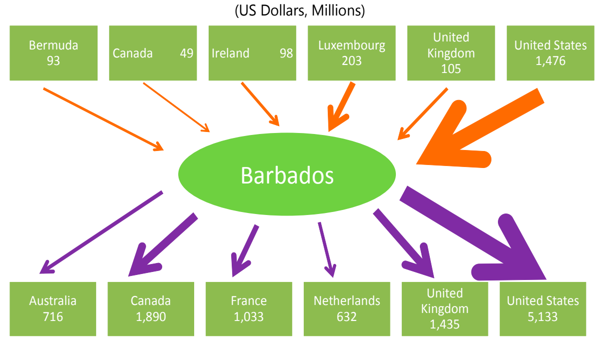
Both countries' high network connectivity reflects their status as offshore financial centers as well as their financial sector's strong linkages with foreign financial institutions in other jurisdictions. In The Bahamas, most funds are originated in Brazil, Italy, Japan, Switzerland, and the U.S., while Ireland, Luxemburg, the U.K., and the U.S. are the main fund providers to Barbados.[14] Despite relatively high interconnectedness, the contagion risks to the onshore banking system may be limited, given the strong regulation separating onshore banking activities from offshore sectors.

Bahamas' Interconnectedness with the global financial sector
(US Dollars, Millions)



Source: CPIS data (2010).

Barbados' Interconnectedness with the global financial sector
(US Dollars, Millions)

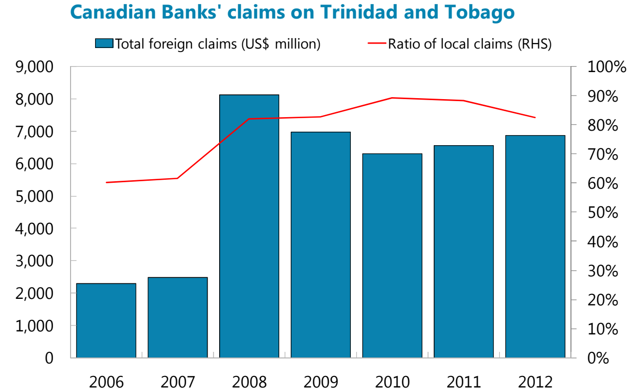


Source: CPIS data (2010).

D. Implications for Systemic Risk

Notwithstanding dominant foreign ownership, the banking sector has been relatively resilient to external shocks. This stability can be attributed to the following mitigating factors: first, the largest four banks in the region are well capitalized and their assets remain liquid; second, the top three banks are part of an international network of Canadian banks whose share of foreign activities is largely made up of local currency claims[15] (see figure about Canadian banks' claims on Trinidad and Tobago) and they are not dependent on wholesale funding markets; third, the banking sector's expansion into the overseas market has focused on

Canadian Banks' claims on Trinidad and Tobago



Sources: Bank of Canada (Banking and Financial Statistics).
Note: Claims include deposits, loans, and holding of securities.

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[14] The cross-border exposures in the global funds data reveals a core group of centers or nodes, such as the United States, United Kingdom, Luxembourg, and France, around which the offshore centers are clusters and to which they channel funds sourced globally. Guernsey and Liechtenstein are distributors of funds to the core nodes, whereas the Bahamas and Bermuda are more collectors of funds for the clusters of off-shore centers (see IMF 2010).

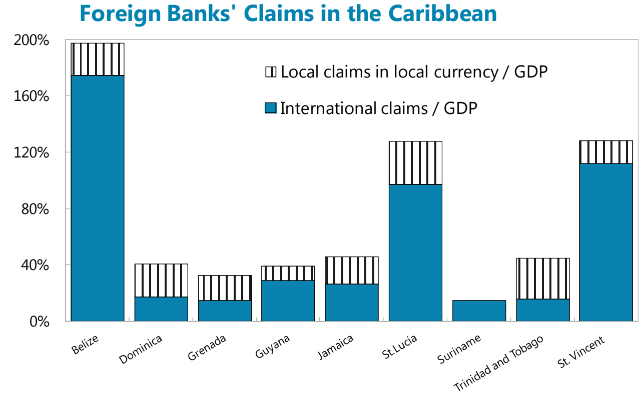
[15] According to the banks' exposure analysis by McCauley, McGuire and Peter (2010), local positions proved more stable during the crisis than cross-border lending. This implies that countries with a larger part of their foreign claims as local claims in local currency have been less vulnerable to global funding disruptions.

traditional retail and commercial banking. However, the collapse of the CL Financial Group highlighted that interconnectedness of financial groups across countries poses significant risks, as shocks can be easily transmitted through the network. In this context, the significant level of concentration within the regional banking sector also represents potential contagion risks associated with distress within one of the large banking groups (see box 2 for additional linkage through regional stock markets, where some of the regional financial institutions are cross-listed).

While the above mentioned banks provide resilience to the regional banking system, the operation of subsidiaries and branches across several jurisdictions, some of which lack a strong consolidated supervision framework, could lead to insufficient understanding of systemic risks, due to differences in prudential regulations and inadequate information sharing across countries. The indigenous banking sector in the ECCU is embarking on an extensive restructuring and consolidation effort, aimed at strengthening and promoting the stability of the financial system, but the bulk of the impact of this effort is likely to be contained within the ECCU region itself.

The interconnectedness with the global financial system also has implications for some countries' vulnerability to external shocks, including from the global deleveraging process. The BIS data shows that foreign banks' claims are more than 100 percent of GDP in a few countries, with a higher portion of international claims (a combination of direct cross-border lending and credit by bank subsidiaries in foreign currency). The overall picture suggests that in a few countries, the impact on credit and output would be greater under a large and disorderly deleveraging process (see Appendix 2 for more detail about BIS data).

Foreign Banks' Claims in the Caribbean



Sources: BIS international banking statistics (2011) and Fund staff calculations.
Note: International claims = direct cross-border lending plus credit by foreign bank subsidiaries in foreign currency. Local claims in local currency = credit to residents by foreign bank subsidiaries in local currency

With respect to the offshore financial sectors in the Bahamas and Barbados, these are insulated from the onshore banking system, thus limiting the risk of contagion. "Chinese walls" exist between affiliated on- and off-shore banks, and there are strict legal prohibitions against transactions between the onshore and offshore sectors. That said, the offshore sector is increasingly receiving greater international scrutiny to reduce illegal tax evasion, address issues related to regulatory loopholes, and strengthen the fight against money laundering and financial terrorism. The heightened regulatory uncertainty brought about by ongoing global regulatory reforms poses key challenges, which may lead to a revised strategy by major financial groups to move away from international financial centers.

Box 2. Interconnectedness through Stock Markets

Companies' cross-listing is another dimension of financial integration. Some large companies, especially financial firms, in the Caribbean region have multiple listings across several stock exchanges. In particular, Barbados, Jamaica, and Trinidad and Tobago show relatively higher percentage of non-local firms in their stock exchanges. The correlation analysis for historical market prices shows that co-movements are strong in the case of companies listed in Jamaica and Trinidad and Tobago as well as those listed in Barbados and Trinidad and Tobago.

Cross-Listed Companies as of July 2012

Country	Stock Exchange	Total Firms	Local Firms	Cross-Listed Firms	Percent of Cross-Listed Firms
ECCU	ECSE	13	11	2	15.4
The Bahamas	BISX	20	19	1	5.0
Barbados	BSE	22	16	6	27.3
Guyana	GASCI	14	13	1	7.1
Jamaica	JSE	39	31	8	20.5
Suriname	SSX	11	11	0	0.0
Trinidad and Tobago	TTSE	34	23	11	32.4
Total		153	124	29	19.0

Source: Individual Stock Exchanges.

Selected Cross-Listed Companies and Correlation of Share Price Movements

Cross-Listed Company	Home Exchange	Other Exchanges where Listed	Correlation	No. of observations
Firstcaribbean International Bank Ltd	Barbados	BISX	0.4457*	25
		JSE	0.5897*	382
		TTSE	0.9171*	84
		ECSE	.	0
Trinidad Cement Limited	Trinidad	BSE	0.9630*	15
		JSE	0.8998*	72
		ECSE	0.1503	11
		GASCI	…	na
Jamaica Money Market Brokers Ltd.	Jamaica	BSE	0.3527	5
		TTSE	0.3776*	424
Neal & Massy Holdings Ltd.	Trinidad	BSE	0.9669*	41
Guardian Holdings Ltd.	Trinidad	JSE	0.7641*	92
Sagicor Financial Corporation	Barbados	TTSE	0.9720*	642
		LSE	0.8129*	614
Fortress Caribbean Property Fund	Barbados	TTSE	…	na
National Commercial Bank of Jamaica Ltd.	Jamaica	TTSE	0.8763*	764
Scotia Investments Jamaica Ltd.	Jamaica	TTSE	0.6918*	345
GraceKennedy Ltd.	Jamaica	BSE	0.6619*	43
		TTSE	0.8947*	621
Capital and Credit Financial Group Ltd.	Jamaica	TTSE	0.8562*	145

Source: Individual Stock Exchanges.

* significant at the 5 percent level.

Note: There is a caveat in this analysis because some stocks are not traded regularly and therefore the number of observations is very low.

IV. Current State/Structure of Financial Sector Supervision in the Region

The structure of financial sector supervision varies markedly across countries in the region. Most countries, with the exception of the banking system in ECCU countries, operate as separate financial jurisdictions, each with their own supervisory and regulatory bodies. Regulatory jurisdiction over financial institutions in the ECCU is divided between the Eastern Caribbean Central Bank (ECCB) and the Ministries of Finance of the member countries.[16] The ECCB is responsible for the regulation and supervision of commercial banks (domestic and foreign) in the ECCU, although a number of regulatory and supervisory decisions pertaining to banks, such as licensing, are made by the respective Ministries of Finance after consultation with or on recommendation from the ECCB. In the non-ECCU countries, the regulation and supervision of commercial banks is usually conducted by the respective central bank.

Insurance companies, credit unions and other NBFIs, as well as offshore financial services in the region generally fall under the supervision of multiple agencies, including the central bank. In the ECCU, the non-banking sector falls under the purview of the national authorities and Ministries of Finance. Most member governments have established Single Regulatory Units (SRUs) for the purpose of supervising all NBFIs, and the supervision is based on harmonized legislation across the members. The structure and the standards of supervision of NBFIs vary among the non-ECCU Caribbean countries. Thus there is uneven regulatory oversight of the financial sector in an environment of rapidly increasing cross-border financial flows. Moreover, Anti Money Laundering (AML) compliance is very low in some jurisdictions, as measured by the percentage of noncompliance or partial compliance with the FATF 40 + 9 recommendations.

Regulatory and Supervisory Structure

	Banks	Credit Unions	Insurance	Offshores
ECCU	ECCB	National Supervisory Agencies (MoFs)	National Supervisory Agencies (MoFs)	National Supervisory Agencies (MoF)
Jamaica	BOJ	Jamaica Cooperative Credit Union League	Financial Services Commission (FSC)	N.A.
Barbados	CBB	Financial Service Commission (FSC)	Financial Service Commission (FSC)	CBB
Trinidad and Tobago	CBTT	Plan to apply CBTT's supervision	CBTT	N.A.
Bahamas	CBoB	CBoB (ongoing)	Insurance Commission of the Bahamas	CBoB
Belize	CBB	CBB	Supervisor of Insurance (SOI)	International Financial Services Commission
Guyana	BOG	Plan to apply BOG's supervision	BOG	N.A.

Source: Country authorities and Fund staff compilation.

[16] The ECCB itself is governed by a Monetary Council comprising the Ministers of Finance from each member Government. In addition to the ECCB and the national authorities, the Eastern Caribbean Securities and Exchange Commission (ECSEC) has some supervisory responsibilities for securities firms in the ECCU.

Main Weaknesses in Supervision and Regulations

There has been gradual progress in key areas of financial sector oversight in many Caribbean countries. Most importantly, the regulation and supervision has been shifting to risk-based approaches. Supervisory capacity is improving with better trained staff, and regulatory coverage is strengthening to include the non-banking sector such as credit unions and insurance companies. Nevertheless, there is still room for further improvement in regulation and supervision, albeit to varying degrees for each country. Some weaknesses include (i) outdated regulations (e.g., asset classification and provisioning), (ii) deficiency of prudential rules, (iii) incomplete state of risk-based supervision framework, (iv) weak framework for consolidated supervision of banking groups and financial conglomerates, and (v) more room for cross-border home/host cooperation. (see Appendix 3 for each country's key prudential standards).

- **Outdated regulations**: In some countries, the regulation addressing loan classification and provisioning does not include off-balance sheet items, investment securities, and other exposures. In addition, real estate collateral is treated very generously even if there is no liquid market to sell it, understating NPLs and the need for provisions on banks' balance sheets, and overstating income, assets, and capital.

- **Deficiency in prudential rules**: In many countries there are no aggregate limits on banks' large exposures, although there are limits in some countries on exposure to single persons or entities. Furthermore, the definition of a group of connected borrowers in the legislation is often not broad enough for supervisors to identify the ultimate beneficial owner and affiliates of borrowers. The insufficient risk management system for addressing single large credit exposures and related party lending could hinder effective tracking of underlying risks.

- **Incomplete state of resolution framework**: Although the authorities have tools for enforcement in place, resolution processes are not effectively implemented in some cases (e.g., slow progress in resolution of CLICO). More transparent procedures and a systemic framework are required to ensure timely intervention and resolution. Some countries have deposit insurance, but limits vary.

- **Limited consolidated supervision**: In some countries there is no explicit legal framework providing a basis for effective consolidated supervision, while in others the scope of consolidated prudential reporting does not include the financial group. The upshot of this is a heightened risk of contagion and the inability of the supervisors to properly monitor related party transactions or gauge the overall health of financial conglomerates in the region.

- **More room for cross-border cooperation**: There is some room for expanding information exchange and policy cooperation between host and home supervisors. In particular, for large regional financial groups, a lack of information sharing on the comprehensive risk profile could prevent supervisors from understanding potential risks in the financial system.

V. Recommendations for Financial Sector Reforms

A. Banking Sector

The crisis has highlighted the importance of financial sector supervision to ensure financial stability. It has also shown that embedding a cross-border dimension in national financial sector policies is critical, as national financial stability may also depend on the policies and institutional framework of other countries. This is being increasingly recognized by policymakers in the Caribbean, and countries in the region are updating the framework for financial sector supervision to incorporate some of these new realities (see Box 3). The increasing concentration, size, and influence of bank holding companies and financial conglomerates suggest that harmonizing regulatory and supervisory frameworks and conducting consolidated supervision would be desirable to prevent regulatory arbitrage. Greater regional cooperation would also help the countries benefit from economies of scale and address capacity problems in the region. While supervision and regulatory standards are still largely country specific, countries are entering cooperation arrangements through signing of Memoranda of Understandings (MOUs) that lay out the framework for exchanging information. In addition, the College of Banking Supervisors and the College of Insurance Supervisors meet periodically and share information. Looking ahead, reforms in the following areas would help to strengthen financial sector stability in the region.[17]

More efforts to update regulation

Some authorities need to update regulations on capital adequacy, asset classification and loss provisioning to ensure effectiveness of supervision. A regular and detailed report on well-defined loan classification and provisioning based on each loan type would allow supervisors to improve their analysis of credit risk and better target on-site examinations. Releasing the implementation schedule of introducing an international standard (e.g., Basel II or III) could help market participants better understand the authorities' stance and thereby improve policy transparency.

Strengthened prudential oversight

Prudential oversight could be strengthened by enhancing the authorities' supervisory capabilities, accelerating the transition to risk-based banking supervision, and tightening

[17] Most of these recommendations have been made in the various FSAP reports and in the case of the ECCU, the recent Task Force Report also underscores these recommendations.

supervision of large exposures and exposures to related parties. In particular, when banks face large credit portfolios in their balance sheet, close monitoring on detailed information on credit risk, (e.g., sectoral distribution, past due loans by the time bucket, and loan to value ratio) would allow supervisors to take prompt actions against imminent risk factors.

Box 3. Progress in Reforming Financial Supervisory System

After experiencing the global financial crisis and contagion effect from the failure of CLICO, some Caribbean countries have implemented reform measures to improve their financial supervisory systems. These efforts have focused on i) introduction of a risk-based supervisory system, ii) strengthening supervisory bodies' capacity and independence, iii) broadening the regulatory perimeters, iv) widening coverage on the non-banking sector institutions and imposing more stringent requirements on them.

The Bahamas: Insurance supervision has been improved with the enactment of new insurance legislation in 2009 and the creation of the Insurance Commission of The Bahamas (ICB) with qualified staff and the power and independence to properly supervise the industry.

Barbados: In 2012, the central bank issued "credit risk management guidelines" and "intervention policy guidelines" that apply to commercial banks, trust and finance companies, merchant banks, brokerage houses, and offshore banks. The central bank began its regular publication of a financial stability report in December 2011. For non-banks, efforts to consolidate the regulatory regime were advanced following the startup of the Financial Services Commission (FSC) in April 2011.

Belize: In 2011, the central bank issued the following new circulars binding to domestic financial institutions: 1) requirements for treatment of interests on savings deposits; 2) classification of loans and other assets; 3) loan loss reserves; and 4) treatment of interest on loans and other interest-bearing assets. In 2011, it also issued new circulars binding to international banks: 1) classification of loans and other assets; 2) loan loss reserves; 3) treatment of interest on loans and other interest-bearing assets; and 4) requirements for assets acquired for sale. The central bank is also phasing in more stringent requirements to improve supervision on credit unions.

Suriname: After several years of preparation, a new Bank Supervision Law (BSL) was enacted in 2011. The new law strengthened considerably the regulatory regime and supervisory powers of the central bank. The central bank is also preparing to issue improved prudential regulations for financial institutions in the areas of risk management, corporate governance, consolidated supervision, and audit and licensing procedures.

Trinidad and Tobago: A revision to the Financial Institutions Act is being considered to broaden the regulatory perimeter, to enhance compliance and enforcement, and Basel III prudential criteria for the definition of regulatory capital and risk-based capital requirements. It also made considerable progress in strengthening the regulatory framework for insurance. Amendments to the Insurance Act in February 2009 provided the CBTT with enhanced powers to address problem institutions, particularly through the issuance of compliance directions when an insurer is engaged in unsafe and unsound practices. A new Insurance Bill implementing risk-based regulation and supervision including modern criteria for solvency measurement (Solvency II) is ready for Parliamentary debate.

Developing early warning systems based on key information (e.g., financial institutions' cross-border exposures, soundness indicators of those exposures) could help the authorities identify risks at an earlier stage and take corrective measures quickly.

Consolidated supervision, information sharing, and transparency

Given the dominance of large regional banks and financial conglomerates, it will be important to provide a more explicit legal basis for effective consolidated supervision, allowing for comprehensive supervision of corporate governance, risk management and internal controls at the group level. Moreover, given the systemic importance of Canadian banks in the Caribbean region, more proactive home-host cooperation with the home supervisor will be important. Consolidated supervision would require a much greater degree of information sharing and coordination between central banks and various other regulatory agencies. In this context, a recently finalized framework for consolidated supervision in the region, commissioned by the Caribbean Group of Banking Supervisors (CGSB), reflects encouraging progress, although implementation will likely require changes to the current legislations. Also, credit bureaus could be a useful vehicle for sharing information and analyzing related credit risks across various jurisdictions. Greater transparency in banks' disclosure and more frequent reporting of financial soundness indicators (FSIs) would also facilitate more effective supervision.

Strengthened, harmonized legislation to prevent regulatory arbitrage

There are significant differences in prudential requirements across the Caribbean. While most countries follow Basel I principles, definitions of concepts and their measurement vary considerably. For example, the definition of what is included in risk-weighted capital is different among countries. The authorities need to make sure that capital requirements reflect all kinds of risk factors (e.g., market, credit, liquidity and operational risks). Similarly, classification standards for non-performing loans vary, as well as loss provisioning requirements and liquid-asset ratios. Many countries do not have well-defined guidelines on connected lending and limits on lending to single borrowers are also different. The current regulations in many countries need to be strengthened to: (i) improve the criteria for loan classification and establish higher loss provisions for each classification category; (ii) require banks to conduct more stringent and frequent reviews of their loan portfolios; (iii) standardize guidelines for the valuation of collateral to harmonize the treatment of these assets and prevent underestimation of NPLs or overstatement of capital; and (iv) use internationally accepted standards for defining connected borrowing, and lending to related parties.

Stronger corrective action and enforcement

In order to avoid delays in corrective action, it would be advisable to move to a prompt corrective action (PCA) framework that would link pre-defined specific and objective criteria to trigger the automatic issuance of a corrective action and thereby enforce a more timely remedy. In this context, strengthening the supervisory bodies' independence and enforcement power is crucial.

Need for crisis management frameworks and deposit insurance

In terms of a crisis resolution framework, the Caribbean Group of Banking Supervisors has put together a draft outline of a crisis resolution strategy for regional banks, which awaits formal adoption. Because financial sector problems can spread very quickly and could potentially affect several countries at the same time given the high degree of interconnectedness, all countries should have a crisis management framework to be able to respond quickly and to contain the potential costs of a financial crisis. As a first step, all systemically important financial institutions should be required to submit mandatory stress tests in addition to the FSIs. Also, all countries should put in place crisis management frameworks which define the lead agency in charge of crisis management and the modalities for cooperation among the different regulatory and supervisory agencies, and other stakeholders. Again, ideally, a regional crisis management framework would be best suited given the high connectivity in the region. As part of the crisis management framework, countries may want to adopt the main recommendations of the Financial Stability Board's *Key Attributes of Effective Resolution Regimes for Financial Institutions* which provides a framework for resolving cross-border financial institutions and groups.[18] For example, the report recommends that bi-national agreements between the relevant authorities of the home and a host jurisdiction should set out how national legal and resolution regimes would interact given a firm's business.

The recent interventions in two indigenous banks in Antigua and Barbuda have highlighted the need for a crisis resolution framework and deposit insurance. While the ECCB stepped in to help resolve the problem banks, the absence of deposit insurance and the lack of a systematic bank resolution framework added complexity and delayed the process. The objective of explicit deposit insurance schemes is to protect relatively unsophisticated depositors from loss due to bank failures. It also helps avoid bank runs by protecting uninformed depositors from the need to withdraw deposits from sound banks out of fear and uncertainty about their banks, and could have reduced the burden on the government in the recent episodes. Some of the non-ECCU countries in the region do have deposit insurance although their coverage is modest. A harmonized regional deposit insurance scheme, with thorough consideration of each country's specific conditions, could be considered in the long-run, but in the short-run all countries should strive to have national deposit insurance schemes. That said, a stronger regulatory and supervisory framework would have to precede deposit insurance to ensure its proper functioning and avoid problems of moral hazard.

[18] These recommendations were endorsed as the new standard by the G-20 leaders at their summit in Cannes in November 2011.

B. Non-Banking Sector

The failure of CL Financial Group demonstrated the extent of regional interconnectedness through large NBFIs and the need to strengthen supervision of these institutions. Adequate information was not collected regarding contracts with affiliates or outstanding arrangements. While some efforts are being made to collect information on credit unions, it needs to be extended to include the broader non-banking sector, and the frequency of the coverage needs to be improved to enable the timely assessment of financial soundness. Without a prompt and effective resolution framework, many risk-averse investors rushed to request redemption of their funds, leading to a collapse of subsidiaries.

In this context, a more systemic approach toward large and complex non-bank financial conglomerates is crucial for financial safety. Regular exchange of information between supervisory authorities, and the establishment of MOUs for cross-border resolution frameworks could be steps in the right direction. The authorities also need to require financial groups to report their financials on both a consolidated and solo basis. Legislative provisions are needed to ensure that the structure of financial groups does not hinder the supervision and resolution process. Also, the authorities' supervision and risk-monitoring of credit unions should be strengthened, especially for countries where credit unions are assuming important roles in providing credit to the domestic economy. With respect to OFCs, in order to safeguard the reputation of financial centers and prevent potential contagion risks, the supervisory bodies should strengthen the capacity of staff to deal with the complexities of the sector, and establish closer working relationships with the home supervisors of foreign banks.

VI. Conclusions

The increased financial sector interconnectedness of the Caribbean region, manifested through the presence of large banking groups and financial conglomerates, can be positive provided the regional authorities take steps to prevent the systemic risk that can come with such interconnectedness. Moreover, the operation of subsidiaries and branches across several jurisdictions, some of which lack strong consolidated supervision frameworks, could potentially lead to regulatory arbitrage or underestimation of risks. Financial sector reforms aimed at bolstering and harmonizing prudential regulations in the region in line with international best practices, the enhancement of financial sector supervision to include cross border linkages through consolidated supervision, increased cooperation and information sharing across supervisors in the region, and the establishment of deposit insurance and crisis resolution frameworks will be critical to maintain financial sector stability and minimize the repercussions of any negative shocks.

APPENDIX 1: SELECTED FINANCIAL SOUNDNESS INDICATORS FOR SELECTED CARIBBEAN COUNTRIES

(In percent)

	2007	2008	2009	2010	2011	2012
Regulatory capital to RWA						
Bahamas	24.9	23.5	26.1	25.5	25.5	26.7
Barbados	16.4	16.1	17.5	17.1	19.3	19.6
Belize	23.1	19.5	20.7	22.4	23.7	22.3
Guyana	15.0	14.9	18.3	18.9	19.1	19.3
Jamaica	16.0	15.2	18.8	18.2	16.1	14.1
Suriname	10.5	10.1	10.8	12.2	12.1	12.3
Trinidad & Tobago	19.1	18.8	20.5	24.2	25.1	24.6
Nonperforming loans to total loans						
Bahamas	4.3	6.1	9.4	12.0	12.8	13.9
Barbados	2.9	3.4	7.9	10.8	11.1	12.7
Belize	6.6	12.7	12.2	18.4	19.0	17.2
Guyana	10.7	9.5	8.3	6.5	5.4	8.4
Jamaica	2.3	2.9	4.7	6.5	8.9	6.8
Suriname	8.7	7.9	7.9	7.9	8.0	8.3
Trinidad & Tobago	0.7	1.0	4.6	6.8	6.3	5.4
Return on assets						
Bahamas	3.6	2.5	2.3	2.7	2.5	1.7
Barbados	1.8	1.4	1.6	1.1	1.0	1.0
Belize	3.5	3.3	2.6	0.7	-5.3	-9.0
Guyana	2.4	2.3	2.7	2.5	2.6	2.4
Jamaica	3.5	3.5	2.9	2.5	3.9	2.4
Suriname	3.1	2.8	0.6	1.3	…	…
Trinidad & Tobago	3.4	3.5	2.7	2.3	2.4	2.6
Liquid asset ratio						
Bahamas	12.0	12.8	15.9	18.7	19.7	20.3
Barbados	9.5	9.0	10.8	11.5	12.0	13.2
Belize	19.7	20.3	21.9	24.3	27.2	29.6
Guyana	26.5	29.8	30.9	30.0	31.1	31.5
Jamaica	22.2	21.7	23.5	27.8	25.0	…
Suriname	33.9	32.6	29.8	29.2	26.4	27.5
Trinidad & Tobago	17.0	22.1	25.0	24.3	27.7	25.2
Provisions to nonperforming loans						
Bahamas	47.9	46.0	37.1	36.6	36.8	39.1
Barbados	52.0	63.4	41.5	37.4	32.9	36.5
Belize	34.2	23.1	19.5	18.2	28.0	40.8
Guyana	54.2	49.3	53.8	63.2	79.5	51.8
Jamaica	103.4	87.2	75.7	69.9	75.2	92.8
Suriname	…	…	…	…	…	…
Trinidad & Tobago	109.7	72.4	52.3	39.5	28.3	42.2

Source: Country authorities.

Note: 2012 Numbers: The Bahamas: ROA (March), Liquid asset ratio (June), Barbaods (September), Suriname (September), Trinidad & Tobago: Provisioning to NPL (September).

APPENDIX 2: BIS REPORTING BANKS' CLAIMS TO THE CARIBBEAN COUNTRIES

Table 1. The Caribbean: Consolidated Foreign Claims by Nationality of Reporting Banks
(Immediate Borrower Basis, in millions of U.S. dollars)

	2011				2012		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3
European banks	**32,048**	**35,789**	**32,339**	**34,052**	**35,010**	**33,599**	**36,012**
Swiss banks	12,467	15,468	12,765	12,056	12,888	11,898	13,654
German banks	7,599	8,596	8,237	8,511	8,463	8,771	9,294
British banks	4,036	4,103	3,692	3,284	3,333	3,789	4,269
French banks	2,230	2,561	2,760	2,212	1,181	1,226	1,375
Dutch banks	611	606	627	615	619	551	480
Portuguese banks	943	881	897	4,342	4,720	4,431	3,195
Swedish banks	334	283	226	223	219	217	301
Spanish banks	1,027	316	575	437	1,143	381	822
Belgian banks	52	51	52	48	45	45	24
Danish banks	264	264	243	186	209	196	189
Austrian banks	85	65	60	47	18	20	19
Italian banks	740	848	589	563	586	545	888
Greek banks	4	2	14	8	7	7	7
Finnish banks	...	...	...	...	...	...	...
Irish banks	...	...	...	...	...	...	...
Others	1,656	1,745	1,602	1,520	1,579	1,522	1,495
North American Banks	**14,287**	**13,258**	**13,658**	**11,464**	**18,565**	**11,947**	**13,126**
US banks	14,287	13,258	13,658	11,464	13,620	11,947	13,126
Canadian banks	...	...	...	...	4,945	...	...
Latin American Banks	**2,504**	**2,774**	**1,845**	**2,307**	**2,311**	**1,767**	**1,755**
Brazilian banks	1,498	1,615	1,411	1,359	1,387	787	735
Mexican banks	717	748	59	727	604	686	703
Panama banks	274	411	364	221	320	294	317
Chilean banks	15	...	11	...	...	...	...
Other Regions	**1,882**	**2,042**	**1,881**	**2,005**	**2,192**	**2,176**	**2,224**
Australian banks	109	115	4	4	235	214	225
Chinese Taipei banks	375	438	469	460	481	539	538
Japanese banks	1,396	1,487	1,406	1,518	1,457	1,410	1,448
South Korean banks	...	...	...	21	17	11	12
Turkish banks	2	2	2	2	2	2	1

Source: BIS International Banking Statistics

Table 2. The Caribbean: Consolidated Foreign Claims by nationality of Reporting Banks
(Immediate Borrower Basis, in millions of U.S. dollars)

	2011				2012		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Swiss banks	**12,467**	**15,468**	**12,765**	**12,056**	**12,888**	**11,898**	**13,654**
Bahamas	11,087	13,691	11,093	10,357	11,070	10,081	11,868
Barbados	134	136	114	237	247	245	251
Belize	667	728	884	855	924	897	875
Dominica	10	11	11	20	22	24	26
Grenada	3	3	5	5	5	5	5
Guyana	3	3	2	2	2	2	...
Jamaica	99	424	92	74	102	139	138
St. Lucia	8	7	22	11	6	10	7
St. Vincent	213	260	282	244	262	259	300
Suriname	4	12	72	74	75	70	66
Trinidad & Tobago	239	193	188	177	173	166	118
German banks	**7,599**	**8,596**	**8,237**	**8,511**	**8,463**	**8,771**	**9,294**
Bahamas	5,360	6,244	5,936	6,131	6,170	6,672	7,200
Barbados	542	651	632	681	586	558	577
Belize	12	23	31	30	56	44	39
Dominica	...	...	...	...	...	...	...
Grenada	...	...	...	...	...	...	...
Guyana	...	...	...	...	...	...	...
Jamaica	194	218	174	197	192	201	203
St. Lucia	26	25	20	35	15	15	16
St. Vincent	120	165	179	147	170	181	102
Suriname	1	1	3	3	1	1	...
Trinidad & Tobago	1,344	1,269	1,262	1,287	1,273	1,099	1,157
British banks	**4,036**	**4,103**	**3,692**	**3,284**	**3,333**	**3,789**	**4,269**
Bahamas	2,323	2,548	2,264	1,776	1,731	2,505	2,933
Barbados	943	816	781	711	842	562	562
Belize	321	279	274	267	265	235	254
Dominica	...	...	...	...	...	...	...
Grenada	8	10	11	9	11	16	11
Guyana	...	...	...	...	...	...	...
Jamaica	152	165	170	210	161	152	113
St. Lucia	16	18	22	65	66	66	66
St. Vincent	53	47	42	25	35	35	36
Suriname	...	...	...	...	...	...	...
Trinidad & Tobago	220	220	128	221	222	218	294
French banks	**2,230**	**2,561**	**2,760**	**2,212**	**1,181**	**1,226**	**1,375**
Bahamas	1,417	1,645	2,144	1,729	841	890	1,025
Barbados	298	394	228	201	4	3	4
Belize	...	...	...	...	...	...	...
Dominica	...	...	...	...	...	...	...
Grenada	3	2	1	1	2	2	2
Guyana	...	...	...	...	13	10	11
Jamaica	...	...	...	...	...	...	...
St. Lucia	...	...	...	...	...	...	...
St. Vincent	63	53	60	48	34	32	31
Suriname	11	11	16	19	21	23	27
Trinidad & Tobago	438	456	311	214	266	266	275

Table 2. The Caribbean: Consolidated Foreign Claims by Nationality of Reporting Banks
(Immediate Borrower Basis, in millions of U.S. Dollars)—Cont'd.

	2011				2012		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3
US banks	**14,287**	**13,258**	**13,658**	**11,464**	**13,620**	**11,947**	**13,126**
Bahamas	12,584	11,227	11,313	8,799	10,638	9,453	10,410
Barbados	372	406	548	693	853	607	660
Belize	44	46	153	159	167	182	201
Dominica	...	...	...	...	...	...	...
Grenada	...	...	1	...	1	...	1
Guyana	22	20	16	3	1	8	1
Jamaica	531	712	501	594	737	662	677
St. Lucia	...	...	...	...	...	...	...
St. Vincent	...	...	...	...	...	...	...
Suriname	4	1	49	49	49	47	44
Trinidad & Tobago	730	846	1,077	1,167	1,174	988	1,132
Canadian banks	**0**	**0**	**0**	**0**	**4,945**	**0**	**0**
Bahamas	...	...	...	...	...	...	...
Barbados	...	...	...	...	4,945	...	...
Belize	...	...	...	...	...	...	...
Dominica	...	...	...	...	...	...	...
Grenada	...	...	...	...	...	...	...
Guyana	...	...	...	...	...	...	...
Jamaica	...	...	...	...	...	...	...
St. Lucia	...	...	...	...	...	...	...
St. Vincent	...	...	...	...	...	...	...
Suriname	...	...	...	...	...	...	...
Trinidad & Tobago	...	...	...	...	...	...	...

Source: BIS International Banking Statistics.

APPENDIX 3: KEY PRUDENTIAL STANDARDS IN SELECTED COUNTRIES

Countries	CAR	NPLs	Provisioning to NPLs	Liquid Assets to Deposits	Large Exposure Limits	Exposures to Related Parties
ECCU	8%	<5%	0%-pass, special mention, substandard (government); 10%-substandard (other); 50%-doubtful; 100%-loss	20-25%	Less than 25% of unimpaired capital and reserves	Banks to identify, record and monitor related party loans, and report at times specified by ECCB
Jamaica	10%	<10%	100% (once NPL is older than 2 years)	No*	No set prudential requirement. Central Bank monitors once exposure has surpassed 5% of capital base.	Prohibit business with any firm or corporation which holds 20% or more of the bank's capital or in which the bank or a connected person has an interest as a partner
Barbados	8%		0%-substandard residential mortgage loans up to 6 months past due; 10%-substandard (other); 50%-doubtful; 100%-loss	15%	Yes, but no legal provision	Yes, but there is no comprehensive definition of “related parties”
Trinidad and Tobago			Progressive additional provisions required over time		cumulative large exposure limit (800 %)	Banks only report connected party exposures higher than 10 percent of the capital of the bank
Bahamas	17%		0%-Satisfactory, Special mention; 15-25%-Substandard; 50-75%-Doubtful; 100%-Loss	20%	Yes	Yes
Belize	9%	<5%	20%-substandard; 50%-doubtful; 100%-loss (fully unsecured); 70%-loss (fully secured)	23%	Lenient**	Unsecured exposures to a person or to a borrower group shall not exceed 15 percent of the fully paid up unimpaired capital and reserves. Aggregate exposure to a person or to a borrower group shall not exceed 4 times the fully paid-up unimpaired capital and reserves.
Guyana	8%				Generous***	

Source: Country's authorities and IMF staff's compilation

* Liquid assets are on average not less than 15 percent of prescribed liabilities.

**Allowing an aggregate limit of 600 percent of capital for loans to individual borrowers exceeding 25 percent of capital. Exemptions to this limit may be granted by the CBB, which has happened frequently over the last few years.

*** the large exposure limits vis-à-vis individual borrower groups should be aligned at 25 percent of capital base.

References

Allen, Franklin and Douglas M. Gale, 2005, “Systemic Risk and Regulation” Wharton Financial Institutions Center Working Paper No. 95–24.

Bauer, Andreas and Paul Cashin, and Sanjaya Panth (Editors), 2008, “The Caribbean: Enhancing Economic Integration” (Washington: International Monetary Fund).

Caballero, R. and A. Simsek, 2010, “Fire sales in a model of complexity,” MIT Department of Economics, unpublished manuscript (Cambridge, MA: Massachusetts Institute of Technology).

Caribbean Centre for Money and Finance, 2013, Newsletter, Volume 6, No.1

Financial Stability Board, 2011, "Key Attributes of Effective Resolution Regimes for Financial Institutions," October.

International Monetary Fund, 2004, “Eastern Caribbean Currency Union: Financial System Stability Assessment, including Report on the Observance of Standards and Codes on Banking Supervision,” IMF Country Report No. 04/293 (Washington: International Monetary Fund).

International Monetary Fund, 2009, “Barbados: Financial System Stability Assessment—Update, including Reports on the Observance of Standards and Codes on the following topics: Banking Supervision and Securities Regulation,” IMF Country Report No. 09/64 (Washington: International Monetary Fund).

International Monetary Fund, 2010, “Understanding Financial Interconnectedness” (Washington: International Monetary Fund).

International Monetary Fund, 2011a, “Mapping Cross-Border Financial Linkages: A Supporting Case for Global Financial Safety Nets” (Washington: International Monetary Fund).

International Monetary Fund, 2011b, “The Key Attributes of Effective Resolution Regimes for Financial Institutions: Progress to date and Next Steps” (Washington: International Monetary Fund).

International Monetary Fund, 2011c, “Trinidad and Tobago: 2010 Article IV Consultation – Staff Report,” IMF Country Report No. 11/73 (Washington: International Monetary Fund).

International Monetary Fund, 2011d, “Trinidad and Tobago: Selected Issues,” IMF Country Report No. 11/74 (Washington: International Monetary Fund).

International Monetary Fund, 2013, “Macroeconomic Issues in Small States and Implications for Fund Engagement” (Washington: International Monetary Fund).

Leitner, Y., 2005, “Financial networks: Contagion, commitment, and private sector bailouts,” *Journal of Finance*, Vol. 60(6).

McCauley, Robert, Patrick McGuire and Goetz von Peter (2010), “The Architecture of Global Banking: From International to Multinational?” *BIS Quarterly Review* (March).

Minoiu, Camelia and Javier A. Reyes, 2011, “A Network Analysis of Global Banking: 1978–2009”, IMF Working Paper 11/74 (Washington: International Monetary Fund).

Worrell, De Lisle and Shane Lowe, 2011, “Priorities for International Financial Reform, from a Caribbean Perspective”, Paper presented at a Meeting of the Financial Stability Board Regional Consultative Group of the Americas.