Research Document

Risk Based Capital and the Securities Market of Trinidad and Tobago

September 2024

Policy Research and Planning

Mr. Sugrim Mungal

TTSEC-PR&P-22973-SM-13/9/2024

Risk Based Capital and the Securities Market of Trinidad and Tobago

Sugrim Mungal

Abstract

Oversight of financial resources of market intermediaries is a cornerstone of actions to strengthen and protect market and systemic stability. An effective prudential framework incorporates clear and adequate requirements for capital, liquidity, and supervisory oversight of compliance and enforcement when necessary. International standards for securities regulators require that an appropriate prudential framework for securities firms should be developed and implemented to mitigate their key risk exposures and risk to systemic stability.

The current capital framework for registrants of the Trinidad and Tobago Securities and Exchange Commission ("TTSEC") is relatively simple, consisting of fixed requirements for different types of licensed activities. The current framework does not recognize either the scale or the nature of the risks that registrants are undertaking. Overall, it is recommended that the current capital framework be replaced with one that reflects the scale and nature of the risks associated with the activities of a registered entity.

Among others, the key risks to the capital of regulated intermediaries includes changes in the values of on-balance sheet items, underwriting commitments, changes in valuation of assets backing repurchase agreement ("Repo") trades, handling errors, negligence, valuation errors, hacking or fraud in relation to handling client money. Research will be conducted on requirements from international standard setting bodies and quantitative impact assessments will be undertaken to demonstrate whether Risk Based Capital or static capital requirements are suitable for registrants of the TTSEC.

Table of Contents

INTRODUCTION

The Trinidad and Tobago Securities and Exchange Commission ("TTSEC") is mandated under Section 6(c) of the Securities Act ("the Act") to "register, authorise or regulate, in accordance with this Act, self-regulatory organisations, broker-dealers, registered representatives, underwriters, issuers and investment advisers, and control and supervise their activities with a view to maintaining proper standards of conduct and professionalism in the securities industry". The Commission is also empowered under Section 7(1)(d) of the Act to "monitor the solvency of registrants that are entities, securities markets and self-regulatory organisations and take measures to protect the interest of investors where the solvency of any such person is in doubt". In order to fulfil these objectives, the TTSEC will review its current capital requirements and determine whether there is a need to revise the framework to include prudential requirements that are built on a risk-based approach. The implementation of risk-based prudential requirements will be consistent with Principle 30 of the International Organization of Securities Commissions ("IOSCO").

Risk based capital adequacy standards foster confidence in the Securities Markets. The formation of initial and ongoing capital requirements also contributes to ensuring the protection of investors, and the integrity and stability of the Securities Market and the financial system. A Securities Market intermediary should be required to ensure that it maintains adequate capital and financial resources to meet its business commitments and to withstand the risks to which its business is subject.

This research aims to highlight an appropriate approach to determining Risk Based Capital for the Securities Market of Trinidad and Tobago. It is proposed that the existing capital regime be replaced with requirements aimed at addressing the risks to capital faced by firms in the Securities Market of Trinidad and Tobago.

LITERATURE REVIEW

Prudential frameworks for capital and liquidity requirements are often based on the Basel Committee on Banking Supervision ("BCBS") core principles. In 1988, the BCBS developed the Capital Accord, also referred to as Basel I, which outlined capital requirements for banks based on the major risks faced by these institutions. Basel I also defined the type of capital that banks ought to hold according to its loss-absorbing characteristics. The BCBS, over the years, has enhanced the Capital Accord to include, for instance, operational risk capital requirements, leverage ratio, capital buffers, standards for the supervisory review process, and public disclosures. The BCBS's Capital Accord, however, is specific to banking activities and may not be relevant to securities activities. The TTSEC utilised guidance from the International Organisation of Security Commissions and the European Banking Authority in determining an approach to developing risk-based capital requirements for the Securities Market.

International Organisation of Security Commissions

The International Organisation of Security Commissions ("IOSCO") is the international body that brings together the world's securities regulators and is recognized as the global standard setter for securities markets regulation. IOSCO develops, implements and promotes adherence to internationally recognized standards for securities markets regulation and works closely with other international organizations on the global regulatory reform agenda.

In the establishment of standards for Securities Market regulation, IOSCO has put forward Principles for Securities Market Regulation. Principle 30 of IOSCO's principles states that *"There should be initial and ongoing capital and other prudential requirements for market intermediaries that reflect the risks that the intermediaries undertake."* (IOSCO I. O., 2017)

The Objective of Principle 30 is to allow a Securities Market Intermediary to absorb some losses and continue to operate, particularly in the event of large, adverse market moves, and to provide supervisory authorities time to intervene to accomplish an orderly wind down. Initial capital requirements must be a condition of licensing and should also be determined based on the nature and amount of business expected to be undertaken by the firm. Ongoing capital requirements should be directly related to the nature of the risks and the amount of business undertaken during operations.

Capital requirements will address the ability of a Security Market Intermediary to absorb costs and risks associated with securities business activities, including starting up, continuing in business, and discontinuing operations. Capital requirements require shareholders/owners to make their own resources available (putting “skin in the game”) so that firms can absorb the costs and risks inherent in their ongoing activities and the costs of resolving errors.

In assessing principle 30, IOSCO (BCBS, 1996) identified two main approaches to determining capital adequacy standards for Securities Market intermediaries. A “net capital” approach is used in the United States, Canada, Japan, and some other non-European Union (“EU”) jurisdictions. The purpose of the net capital approach is, among other things, to protect clients and creditors by requiring broker-dealers to maintain sufficient liquid assets to allow the orderly self-liquidation of financially distressed broker-dealers.

The other main approach is incorporated in the EU’s Capital Requirements Regulation and in the Credit Institutions Directive, which are based on the amendment to the Basel Capital Accord to incorporate market risks (BCBS, 1996). The emphasis in this approach is on ensuring the capital solvency of Security Market Intermediaries. While the two approaches differ in their objectives, their practical effects overlap to a significant extent.

Principles for Market Infrastructures

The Committee on Payment and Settlement Systems (“CPSS”) and IOSCO have developed the Principles for Market Infrastructures (“PFMI”). The PFMIs provide international standards for Financial Market Infrastructures (“FMI”) which include Payment Systems which are systemically important, Central Securities Depositories and Securities Settlement Systems.

According to Principle 15: General Business Risk, an FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services (CPSS and IOSCO, 2012).

An important consideration for Principle 15 includes the fact that an FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses.

European Banking Authority

The prudential framework in the EU has evolved into a framework aimed specifically at Security Market Intermediaries. In the past, EU securities markets authorities had applied the same framework to investment firms as they do to banks. That framework is based on the framework of the Basel Committee for Banking Supervision (BCBS) of the Bank for International Settlements (BIS). In 2014, the European Commission of the EU (EC) asked the European Banking Authority (EBA), supported by the European Securities Markets Authority (ESMA), to give its opinion on the suitability of the banking framework for European investment firms (EBA and ESMA, 2014). The EBA gave its opinion including specific recommendations, in 2017 (EBA, 2017).

In short, the EBA recommended that the EU move away from the BCBS approach and its Capital Adequacy Ratio ("CAR") to a new approach in which capital had to meet requirements based on the specific risks associated with investment firm activities. This new approach would apply to firms other than major investment firms that might pose systemic risks. The EBA recommendations were largely accepted by the EC and approved by the European Parliament, with implementation expected to start in 2021.

The overall EBA recommendation (EBA, 2017), accepted by both the European Commission and European Parliament, was that a firm should have acceptable capital that was at least the highest of the following three numbers:

I. An initial requirement - The minimum required for authorization of the firm
II. An operational requirement - Three months of fixed expenses (i.e., not including costs that varied according to the profitability of the firm and would not be needed in a close down of the firm, such as bonuses or trade-related commission)
III. A risk-based requirement - based on the activities and assets of the firm.

Caribbean Regional Technical Assistance Centre

During 2021, the Caribbean Regional Technical Assistance Centre ("CARTAC") provided technical assistance to Trinidad and Tobago on the development and implementation of enhance Risk-Based Capital Requirements for TTSEC Regulated Entities. In its final report to the TTSEC CARTAC proposed that the TTSEC implement a regime whereby firms are required to hold qualifying capital that is the higher of (i) a minimum capital requirement, or (ii) a risk-based capital requirement. Each of these requirements are set out as absolute amounts rather than ratios, such as the Capital Adequacy Ratio -CAR for Banks, as this is significantly simpler and creates a more tangible and easily understood link between the risks that a firm decides to take and the corresponding capital required to cover them.

METHODOLOGY

To implement a regulatory regime for Risk Based Capital in the Securities market of Trinidad and Tobago, the TTSEC would have to achieve specific milestones as follows:

1. Introduce a legally binding Risk-Based Capital requirement that applies to all regulated entities.
2. Provide a definition of qualifying capital.
3. Implement a risk-based calculation to include market risk, operational risk and credit risk.
4. Consider the Financial Stability risks associated with Fixed NAV Collective Investment Schemes in the risk-based calculation.
5. Consider the treatment of dual-regulated entities between the TTSEC and the CBTT.
6. Conduct Qualitative Impact Assessments to determine the impact of implementing a risk-based capital regime in the securities market of Trinidad and Tobago.

The following research equation is a mathematical representation used to express relationships between variables within the proposed risk-based capital framework.

$$X = \Sigma(M + O + C)$$

$$M = \Sigma[(z_1 \times 1 + z_2 \times 0.91 + z_3\ x\ 0.67) + (\text{MV x IR}) + (> (\text{NL x } 2\% \ \& \text{ NS x } 5\%) + (\text{E x } 8\%)]$$

$$O = \Sigma(CCH \times 0.4\% + AUM \times 0.02\% + AS \times 0.02\%)$$

$$C = \Sigma(CC \times 0\% + OC \times 20\% + UC\ 100\% + M(FNAV))$$

KEY

X – Risk based capital requirement
M – Market risk
O – Operational risk
C – Credit risk
Z – Weighted average maturity (≤ 1 year, > 1 year and ≤ 5 years, > 5 years)
MV – Market value of fixed income securities
IR – Interest rate charge
NL – Net long position
NS – Net short position

E - Equities
CCH – Client cash held
AUM – Client assets under management
AS – Client assets in safekeeping
CC – Cash collateral
OC – Other collateral
UC – Uncollateralised loans
FNAV – Fixed NAV CIS

Legal Process

The proposal to enhance the current capital framework with one that reflects the scale and nature of the risks associated with the activities of a registered entity would require legislative amendment or the introduction of new legislation. The legislation would have to include the following:

- Definition of new capital requirements
- Definition of qualifying capital
- Reporting requirements
- Transition period

The Securities Act 2012 ("The Act") provides two (2) pathways to implementing the Risk Based Capital requirements. The first is where the TTSEC would recommend to the Minister of Finance that the Bye - Laws be created. The second option would include the TTSEC issuing an Order amending the existing capital requirements. It was determined that the most suitable approach would be to create new Bye – Laws which is considered to be secondary legislation. The following process is followed for the implementation of secondary legislation:

1. Draft the requisite legislation - Bye-laws or amendments to existing ones as necessary.
2. Present to Board of Commissioners for approval.
3. Circulated to stakeholders for comment.
4. Reviewed Stakeholders comments and make necessary amendments to the requisite legislation (if necessary).
5. If substantial amendments are made, the legislation should be recirculated for Board Approval.
6. Review any further comments from stakeholders and prepare a final draft of legislation.
7. Present final draft to the Board for approval to submit same to the Minister of Finance.
8. Once approval is obtained, submit final draft of the legislation to the Minister of Finance for approval and forwarding to the Chief Parliamentary Counsel (CPC).
9. CPC where necessary revises the draft to ensure that it accords with the relevant legislative drafting format and presents to the Cabinet for approval.
10. Once the Cabinet approves, the Law Review Commission (LRC), will review the proposed legislation and the Commission will appear before the LRC if they so request. Bye-law would be laid and passed by negative resolution.

Qualifying Capital

The purpose of a capital requirement is to ensure that sufficient capital is held to be able to absorb a reasonable level of losses associated with the firm's business. The TTSEC's current definition of qualifying capital broadly refers to balance sheet capital, much of which may not be able to absorb losses (for example: revaluation reserves, unrealized profits, statutory reserves, etc.). The current capital requirement framework for registered entities is relatively simple, consisting of fixed requirements for different types of licensed activity. The current framework does not recognize either the scale or the nature of the risks that the firms are undertaking. The table below displays the TTSEC's current capital requirements.

Table 1 – Current Capital Requirement

Registrant Category	Description of activities conducted	Capital Required (TTD)	Minimum Capital Requirement (TTD)
Investment Adviser	Investment advisory services	50,000	50,000
Underwriter	Underwriting	5,000,000	2,000,000
Broker-Dealer	Executing transaction - clients	2,000,000	1,000,000
	Executing transaction - own account and clients	5,000,000	2,000,000
	Executing transactions and underwriting	6,000,000	3,000,000
Draft CIS and Portfolio Manager By-Laws			
CIS Manager	Administering CISs for clients	2,000,000	1,000,000
Portfolio Manager	Administering non-discretionary accounts	75,000	Not Applicable
	discretionary and non-discretionary accounts	125,000	

The TTSEC will need to use a definition of qualifying capital which is consistent Basel Requirements, however, simplified so as to remove elements that are not found in the securities market. The following is the proposed approach to determine qualifying capital in the securities market.

Common Equity Tier 1 Capital		
Fully paid issued ordinary share capital + share capital premium	XX	
Audited Retained earnings	XX	XX
Deductions		
Current year losses	XX	
Goodwill	XX	
Other intangible assets	XX	(XX)
Fully paid perpetual non-cumulative preference shares + premium		XX
Net Tier 1 Capital		**XX**
Tier 2 Capital		
Fully paid perpetual cumulative preference shares + premium	XX	
Hybrid instruments	XX	
Subordinated Term Debts (tapered by 20 percent for every year less than 5 years to maturity)	XX	XX
Net Tier 2 Capital		**XX**
Total Qualifying Capital		XX

Regulated entities will be required at all times to have qualifying capital of the higher of (i) the existing minimum capital requirements or (ii) a specific risk-based calculation. In light of this an important question would have to be answered on how the TTSEC can implement the Risk-Based Capital Adequacy Framework and compel compliance.

Risk Based Calculation

The risk-based capital Framework will be based on an understanding of the key risks of securities firms operating within Trinidad and Tobago. These risks have been identified as follows and are discussed further below.

i. Market risk – changes in the value of on-balance sheet and off-balance sheet assets due to, for example, changes in interest rates and foreign exchange rates.

ii. Credit risk – risk attached to loans, contingent liabilities and the implicit or explicit guarantees of Fixed Net Asset Value ("NAV") funds.
iii. Operational risk – risk of loss due to handling errors, system malfunction, negligence, valuation errors, hacking or fraud.

Market Risk Requirement

Market risk is defined as the possibility of a decline in the value of on-balance sheet and off-balance sheet assets due to adverse movements in market prices, such as interest rates, equity prices and foreign exchange rates. The TTSEC's approach to determining the capital requirement for market risk will be consistent with the BCBS's Standardized Approach albeit tailored and simplified for the local securities sector. Under the Standardized Approach, capital charges are applied separately to each risk category and then aggregated to an overall capital requirement.

General Interest Rate Risk Requirement

The general interest rate risk requirement reflects the price sensitivity of interest rate bearing instruments to changes in market interest rates or yields, otherwise defined as modified duration. Interest rate related securities on a firm's proprietary book, as well as those underlying Repurchase Agreements ("Repos") sold to clients, are subdivided into three zones depending on their remaining time to maturity.

i. Zone 1 – securities that have less than one year remaining to maturity;

ii. Zone 2 – securities that are maturing within one to five years; and

iii. Zone 3 – securities that have more than five years remaining to maturity.

The weighted average remaining time to maturity for each zone will be multiplied by a conversion factor (supplied by the TTSEC) to obtain the modified duration for each zone. A conversion factor is applied so as to avoid the need to amend the current Micro and Macro-prudential Reporting Framework ("MMRF"), which does not require registrants to report modified duration for securities on their balance sheet. The conversion factor, for each maturity zone, was estimated based on a typical coupon rate for bonds within the securities market of Trinidad and Tobago and the Standardized Trinidad and Tobago Treasury Yield Curve published by the CBTT.

In accordance with the BCBS' Standardized Approach, changes in interest rates are assumed to be between 0.65% and 1.00% depending on the maturity zone. The capital required against general interest rate risk is equal to the aggregate of the market value of bonds within each zone by the respective modified duration and the assumed change in yields. Figure 1 illustrates this computation for a sample firm.

Figure 1: General Interest Rate Risk Capital Requirement

		NOTES	Zone 1	Zone 2	Zone 3	Capital
	Remaining Time to Maturity		**≥ 1 year**	**> 1 - 5 years**	**> 5 years**	
301	Total Market Value of Positions		2,488,124	88,868,378	106,315,235	
302	Weighted Avg. Maturity	*Note 1*	0.17	2.95	12.78	
303	Moddur Conversion Factor		1.0	0.91	0.67	
304	Market Value * Moddur		432,245	238,637,961	910,690,648	
305	Assumed change in yields		1%	0.80%	0.65%	
306	Weighted sensitivity		4,322	1,909,104	5,919,489	
307	Capital Charge		100%	100%	100%	
308	**Total Capital Required Against General Interest Rate Risk**		**4,322**	**1,909,104**	**5,919,489**	**7,832,915**

Specific Interest Rate Risk Requirement

Specific interest rate risk arises due to factors related to the individual security issuer, most specifically changes in the perception of the issuer's ability to pay interest and principal, as represented by its credit rating. The TTSEC will categorise interest bearing securities into four groups depending on the issuer.

I. The Government of the Republic of Trinidad and Tobago ("GORTT") Trinidad and Tobago denominated Bonds, this includes Treasury Bills, Notes and Bonds issued and fully guaranteed by GORTT;

II. GORTT Eurobonds;

III. Other Domestic Bonds, including bonds issued by State Agencies and guaranteed by GORTT; and

IV. Foreign Bonds.

An interest rate charge which reflects the credit rating of the issuer is applied to the market value of the securities to determine the capital required for each category. The sum of the capital required for each category is equal to the specific interest rate risk capital requirement. Figure 2 illustrates the computation for a sample firm.

Figure 2: Specific Interest Rate Risk Requirement

		Market Value TT$	Interest Rate Risk Charge %	Capital Required TT$
401	**Government of the Republic of Trinidad & Tobago TT Securities**	62,416,977	0%	0
402	**Government of the Republic of Trinidad & Tobago Eurobonds**	36,911,416	1.6%	590,583
403	**Other Domestic Bonds**			
4031	AAA to AA-		0%	0
4032	A+ to BBB-		1.6%	0
4033	BB+ to B-		8%	0
4034	Below B-		12%	0
4035	Unrated	86,019,388	8%	6,881,551
404	**Foreign Government and Non-Government Securities**			
4041	AAA to AA-	1,352,500	0%	0
4042	A+ to BBB-		1.6%	0
4043	BB+ to B-	2,605,148	8%	208,412
4044	Below B-		12%	0
4045	Unrated	8,366,308	8%	669,305
405	**Total Capital Required Against Specific Interest Rate Risk**			**8,349,850**

Equity Risk Requirement

Registrants that hold equity securities are exposed to the risk that the value of these securities may fluctuate due to factors specific to the issuer (specific market risk) or movements in the equity market (general market risk). The financial instruments to which equity risk capital requirements will apply, include:

I. Ordinary shares;
II. Convertible preference shares;
III. Convertible bonds that trade like equities;
IV. Units of a CIS;
V. Exchange-Traded Funds ("ETFs"); and
VI. Any other financial instrument that exhibits equity-like characteristics and trade like equities.

The capital required against equity risk is equal to the total market value of equity positions multiplied by a capital charge of 8% each for specific market risk and general market risk or 16% in total. These capital charges align with those prescribed by the BCBS and the Central Bank. According to BIS, Specific risk is defined as the bank's gross equity positions (ie the sum of all long equity positions and of all short equity positions) and general market risk as the difference between the sum of the longs and the sum of the shorts (ie the overall net position in an equity market). Short positions do not exist in the Trinidad and Tobago market therefore only Specific risk will be applicable Equity Market Risk. Therefore, the Equity charge will be 8% or the relevant financial instruments.

Foreign Currency Risk Requirement

The objective of this requirement is to ensure that firms have sufficient capital to cover any losses resulting from the volatility in exchange rates. Foreign currency risk may emanate from a firm's assets and/or liabilities that are denominated in a currency other than the TTD. In accordance with the BCBS Standardized Approach, the capital charge is therefore applied to the firm's net foreign currency position (foreign assets less foreign liabilities).

A capital charge of 2% shall be applied in the instance of a net long foreign currency position (where foreign assets exceed foreign liabilities) and a charge of 5% for a net short foreign currency position. The foreign currency capital charges under this Framework considers the following:

I. The TTD has historically depreciated against the United States Dollar ("USD"), the predominant foreign currency held on registrants' balance sheet;
II. Accordingly, a net long foreign currency position is less risky than a net short foreign currency position; and
III. The 10% single capital charge prescribed under the BCBS Standardized Approach if applied to the higher of the net long foreign currency position and the net short foreign currency position would be onerous for registrants.

<u>Operational Risk Requirement</u>

The operational risk faced by securities intermediaries differs somewhat from that faced by banks and other financial institutions. Securities intermediaries are exposed to a significant amount of operational risk when handling clients' monies and assets as well as safekeeping those assets. The BCBS or Central Bank approach does not give sufficient weight to firms whose prime business activities include managing or safekeeping clients' assets. As such, the TTSEC has modeled its operational risk requirement in line with the EBA's approach. The operational risk requirement is the sum of the required capital for handling clients' monies, managing clients' assets, and safekeeping clients' assets.

Handling Clients' Monies

This activity is highly exposed to errors and misconduct that may harm the interests, rights, and assets of clients, which the firm would be liable to make good. Although under the Act, registrants are required to hold clients' monies in separate bank accounts, such monies remain in direct control of the registrant and are often included on its balance sheet. Furthermore, the fungibility of cash makes identifying and tracing errors even more difficult. Given that clients' monies are not fully segregated from registrants' monies, the capital required to be held against operational risks related to the handling of clients' monies is:

Client Money Requirement = 0.4% x Total Client Money Held

Where Total Client Money Held is the TTD value of money held or controlled by the firm on behalf of clients and any other third parties. It includes all client monies held in cash and in bank accounts, whether segregated or not, and in TTD as well as in a foreign currency, converted at the exchange rate effective for the date of calculation.

Client Assets Under Management ("AUM")

Some registrants engage in investment management activity. This activity is also open to significant errors and misconduct that can directly impact the interests, rights and assets of clients, and for which the firm will be liable. An adequately capitalised firm should be able to maintain systems that prevent inappropriate behavior and to rectify any mistakes. The capital required to be held against operational risks related to managing clients' assets is:

Client AUM Requirement = 0.02% x Total Client AUM

Where Total Client AUM is the TTD value of all client assets in accounts administered by the firm (CIS, pension funds, and portfolios of institutional and retail clients) but not including cash and Repo accounts.

Client Assets in Safekeeping or Custody

Risks also arise when a firm has direct control over client investments in safekeeping or custody. A firm with adequate capital should be able to maintain satisfactory arrangements to safeguard clients' rights and prevent the inappropriate sale of assets or use of clients' instruments, as well as compensate the client for any mistakes. In Trinidad and Tobago, most client assets have to be kept in segregated accounts with the TTCD. Furthermore, clients have direct electronic access to inspect their accounts. Taking this into consideration, the capital required against operational risks related to the safekeeping of clients' assets is:

Client Custody Requirement = 0.02% x Total Assets in Safekeeping

Where Total Assets in Safekeeping is the TTD value of all investment assets held in the custody or safekeeping by the firm for clients. This includes investments held by another party that acts on instructions from the firm, rather than from the investor. It includes assets held as part of Repo, wealth and CIS portfolios, which may be held in the TTCD or in foreign custody.

Similar to the EBA and BCBS approaches, the Commission's Framework does not take into consideration professional indemnity insurance for any reduction to the operational risk requirement. Although insurance purports to cover some exposure to operational risks, it cannot be relied upon for regulatory purposes because:

I. Insurance companies may be incentivised to find reasons not to pay and, in any event, may not pay out in a timely manner.
II. Terms are likely to exclude deliberate losses or losses attributable to executives or significant shareholders.
III. There is counterparty risk.

Credit Risk Requirement

Credit risk is defined as the potential for a borrower or counterparty to fail to satisfy its obligations in accordance with the agreed terms. Other than the credit risks attached to debt securities, the most significant credit risks borne by registrants are the credit risks attached to loans to clients, contingent liabilities and Fixed NAV CISs.

Loans to clients are usually made against collateral. In accordance with the BCBS or Central Bank approach, a capital charge of 20% is applied to the collateralised portion of a loan and a charge of 100% against the uncollateralised portion of the loan when determining the capital requirement.

A contingent liability is a future liability that may occur depending on the outcome of an event. In accordance with International Financial Reporting Standards, contingent liabilities must be recorded on a firm's balance sheet. If the contingent liability is deemed likely to materialise, a capital charge of 100% is applied to the amount of the liability when determining the capital requirement.

Fixed NAV Collective Investment

For Fixed NAV CISs, the value of a unit of the fund remains constant for both subscriptions and redemptions. Essentially, the fund manager provides unitholders with a guarantee against any market risks within the fund. The effect is that the fund manager has a risk that corresponds to a long exposure to the value of the fund. Under the BCBS rules, the market risk of a long position in funds is calculated by "looking through" to the underlying assets of the fund[1]. Accordingly, the capital requirement based on the market risk of the underlying assets of the fund will be determined using the market risk requirement calculation described in the Market Risk Section of this paper. The market risk of the underlying assets of the fund are incorporated in the credit risk capital requirement for the CIS manager because the risk is primarily attached to a guarantee by the entity.

The TTSEC will consider implementing the market risk requirement for Fixed NAV CISs in a phased approach so as to give fund managers time to adjust their fund structure, reduce the risks attached to Fixed NAV CISs and possibly incentivise a transition away from these funds. Fixed NAV CIS fund managers would be required to have at least 25% of the market risk requirement for Fixed NAV CISs. This amount will increase to 50% in stage 2, 12 months after the implementation of the Framework; and 75% in stage 3 (24 months after implementation). Full implementation of the market risk requirement for Fixed NAV CISs is anticipated after 36 months of the implementation of the risk-based capital framework.

Dual-Regulated Entities

Many of the TTSEC registered entities, particularly broker-dealers, are also regulated by CBTT as banks, non-bank financial institutions or insurance companies. Of the 53 entities regulated by TTSEC, not all have securities business as their main activity. Two are insurance companies, six are commercial banks, two are merchant banks, and ten are non-bank financial intermediaries; all of these are under direct CBTT oversight. It will be necessary to determine which set of capital requirements should apply to which entity.

[1] Bank for International Settlements, *Capital requirement for bank's equity investments in funds*, December 2013, [Capital requirements for banks' equity investments in funds - final standard (bis.org)]

For entities whose principal business is banking, but which carry out a small amount of securities activity, the banking capital requirement will be best designed to address the entity's risks. For

entities whose principal business is insurance, similarly, it may be appropriate to apply the insurance company risk-based capital framework. For entities that are primarily carrying out securities business, it will be appropriate to apply the TTSEC risk-based framework designed for securities intermediaries.

Within the TTSEC's proposed framework a registrant registered under Section 51(1) of the Act which is also licensed by the Central Bank under the Financial Institutions Act Chapter 79:09 of the Laws of the Republic of Trinidad and Tobago may make an application to the TTSEC to be exempted from the provisions of the risk-based capital Bye-Laws.

Quantitative Impact Study

A Quantitative Impact Study ("QIS") was conducted to determine whether the proposed risk-based framework was suitable for the securities market of Trinidad and Tobago. QISs were conducted on two (2) separate occasions during the calendar years 2020 and 2023. Results of the QISs are discussed further below.

Quantitative Impact Study 2020

Utilising information as at the December 31st 2020 and the research equation for the relationships between variables within the proposed risk-based capital framework.

$$x = \Sigma(M + O + C)$$

The average risk-based capital requirement consists of the following:

$$\Sigma(TTD\$88{,}333{,}825 + TTD\$3{,}391{,}753 + TTD\$151{,}578{,}957) = TTD\$243{,}304{,}535$$

The Average Qualifying capital considering both Tier 1 and Tier 2 capital is TTD$368,798,262

Overall based on the averages observed the market will be in a capital surplus of TTD$125,493,727

The main driver of the credit risk component relates to the management of Fixed NAV CISs. Of the 49 registrants 8 (16%) failed the risk-based capital requirement. This included four (4) managers of Fixed NAV CISs, and four (4) registrants that engage in the business of Repo selling, portfolio management and brokerage services.

Quantitative Impact Study 2023

As per December 31st, 2023, the average capital surplus was TTD$196,052,742. This was a 56% increase from the QIS conducted in 2020. Which signified that the market's capital position was strengthened. Of the 54 registrants 4 (7%) failed the risk-based capital requirement.

DISCUSSION

It is strongly recommended that the TTSEC plan carefully for the implementation of the proposed risk-based capital framework. This would require consultations with the market, which may necessitate fine tuning of reporting templates. During Implementation the TTSEC will also have to consider the inclusion of an Absolute Requirement or Capital Adequacy Ratio ("CAR"). Many Broker-Dealers registered with the TTSEC are also part of banking groups and may be familiar with CAR ratios and prefer that the absolute requirement be replaced with a CAR ratio.

The existing prudential reporting framework of the TTSEC should be leveraged for the process. This will mean that the reporting will be implemented on a quarterly basis and will require firms to monitor their capital continuously and report formally on a quarterly basis.

The TTSEC will have to consider how it will act in relation to breaches of the requirement. The TTSEC will consider the creation of a supervisory ladder, including Early Warning Indicators ("EWIs") prior to breach, with specific actions planned for when capital or liquidity falls below the required levels. This would include, for example, being put on a watch list and contacting the firm to establish what their plans are to improve their capital. The risk-based capital requirement will also be integrated with the Risk-Based Supervision framework, along with the EWIs.

Many of the registered entities are also regulated by CBTT as banks, non-bank financial institutions or insurance companies. The TTSEC and the CBTT have entered into a Memorandum of Understanding, along with the Financial Intelligence Unit of Trinidad and Tobago (responsible for oversight of Anti Money Laundering and Combatting the Financing of Terrorism) for mutual consultation, cooperation and information exchange between the three authorities in the carrying out of their regulatory and supervisory functions under the relevant Laws, Regulations and Rules. The TTSEC will have to be in discussions with the CBTT regarding dually registered entities.

CONCLUSION

Results from the QIS suggest that the implementation of Risk – Based Capital requirement is not too onerous on the entities approved to operate in the securities market of Trinidad and Tobago. It is therefore recommended that the existing capital adequacy requirements be replaced with a requirement aimed at addressing the risks to capital faced by firms in Trinidad and Tobago. This will allow the country to be compliant with international best practices and ensure that firms are able to absorb some of the costs and risks associated with their securities business. The risk-based capital requirements will also aid in mitigating the impact of the failure of any one firm on clients, other market participants, the securities sector, and the financial system and will foster confidence in the securities industry.

A risk-based capital framework will ensure that regulated entities have capital commensurate with the risks inherent in their business activities, so that they can absorb losses that emerge naturally from these activities and to help ensure that the firm has sufficient time and resources to close down operations in an orderly manner, passing customer accounts and assets over to another firm. There are some components of capital on a firm's balance sheet that may not be able to absorb losses. These include, for example, revaluation reserves and unrealised profits. Accordingly, the TTSEC's risk-based capital framework can limit qualifying capital to only those elements that are useful for absorbing losses.

References

BCBS, B. C. (1996). *Amendment to the Capital Accord to Incorporate Market Risk.* BCBS.

CPSS and IOSCO, C. o. (2012). *Principles for Financial Market Infrastructures Disclousure Framework and Assessment Methodology* . Bank for International Settlements .

EBA and ESMA, E. B. (2014). *Report on Investment Firms.* EBA.

EBA, E. B. (2017). *Opinion of the European Banking Authority in response to the European Commission's call for Advice on Investment Firms.* EBA. Retrieved from https://www.eba.europa.eu/sites/default/files/documents/10180/1976637/c1cfe165-633a-4c1f-851d-fa771246ee54/EBA%20Advice%20on%20New%20Prudential%20Framework%20on%20Investment%20Firms%20%28EBA-Op-2017-11%29.pdf

IOSCO, I. O. (1996). *Recommendation of the Technical Committee on the Recognition of Bilateral Netting Agreements in the Calculation of Capital Requirements for Securities Firms.* IOSCO.

IOSCO, I. O. (2017). *Methodology For Assessing Implementation of the IOSCO Objectives and Principles of Securities Regulation.* IOSCO.

Supervision, B. C. (2013). *Capital requirements for banks' equity investments in funds.* Bank for International Settlements.