IIBF Diamond Jubilee and C H Bhabha Banking Overseas Research Fellowship Project

A study on the AT1 Bonds in India vis-à-vis other jurisdictions

DECLARATION

I, hereby declare that this project report titled “A study of AT1 bonds in India vis-à-vis other jurisdictions” is a bonafide and genuine research work carried out by me under the Diamond Jubilee and CH Bhabha Banking Overseas Research Fellowship 2021-22 of Indian Institute of Banking and Finance (IIBF), Mumbai. There is no violation of copyright and IIBF shall have the rights to preserve, use, and disseminate the report in print or electronic format for academic/ research purpose.

Date: June 30, 2024

Place: Mumbai.

(SAKET KUMAR)

DISCLAIMER

The views and opinions expressed in the report are those of the author and do not necessarily represent the views of the institution to which the author is affiliated to or of the IIBF. The report is provided for informational purposes only and is not intended to provide any legal or professional advice, and readers should not act or rely on any information contained in this report without seeking professional advice. The information presented in this report is based on the current understanding of the subject matter at the time of writing and may not be complete or accurate and is solely for academic purpose.

The author and the organization will not be held liable for any losses, damages, or other liabilities arising from the use or reliance on the information presented in this report. Readers are responsible for verifying any information contained in this report before acting on it. The information in this report is subject to change without notice and may not be updated or revised to reflect changes in the subject matter. The author and the organization do not undertake any obligation to update or revise any information contained in this report.

Supervisor's Certificate

This is to certify that this Research Report entitled "A study on AT-1 bonds in India vis-à-vis other Jurisdictions" has been carried out by Shri Saket Kumar, and submitted to the Indian Institute of Banking and Finance (IIBF), Mumbai for the award of the Diamond Jubilee & CH Bhabha Banking Overseas Research Fellowship (DJCHBBORF) for 2021-22, under my supervision. The research work done in this Report is Satisfactory and recommended for the Award.

This Report or a part thereof has not been previously submitted to any other Institute/ University for any award/degree.

Place: Pune

Date: 30/06/2024

(Dr Arindam Bandyopadhyay)

Professor & Dean, Academic Programme, NIBM, Pune

Dr. Arindam Bandyopadhyay
Professor (Finance Area)
Dean (Academic Programme) & Principal
PGDM (Banking & Financial Services)

Acknowledgement

This work would not have been possible without the support of a lot of people, and I take this opportunity to thank them all for selflessly enabling and guiding me to delve into this subject and complete the report. I would like to express my special thanks of gratitude to Ms. Gitika Ojha and Mr. Nik Dhanani from HSBC Bank plc, UK, Shri Anil Gupta and Shri Karthik Srinivasan from ICRA, Mr. Arnab Das, Mr. Ian Centis, and Mr. Rod Ringrow from Invesco Asset Management, London, Ms. Hannah Paik and Mr. Hanif Aabid from Natwest, London, Simon Hill, from UK finance, Mahmoud Fatouh, from Bank of England, Manthan Taswala, from Barclays Bank, UK, Shri Paritosh Kumar from Union Bank of India, and Shri Yogesh Satpute from IndusInd Bank.

2. I am also extremely grateful to Indian Institute of Banking & Finance (IIBF) for the award of the Diamond Jubilee and CH Bhabha Banking Overseas Research Fellowship (DJCHBBORF) and giving me the opportunity to study the AT1 bonds in depth. I would like to specially thank CEO, IIBF, Dr. Kratika Shrivastava, and Ms. Anupama Bharadwaj from IIBF for their constant support and encouragement. I would also like to extend my heartfelt thanks to my guide Dr. Arindam Bandyopadhyay, NIBM, for his guidance, encouragement and continuous support. I also take this opportunity to record my sincere thanks to my institution for allowing me to undertake this fellowship.

Table of Contents

Executive Summary

AT1 bonds are capital instruments with debt like features and act as key regulatory bail-in instruments outside the normal bankruptcy process imposing principal losses on creditors in case of firm specific events. The primary purpose of institutionalising AT1 bonds has been to enhance the resilience of banks by ensuring orderly re-capitalization and liquidation of banks without leading to any domino impact on the banking or financial system.

2. Based on the stipulated features, AT-1 instruments have two defining characteristics – the loss absorption mechanism and the trigger that activates this mechanism. The loss absorption mechanism occurs either by AT1 bonds converting into common equity by or through a complete or partial, permanent or temporary principal write-down, based on pre-defined trigger point, either quantitative or qualitative. The quantitative trigger is generally defined numerically in terms of a specific capital ratio/ fraction of risk-weighted assets, or it can also be discretionary based on supervisory assessment (statutory power or contractual terms), when the bank is assessed to be non-viable, and the trigger is necessary. The write-down is also affected in cases prior to recapitalisation of a bank with public funds.

4. The global AT-1 market is worth roughly **$969 billion** as of March 2024 with Asia having the major share of around **$577 billion**, followed by Europe with **$211 billion,** and preference shares in USA with a market of around **$182 billion.** Globally, the CNY is the currency with maximum share of issuance in AT1 followed by USD and EUR. With regard to the principal loss absorption mechanism, AT1 instruments with write-down feature has been observed to the prominent issuance type both in Europe as well as in Asia. However, the proportion of write-down issuance is greater in case of Asia. In the write-down category, there appears a complete contrast between the issuances in Asia and Europe. While European write-down issuances are primarily temporary write-downs, in contrast, the Asia write-down issuances are primarily permanent in nature.

5. The maturity of the AT1 bonds is broadly perpetual across the globe and are mainly issued as subordinated debt. The coupon reset dates have been observed to

be coincident with the first call date. As required in the Basel guidelines, dividend pusher feature is not observed in any jurisdiction globally. However, the dividend stopper guidelines are present globally in most of the jurisdictions. With respect to dividend distribution, dividends are observed to be fully discretionary (non- cumulative) and subject to distributable reserves and capital buffers.

6. There is a lot of variation observed in the requirements for going concern CET1 loss absorption triggers across the geographies. Geographies such as China, Singapore, Hong Kong, Korea, USA and Canada have no stipulated trigger requirements. However, for Australia, EU, UK, India, Thailand, and Switzerland, CET1 requirements ranges from 5.125% to 7%. There is also a lot of variances in the loss absorption manner wherein some jurisdictions provide only for conversion to equity while some for permanent and temporary write-downs.

9. With respect to the discretionary trigger of non-viability, stipulations across jurisdictions are based on contractual agreements, statutory or both. In case of contractual stipulations, the provision of loss absorption trigger is mentioned in the AT1 contract itself. Statutory stipulation requires that in case resolution is invoked, creditor hierarchy has to be respected via "no creditors worse off than in liquidation principle". China, Australia, Korea, Thailand, India, and Canada have contractual stipulations. Hong Kong, Singapore, and Switzerland have both the stipulations. EU, UK, and USA have the statutory stipulations.

10. Globally, the major investor groups for AT1 instruments include Asset Managers, Banks, Family Office/ professional investor/ private bank customer, Hedge Funds, Insurer (investing policy holder liabilities), Pension Funds, Preferred Funds/ CoCo Funds, and Sovereign wealth funds. Most global investors do not have any rating restrictions for making investments except for Asian markets. Relative outright value of AT1 bonds within the asset class appeared to be the most quoted reasons for investing in AT1s. Investors and banks use yields and credit spreads (Z-spreads and 5-year swap spreads) to value the AT1 bonds.

11. The market expectations about issuers invariably calling the AT1 bonds at first call date has been replaced with the understanding that the issuers may prefer calling the AT1 bonds at the first call date but may choose not to if the economics are very

unfavorable. Hedging with respect to AT1 bonds was not being done by majority of the investors. As a tool to reduce refinancing risk and enhancing primary market efficiency, many banks in UK and EU combine fresh AT1 capital issuances with the concurrent repurchases of outstanding AT1 capital instruments, often termed as “tender offer”.

12. As on March 2024, the total amount of AT1 instruments outstanding in Indian markets is ₹1,28,147 crores, with the issuance being dominated by Public Sector Banks. There appears to be a wide variability in the respective coupons and the spreads prior to 2020-21 which have appeared to narrowed down over the post 2020-21 period, mainly attributed to bank consolidation. There has been stability in the levels of the coupons and the reduction in the spreads appear to reflect upon the healthy condition of the Indian Banking sector, better balance sheets, as well as the overall strength of the financial sector in general. There do not appear to be any direct relationship between the issuance of AT1 bonds and GNPAs, however, we may infer expected write-offs to be directionally related to the issuance of the AT1 bonds.

13. The Indian AT1 market has seen several regulatory interventions coordinated with the government to avoid any coupon deferral or loss to investors in these instruments. The domestic AT1 bond market is limited due to the lack of a vibrant secondary market for bonds. For the Indian markets, the AT1 bonds are invariably assumed to be called on the first call date and this has been the practical norm.

14. AT1 bonds are complex instruments. Given the risks involved in investing in AT1 instruments, one key risk to the AT1 market is around investor confidence. Over the recent past, there has been several events of the writing off of AT1 bonds issued. In case the respective jurisdiction has statutory guidelines in terms of resolution framework or other guidelines, then the contractual terms must coincide with the statutory terms and the competent authority puts the bank in resolution simultaneously writing-down the AT1 bond. Generally, the resolution frameworks mandate the creditor hierarchy to be followed and thus in these cases the write-down of AT1 bonds prior to write-down of shareholders’ equity is prevented.

15. In cases where there are no such statutory/ resolution provisions, or the contractual terms are not fully aligned with the respective statutory guidelines, or the

respective statutory framework do not put specific restrictions on the wipe-out of the AT1 bonds without the wipe-out of CET1, then in these cases the write-down of AT1 bonds prior to write-down of shareholders' equity is possible. Thus, there is considerable complexity in understanding the nuances of the AT1 bonds which would be a daunting task for any retail investor and thus only specialised investors may be required to be allowed to invest in these instruments.

16. Placement memorandum (along with term sheet) is the official document which has been prescribed for issuance of corporate bonds in India as per SEBI guidelines, as compared to Placement Prospectus in EU. Even though the term-sheet field list has been prescribed, variability has been observed in the disclosures provided in the term sheets particularly with respect to the write-down, exercise of call options, exercise of PONV stipulations. Given the technicalities and intricacies involved in various situations in which the write-down may occur, the disclosures need to be simple and well-explained. With respect to mis-selling, the regulators may mandate nuanced and to the point disclosures in the application forms or the selling team to individually apprise the customers and getting those signed as part of the investment document, so that the product is adequately explained, all related information is provided, and the investors make an informed investment decision.

17. The Indian corporate bond market is still evolving. The Indian corporate bond market is completely dominated by private placement issuances and public issuances have been limited. From a ratings perspective, the corporate bond market is highly skewed by issuers which are highly rated with AAA and AA rated issuers forming the 75-80% of the issuance. Further, majority of the issuances in the corporate bond market are fixed rate issuances and the floating rate issuances are minimal. The corporate bond market is also dominated by issuances from financial corporations; however, the share of non-financial corporations has also risen over the years. There is limited trading in the secondary bond market.

18. Banks along-with AT1 bonds also issue other bonds such as infrastructure bonds. Given that domestically, the bonds are issued by banks as part of the corporate bond markets, hence, the bank bond markets including the AT1s parallel the nature of the corporate bond markets. AT1 bonds are at the riskier end of the fixed income

bonds as they are lower rated than more senior debt, therefore the relative higher yield offered by AT1 bonds may be assumed to be driven by their subordination in the capital structure, rather than a reflection of the respective bank's credit quality.

19. Credit rating agencies generally follow the practice of "notching", wherein the different issuances of same borrowers are rated differently based on the risk perceptions. AT1 bonds, based on loss absorption features and thereby inherently considered more risky are generally notched down from similar issuances of the banks. The corporate bonds are generally being priced based on the ratings with the highest ratings having the smallest coupon and the weakest ratings having the highest coupons. A comparison of the coupons with the bonds of the Banks reveal that as we go down the rating chart, the difference in the coupons become more stark.

20. In the India context, there is a need for harmonization on the valuation aspect of the AT1 bonds which is not as what is observed globally. There is need to bring in more customer awareness with respect to the various scenarios related to the write-down/ write-off of AT1 bonds. Regulators may also issue FAQs detailing all the aspects so that the customers can get an authentic information source on the AT1 bonds. The prospectus memorandum for the issuance of AT1 bonds may be made more focused with respect to the risk disclosures. The limitations of the corporate bond market which also affects the AT1 bond market such as non-availability of indices/ benchmarks, lack of depth in CDS market, lack of depth in secondary markets, primary market being highly privately placed making effective price discovery limited, limited avenues for hedging instruments etc. are required to be addressed.

21. Unlike as observed world-over, AT1 bonds in the form of contingent convertible are not allowed in India as part of capital. With the deepening of capital markets and efficient price discovery being facilitated, this aspect may also be reviewed. Further, the PNCPS issuance in India is limited even when we have a vibrant capital market. A well-developed PNCPS market will augur well for capital raising by the banks and will add to the variety of instruments available for the same.

1. Introduction

Banks are the agents of maturity and credit transformation and intermediation in an economy. In conduct of their business, Banks are exposed to various risks in their banking and trading books which are credit risk, market risk, liquidity, and operational risks, the manifestation of which may lead to future losses. As Banks lend money which is public money, the viability and solvency of Banks assume prime importance. In this context, Banks are mandated to have capital as a cushion that protects them from expected and unexpected losses, fuels business growth and ensures financial viability of banks.

1.2 Bank capital is generally categorized in two groups – going concern capital and gone concern capital. While the going concern capital (Tier 1) absorbs losses without triggering bankruptcy, the gone concern capital (Tier 2) on the other hand, absorbs losses in case of liquidation before depositors and general creditors. Tier I capital allows a bank to continue its activities and maintain its solvency. The highest quality of Tier 1 capital is the common equity tier 1 (CET1) and is the most junior and comprise of retained earnings, reserves, and equity capital.

1.3 The Global Financial Crisis (GFC) exposed[1] several issues with the capital structure of various multi-national banks such as varied capital definitions, differentiated regulatory approaches towards various capital adjustments, along-with insufficient and non-standard disclosures. As the GFC intensified, a number of banks were bailed out by government funds in the form of common equity and other forms of Tier 1 capital. All these instances brought to the forefront the insufficiency of the extant Tier 1 and Tier 2 instruments for loss absorption during that period.

1.4 As a way forward, BCBS issued comprehensive guidelines in the form of "*Basel III: A global regulatory framework for more resilient banks and banking systems*" in December 2010, so as to strengthen the quality of banks' capital and improving the resilience of the banks to absorb shocks and stress. These reforms increased the required level of regulatory capital (capital conservation buffer, leverage ratio), while

[1] https://www.bis.org/fsi/fsisummaries/defcap_b3.pdf

instituting more stringent disclosure requirements, and strengthening the qualifying criteria for inclusion of equity in Additional Tier I and Tier II capital.

1.5 Basel III envisaged to plug the various inconsistencies that were observed as consequence of the GFC. Basel III particularly focussed on high-quality capital such as share capital and retained earnings, along-with specific classification criteria for the various capital components. It introduced an explicit going- and gone-concern capital framework by clearly delineating between Tier 1 capital (going concern) and Tier 2 capital (gone concern). It also stipulated an explicit requirement of point of non-viability (PONV) for loss absorption. In addition, international harmonisation was achieved for various regulatory deductions and prudential filters for common equity, which was further strengthened through enhanced disclosure requirements, aimed at improving the transparency and market discipline.

1.A Need for the study

The usage of AT1 bonds has recently been marred with write-downs both domestically and internationally. Further, going forward there may be scenarios of requirement of commercial banks' increased reliance on issuance of these bonds to meet regulatory capital requirements. Domestic developments such as the new rules imposed by SEBI with respect to the valuation of AT1 bonds and exposure limits for mutual funds, which currently serves as one of the major investors in these bonds, also alters the market dynamics of the future issuance of these bonds. Further, there is also an increased element of investor awareness and investor protection in the issuance and trading of these bonds, with the recent episode of write-down of the AT1 bonds of Yes Bank in India and Credit Suisse in Europe. All these factors call for a comprehensive review of the AT1 market in India and its comparison with other developed markets to draw findings that may help create a more robust domestic market as well as help banks raise capital in cost effective manner with investor protection.

1.B Objective of study

The introduction of Basel III regulatory framework has allowed banks to meet part of their regulatory capital requirements through Additional Tier 1 (AT1) bonds. Several banks in various jurisdictions have issued innovative instruments like CoCos

(Contingent Convertibles) for raising capital and maintaining business growth. This report studies the usage and nature of AT1 bonds present across various jurisdictions. It compares the practice and approach in India and of Indian Banks vis-à-vis global practices. Further, the study also focuses on understanding the effectiveness as well as limitations of AT1 bonds in ensuring bank solvency and stability. The study also provides a comparative study of bonds issued by corporates and banks and an investor’s perspective on AT1 bonds in Indian context.

2. AT-1 Capital Instruments – Features and its Types[2]

2.1 AT1 bonds are capital instruments with debt like features and act as key regulatory bail-in instruments outside the normal bankruptcy process imposing principal losses on creditors in case of firm specific events. The primary purpose of institutionalising AT1 bonds has been to enhance the resilience of banks by ensuring orderly re-capitalization and liquidation of banks without leading to any domino impact on the banking or financial system. Some of the unique features of AT1 bonds have been loss-absorption on a going-concern basis, without a maturity date and without any step-ups and not permitted for any incentives for these bonds to be redeemed. AT1 bonds carry a coupon rate that is paid to the investors, which can be paid out of distributable items. Further, the interest payable on AT1 bonds is not cumulative, with the issuing bank having full discretion over coupon payments and dividend pushers not being permitted. AT1 bonds are issued with a call option which generally has a minimum period of five years, which the issuing bank can exercise subject to prior regulatory approval.

2.2 Based on the stipulated features, AT-1 instruments have two defining characteristics – the loss absorption mechanism and the trigger that activates this mechanism. The loss absorption mechanism of AT1 bonds occurs either by AT1 bonds converting into common equity by or through a complete or partial, permanent or temporary principal write-down. The loss absorption mechanism strives in when a pre-defined trigger point, either quantitative or qualitative, happens. The quantitative trigger is generally defined numerically in terms of a specific capital ratio/ fraction of risk-weighted assets (which in turn may either be based on book values or market values) or it can also be discretionary based on supervisory assessment. Based on the principal loss absorption mechanism, AT1 instruments, may be categorised into two categories. These are -

I. <u>Equity Conversion (Contingent Convertible, CoCo) AT-1</u> – Principal Loss-absorption through conversion to common shares/ CET1 at objective pre-specified trigger points.

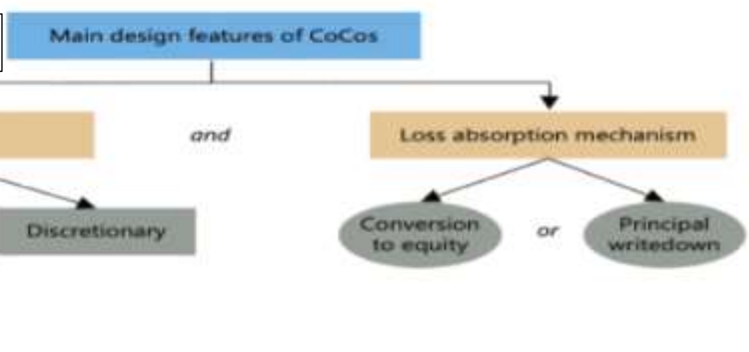
[2] https://www.bis.org/publ/bcbs189.pdf

II. Write-Down AT-1 – Principal loss absorption through temporary/ permanent partial/ permanent write-down at pre-specified trigger points of at least CET 1.

2.3 To ward off idiosyncratic issues turning into a systemic one, AT1 instruments also have a provision that requires, at the discretion of the supervisor, the instrument to be either written off or converted into common equity. This happens on the occurrence of a discretionary trigger event or a qualitative trigger event, which is generally based on the decision of the supervisor (based on statutory power or contractual terms) that the bank is assessed to be non-viable and the trigger is necessary. The write-down is also affected in cases prior to recapitalisation of a bank with public funds.

2.4 The summary of design features of the AT1 instruments based on trigger and loss absorption mechanism is provided in **Chart 1** below.

Chart 1



Source - BIS Quarterly Review, September 2013.

2.5 AT1 instruments are subordinated to depositors, general creditors and subordinated debt of the bank. The typical order of preference for the debt follows Senior[3] Secured Debt, Senior[3] Unsecured Debt, Subordinated[4] Debt, Tier 2[5], AT- 1,

[3] **Senior debt:** a debt instrument where holders are repaid before subordinated debt holders. Financial institutions commonly use these securities to secure funding on the financial markets. These instruments can be used for bail-ins.

[4] **Subordinated debt:** a debt instrument where holders are only repaid after senior debt holders. In the case of financial institutions, several types of instruments called Tier 1 or Tier 2 exist. Their characteristics vary according to their particular issue details and degree of subordination. These instruments can be used for bail-ins

[5] **Tier 2:** a Tier 2 subordinated debt instrument where holders are repaid before shareholders and Tier 1 debt holders but after all other types of debt holders.

and Equity. The major difference between various capital instruments is presented below in **Table 1** below.

Table 1: Comparison between Debt Instruments			
	Senior	**Tier 2**	**AT-1**
Subordinated	No	Yes	Yes
Maturity	Dated	Dated	Perpetual
Option	No	Callable	Callable
Coupon	Non-cancellable	Non-cancellable	Cancellable
Loss absorption	Possible	Yes	Yes
Equity Conversion	No	No	Yes

3. An Overview of Global AT-1 Market[6][7]

3.1 Over the years the global AT1 market have come of age. The AT1 market has become a richer complex of deals with various structures at different points on the curve, multicurrency, and has been gaining depth over the years. The global AT-1 market is worth roughly **$969 billion** as of March 2024 with Asia having the major share of around **$577 billion**, followed by Europe with **$211 billion,** and preference shares in USA[8] with a market of around **$182 billion.** Globally, the CNY is the currency with maximum share of issuance in AT1 followed by USD and EUR. The currency-wise composition of global issuance of AT1 instruments is presented in **Chart 2** below. The Currency wise composition of the issuance of AT1 bonds in Asia and Europe is presented respectively in **Chart 3** and **Chart 4** below. For Asia, Chinese Yuan is the largest currency of issuance followed by JPY and USD. For Europe, majority of the issuance is in bonds denominated in USD despite being mostly issued by European banks[9]. This is followed by issuance in EUR and GBP currencies. The issuance in USA includes predominantly preference shares issued in USD.

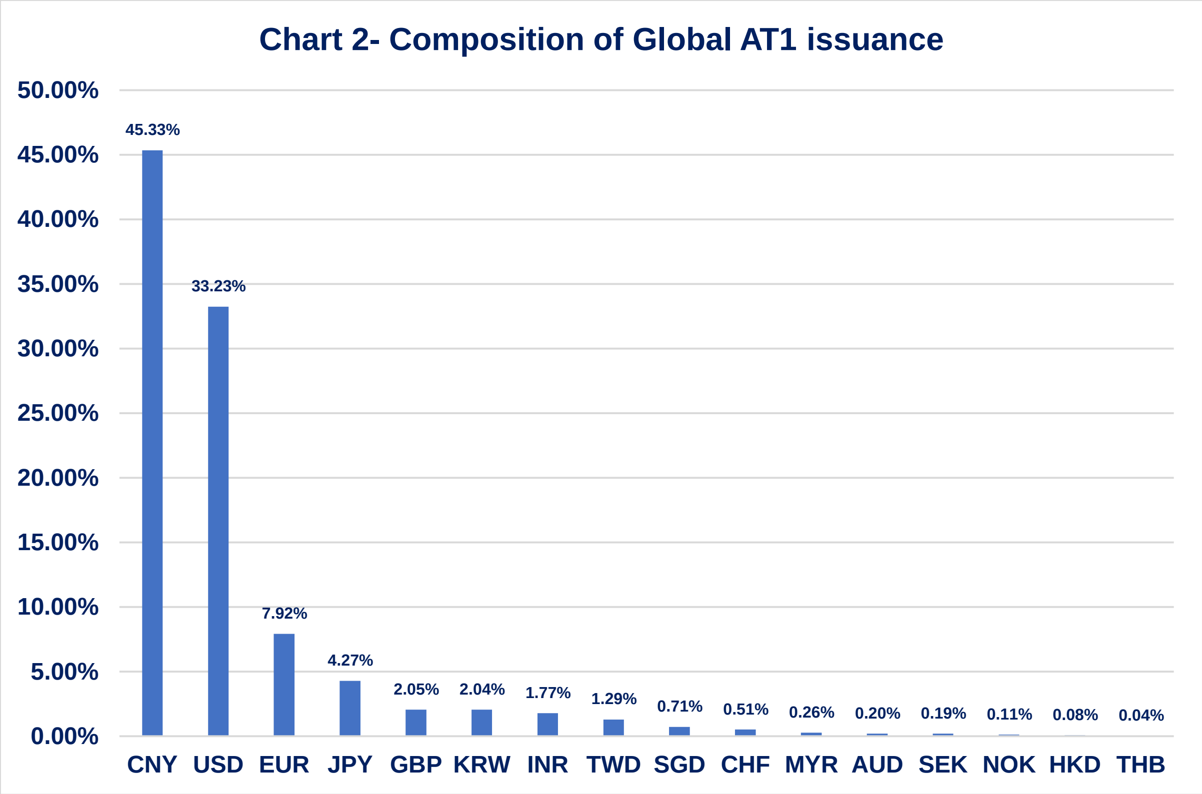
---

[6] The data in this section has been sourced from various public sources such as Bloomberg, and Creditsights, and HSBC Group plc, UK.

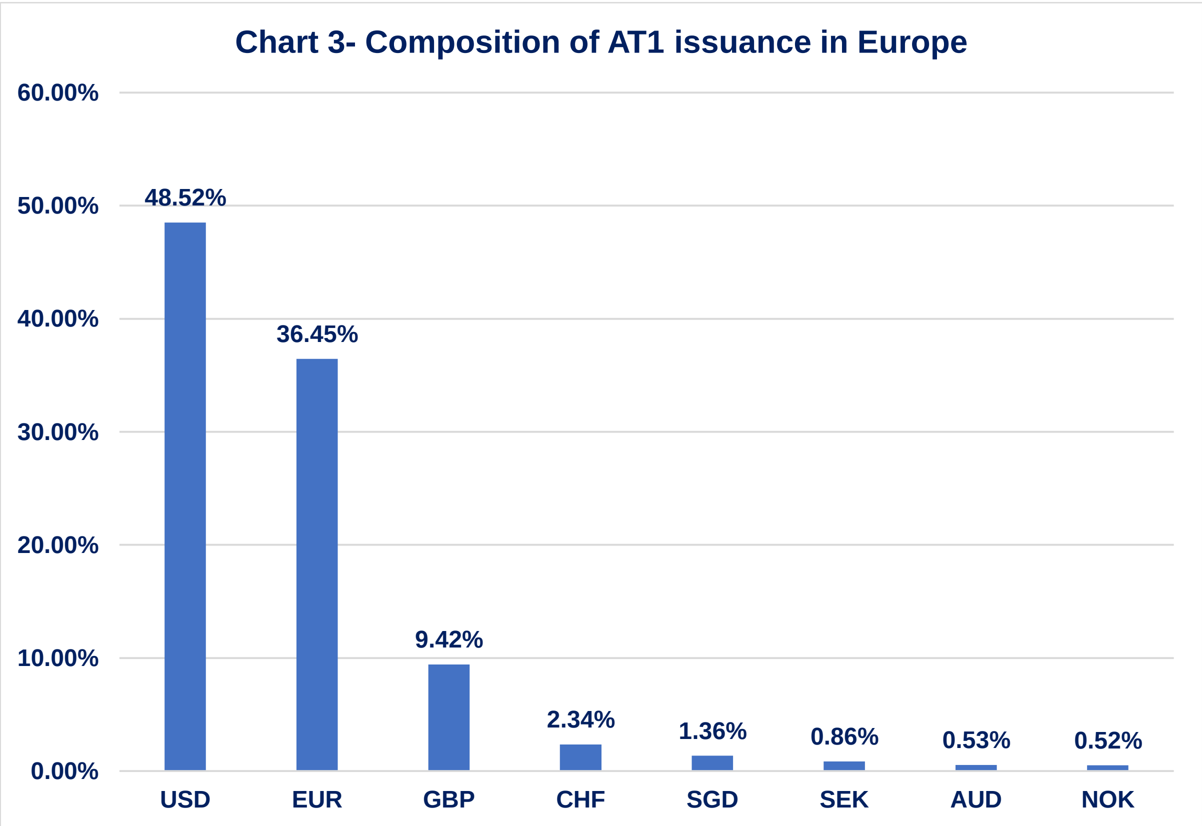
[7] This section has been prepared based on the discussions with organisations such as Bank of England, Barclays UK, HSBC, UK, Invesco, UK, City of London, NatWest London, and UK Finance.

[8] US based banks do not issue AT1, but **specific hybrid Tier 1 capital securities called Preferred Shares.**

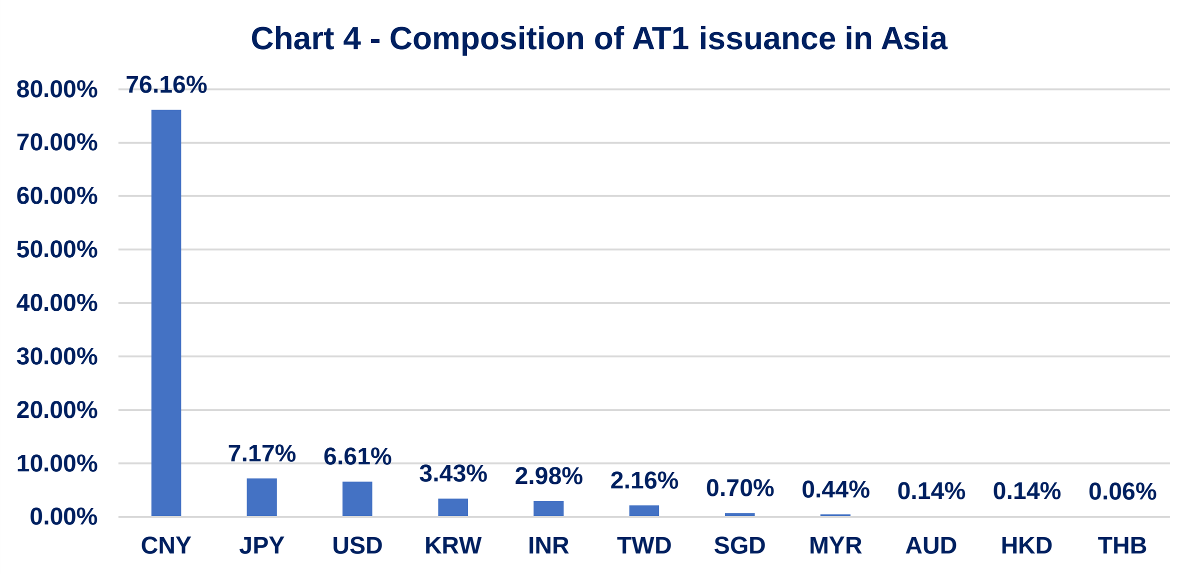
[9] European banks issuance in US dollar is primarily done to naturally hedge their US dollar assets, along-with strategic reasons. The issuance is also impacted by volatility considerations as well as bank-specific variables, such as presence of US subsidiaries, credit ratings, and cost of credit with respect to interest rate differentials spanning both covered and uncovered interest parity.



Data source - Various public sources, Bloomberg, and Creditsights, HSBC Group plc, UK, and Author's own calculations.

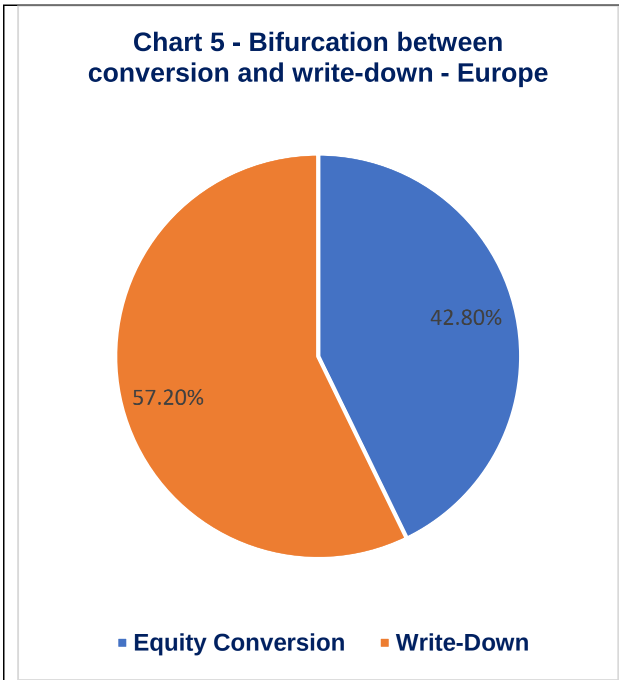


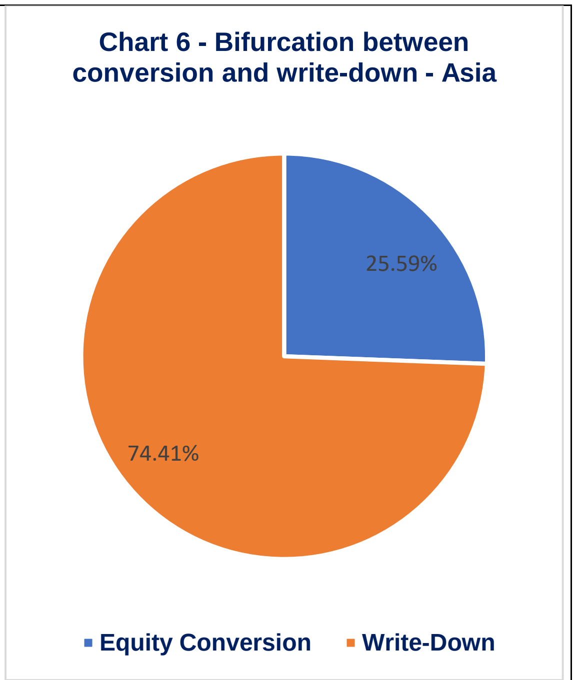
Data source - Various public sources, Bloomberg, and Creditsights, HSBC Group plc, UK, and Author's own calculations.



Data source - Various public sources, Bloomberg, and Creditsights, HSBC Group plc, UK, and Author's own calculations.

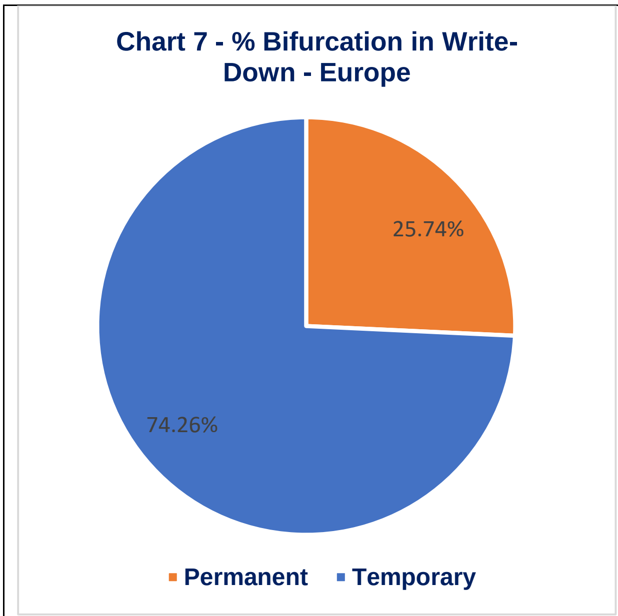
3.2 With regard to the principal loss absorption mechanism, AT1 instruments with write-down feature has been observed to the prominent issuance type both in Europe as well as in Asia. However, the proportion of write-down issuance is greater in case of Asia. The same is depicted in the **Chart 5** and **Chart 6** below.

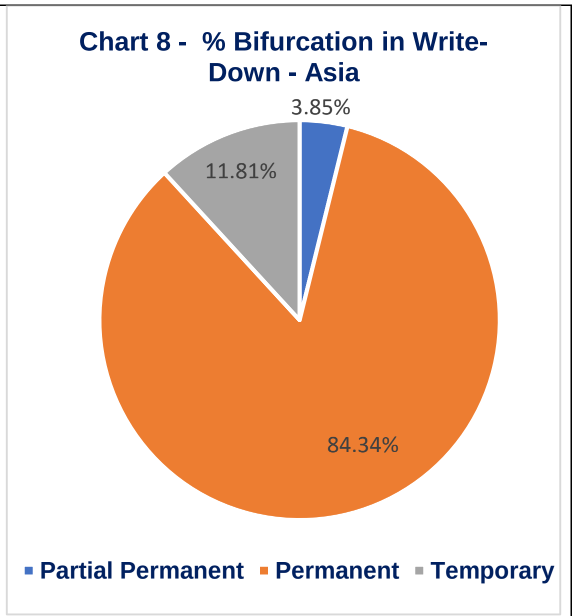




Data source - Various public sources, Bloomberg, and Creditsights, HSBC Group plc, UK, and Author's own calculations.

3.3 In the write-down category, there appears a complete contrast between the issuances in Asia and Europe. While European write-down issuances are primarily temporary write-downs, in contrast, the Asia write-down issuances are primarily permanent in nature. The same is depicted in **Chart 7** and **Chart 8** below.





Data source - Various public sources, Bloomberg, and Creditsights, HSBC Group plc, UK, and Author's own calculations

3.A Structural Features of AT1 Bonds in different geographies

3.A.1 The key structural differences for the issuance of Basel 3 AT 1 instruments across various prominent geographies is presented in **Table 2** and **Table 3** below. The main conclusions from the comparison are presented below –

I. The maturity of the AT1 bonds is perpetual across the globe with an exception for Canada (LRCN - Limited Resource Capital Notes) for which the maturity is 60 years.

II. The AT1 bonds are mainly issued as subordinated debt across the globe with an exception in China and USA, where in China along with the bonds, preference shares are also issued and in USA only preference shares are issued as AT1 instruments.

III. The coupon reset dates have been observed to be coincident with the first call date from the start of the instrument. The only exception being India where rate reset is separated from call date from the first issuance of the instrument.

IV. As required in the Basel guidelines, dividend pusher feature is not observed in any jurisdiction globally. However, the dividend stopper guidelines are present globally in all jurisdictions except UK, Europe and Canada (LRCN).

V. With respect to dividend distribution format, dividends are observed to be fully discretionary (non- cumulative) and subject to distributable reserves and capital buffers across all the jurisdictions.

VI. There is a lot of variation observed in the requirements for going concern CET1 loss absorption triggers across the geographies. Geographies such as China, Singapore, Hong Kong, Korea, USA and Canada have no stipulated trigger requirements. However, for Australia, EU, UK, India, Thailand, and Switzerland, CET1 requirements ranges from 5.125% to 7%.

VII. There is also a lot of variance in the loss absorption manner once the going concern CET1 trigger point is breached. On the one hand Australia provides only for conversion to equity while Thailand and India allow for permanent and temporary write-downs respectively along-with partial write-downs. Switzerland allows only permanent write-downs, while EU and UK allow for full/ partial write-downs or conversion.

VIII. With respect to the discretionary trigger of non-viability loss absorption, stipulations across jurisdictions may be segregated as either contractual, statutory or both. In case of contractual stipulations, the provision of loss absorption trigger is mentioned in the AT1 contract itself. Statutory stipulation requires that in case resolution is invoked, creditor hierarchy has to be respected via “no creditors worse off than in liquidation principle”. China, Australia, Korea, Thailand, India, and Canada have contractual stipulations. Hong Kong, Singapore, and Switzerland have both the stipulations - contractual as well as statutory. EU, UK, and USA have the statutory stipulations.

Table 2: Structural differences between issuance of AT1 instruments across prominent geographies.					
	Maturity	**Legal Form**	**Coupon Reset**	**Dividend Stopper**	**Dividend Pusher**
China	Perpetual	Preference Shares/ Subordinated Debt[10]	Start from first Call date	Yes	No
Hong Kong	Perpetual	Subordinated Debt	Start from first Call date	Yes	No
Singapore	Perpetual	Subordinated Debt	Start from first Call date	Yes	No
Australia	Perpetual	Subordinated Debt	Start from first Call date	Yes	No
Korea	Perpetual	Subordinated Debt	Start from first Call date	Yes	No
Thailand	Perpetual	Subordinated Debt	Start from first Call date	Yes	No
India	Perpetual	Subordinated Debt	Rate reset to be separated from First Call Date	Yes	No
Switzerland	Perpetual	Subordinated Debt	Start from first Call date	Yes	No
EU/UK	Perpetual	Subordinated Debt	Start from first Call date	No	No
Canada	Perpetual	Subordinated Debt	Start from first Call date	Yes	No
Canada (LRCN)	60 years	Subordinated Debt[11]	Start from first Call date	No	No
USA	Perpetual	Preference Shares	Start from first Call date	Yes	No

Table 3: Structural differences between issuance of AT1 instruments across prominent geographies.

[10] CBIRC (China Banking and Insurance Regulatory Commission) has allowed sub-debt format AT1 that uses write-down for principal loss absorption.
[11] LRCN (Limited Resource Capital Notes) has preferred shares as underlying instrument issued to a SPV. Upon non-payment event, an event of default, the sole recourse against the issuer for the claims will be the delivery of the preferred shares. Upon PONV, LRCN will become due and payable, and upon non-payment of such, LRCN holders will receive common shares of the bank upon conversion of the preferred shares.

	Distribution Format	Going concern CET1 Loss Absorption Trigger	Non-Viability Loss Absorption	Regulatory/ Tax Event Call	Issuer call frequency
China	Fully discretionary (non-cumulative) Subject to distributable reserves and capital buffers	None[12]	Conversion to equity/ Permanent write-down[8] (partial allowed)[13] Contractual	Only regulatory call, at par[14]	Every IPD
Hong Kong		None	Permanent write-down (partial allowed) Contractual/ Statutory[15]	Yes, at Par	Every IPD
Singapore		None	Permanent write-down (partial allowed) Contractual/ Statutory[13]	Yes, at Par	Every BD/ IPD
Australia		Conversion to equity (full) CET1<= 5.125%	Conversion to equity (full) Contractual	Yes, at Par	Every Reset Date
Korea		None	Permanent write-down (full) Contractual	Only tax call, at par	Every IPD
Thailand		Permanent write-down (partial allowed) CET1<= 5.125%	Permanent write-down (partial allowed) Contractual	Yes, at Par	Every IPD
India		Temporary write-down	Permanent write-down	Yes, at Par	Every IPD

[12] Previously, Chinese AT1s were required to have a 5.125% trigger, upon which equity conversion will occur.
[13] Previously, Chinese AT1 are required to have a 5.125% trigger, upon which equity conversion will occur.
[14] In recent AT1 issuances
[15] If statutory resolution is invoked, creditor hierarchy has to be respected via “no creditors worse off than in liquidation principle”.

		(partial allowed) CET1<= 6.125%	(partial allowed) Contractual		
Switzerland		CET1<= 7.00%. (High Trigger); or CET1< 5.125% (Low Trigger) Permanent write-down (full)	Permanent write-down (full) Contractual/ Statutory[13]	Yes, at Par	Every IPD or Reset Date
EU/UK		CET1<= 7.00%. (High Trigger); or CET1< 5.125% (Low Trigger)[16] Full/ partial write-down or conversion	Permanent write-down or conversion (partial allowed) Contractual	Yes, at Par	Every IPD or Reset Date
Canada		None	Conversion to equity (full) Contractual	Yes, at Par	Every IPD
Canada (LRCN)		None	Conversion to equity (full) Contractual	Yes, at Par	Every IPD
USA		None	Statutory (Dodd-Frank for SIFIs)	Only regulatory call allowed, at par	Every IPD

3.B Investor base of AT1 Bonds

3.B.1 As per discussions with various global market players, the major investor groups for AT1 instruments include Asset Managers, Banks, Family Office/

[16] UK rules require 7% trigger for leverage ratio eligibility therefore in practice, institutions typically issue with this.

professional investor/ private bank customer, Hedge Funds, Insurer (investing policy holder liabilities), Pension Funds, Preferred Funds/ CoCo Funds, and Sovereign wealth funds. Asset Managers/ Mutual Funds, and Hedge Funds are observed to be the top investors in global AT1 market, particularly with respect to US, UK, and EU.

3.B.2 Most of the global investors do not have any ratings restrictions for making investments, however they appear to have some sort of rating restrictions for making investments in Asian markets. Most of the investors appear to be investing in AT1 bonds as a core set of long-term holdings. Some of the investors appear to hold AT1 bonds for trading purpose as well. While the investors may have different reasons to invest in AT1 bonds, relative outright value of AT1 bonds within the asset class appeared to be the most quoted reasons for investing in AT1s. Some other motivations included the duration tilting of the portfolios, and low cash price and high coupons of the AT1 bonds.

3.B.3 One of the main features that is a point of concern to the AT1 investor community is the mechanical trigger levels. While the past learnings and research have signaled a requirement of a high trigger level for AT1 bonds something in the range of 7% to 10%, however a balance needs to be established as a high trigger may mean an increased probability of loss to investors by way of a write-down or a conversion or coupon switch off as they may become more frequent and probable. This may either lead to investors moving away from this asset class on account of increase in perceived risk or demand more compensation to account for the increased risks which may increase the price of issuing these instruments for the Bank. This will have its impact on the issuer and the price of offer, which may mean banks who are down the ladder may find it difficult to raise capital in a cost-effective manner.

3.C Valuation of AT1 bonds

3.C.1 The general industry convention in pricing and valuation of any market instrument is based on usage of some models. With respect to AT1 bonds, certain characteristics of the instrument with respect to the triggers (mechanical trigger based on book or market value or supervisor's discretionary trigger based on PONV) and coupon switch offs are difficult to model and thus assign subjectivity to its pricing and valuation.

3.C.2 Given the subjectivity involved, for valuing the ATI bonds, investors focus on both idiosyncratic as well as systemic risks and metrices. There are primarily two methods being used for fundamental valuations of the AT1 bonds. Investors and banks use yields and credit spreads (Z-spreads and 5-year swap spreads) to value the AT1 bonds. However, banks have been primarily observed to use yields for fundamental valuation of AT1 instruments. With regard to the maturity of the bonds, the industry practice has been observed to be invariably using the first call date as the maturity date for valuing the AT1 bonds.

3.C.3 For investing in AT1 bonds, investors also factor in some other idiosyncratic metrices for their fundamental valuation. These among others include the equity dividend yield, the CDS prices, Tier 2 debt levels, yields of the alternative corporate bonds, and bank's share price movement. In terms of assessing the general market risk for valuation of AT1s, the investors consider the recent trends in the non-calls at first call dates, instances of coupon switch-offs, the general interest rate outlook, and the current financial and economic outlooks. The benchmarking of the returns of AT1 bonds is generally being done through comparison from fixed income benchmarks such as Bloomberg Fixed Income Indices, ICE BoFA Fixed Income Indices, JP Morgan Indices, and Markit iBoxx index. Along with fundamental investing, investors have also been observed to take opportunistic trading positions in AT1 bonds.

3.C.4 With respect to coupon switch-offs, there is an observed consensus among the market players that the same is being driven mainly by supervisory discretion at idiosyncratic level as well as sectoral systemic levels. The market also views combined buffer breach of the banks as one of the main metrics to monitor for risks related to coupon switch offs. Another consideration is the available distributable items (ADI) breach, as the coupons are paid out of the distributable items, any breach on the stipulated levels leads to coupon switch-offs. This is observed to be one of the major considerations for Asian AT1s. The final pricing or valuation by each investor is an informed estimate based on the subjective considerations and the objective parameters.

3.D To call or not to call?

3.D.1 One of the main features of AT1 bonds is the inbuilt call option which the issuer bank can exercise generally after a minimum of five years, subject to prior regulatory approval. While the regulatory stipulations provide that banks shall not provide any indication on calling of the bonds, however traditionally it has been observed that the market invariably expects the banks to call the bonds on the first call date and the banks had been calling the bonds on the first call date in line with the market expectations. Any event of the non-calling of the bonds was assumed to be indicative of some sort of problems within that bank. This event of the non-calling of the AT1 bonds on the first call date is also known as extension risk.

3.D.2 Globally over-time there appear to be some sort of investor maturity on this aspect. The market expectations about issuers invariably calling the AT1 bonds at first call date has been replaced with the understanding that the issuers may prefer calling the AT1 bonds at the first call date but may choose not to if the economics are very unfavorable. US markets appear to be the most mature wherein the investors expect the call decision to be made purely on economic basis, followed by Europe and UK. Further, there is also an understanding among investors that even if the bank prefers calling the AT1 bonds despite unfavorable economics, the same may not get the required regulatory approval.

3.E Hedging of AT1 Bonds

As per the discussions, hedging with respect to AT1 bonds was not being done by majority of the investors. However, majority of the banks and dedicated preferred / CoCo funds appeared to be hedging the interest rate risk using relevant index funds. For example, iTraxx Europe High Yield Crossover index, iTraxx Europe Subordinated Financial index, iTraxx Europe Senior Financial index, and Bank equity index are being primarily used for hedging exposures to AT1 bonds. Other instruments being used for hedging involves tradable CDS indices, individual bank equity, bank capital instruments, and exposure to other AT1s.

3.F Cost of issuance of AT1 bonds for Banks

The AT-1 market in UK and Europe has been observed to be fairly liquid with respect to the primary market, even though the liquidity in the secondary market may become limited at times. The pricing in the primary and secondary markets is primarily market determined pricing in various risks including the extension risk. The common metrics used for pricing is the mid-swap rate with spreads based on the idiosyncratic risks reflecting the issuance. Issuance of AT1 bonds may at times be more expensive than tier 2 for issuers, but it brings a ratings value that might reduce senior unsecured costs, with banks optimizing capital costs and returns.

3.G Tender offers

3.G.1 As a tool to reduce refinancing risk and enhancing primary market efficiency, many banks in UK and EU combine fresh AT1 capital issuances with the concurrent repurchases of outstanding AT1 capital instruments. This repurchase is often termed as a "tender offer" and is documented independently as the new-issue and effected via the clearing systems (i.e., holders notified via custodians of the issuer's repurchase offer, and they may participate without involving any third parties). The tender offer is typically made available for a period of 5-6 days, to allow sufficient time for holders to evaluate the offer and participate (if the terms and conditions are accepted).

3.G.2 These tender offers generally include a "financing condition" which ensures that the issuer will never be required to repurchase a higher volume of outstanding AT1s than being issued through the new issue. This ensures that the capital position of the bank is legally safe-guarded and is a standard market practice being followed for liability management of capital securities. Additionally, the Tender Offer mechanics contain valuable flexibility which also allows the issuer to abort the tender at its discretion.

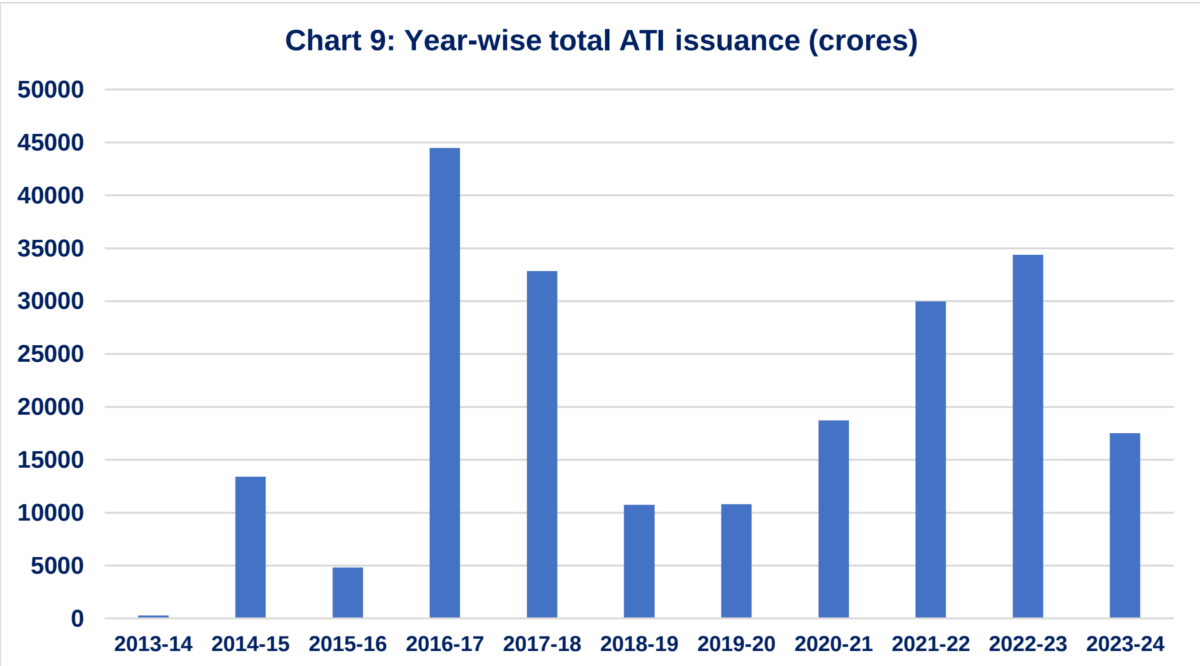
3.G.3 These tender offers facilitate investor 'roll-over': i.e., allows existing holders to migrate holdings into the new issue without leading to an increase in the exposure. Further, it also avoids the need for additional market capacity. The tender offer also provides valuable bid-side liquidity which leads to reduced volatility in the outstanding bonds of the issuer. The possibility of liability management may encourage a bank to refinance its outstanding capital instrument at an early stage, which has been seen favourably from a prudential perspective. The repurchase of the existing instrument allows the bank to avoid (or reduce) the excess ‘carry cost’: - i.e., the cost of the old instrument as well as the new issue. The reduction in carry cost essentially provides a valuable economic saving, which marginally enhances the bank’s CET1 position. Rationale for acceptance by prudential authorities:

- Facilitates prudent capital management by the bank.
- Overall exercise can be designed to avoid any risk of capital shortfalls (i.e., repurchase consideration can never exceed the new-issue proceeds)
- Allows for cost savings, especially for cost of carry, which should enhance CET1.
- Diminished execution risk.

3.G.4 Even though these tender offers reduce the cost of carry, but these have been observed to be issued at a premium to the respective offer price, which thus involves an element of extra cost at the offer outset. The issuer may also specify a tender acceptance cap, i.e., the maximum amount that may be accepted under the tender offer. The acceptance cap may be calibrated by reference to the new issue amount. In practice, this is typically determined after pricing the new issue. These tender offers are also prevalent in US, wherein the issuer is required to specify the tender cap at the launch of the tender offer itself. In contrast, the Eurobond issuances, the cap is specified at any time based on the issuer’s circumstances.

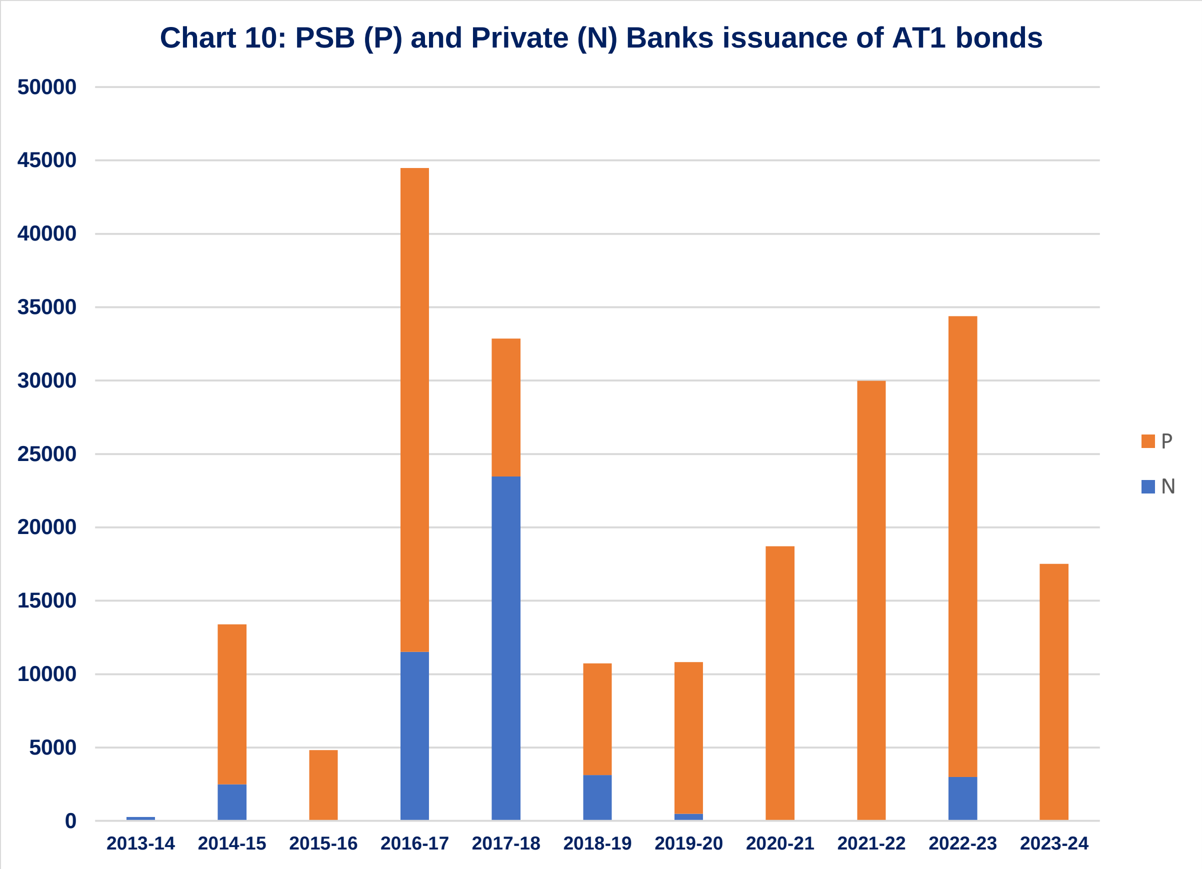
4. An Over-view of Indian AT1 bond Market[17][18]

4.1 The Indian AT1 bond market has had a roller coaster ride since its inception in 2013. The size and the issuance of the AT1 instruments have been affected by several domestic and international events. As on March 2024, the total amount of AT1 instruments outstanding is ₹1,28,147 crores. An overview of the year wise total issuance, since the first issuance in 2013 is presented in **Chart 9** below. The issuance of AT1 bonds has been dominated by Public Sector Banks throughout the period. As can be seen in **Chart 10** below, except for the year 2017-18, the majority of the issuance in AT1 bonds have been done by the Public Sector Banks (PSBs). The individual year-wise bank-wise issuance of the AT1 bonds is presented in **Chart 11** below. State Bank of India, Punjab National Bank, Canara Bank, Bank of Baroda, and Union Bank of India have been the major issuers of AT1 in India. It may be noted that throughout this section the Public sector banks' figures have been combined together considering the amalgamation of various Banks that was carried out. These figures also do not include the AT1 bonds issued by Indian Banks in foreign currency, which have been very limited and have been issued only by private commercial banks.



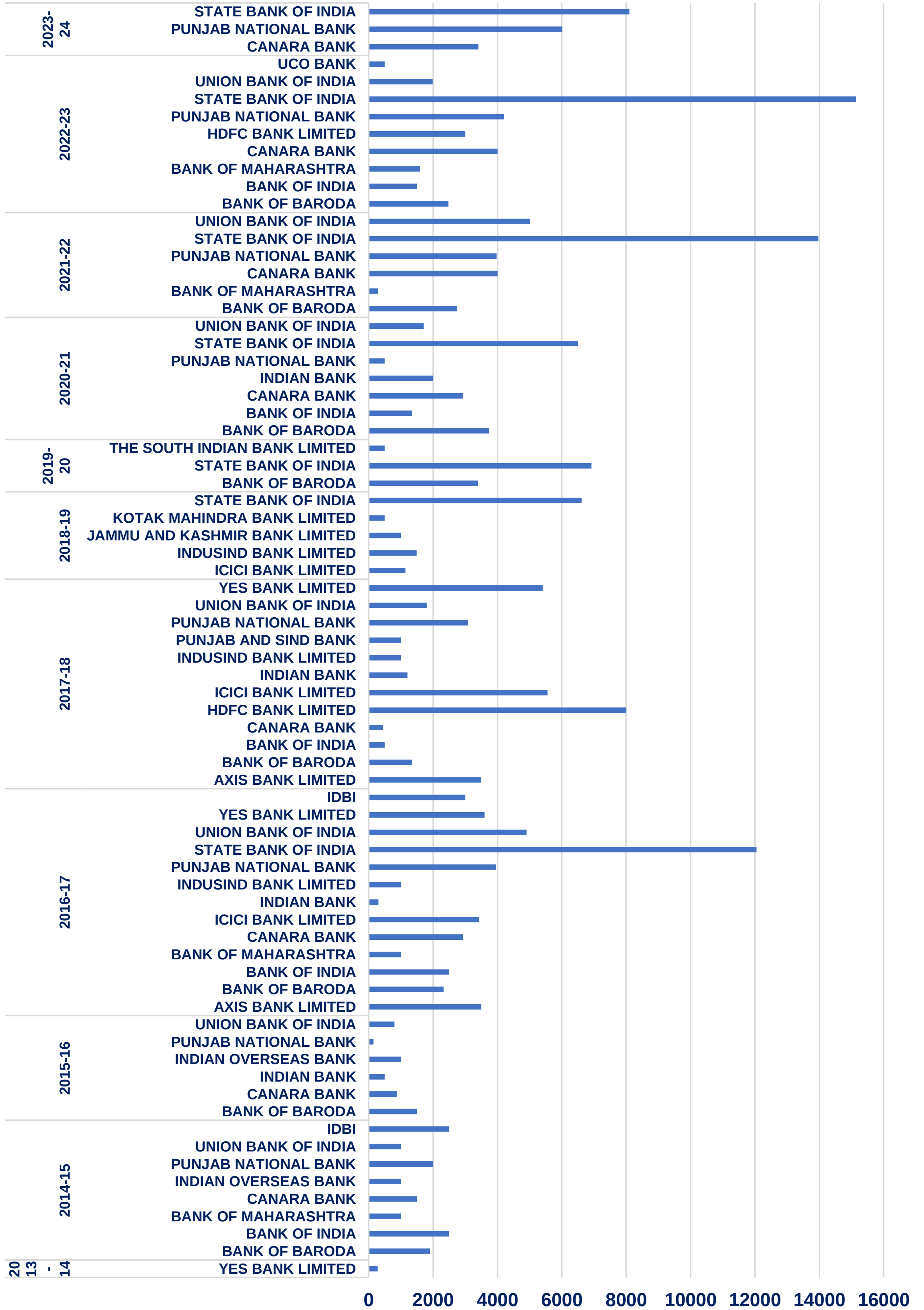
Data source - Various public sources ICRA, India, and Author's own calculations.

[17] Data pertaining to this section have been sourced from various public sources and ICRA.
[18] The input in this section is based on discussions with some Indian domestic commercial banks.



Data source - Various public sources, ICRA, and Author’s own calculations.

Chart 11: Bank-wise issuance of AT1 bonds over the years



Data source - Various public sources, ICRA, and Author’s own calculations.

4.2 One of the most important aspects of the AT1 bonds is the coupon interest which is paid on these instruments to the investors. Given that AT1 bonds carry substantial risks, these bonds carry coupon rates that are competitive as an asset class and makes them attractive for investment from a risk reward perspective. An analysis of the coupon rates of the AT1 instruments issued by the Indian commercial Banks and their spreads over the 5-year G-sec yield (as the call date for AT1 bonds is 5 year and till recently the bonds had been valued over a 5-year maturity period) and Repo rate is provided in **Chart 12** and **Chart 13** below.

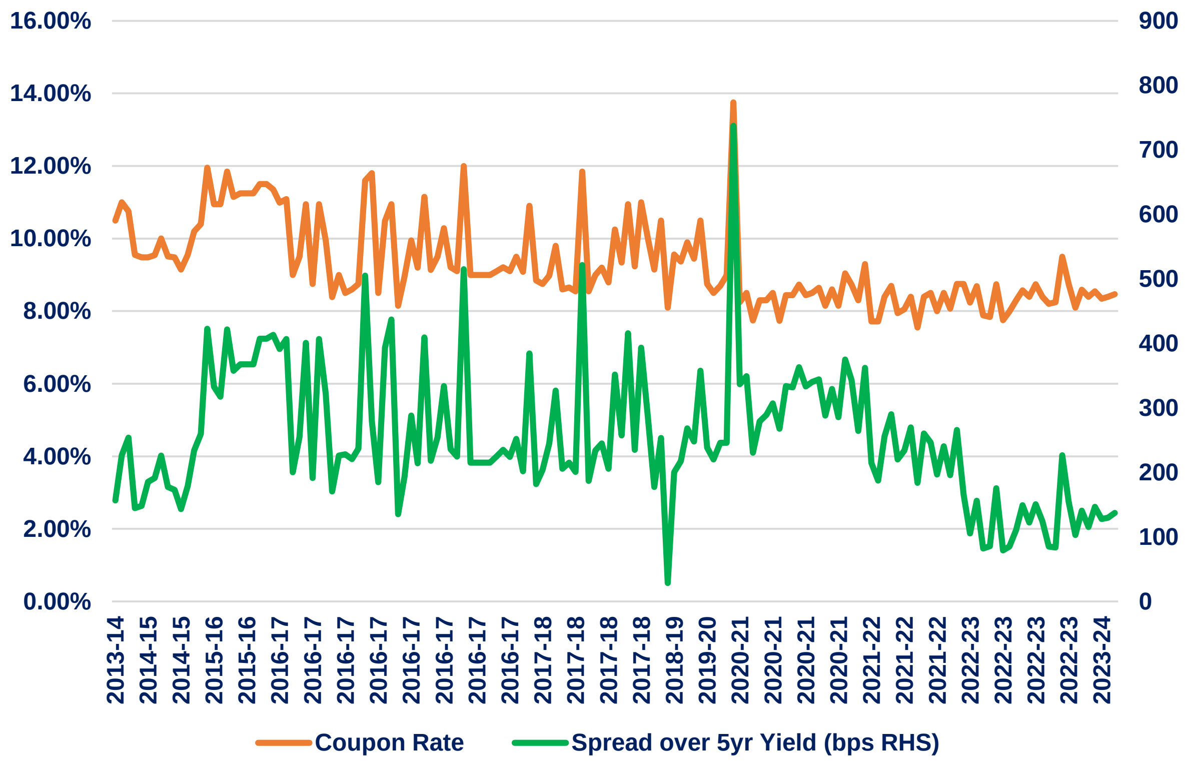
4.3 Similar trends can be interpreted from both the charts. There appears to be a wide variability in the respective coupons and the spreads prior to 2020-21 which have appeared to narrowed down over the post 2020-21 period. This may be attributed to the Bank consolidation that happended during the period. Earier as there were several banks issuing AT1 bonds, hence the coupons and the spreads were variable reflecting the respective financial and balance sheet strength of the Banks and the related coupons. With Bank consolidation, fewer banks with better financial strength has been formulated, which appears to have led to the narrowing of the coupons and the spreads.

4.4 Along-with the reduction in the variability of the coupons and the spreads, the overall level of the coupons and the spreads since 2022-23 are also appeared to have come down over their historical levels. This is despite the fact that the global AT1 bond markets have faced a tumultous period following the write-down of the AT1 bonds of Credit-Suisse. The stability in the levels of the coupons and the reduction in the spreads appear to reflect upon the healthy condition of the Indian Banking sector, better balance sheets, as well as the overall strength of the financial sector in general.

4.5 There has been one spike in the coupon and the spreads which is reflective of the period near the first Covid lockdown. Even though the interest rates were at historical low levels during the COVID, the coupon on the fresh AT1 bonds issued by the banks during this period largely remained similar to the cost of capital being replaced. The coupons on the AT1’s have generally trended between 8% to 12% throughout the period and the spreads have generally trended between 500 to 100 bps. Also, since repo rates are the base rates and the yields always trend above the repro rates, hence the spreads with respect to Repo rate is more as compared to the

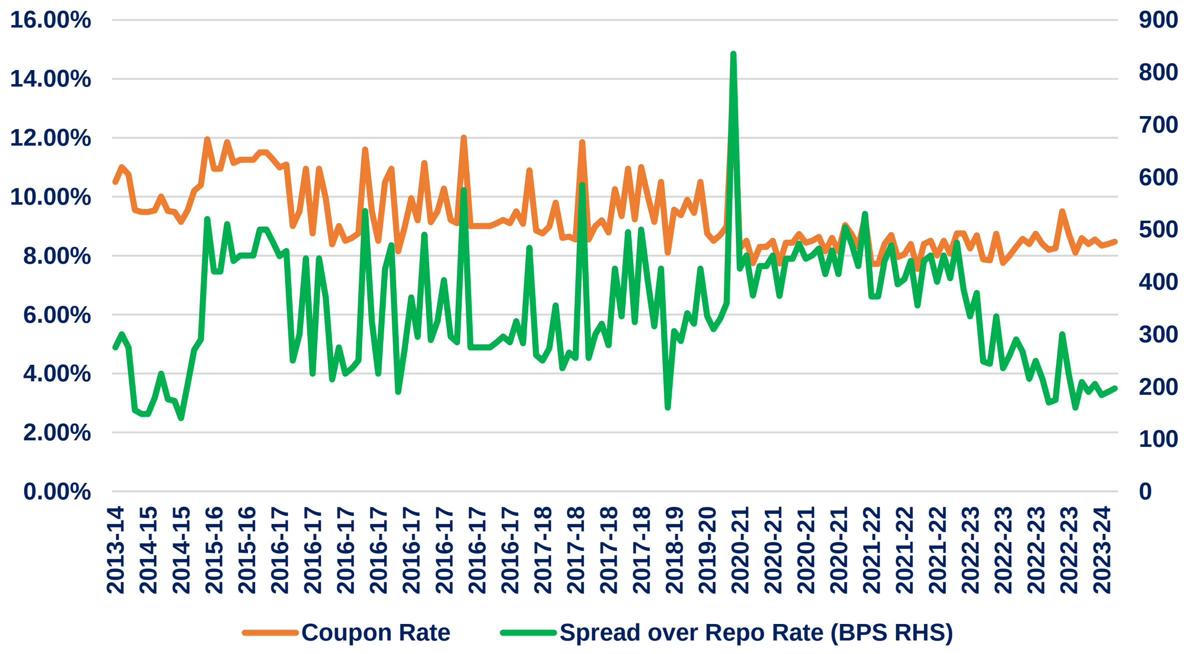
5 year G-sec yields. Public Sector Banks (PSBs) have been observed to have lesser spreads as compared to Private Commercial Banks (PCBs).

Chart 12: AT1 Coupon Rates and Spreads over 5 year G-sec yield



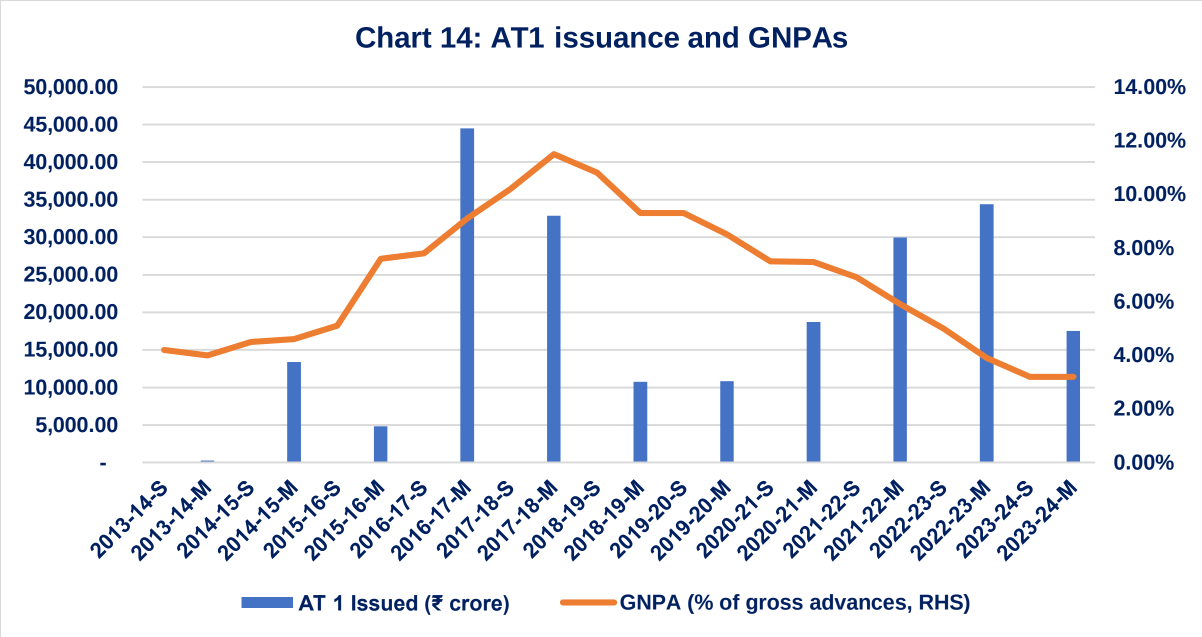
Data source - Various public sources, ICRA, and Author’s own calculations.

Chart 13: AT1 Coupon Rates and Spreads over Repo Rate

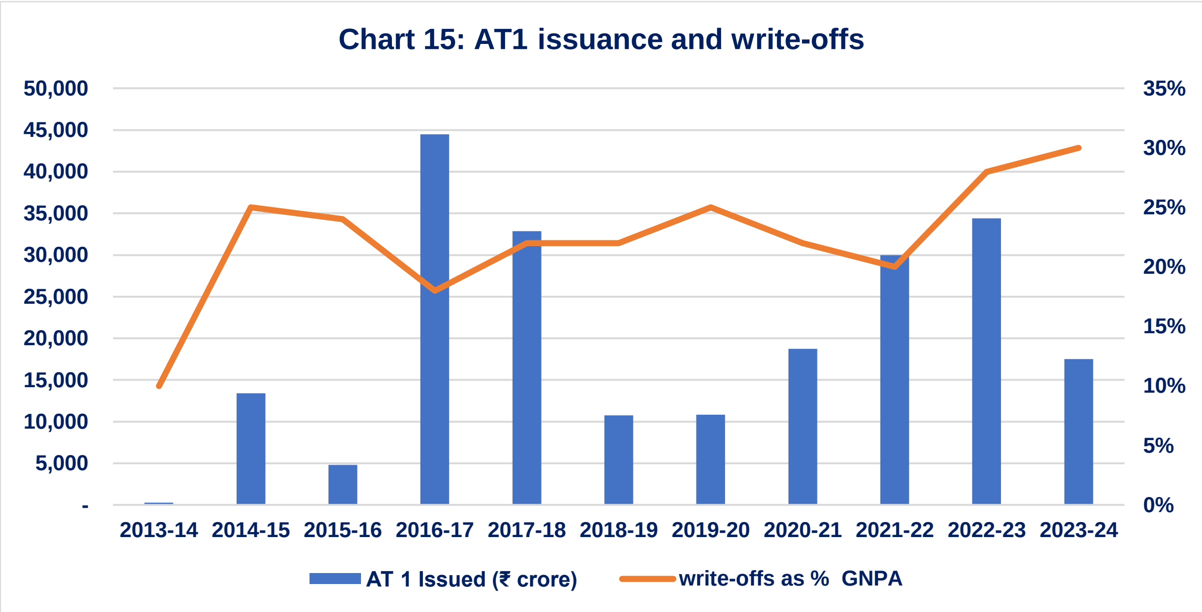


Data source - Various public sources, ICRA, and Author’s own calculations.

4.6 The previous decade in the Indian Banking system has been a tumultuous period with scheduled commercial banks being plagued with non-performing assets and a gradual recovery towards better health. A likely point of consideration may be the relationship between AT1 bonds issuance and the level of Gross non-preforming assets (GNPAs) of the banks and also on the level of write-offs and the issuance of AT1 bonds. To study the same, the data on system-level GNPAs and the aggregate write-offs has been plotted against the system level issuance of AT1 bonds over the period in **Graph 14** and **Graph 15** respectively below.



Data source - Various public sources, ICRA, and Author's own calculations.



Data source - Various public sources, ICRA, and Author's own calculations

4.7 Attributing issuance of AT1 bonds to one particular aspect may be a limiting assumption to make, as the capital issuance is considered involving several aspects such as the current yields, market conditions, expected future movements, expected growth and economic outlook, etc. The Graph 14 do not seem to provide any direct relationship between the GNPAs and the issuance of the AT1 bonds. Even though, from Graph 15, we may infer expected write-offs to be directionally related to the issuance of the AT1 bonds.

4.A AT1 instruments and their features in India

4.A.1 The elements which constitute the AT1 capital are Perpetual Non-Cumulative Preference Shares (PNCPS[19]), stock surplus (share premium) resulting from the issue of instruments included in AT1, and Debt capital instruments. These instruments are perpetual without any 'put' option, however they may be issued with a 'call' option permissible after the instrument has run for a minimum of 5 years. AT1 instruments in the form of PNCPS and Perpetual Debt instruments (PDI) have been widely used by Indian Scheduled commercial banks to shore up Tier 1 capital ratios. The AT1 bonds being issued domestically are issued only in write-down category. Contingent convertibles AT1s are not issued domestically as they are not identified as capital under the regulator prescribed capital norms.

4.A.2 AT1 bonds have been designed to absorb losses on a going concern basis. In other words, these are liable to be written down at pre-specified trigger events or point of non-viability (PONV). The pre-specified trigger level is linked to the CET1 level of the respective issuing Bank – if it falls below 6.125% of Risk Weighted Assets (RWA). The PONV trigger event is determined by the RBI at the point the bank is assessed to be non-viable unless there is a write-off to equity of said BASEL III AT1 bonds, or a public capital infusion. The regulation requires that the write-off or conversion of the AT1 instruments occurs prior to any public sector injection of capital so that the capital provided is not diluted.

[19] Non-cumulative preference shares are those shares that provide the shareholder fixed dividend amount each year from the company's net profit but in case the company fails to pay the dividend on such preference share to the shareholder in any year then such dividend cannot be claimed by the shareholder in future.

4.B Features of the AT1 Bond market in India

4.B.1 The main features of the AT1 bond market includes the nature of participants, the depth and liquidity in the market, the maturity of the market, the investor awareness, the regulatory enabling framework, rules for pricing and valuation, etc. The analysis with respect to each of these points is provided below.

4.B.2 As compared to global markets, the investor base for Indian AT1 bonds appears to be comprising mostly of scheduled commercial banks, mutual funds, provident and pension funds, insurance companies, corporate treasury, hedge funds and HNIs. Most of the issuance of the AT1 bonds domestically is being done as private placement. Also, as observed globally, most of the investors appear to be investing in AT1 bonds as a core set of long-term holdings and trading and portfolio management purposes for investment in AT1 bonds appeared to be limited, which is similar to what has been observed in domestic market as well. Given that most of the investment in AT1 bonds are done as core portfolio investment, hedging as an option is not being used majorly both internationally and domestically. However, unlike global markets, due to inherent shallow size and evolving nature of the corporate bond markets in India, hedging instruments and hedging as a tool is not being used and is limited in availability with respect to the AT1 bonds.

4.B.3 The pricing of AT1 bonds globally is being done based on market determined swap rates and considering the presence of several ATI indices which reflect the market view on the pricing of the asset class and individual issuances and provides the issuers and the investors with an independent reference point for pricing and valuation. The lack of any AT1 indices for tracking domestic AT1 issuances adds to the subjectivity in the pricing of the AT1 bonds as there is lack of market determined reference prices owing to low volumes and less frequent trades. For valuing the ATI bonds, issuers and investors also both internationally and domestically, appeared to focus on both idiosyncratic as well as systemic risks and metrics.

4.B.4 Domestically, the yields of the G-sec market are generally used as a reference point for pricing the AT1 bonds. Based on the actual trades in AT1 bonds during a particular month, FIMMDA[20] publishes spreads for AT1 bonds after discussions in the monthly valuation committee meetings. The valuation of AT 1 instruments is done based on a Yield to First Call (YFC) basis, which is generally five years. FIMMDA publishes the spreads for two ratings zones AA & Above and AA- & Below and for two tenors' of up to 5 years and above 5 years. The spreads are calculated based on the volume weighted average of the traded bonds. Given the lack of market depth in the secondary markets, an efficient risk-based pricing of AT1 bonds is still a work in progress.

4.B.5 With respect to the valuation, the industry practice globally has been observed to be invariably using the first call date as the valuation time period/ maturity date, which is generally five years/ ten years. This is in contrast with the 100-year valuation rule that has been domestically stipulated by the capital markets regulator. Further, as observed globally, there do not appear to be any specific investment limits[21] with respect to investment in the AT1 bonds. One more aspect that has been observed is that domestically, scheduled commercial banks can buy crossholdings with other scheduled commercial bank's AT1 issuance within the 10% ceiling of their total Non-SLR holdings.

4.B.6 Another feature observed has been the distinction with respect to the maturity of the market participants and investors. Globally, there has been an increased trend towards the understanding among the AT1 bond investors that it is not obligatory for the banks to call the AT1 on the first call date and banks may choose not to call if the economics are very unfavorable and it may not necessarily be synonymous with any impending idiosyncratic issue with the Bank. Further, recent instances of non-call from the banks have not been taken as a market event by the investors in Europe and UK. There is also an increased understanding among investors that even if the bank prefers calling the AT1 bonds despite unfavorable economics, the same may not get the required regulatory approval. However, for the Indian markets, the AT1 bonds are invariably assumed to be called on the first call date and this has been the practical

[20] https://www.fimmda.org/pdf/Valuations/methodology/Corp-Bond-Methodology-24-05-2017.pdf
[21] For Mutual Funds in India, a limit of not more than 5% exposure to a single issuer and not more than 10% of the scheme's net asset value has been stipulated.

norm. The investor maturity on understanding of the economics behind the non-calling of the AT1 bond on the call dates is still evolving in the Indian context.

4.B.7 The AT1 market has seen several regulatory interventions coordinated with the government to avoid any coupon deferral or loss to investors in these instruments. These included relaxations of regulations, infusing funds and calling back the bonds. These steps even though are on account of market infirmities and builds investor confidence but may also lead to building of the expectation for a "regulator put" in evolving scenarios. The regulatory interventions included allowing banks to service coupon from revenue reserves or past profits, or tap into other reserves, including statutory reserves as well as providing one-time relaxations of allowing the losses to be set off against share premium reserves, which are not part of distributable reserves.

4.B.8 The domestic AT1 bond market also is limited due to the lack of a vibrant secondary market for bonds. Several of the perpetual bonds do trade in secondary market, which helps in arriving at a valuation figure for the Bonds. However, the trading is limited. Further, any risk-off events may further lead to drying up of the liquidity, which may further diminish the volumes and increase the cost of trading of the bonds. A lack of deep secondary markets limits the overall size of the AT1 bond markets.

4.C Capital Requirement for Indian Scheduled Commercial Banks

4.C.1 As per the regulatory guidelines, Indian Scheduled Commercial Banks are required to maintain a minimum Pillar 1 Capital to Risk-weighted Assets Ratio (CRAR) of 9% on an on-going basis. The Total required regulatory capital consist Tier 1 Capital (7%, with CET1 to be a minimum of 5.5%)[22], AT1 capital (maximum allowed is 1.5%) and Tier 2 capital.

4.C.2 Domestic scheduled commercial banks generally follow the process of capital planning through which every financial year with the respective board's approval, the proposed issuance of capital instruments throughout the year are envisaged through forecasting of the requirement of capital. As has been observed in para 4.5, the pricing of AT1 bonds issued by PSBs' have been found to be having lesser spreads as

[22] Further, as per the regulatory guidelines, not more than 49% of the higher of Total Additional Tier 1 Capital and 1.5% of RWAs, can be issued in foreign currency and/or in rupee denominated bonds overseas.

compared to PCBs' arguably suggesting implicit government support to these banks impacting the price differentials.

4.C.3 Going ahead, there are two aspects which warrant the continued issuance of AT1 bonds by the Banks. Firstly, the already issued AT1 Bonds, even though are perpetual instruments, but as per the market practice, are invariably being called on the first call option date which is generally five years. **Table 4** below presents the year-wise call options that are due to be called over the next 5 years. As and when, these call options are exercised, the capital level of the respective Bank will reduce by the related amount, unless the same is supplemented either by a new issuance or any other form of capital issuance/ replenishment.

Table 4: Amount of AT1 bonds due at their respective 5 year call options

Amount (₹ crore)	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
PSB	13,302	18,723	30,894	31,394	8,657	111,829
PCB	500	-	12,818	3,000	-	16,318
Total	13,802	18,723	43,712	34,394	17,516	128,147

4.C.4 Along-with replenishing the call-due capital, Banks also need to raise fresh capital to support balance sheet growth. Banks also play a crucial role in fostering overall economic growth in the country hence for an aspirational burgeoning economy, the credit growth is very important. This means that going forward as the economy leaps forward, the requirement of capital would be increasing and given the limitations on both internal capital formation and external recapitalization, AT1 bonds may serve as a means to bridge this required gap.

5. AT1 Bonds from investors perspective

5.1 AT1 bonds are complex instruments. The investment is these instruments requires extensive due diligence, particularly around the call structure of the bonds. Extension risk is the risk that the bank will defer payment of the principal of the bond. Around the call structure, the broad risks that an investor can face is the extension risk, the regulatory risk, idiosyncratic risk, as well as the systematic risk. For the AT1 bonds, banks are not permitted to create the expectation that a call will be exercised or not. However, market invariably expects, particularly in Indian case, banks to call the instrument after 5 years, which is also known as the refinancing of the called bond.

5.2 In theory, when an AT1 bond is called or not, either arises from the idiosyncratic risks that a particular bank faces as well as on broad level systematic risk that the market as a whole is facing. Both these risks are also fertile grounds that may lead to situations where the regulator is required to invoke the PONV criteria. Thus, a thorough understanding of these conditions by the investors, under which a bond might not be called, or coupons may be deferred or the bond itself is converted or written down is important. Given these risks involved in investing in AT1 instruments, one key risk to the AT1 market is around investor confidence.

5.3 Over the recent past, there has been three events of the writing off of AT1 bonds issued by one of the major banks in their respective jurisdictions. These were the Yes Bank, India, Silicon Valley Bank, UK and Credit Suisse in Switzerland. Even though in the default hierarchy, the AT1 bonds come above the equity, in the instance of Yes Bank and in the instance of Credit Suisse, the AT1 bond holders were the first to take the losses even before the equity shareholders and the equity was written down. However, in the case of the UK arm of Silicon Valley Bank, which was acquired by HSBC, UK, the AT1 bonds were written off along-with the common equity. The difference in approach in both the cases is due to the respective regulatory regimes in these countries. The same is explained in detail in **Box I** below.

Box I: Loss absorption mechanism of AT1 Bonds – Contractual and Statutory provisions[23]

The recent instance of wipe-out of the AT1 bonds before writing down of the stakeholders' equity in the case of Credit Suisse sent the global AT1 markets into tailspin and raised concerns and debates as how and when the AT1 instruments can be written down? We look into the loss absorption aspects of the AT1 bonds and its related mechanisms.

AT1 bonds by virtue have the characteristic of debt as well as equity. As per the Basel guidelines, there are two loss absorption mechanisms for a AT1 bond. These are contractual and statutory.

"The Basel Framework requires a contractual principal loss absorption mechanism for all AT1 instruments ("contractual approach"), unless the governing jurisdiction of the bank has in place laws that allow authorities to enact the conversion or write-down of these instruments irrespective of their terms and conditions ("statutory approach")."

The contractual loss absorption mechanisms are invoked at certain trigger levels. These trigger levels can either be quantitative or qualitative.

> *Quantitative trigger*: This is a mandatory trigger clause which provides for automatic write-down/ conversion of AT1 principal to shore up the CET1 to 5.125% or higher specified target level.
>
> *Qualitative trigger:* This trigger is mandated for AT1 instruments that have statutory provisions or contractual clauses providing for such mechanism to take place.

PONV in Basel Framework is defined as "*the earlier of: (i) the decision of the relevant authority that a write-down is needed to restore the viability of the issuing firm: or (ii) a decision by the public sector to provide support to restore the viability of the issuing firm."*

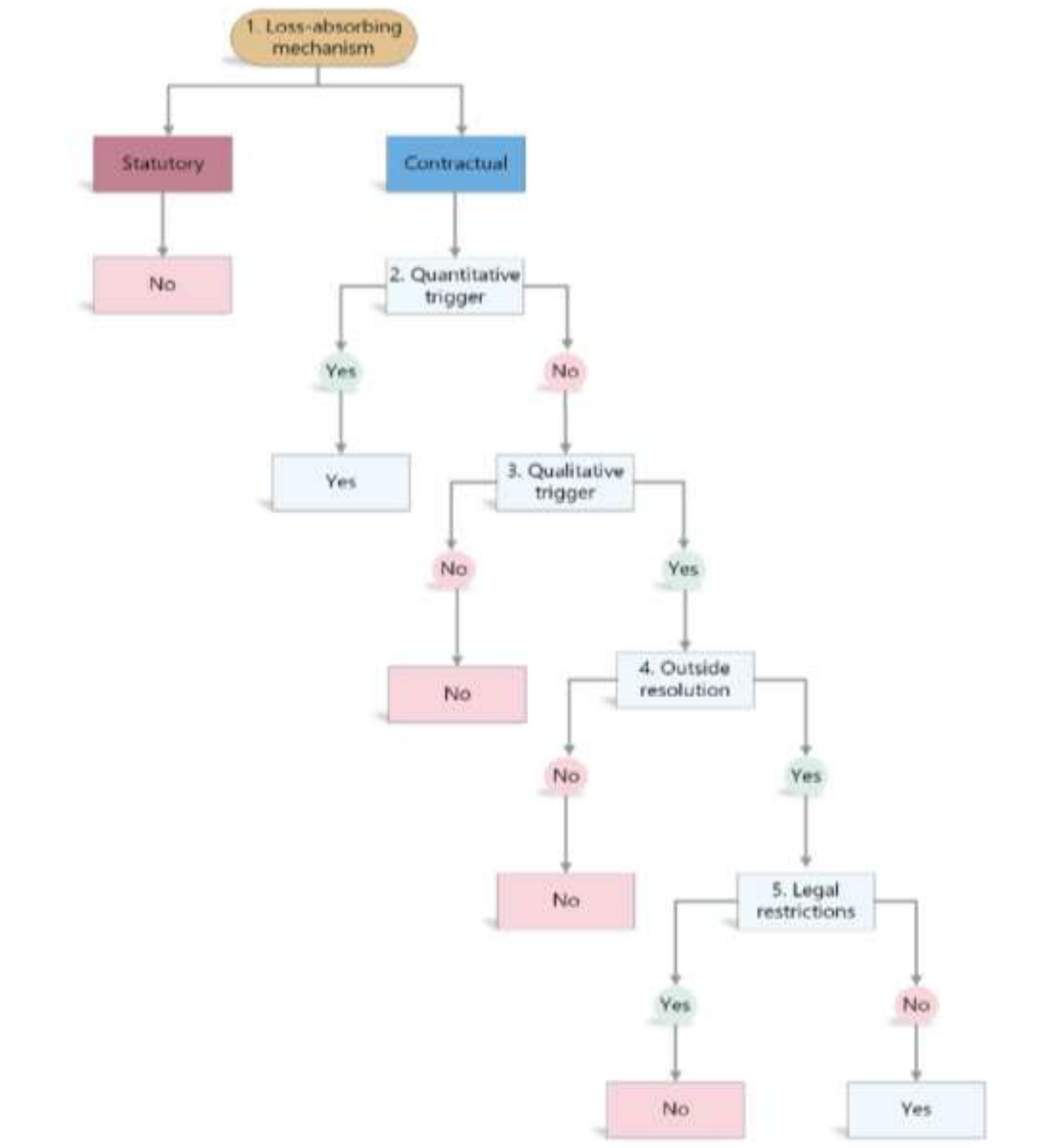
[23] FSI Briefs - Upside down: when AT1 instruments absorb losses before equity.

The usage of the qualitative trigger is based on the judgement/ discretion of the respective regulators. The trigger may enable writing down the AT1 bonds without a prior or subsequent full write-down of the shareholders' equity. There are two scenarios that may be considered here –

a. In case the respective jurisdiction has statutory guidelines in terms of resolution framework or other guidelines, then the contractual terms must coincide with the statutory terms and the competent authority puts the bank in resolution simultaneously writing-down the AT1 bond. Generally, the resolution frameworks mandate the creditor hierarchy to be followed and thus in these cases the write-down of AT1 bonds prior to write-down of shareholders' equity is prevented.
b. However, in case there are no such statutory/ resolution provisions, or the contractual terms are not fully aligned with the respective statutory guidelines, or the respective statutory framework do not put specific restrictions on the wipe-out of the AT1 bonds without the wipe-out of CET1, then in these cases the write-down of AT1 bonds prior to write-down of shareholders' equity is possible.

Different countries have taken varied approaches towards the loss absorption mechanism. USA has statutory approach to PONV requirements while Canada, China, EU, UK, Switzerland, and India follow a contractual approach. In Canada, India, and Switzerland, qualitative triggers are deemed met if there is infusion of public funds in the respective bank. In China, the infusion of funds is not specified to be a trigger. Further, for EU, UK, and Japan, AT1 instruments may but are not required to have such qualitative triggers. The loss absorption mechanism and decision-making is presented in **Chart 16** below.

Chart 16: Decision making with respect to loss-absorption mechanism of AT1 bonds



Source: FSI analysis.

The isolated write-down of AT1 instruments is thus possible depending upon the event taking place outside the resolution for quantitative triggers, which seems highly improbable. However, the isolated write-down for qualitative triggers is possible, if the respective authorities chose to write-down the AT1 bonds based on the qualitative triggers outside the resolution framework or when there is no such resolution framework or the resolution framework do not specifically restrict such isolated write-downs. Thus, such isolated write-downs have been possible in India and Switzerland, however the same is not possible in UK and EU. This explains the difference between the write-down of AT1 bonds before writing down of shareholders' equity in case of Yes Bank and Credit Suisse but not in the case of Silicon Valley Bank, UK.

5.4 Thus, there is considerable complexity in understanding the nuances of the AT1 bonds which would be a daunting task for any retail investor and thus only specialised investors may be required to be allowed to invest in these instruments. It is observed that in EU/ UK, retail participation in AT1 bonds is prohibited and the same has also been implemented in India with the revised SEBI guidelines after the Yes Bank write-down of AT1 bonds, wherein only QIBs are allowed to invest in AT1 bonds going forward and all non-QIB and retail investors are not allowed to invest in the AT1 bonds. All these developments have led to the grey areas of the AT1 bonds being coming to prominence and getting discussed and understood properly. The limitations implemented on the participation of retail investors, and on the products being sold to retail investors also augurs well for this asset class considering the complexity of the product.

5.5 As we say that the "devil lies in the details", so every AT1 issuance comes with a regulator mandated and prescribed placement prospectus/ disclosure document or term sheet detailing all the aspects of the issuance to the investors. This document is supposed to explain everything about the respective AT1 issuance and is generally fairly detailed and extremely voluminous, even though there is a consolidated information in the form of a term sheet and its summary. The very voluminous nature of this document makes it difficult to have an effective assessment unless the investor is a sophisticated player having a team of experts to delve into each of the detail.

5.6 The placement memorandum in India is prepared based on SEBI's guidelines, SEBI (Issue and Listing of Non-Convertible Securities) Regulations, 2021 issued vide circular No. SEBI/LAD-NRO/GN/2021/39 dated August 9, 2021, read with SEBI circular number SEBI/HO/DDHS/P/CIR/2021/613 dated August 10, 2021, as amended/modified/supplemented from time to time. The EU regulation is followed through “The Prospectus Regulation (Regulation (EU) 2017/1129)” which was modified and issued on July 21, 2019. The new modified regulation mandated preparation of a prospectus summary in case of securities being offered to public. The summary is required to disclose the 15 most relevant risk factors in a concise way. The modification also provided the length of this summary to be on a maximum of seven sides of A4 paper when printed (and extendable only in exceptional cases). SEBI also in its above stated circular with reference to PDIs and PNCPs, has mandated to make the following specific disclosures -

- The placement memorandum to specify the conditions upon which the call option will be exercised.
- The inherent features to include all the Risk factors.
- Point of Non-Viability clause

5.7 Placement memorandum is the official document which has been prescribed for issuance of corporate bonds in India as per SEBI guidelines. The relevant excerpts from the some of the fillings which has been done by AT1 bond issuing banks are produced below for comparison with the fillings done as per the placement prospectus which is the official document for UK/EU for issuance of AT1 bonds in UK/ EU. Both the documents broadly cover similar level of disclosures; however, an in-depth look brings out the subtle differences between the documents.

5.8 Risk factors pertaining to the issuance have to be covered in the prospectus as has been mandated in both the jurisdictions. The Prospectus Regulation of EU also seeks to ensure concerted disclosure around risks and prevent overly broad disclosure of risk factors. The regulation stipulates that the issuers should only set out risk factors that are material to the issuance and that would enable an investor to make an informed investment decision, and which are specific to the issuer. The European Securities and Markets Authority (ESMA) has published a Guidelines on Risk Factors in March 2019. Qualitative scaling of the risk factors as low, medium or high, limiting the risk categories to 10 and with most material risk being disclosed first are some of the stipulations that has also been prescribed. In comparison, generalized nature on disclosures is mentioned in Indian regulations. An overview of the comparison of the disclosures in risk factors of the AT1 bond prospectus in India and UK/ EU is presented in **Table 5** below.

Table 5: Disclosures comparison	
India	**UK/ EUR**
Placement Memorandum	**Placement Prospectus**
Risk Factors – The risk factors contain risks relating to the bank's business, and risks relating to the bonds/ issue. A summary of the risk factors is presented below – Risks relating to bank's business – Economic environment, financial conditions, interest rate and exchange rate risk, volatility, reduction in customer deposits, reduction in income, interest rate risk, large investment in Government securities, income from government operations, level of NPAs, provisioning requirement and restructured loans, high concentration of loans, delay in enforcing collateral on borrower default, credit, market and liquidity risks, foreign exchange risk, operational issues, unforeseen events, operational risks, unidentified risks, reputation risk, sanctions risk, security breaches, frauds, regulatory risk, technology risk, pension and contingent liabilities risk, ratings downgrade, natural calamity, accounting issues etc. Risks relating to Bond – not suitable for investor, not guaranteed by government, active trading of bond may not happen, no limitation on issuing debt or senior or pari passu charge, payments on Bonds are subordinated to certain tax and other liabilities, downgrade, subject to write-off on the occurrence of PONV trigger or CET1 trigger event, coupons non-cumulative and can be cancelled, no fixed maturity, investors have no right to call for redemption, limited	Risk Factors – "*Risks associated with the investment in the securities, the business of the issuer, and the industry in which the issuer operates*." Risk factors related to the issuer – "*the risk factors set out in the Issuer's registration document, incorporated by reference (the "Registration Document, the 2022 form 20-F"). The Issuer considers such risk factors to be the principal risk factors that may affect the Issuer's ability to fulfil its obligations under the Securities and/or risk factors that are material for the purposes of assessing the market risk associated with the Securities*". Risks related to the securities – do not contain events of default, limited remedies available to the bondholders, bond investment is not equivalent to investment in bank deposit, optional redemption, no scheduled maturity, bondholders have limited ability to cash in the investment, tax risk, discretionary interest payments that are cancellable in part or whole, cancelled interest payments not to be due or accumulate or any right for the investors to receive them, interest payments also to be restricted in case issuer has insufficient distributable reserves, issues affecting distributable income, conditions that may limit interest payments to investors, risks related to potential conversion or write-down of the security, converted or written down following a capital adequacy trigger, securities to be converted to ordinary shares, circumstances surrounding a trigger of conversion are unpredictable, changes to calculation of CET1 or Risk weighted assets may affect capital adequacy trigger, limited anti-dilution

assurance on listing of bonds, may not be any active market for bonds on the stock exchanges, bank not required to and will not create or maintain a Debenture redemption reserve for these bonds.	provision, shares may also get converted into another entity, applicable bank resolution powers, structural subordination, credit ratings may not reflect risk, may not be active trading of the bond, exchange rate risks, securities with multiple denominations, modification, waiver, and substitution.

5.9 Within the placement memorandum, banks are required to prepare a term sheet containing the details about the issue. The format of the term sheet has been detailed by SEBI guidelines. The term sheet provides an adept view of the complete issuance of the AT1 bonds. The term sheet contains the basic details about the issuance such as issue size, security name, type of instrument, greenshoe option, minimum amount of subscription, manner of allotment, rating of the instrument. It also has detailed information on specifics of the issuance such as the seniority of claim, eligible investors, listing exchange, settlement cycle, issuance and trading mode, tenor, issue price, tenor and face value, and coupon rate. The term sheet also provides the details on the unique features of the issuance such as the step up/ step down coupon, call option and call date, condition for exercise of call option, issuer call option, tax call, regulatory call, coupon discretion, dividend stopper, PONV trigger, bankruptcy/ liquidation/ Insolvency treatment, risk factors, and write-down of the instrument.

5.10 Even though the term-sheet field list has been prescribed, variability has been observed in the disclosures provided in the term sheets particularly with respect to the write-down, exercise of call options, exercise of PONV stipulations. Given the technicalities and intricacies involved in various situations in which the write-down may occur, the disclosures need to be simple and well-explained. Some sample term sheets from various AT1 issuances of the commercial banks can be assessed here[24] for reference. From an investor point of view, even though the disclosures have

[24] https://bankofmaharashtra.in/writereaddata/documentlibrary/363c5cb7-b33a-4b1f-aced-6bd295d65b57.pdf
https://www.bankofbaroda.in/-/media/Project/BOB/CountryWebsites/India/pdfs/termsheet-at-1-series-xviii-final-270122-02-16.pdf
https://www.hdfcbank.com/content/bbp/repositories/723fb80a-2dde-42a3-9793-7ae1be57c87f/?path=/Footer/Resource/Regulatory%20Disclosures/Content/2022/Terms%20conditions-%20Additional%20Tier%201%20September%2008%202022.pdf

increased and AT1 bonds have been limited to QIBs, still there is scope for further transparency and disclosure - particularly towards the price discovery of the issuances and on the clear articulation, simplification and comprehensiveness of the write-down aspect in the Indian case.

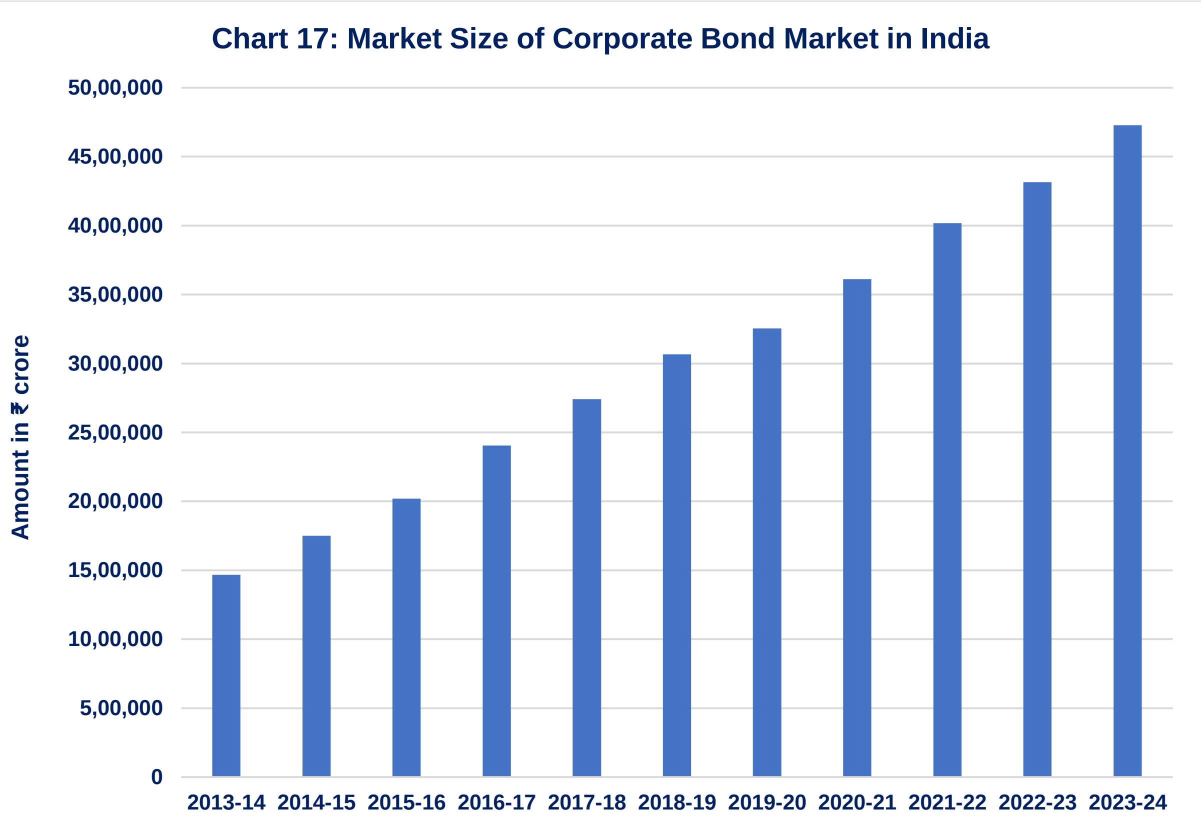
5.11 Given the complex nature of the AT1 bonds, one of the associated issues have been around mis-selling of these bonds. Whether it is the case of the AT1 bonds of Yes Bank, or the AT1 bonds of the Credit-Suisse, numerous lawsuits have been filled claiming mis-selling of these bonds. Whether it has been in Switzerland, or Japan, or USA, the write-off of the AT1 bonds of Credit-Suisse have led to litigations all around. In Japan, the issue observed has been the following of KYC norms as well as adequately explaining the rules of AT1 bonds to the prospective buyers by the sellers. Even though selling the AT1 bonds to the “regular/ professional customers”, the complexity of the nature and the opaqueness around the write-down circumstances, would be difficult to be understood until the customer has certain financial understanding.

5.12 Even though the regulators have already banned selling of AT1 bonds to retail investors, a curb on the mis-selling or “informed selling” going forward to the regular eligible customers is also required. This may entail the regulators mandating some sort of nuanced and to the point disclosures in the application forms or the selling team to individually apprising the customers and getting those signed as part of the investment mandating document may be few additional practices that may be thought of, so that the product is adequately explained, all related information is provided, and the investors are left with the choice to make an informed investment decision.

6. Comparative study on bonds issued by Corporates and Banks in India

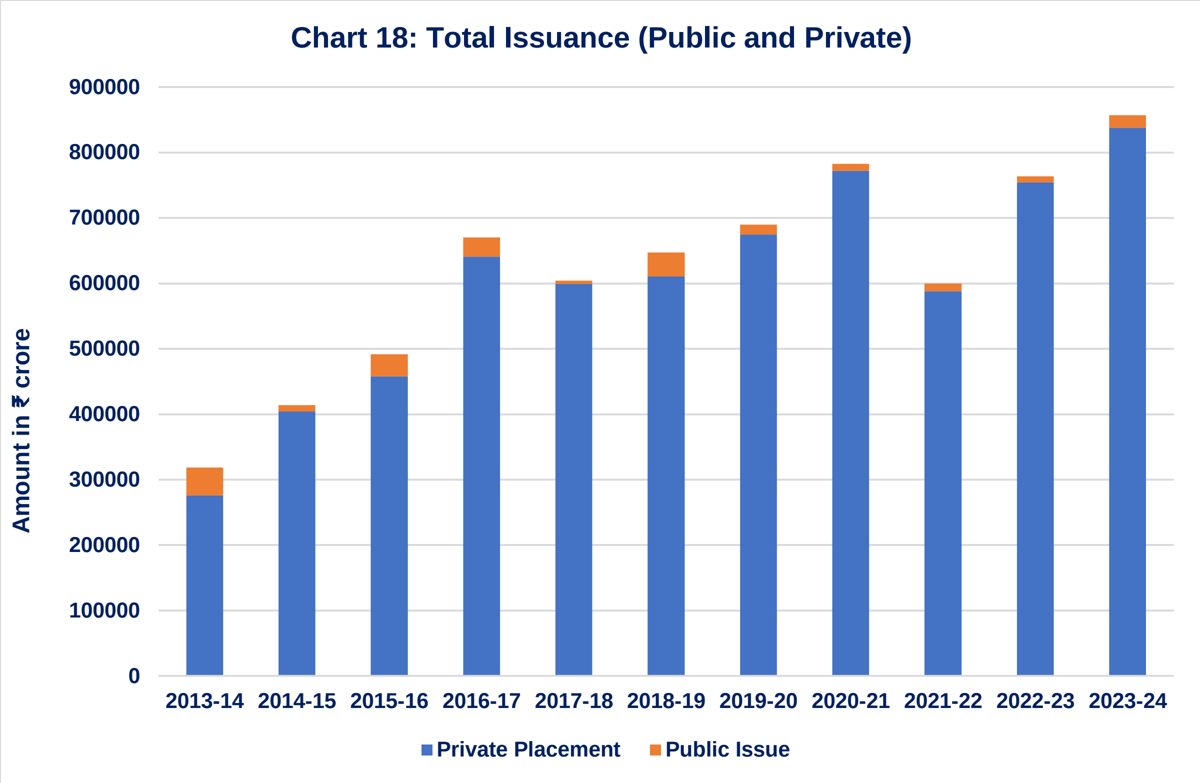
6.A Corporate Bond Market and its features

6.A.1 The Indian corporate bond market is still evolving. Over the years, the corporate bond market has grown in size of issuance as shown in **Chart 17** below. However, some of the basic issues still persist. The Indian corporate bond market is completely dominated by private placement issuances and public issuances are limited which over the years has continued to follow this trend. (**Chart 18**). From a ratings perspective, the corporate bond market is highly skewed by issuers which are highly rated. AAA and AA rated issuers form the 75-80% of the market by value of issuance. Further, majority of the issuances in the corporate bond market are fixed rate issuances and the floating rate issuances are minimal. (**Chart 19**)

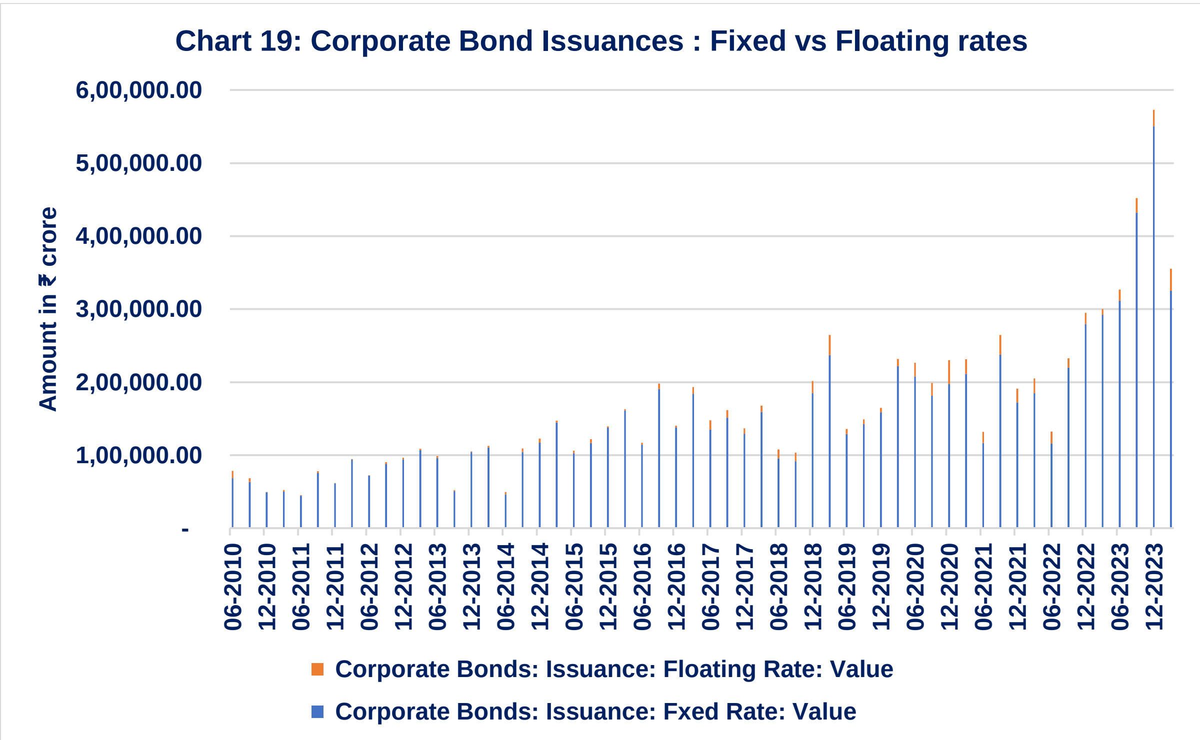


Source - SEBI[25] and Author's own calculations

[25] https://www.sebi.gov.in/statistics/corporate-bonds/outstandingcropbond.html



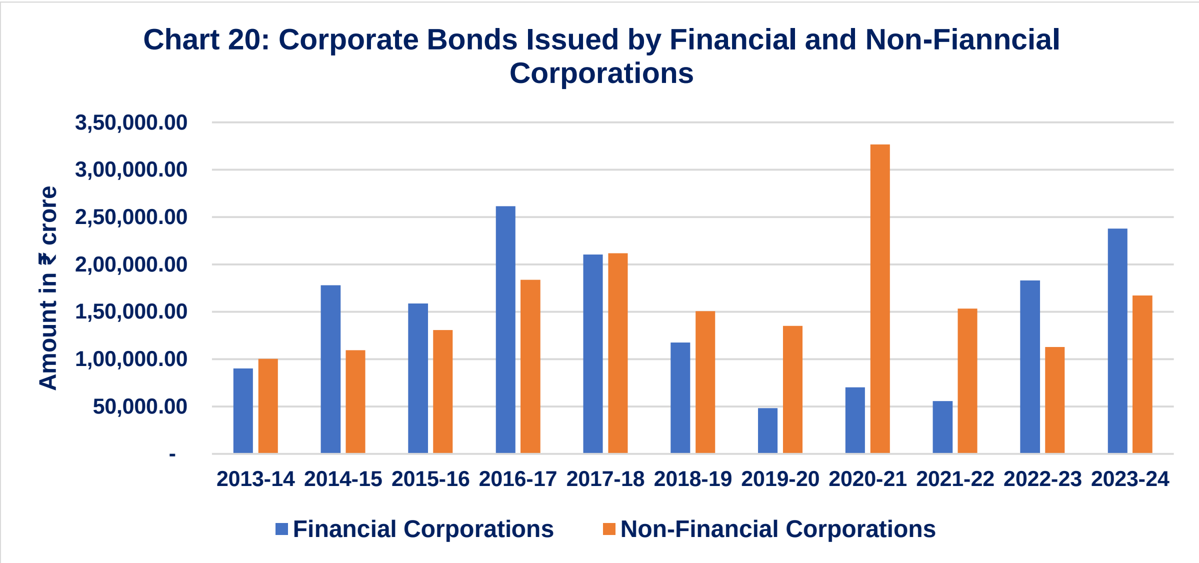
Source - SEBI[26] and Author's own calculations



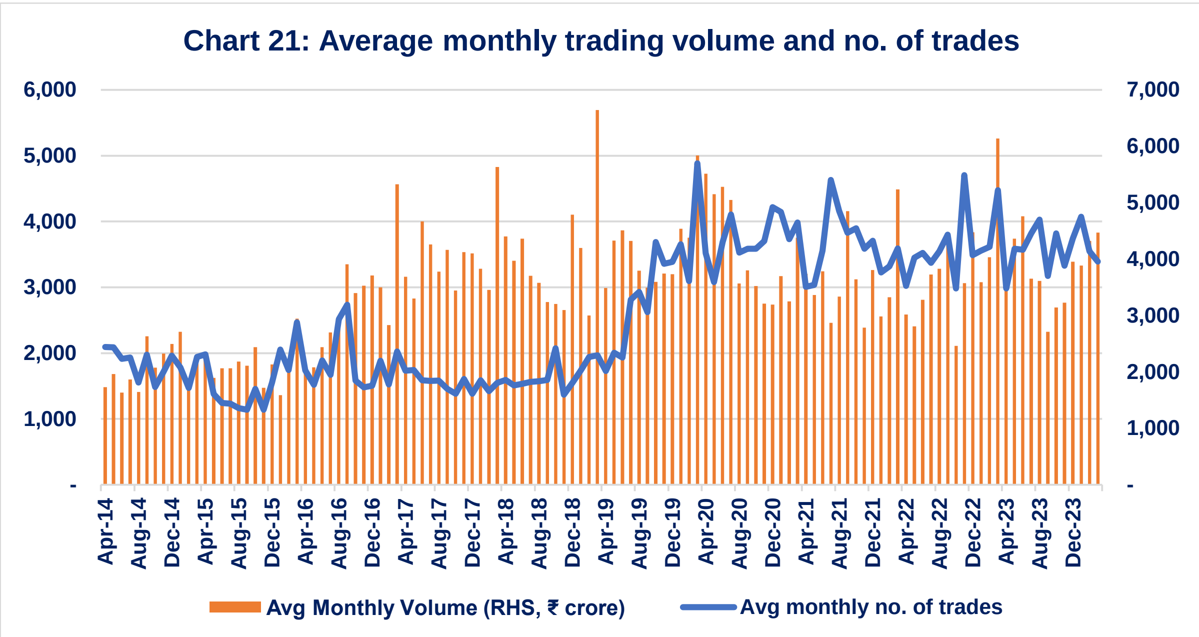
Source: SEBI[27] and Author's own calculations

[26] https://www.sebi.gov.in/statistics/corporate-bonds/privateplacementdata.html
https://www.sebi.gov.in/statistics/corporate-bonds/publicissuedata.html
[27] https://www.sebi.gov.in/statistics/corporate-bonds/outstandingcropbond.html
https://www.sebi.gov.in/statistics/corporate-bonds/outstandingcorpdata.html

6.A.2 The corporate bond market is also dominated by issuances from financial corporations; however, the share of non-financial corporations has also risen over the years. (**Chart 20**). Further, there is limited trading in the secondary bond market with the average number of trades happening on a daily basis and the volumes being at comparatively much meagre amount as compared to the primary market issuances or the total outstanding market volume. (**Chart 21**).



Source - SEBI[28] and Author's own calculations



Source - SEBI[29] and Author's own calculations

---

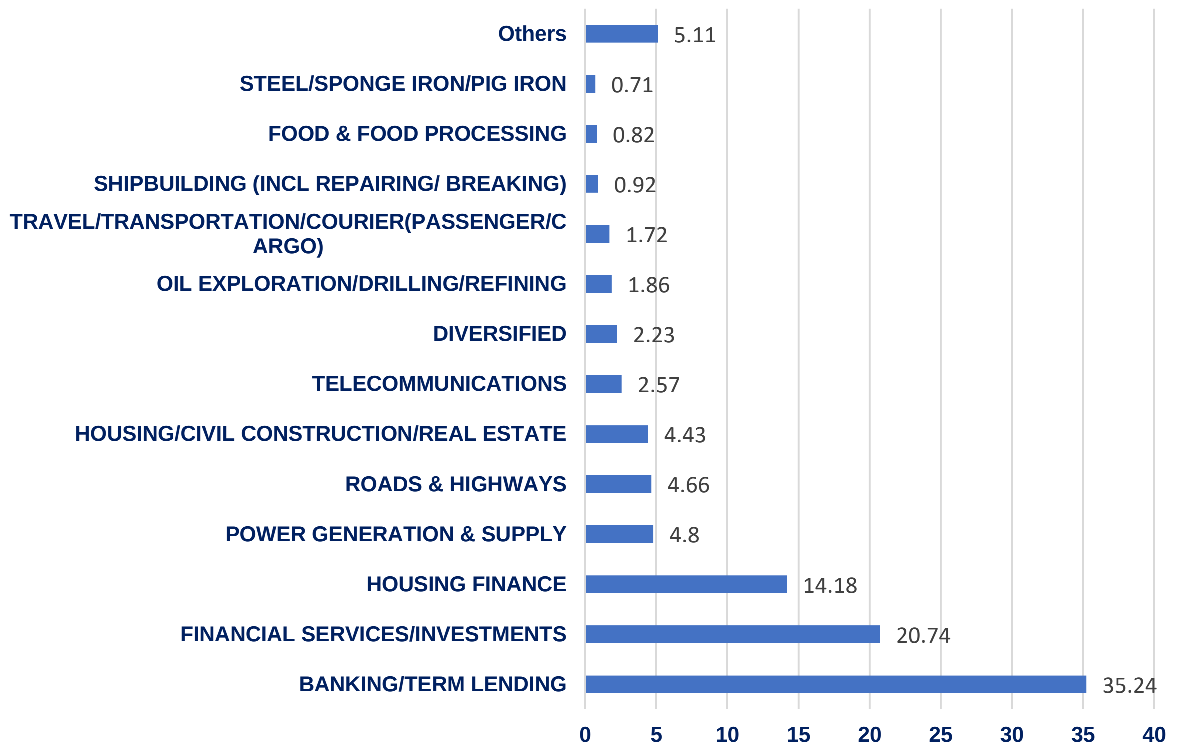
[28] https://www.sebi.gov.in/statistics/corporate-bonds/outstandingcropbond-finnonfincrop.html
[29] https://www.sebi.gov.in/statistics/corporate-bonds/trades-corporate-bonds/tcb-MonthWise/Data-For-FY-2015-2022-MonthWise.html

6.A.3 Due to the limited volume in the secondary markets, there is a lack of an interest rate/ yield curve benchmark in the Indian Corporate bond market. Due to lack of availability of such indices and benchmarks, G-sec are used as a benchmark for analyzing the spreads of the issuances. However, a marked difference between the G-sec and corporate bonds is nearly default-free nature of the G-sec as compared to the extensive credit risk which is entailed in every investment in the corporate bonds. Coupon rates on various types of bonds are influenced by several factors such as maturity, ratings, type of issuance, G-sec yield, and the overall market perception of riskiness.

6.B Issuers and Issuances in Domestic Corporate Bond Markets

6.B.1 During the period FY 2019-2020 to 2023-2024, around 70% of the total issuance in the domestic private placement of corporate debt instruments has been done by Banks/ Term Lending companies, Financial Services/ Investment companies, and HFCs with their respective share being 35.24%, 20.74%, and 14.18% respectively. (**Chart 22**).

Chart 22: % share in Issuance (FY 2019-2024)

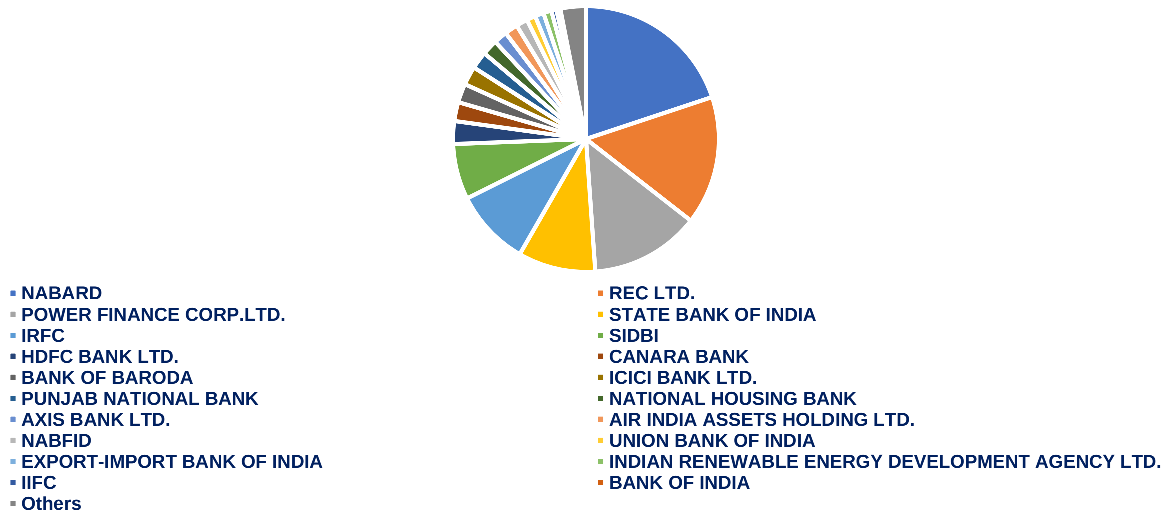


Source – Prime database and Author's own calculations

6.B.2 Within the first two categories of the issuers domestically, NABARD is the top issuer among the Bank/ Term Lending Companies while Bajaj Finance Ltd., is the top issuer among Financial services/ Investment companies. Among Bank/ Term Lending Companies, top 20 companies constitute around 96.90 of the total issuances during the period FY 2019-20 to 2023-2024. For Financial services/ Investment companies, top 20 companies constituted 60.65% of the total issuances. There were a total of 505 issuing companies in Financial services/ Investment companies as compared to 51 issuing companies among Bank/ Term Lending Companies. The list of companies issuing under both the categories of Bank/ Term Lending Companies and Financial services/ Investment companies contributing to the overall issuance is provided as **Annex I** and **Annex II** respectively.

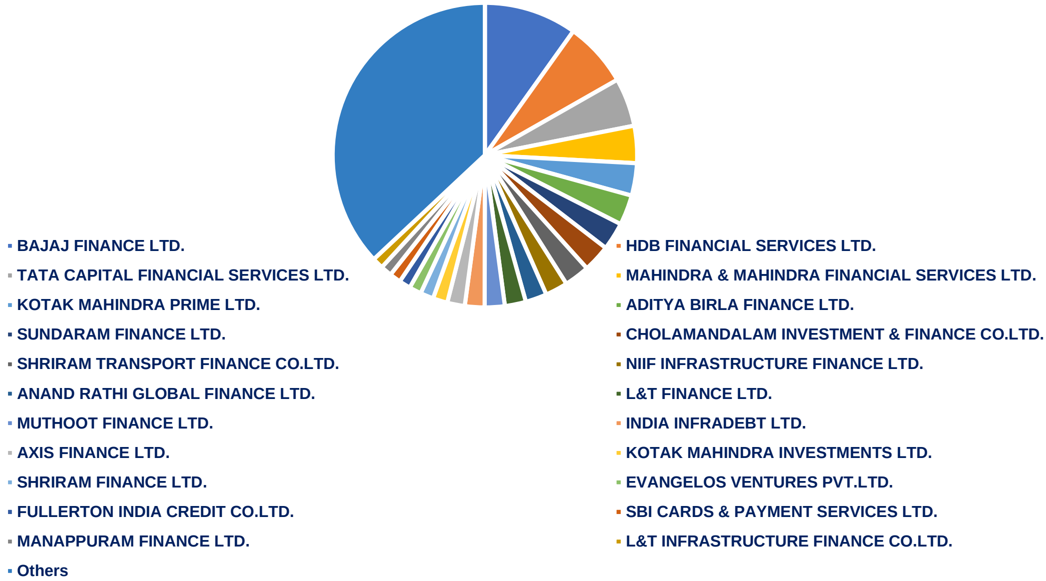
6.B.3 During this period FY 2019-20 to 2023-2024, Scheduled Commercial Banks (SCBs) as a group has issued ₹ 3,74,173 crores of bonds through private placement. During the same period, the total AT1 bonds issued has been ₹ 1,11,433 crores which is approximately 29.78% of the total issuance. In the AT1 bonds, even though the issuance was dominated by big SCBs and smaller SCBs were absent, in the overall bonds market, the smaller SCBs including small finance banks have been issuing the corporate debt. As a proportion of the overall market, SCBs issuance form 9.54% of the total corporate bond issuance over the period FY 2019-20 to 2023-24.

Chart 23: Banks/ Term Lending Comapnies-
% of issuances by different entities



Source – Prime Database and Author’s own calculations

Chart 24: Financial Services/ Investment companies - % of issuances by different entities



Source – Prime Database and Author’s own calculations

6.C Issuance of AT1 Bonds and other bonds by Banks

6.C.1 Banks along-with AT1 bonds also issue other bonds such as infrastructure bonds. Given that domestically the bonds are issued by banks as part of the corporate bond markets, hence, the bank bond markets including the AT1s parallel the nature of the corporate bond markets in terms of being primarily private placed market, with limited volume in secondary market trading, non-availability of reference indices/ benchmarks, limited market depth in primary markets etc.

6.C.2 AT1 bonds are at the riskier end of the fixed income bonds as they are lower rated than more senior debt, therefore the relative higher yield offered by AT1 bonds may be assumed to be driven by their subordination in the capital structure, rather than a reflection of the respective bank’s credit quality. Further, domestically the majority of the AT1 bonds are issued by investment grade banks, and which are highly rated. On a global level, the majority of AT1 debt is skewed towards lower ratings level. Credit rating agencies generally follow the practice of “notching”, wherein the different issuances of same borrowers are rated differently based on the risk perceptions. AT1 bonds, based on loss absorption features and thereby inherently considered more risky are generally notched down from similar issuances of the banks. An example of the different ratings of issuances of a commercial bank is presented below (**Figure 1**).

State Bank of India: [ICRA]AAA (Stable) assigned to long-term bonds; ratings reaffirmed

Summary of rating action

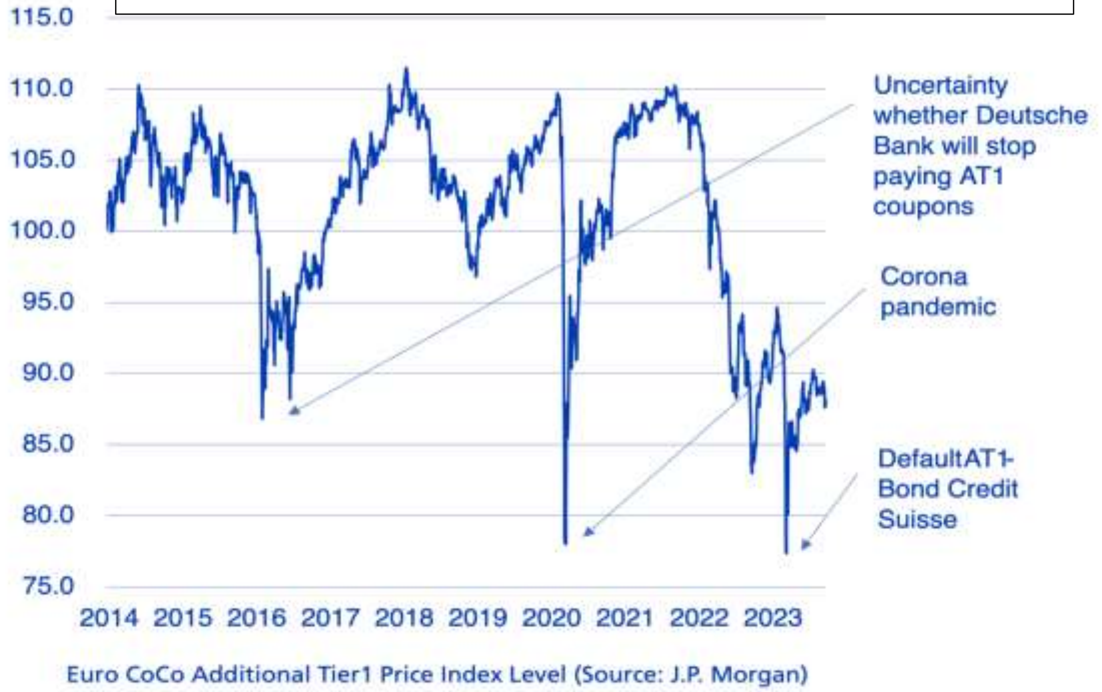
Instrument*	Previous Rated Amount (Rs. crore)	Current Rated Amount (Rs. crore)	Rating Action
Long-term Bonds^	-	10,000.00	[ICRA]AAA (Stable); Assigned
Infrastructure Bonds	40,000.00	40,000.00	[ICRA]AAA (Stable); Reaffirmed
Basel III Tier II Bonds	18,743.00	18,743.00	[ICRA]AAA (Stable); Reaffirmed
Basel III Tier II Bonds	2,000.00	-	[ICRA]AAA (Stable); Reaffirmed and withdrawn
Basel III Tier I Bonds	30,418.40	30,418.40	[ICRA]AA+ (Stable); Reaffirmed
Basel III Tier I Bonds	7,317.30	-	[ICRA]AA+ (Stable); Reaffirmed and withdrawn
Fixed Deposits	-	-	[ICRA]AAA (Stable); Reaffirmed
Total	98,478.70	99,161.40	

Instrument details are provided in Annexure I
^Infrastructure bonds

Figure 1: Notching of AT1 bonds issuance

6.C.3 Hence, globally the returns on AT1 bonds are generally compared with the returns on the High-yield bond index. The AT1 bonds pricing and returns are also observed to be variable over the various global uncertainties. A snapshot of returns fluctuation of Euro AT1 bonds vis-à-vis global events is presented in **Chart 25** below.

Chart 25: Uncertainty and price index level of Euro COC AT1



6.C.4 With respect to the returns two important indicators are Z-spread to worst which measures the difference between the best and worst performing securities and Yield to worst which is the lowest possible yield that can be achieved on a specific set of securities. A plot of the Z-spread to worst and Yield to worst of the Euro CoCo AT1 bonds is provided in **Chart 26** and **Chart 27** respectively below.

Chart 26: Z-spread to worst of Euro COC AT1

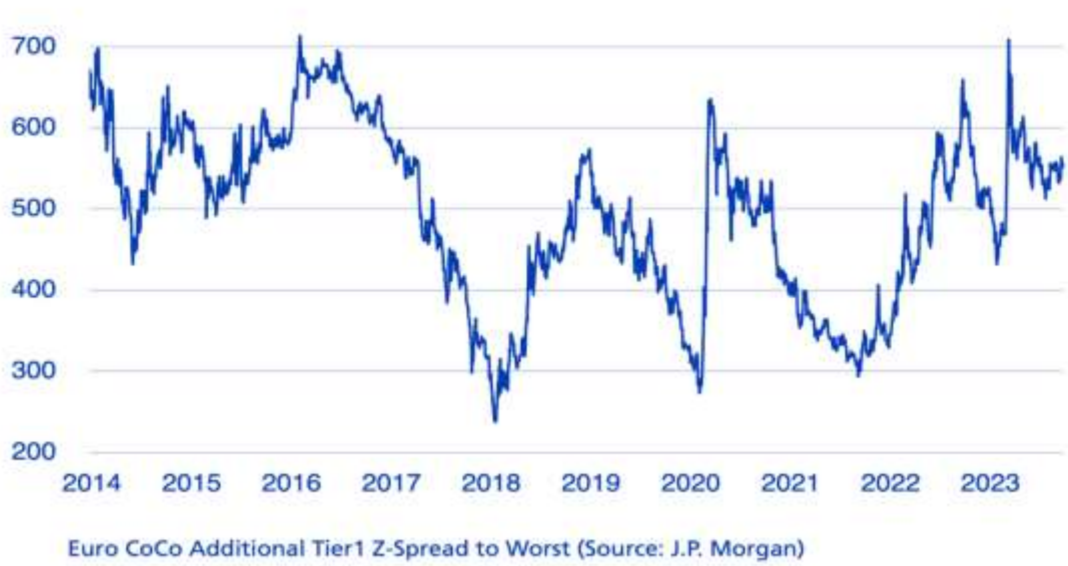
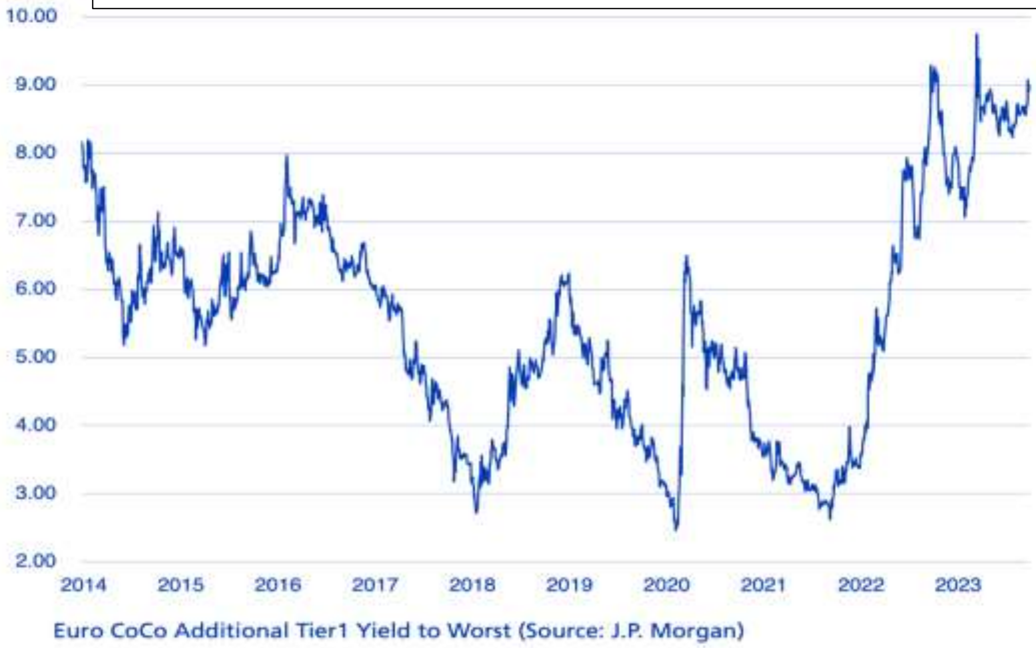


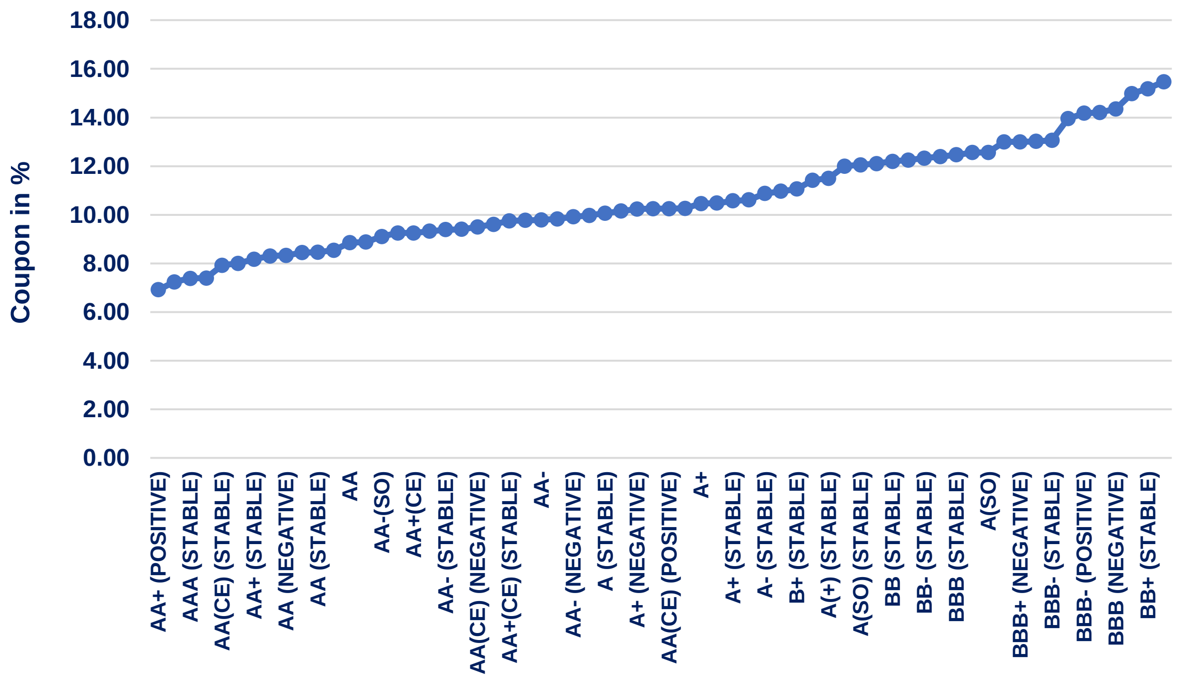
Chart 27: Yield to worst of Euro COC AT1



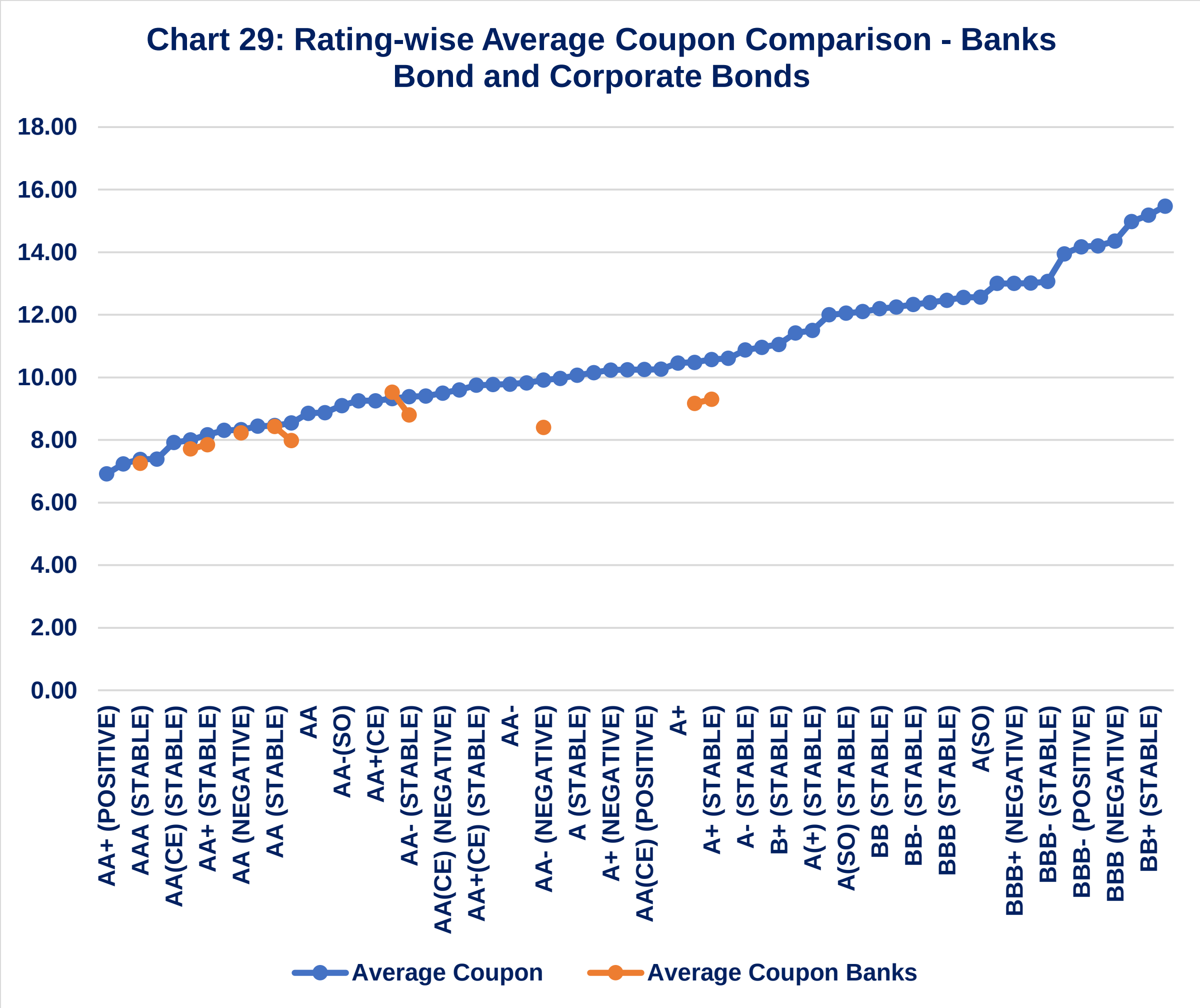
6.C.5 Domestically rating agencies generally follow the concept of notching (the practice of giving different credit ratings to different issuances of a single issuing entity) when rating individual issuances of the Banks. Along-with the general health of the Bank, the rating agencies also look at the distributable reserves of the Banks, from which the Banks are required to make the periodic coupon payments as factors for notching the issuance from the respective ratings of the Bank. As has been observed, in contrast to the global markets, the majority of the issuance in AT1 bonds is from the highest rated banks and thus the comparable yields will be the 5-year G-sec yields or the AAA corporate bond index.

6.C.6 Coupon serves as an important parameter in the issuance of the bonds. An estimation of the average coupon on the fixed rate corporate bonds issued between FY 2019-20 to 2023-24 is presented in **Chart 28**. As can be seen from the chart, the corporate bonds are generally being priced based on the ratings with the highest ratings having the smallest coupon and the weakest ratings having the highest coupons. A comparison of the coupons with the bonds of the Banks reveal that as we go down the rating chart, the difference in the coupons become more stark. (**Chart 29**)

Chart 28: Rating-wise Average Coupon



Source – Prime Data Base and Author's own calculations



Source – Prime Data Base and Author's own calculations

7. Conclusions and Recommendations

AT-1 capital instruments after the Global Financial Crisis were envisaged as key regulatory bail-in instruments outside the normal bankruptcy process, seeking to impose principal losses on creditors during firm related idiosyncratic distress events. The purpose of institution of these instruments was to ensure orderly re-capitalization, or eventual liquidation, of a given institution without triggering system-wide distress. In this context, the important consideration has to understand the real loss-absorption capacity of AT1 instruments in a going-concern basis.

7.A Loss absorption capacity of AT1 instruments

7.A.1 A study from Bank of England working paper (Fatouh et al, 2021) has shown that CoCo bonds issuance has a strong positive effect on risk-taking behaviour of the Banks, and so do conversion parameters that reduces dilution of existing shareholders upon conversion. Higher economic volatility also is seen to amplify the impact of CoCo bonds on risk-taking. Petras (2020) has also shown that use of CoCo bonds instead of Bank equity as AT1 capital significantly increases bank profitability.

7.A.2 Theoretically AT1 bonds have been designed to absorb losses before writing down of equity, however, the design features of the AT1 bonds allows writing down of AT1 bonds before writing down of CET and thus transfer of value from AT1 bond holders to the shareholders. The fact that isolated write-down is feasible in several jurisdictions, however, negative market reactions may lead the authorities to write-down the bonds only in case of resolution. Thus, the ability of the AT1 bonds to absorb losses on a going-concern basis is severely limited in these cases.

7.A.3 In the wake of the write-off of the Credit Suisse AT1 bonds, in a joint statement, the European Central Bank, the European Banking Authority and the Single Resolution Board confirmed that, for those banks under the EU's jurisdiction, AT1 bonds would only be written down after all common equity tier 1 capital had been exhausted. The Bank of England also issued a similar statement.

7.A.4 In the wake of the possible scenarios and obscurity behind the write-down and conversion of AT1 bonds, enhanced customer disclosures are required. The respective regulators may be required to devise mechanisms for more transparency in the customers being educated on the possible risks associated with the investment in AT1 bonds. FAQs from the regulators on several aspects of the AT1 bonds may be issued which may be referred by investors while investing in these bonds.

7.A.5 Mis-selling of any type is required to be completely prohibited and AT1 bonds may be sold only to the investors who are mature enough to understand the inherent risks involved in these bonds, under various scenarios. Any misrepresentation selling or selling in disguise must be severely dealt with.

7.B Can AT1 instruments be considered as capital?

Given the fact that AT1 bonds design features enable it to be either being used on a going-concern basis or gone concern basis, however, their ability to boost capital ratios is well recognised. In a capital required world, where the Banks need capital perennially to boost their balance sheets, and given that boosting CET1 through internal capital may be challenging at times, AT1 bonds serve as a vibrant source of capital for the banks.

7.C AT1 bonds as an investment class

7.C.1 AT1 bonds are hybrid securities and combine the features of both bonds and equities. As an investment class, AT1 bonds have historically offered higher yields than most traditional bonds having a call feature, as a compensating spread to the investors with the greater associated risks of conversion or write-down.

7.C.2 As can be seen globally and also in India, AT1 bonds is an asset class that is still a limited percent of the total bond market and is thus having potential for more capacity utilisation. At a time, when we are heading into a lower rates regime and with equity markets at all-time highs, and with globally banks being fairly stable, AT1 bonds can gain enhanced traction among the investors.

7.C.3 Even though the AT1 bonds' features entail a fixed coupon, possibilities of allowing a floating rate coupon AT1 bonds may also be thought of since AT1 bonds are long term to perpetual instruments and, therefore, need for a mechanism to adjust to prevailing interest rates scenarios during their long tenures may be envisaged This may enable the bonds to benefit both the investors and the banks as that will provide the market linked compensation and allow more flexibility in terms of calling or extending the AT1s.

7.C.4 The bonds issued by the Banks form a small part of the overall size of the corporate bond market in India. The coupon rate for the Banks' bond issuance have been observed to be lesser as compared to similar rated corporates. The AT1 bonds form around 1/3rd of the issuance of the overall bank bonds. Thus, there is scope of increasing the market size of the AT1 bonds which will enable banks to efficiently cater to their growing capital needs.

7.D AT1 bonds in Indian context

Harmonization of Valuation aspects

7.D.1 In the India context, there is a need for harmonization on the valuation aspect of the AT1 bonds which is not as what is observed globally. Further, there has to be inter-regulatory co-ordination on several aspects such as allowing investment in various rating grades, investment limits revision, regulatory confidence, curb on mis-selling, more focused disclosures and risk-assessments, which can make this instrument class more vibrant and that may enhance investments in this asset class, along-side keeping the confidence and stability of the markets intact.

Enhanced customer awareness

7.D.2 There is need to bring in more customer awareness with respect to the various scenarios related to the write-down/ write-off of AT1 bonds. Regulators may issue FAQs detailing all the aspects so that the customers can get an authentic information source on the AT1 bonds. Further, there has to be strict vigil for any mis-selling or ill-informed selling or disguised selling of AT1 bonds even to the regular customers. The sellers of the AT1 bonds may be mandated to ensure customer suitability before selling the AT1 bonds to them, as this will not only ensure complete on-boarding and understanding of the risks, but also will instill greater confidence in the AT1 bonds market.

Focused and enhanced risk disclosures

7.D.3 The prospectus memorandum for the issuance of AT1 bonds may be made more focused with respect to the risk disclosures. The current risk disclosures are very broad based and many of the risk disclosures are not relevant to the issuance. The variability in the summary term-sheet disclosures across the banks may also be harmonized.

Over-coming the inherent limitations of the corporate bond market

7.D.4 The limitations of the corporate bond market which also affects the AT1 bond market such as non-availability of indices/ benchmarks, lack of depth in CDS market, lack of depth in secondary markets, primary market being highly privately placed making effective price discovery limited, limited avenues for hedging instruments etc. are required to be addressed. Further, the investor maturity on understanding of the economics behind the non-calling of the AT1 bonds on the call dates is still evolving in the Indian context.

Feasibility of CoCos as capital for Indian banks

7.D.5 Unlike as observed world-over, AT1 bonds in the form of contingent convertible are not allowed in India as part of capital. With the deepening of capital markets and efficient price discovery being facilitated, this aspect may also be reviewed. Further, the PNCPS issuance in India is limited even when we have a vibrant capital market. A well-developed PNCPS market will augur well for capital raising by the banks and will add to the variety of instruments available for the same.

Annex I – Issuance by Banks/ Term Lending Companies

Name of the Entity	% of Total Issuance (FY 2019-2024)
NABARD	19.89
REC LTD.	15.65
POWER FINANCE CORP.LTD.	13.35
STATE BANK OF INDIA	9.42
IRFC	9.32
SIDBI	6.77
HDFC BANK LTD.	2.77
CANARA BANK	2.30
BANK OF BARODA	2.30
ICICI BANK LTD.	2.28
PUNJAB NATIONAL BANK	2.11
NATIONAL HOUSING BANK	1.89
AXIS BANK LTD.	1.64
AIR INDIA ASSETS HOLDING LTD.	1.59
NABFID	1.41
UNION BANK OF INDIA	1.08
EXPORT-IMPORT BANK OF INDIA	1.05
INDIAN RENEWABLE ENERGY DEVELOPMENT AGENCY LTD.	0.99
IIFC	0.61
BANK OF INDIA	0.48
BANK OF MAHARASHTRA	0.37
KOTAK MAHINDRA BANK LTD.	0.34
IDFC FIRST BANK LTD.	0.33
INDIAN BANK	0.29
INDUSIND BANK LTD.	0.20
CENTRAL BANK OF INDIA	0.18
INDIAN OVERSEAS BANK	0.16
UCO BANK	0.14
FEDERAL BANK LTD.,THE	0.14
ANDHRA PRADESH POWER FINANCE CORP.LTD.	0.14
KERALA FINANCIAL CORP.	0.11
ALLAHABAD BANK	0.11
NATIONAL COOPERATIVE DEVELOPMENT CORP.	0.10
JAMMU & KASHMIR BANK LTD.,THE	0.10
CORPORATION BANK	0.07

IDBI BANK LTD.	0.05
PUNJAB & SIND BANK	0.05
SOUTH INDIAN BANK LTD.,THE	0.04
KERALA INFRASTRUCTURE INVESTMENT FUND BOARD	0.02
DCB BANK LTD.	0.02
KARNATAKA BANK LTD.,THE	0.02
ESAF SMALL FINANCE BANK LTD.	0.02
JANA SMALL FINANCE BANK LTD.	0.02
SAVE SOLUTIONS PVT.LTD.	0.02
SBM BANK (INDIA) LTD.	0.02
IFCI LTD.	0.01
UNITY SMALL FINANCE BANK LTD.	0.01
TOURISM FINANCE CORP.OF INDIA LTD.	0.00
CAPITAL SMALL FINANCE BANK LTD.	0.00
NORTH EAST SMALL FINANCE BANK LTD.	0.00

Annex II – Issuance by Financial Services/ Investment Companies

Name of the entity	% of Total Issuance (FY 2019-2024)
BAJAJ FINANCE LTD.	9.87
HDB FINANCIAL SERVICES LTD.	6.89
TATA CAPITAL FINANCIAL SERVICES LTD.	5.14
MAHINDRA & MAHINDRA FINANCIAL SERVICES LTD.	3.95
KOTAK MAHINDRA PRIME LTD.	3.44
ADITYA BIRLA FINANCE LTD.	3.20
SUNDARAM FINANCE LTD.	2.94
CHOLAMANDALAM INVESTMENT & FINANCE CO.LTD.	2.90
SHRIRAM TRANSPORT FINANCE CO.LTD.	2.69
NIIF INFRASTRUCTURE FINANCE LTD.	2.38
ANAND RATHI GLOBAL FINANCE LTD.	2.27
L&T FINANCE LTD.	2.24
MUTHOOT FINANCE LTD.	2.13
INDIA INFRADEBT LTD.	2.09
AXIS FINANCE LTD.	1.86
KOTAK MAHINDRA INVESTMENTS LTD.	1.55
SHRIRAM FINANCE LTD.	1.40
EVANGELOS VENTURES PVT.LTD.	1.29
FULLERTON INDIA CREDIT CO.LTD.	1.22
SBI CARDS & PAYMENT SERVICES LTD.	1.20
MANAPPURAM FINANCE LTD.	1.20
L&T INFRASTRUCTURE FINANCE CO.LTD.	1.18
SHRIRAM CITY UNION FINANCE LTD.	0.97
TATA CAPITAL LTD.	0.87
TATA MOTORS FINANCE LTD.	0.80
IIFL WEALTH PRIME LTD.	0.79
TMF HOLDINGS LTD.	0.70
CITICORP FINANCE (INDIA) LTD.	0.68
REDDY VEERANNA INVESTMENTS PVT.LTD.	0.66
HERO FINCORP LTD.	0.65
TOYOTA FINANCIAL SERVICES INDIA LTD.	0.64
INDOSTAR CAPITAL FINANCE LTD.	0.63
BAHADUR CHAND INVESTMENTS PVT.LTD.	0.63
ECAP EQUITIES LTD.	0.58

HDFC CREDILA FINANCIAL SERVICES LTD.	0.58
JM FINANCIAL CREDIT SOLUTIONS LTD.	0.56
AVANSE FINANCIAL SERVICES LTD.	0.56
MUTHOOT FINCORP LTD.	0.56
SREI EQUIPMENT FINANCE LTD.	0.56
SPANDANA SPHOORTY FINANCIAL LTD.	0.54
IIFL WEALTH FINANCE LTD.	0.53
360 ONE PORTFOLIO MANAGERS LTD.	0.46
TVS CREDIT SERVICES LTD.	0.46
360 ONE PRIME LTD.	0.45
NUVAMA WEALTH FINANCE LTD.	0.45
JM FINANCIAL PRODUCTS LTD.	0.43
IIFL FINANCE LTD.	0.41
DMI FINANCE PVT.LTD.	0.37
HINDUJA LEYLAND FINANCE LTD.	0.37
EDELWEISS ASSET RECONSTRUCTION CO.LTD.	0.36
TATA CLEANTECH CAPITAL LTD.	0.36
JSW TECHNO PROJECTS MANAGEMENT LTD.	0.36
ASIRVAD MICRO FINANCE LTD.	0.33
EDELWEISS FINANCE & INVESTMENTS LTD.	0.32
JM FINANCIAL ASSET RECONSTRUCTION CO.LTD.	0.32
EDELWEISS BROKING LTD.	0.31
WORLDONE PVT.LTD.	0.31
NAVI FINSERV LTD.	0.31
VIVRITI CAPITAL LTD.	0.30
MOTILAL OSWAL FINVEST LTD.	0.29
PHL FININVEST PVT.LTD.	0.29
EDEL LAND LTD.	0.29
ASEEM INFRASTRUCTURE FINANCE LTD.	0.27
GMR ENTERPRISES PVT.LTD.	0.27
TATA MOTORS FINANCE SOLUTIONS LTD.	0.26
SK FINANCE LTD.	0.26
JOHN DEERE FINANCIAL INDIA PVT.LTD.	0.25
SATIN CREDITCARE NETWORK LTD.	0.25
ANNAPURNA FINANCE PVT.LTD.	0.25
NORTHERN ARC CAPITAL LTD.	0.24
AYE FINANCE PVT.LTD.	0.24
ECL FINANCE LTD.	0.23
EDELWEISS FINANCIAL SERVICES LTD.	0.23

ESS KAY FINCORP LTD.	0.23
MAS FINANCIAL SERVICES LTD.	0.22
MUTHOOT MICROFIN LTD.	0.22
EDEL FINANCE CO.LTD.	0.22
FIVE-STAR BUSINESS FINANCE LTD.	0.22
CREDITACCESS GRAMEEN LTD.	0.21
BELSTAR MICROFINANCE LTD.	0.20
PRODIGEE FINANCE LTD.	0.20
SUPRA PACIFIC FINANCIAL SERVICES LTD.	0.20
ASSETS CARE & RECONSTRUCTION ENTERPRISE LTD.	0.20
UGRO CAPITAL LTD.	0.20
LENDINGKART FINANCE LTD.	0.19
L&T FINANCE HOLDINGS LTD.	0.19
ANAND RATHI FINANCIAL SERVICES LTD.	0.19
JANA CAPITAL LTD.	0.19
INCRED FINANCIAL SERVICES LTD.	0.19
ARKA FINCAP LTD.	0.18
AROHAN FINANCIAL SERVICES LTD.	0.18
L&T INFRA DEBT FUND LTD.	0.18
SATYA MICROCAPITAL LTD.	0.17
CENTRUM FINANCIAL SERVICES LTD.	0.16
SILVERLINE INVESTMENT & FINANCE PVT.LTD.	0.15
EDELWEISS RURAL & CORPORATE SERVICES LTD.	0.15
RYKA COMMERCIAL VENTURES PVT.LTD.	0.15
CLIX CAPITAL SERVICES PVT.LTD.	0.14
AVENDUS FINANCE PVT.LTD.	0.14
TRUST INVESTMENT ADVISORS PVT.LTD.	0.14
ALPHA ALTERNATIVES FINANCIAL SERVICES PVT.LTD.	0.13
FEDBANK FINANCIAL SERVICES LTD.	0.13
IIFL SAMASTA FINANCE LTD.	0.13
NUVAMA WEALTH & INVESTMENT LTD.	0.12
POONAWALLA FINCORP LTD.	0.12
INDIA INFOLINE FINANCE LTD.	0.12
SMFG INDIA CREDIT CO.LTD.	0.12
MORGAN STANLEY INDIA PRIMARY DEALER PVT.LTD.	0.11
KOGTA FINANCIAL (INDIA) LTD.	0.11
KOTAK INFRASTRUCTURE DEBT FUND LTD.	0.11
CITYGOLD INVESTMENTS PVT.LTD.	0.11

MJ SHAH CAPITAL PVT.LTD.	0.11
ICL FINCORP LTD.	0.10
SVATANTRA MICROFIN PVT.LTD.	0.10
JANA HOLDINGS LTD.	0.10
VERITAS FINANCE PVT.LTD.	0.09
ADANI CAPITAL PVT.LTD.	0.09
CAPRI GLOBAL CAPITAL LTD.	0.09
MUTHOOT CAPITAL SERVICES LTD.	0.09
IKF FINANCE LTD.	0.09
EARLYSALARY SERVICES PVT.LTD.	0.09
TRUST CAPITAL SERVICES (INDIA) PVT.LTD.	0.09
DAIMLER FINANCIAL SERVICES INDIA PVT.LTD.	0.09
WISEMORE ADVISORY PVT.LTD.	0.09
PIRAMAL FINANCE LTD.	0.09
CHAITANYA INDIA FIN CREDIT PVT.LTD.	0.08
WADHWA GROUP HOLDINGS PVT.LTD.	0.08
ELPIS VENTURES PVT.LTD.	0.08
AMRAPALI STALLED PROJECTS & INVESTMENTS RECONSTRUCTION ESTABLISHMENT	0.08
FUSION MICRO FINANCE LTD.	0.08
KEERTANA FINSERV PVT.LTD.	0.08
PROVINCIAL FINANCE & LEASING CO.PVT.LTD.	0.08
EFILO INVESTMENT PVT.LTD.	0.08
ELFBRIDGE INVESTMENT PVT.LTD.	0.08
TMT VINIYOGAN LTD.	0.08
PRIDHVI ASSET RECONSTRUCTION & SECURITISATION CO.LTD.	0.07
NOMURA CAPITAL (INDIA) PVT.LTD.	0.07
MARWADI SHARES & FINANCE LTD.	0.07
AGILEMED INVESTMENTS PVT.LTD.	0.07
NEOGROWTH CREDIT PVT.LTD.	0.07
ADITYA BIRLA ARC LTD.	0.07
WHIZDM FINANCE PVT.LTD.	0.07
VISAGE HOLDINGS & FINANCE PVT.LTD.	0.07
OXYZO FINANCIAL SERVICES LTD.	0.07
ROBUST MARKETING SERVICES PVT.LTD.	0.07
QUADRILLION FINANCE PVT.LTD.	0.07
A.K.CAPITAL FINANCE LTD.	0.07
AKARA CAPITAL ADVISORS PVT.LTD.	0.07
AMBIT FINVEST PVT.LTD.	0.07
VIVIFI INDIA FINANCE PVT.LTD.	0.07

MAGMA FINCORP LTD.	0.06
DVARA KSHETRIYA GRAMIN FINANCIAL SERVICES PVT.LTD.	0.06
PHOENIX ARC PVT.LTD.	0.06
AUXILO FINSERVE PVT.LTD.	0.06
TOUCHSTONE FINCAP LTD.	0.06
AU SMALL FINANCE BANK LTD.	0.06
BYJUS INVESTMENTS PVT.LTD.	0.06
GODREJ FINANCE LTD.	0.06
RARE EQUITY PVT.LTD.	0.06
SIDDESHWARI TRADEX PVT.LTD.	0.06
SONATA FINANCE PVT.LTD.	0.06
SAMUNNATI FINANCIAL INTERMEDIATION & SERVICES PVT.LTD.	0.06
PAHAL FINANCIAL SERVICES PVT.LTD.	0.06
KKR INDIA ASSET FINANCE LTD.	0.06
SUNDEW FINANCE PVT.LTD.	0.06
BLACKSOIL CAPITAL PVT.LTD.	0.06
SAMASTA MICROFINANCE LTD.	0.06
ZUARI GLOBAL LTD.	0.06
INCRED CAPITAL FINANCIAL SERVICES PVT.LTD.	0.05
MOTILAL OSWAL FINANCIAL SERVICES LTD.	0.05
CENTRUM CAPITAL LTD.	0.05
BHANIX FINANCE & INVESTMENT LTD.	0.05
SI CREVA CAPITAL SERVICES PVT.LTD.	0.05
VASTU FINSERVE INDIA PVT.LTD.	0.05
OMKARA ASSETS RECONSTRUCTION PVT.LTD.	0.05
CAPSAVE FINANCE PVT.LTD.	0.05
EDELWEISS RETAIL FINANCE LTD.	0.05
ELECTRONICA FINANCE LTD.	0.05
PLATINUM HOLDINGS PVT.LTD.	0.05
EDELWEISS INVESTMENT ADVISER LTD.	0.04
UNILAZER VENTURES PVT.LTD.	0.04
EDELCAP SECURITIES LTD.	0.04
KANAKADURGA FINANCE LTD.	0.04
INCRED WEALTH & INVESTMENT SERVICES PVT.LTD.	0.04
LONE FURROW INVESTMENTS PVT.LTD.	0.04
STANDARD CHARTERED INVESTMENTS & LOANS (INDIA) LTD.	0.04
SBFC FINANCE LTD.	0.04

FINCARE SMALL FINANCE BANK LTD.	0.04
ASHV FINANCE LTD.	0.04
PUJA TRADES & INVESTEMENTS PVT.LTD.	0.04
SANKHYA FINANCIAL SERVICES PVT.LTD.	0.04
NAMDEV FINVEST PVT.LTD.	0.04
NATIONAL COLLATERAL MANAGEMENT SERVICES LTD.	0.04
SARVAPRIYA HEALTHCARE SOLUTIONS PVT.LTD.	0.04
VISTAAR FINANCIAL SERVICES PVT.LTD.	0.04
AVANTI FINANCE PVT.LTD.	0.04
KISETSU SAISON FINANCE (INDIA) PVT.LTD.	0.04
UJJIVAN SMALL FINANCE BANK LTD.	0.04
VOLKSWAGEN FINANCE PVT.LTD.	0.04
SATTVA HOLDING & TRADING PVT.LTD.	0.04
MIDLAND MICROFIN LTD.	0.04
JM FINANCIAL SERVICES LTD.	0.04
LIGHT MICROFINANCE PVT.LTD.	0.04
MPOKKET FINANCIAL SERVICES PVT.LTD.	0.03
EDELWEISS ALTERNATIVE ASSET ADVISORS LTD.	0.03
IIFL WEALTH PORTFOLIO MANAGERS LTD.	0.03
VARTHANA FINANCE PVT.LTD.	0.03
ANANKE TRUSTEE CO.PVT.LTD.	0.03
CAPFLOAT FINANCIAL SERVICES PVT.LTD.	0.03
EDELWEISS GLOBAL WEALTH MANAGEMENT LTD.	0.03
INDIABULLS CONSUMER FINANCE LTD.	0.03
IIFL WEALTH MANAGEMENT LTD.	0.03
ANAND RATHI SHARE & STOCK BROKERS LTD.	0.03
NIRMAL BANG SECURITIES PVT.LTD.	0.03
FLOREAT INVESTMENTS LTD.	0.03
UPGRID ELECTRILEASE PVT.LTD.	0.03
NAMRA FINANCE LTD.	0.03
XANDER FINANCE PVT.LTD.	0.03
PAISALO DIGITAL LTD.	0.03
ECAP SECURITIES & INVESTMENTS LTD.	0.03
LENDINGKART TECHNOLOGIES PVT.LTD.	0.03
MANBA FINANCE LTD.	0.03
FORTUNE INTEGRATED ASSETS FINANCE LTD.	0.02
NATIONAL COMMODITIES MANAGEMENT SERVICES LTD.	0.02

SURAJ FINVEST PVT.LTD.	0.02
UTKARSH SMALL FINANCE BANK LTD.	0.02
KINARA CAPITAL PVT.LTD.	0.02
NS OXYMORON ADVISORS PVT.LTD.	0.02
ANANYA FINANCE FOR INCLUSIVE GROWTH PVT.LTD.	0.02
TRUE CREDITS PVT.LTD.	0.02
TORUS FINANCIAL MARKETS PVT.LTD.	0.02
ABANS FINANCE PVT.LTD.	0.02
ARMAN FINANCIAL SERVICES LTD.	0.02
SAVE MICROFINANCE PVT.LTD.	0.02
VAYA FINSERV PVT.LTD.	0.02
SVASTI MICROFINANCE PVT.LTD.	0.02
CASHPOR MICRO CREDIT	0.02
ZUARI INVESTMENTS LTD.	0.02
APARAJITHA CAPITAL GROWTH PVT.LTD.	0.02
RELIANCE FINANCIAL LTD.	0.02
CENTRUM RETAIL SERVICES LTD.	0.02
INDEL MONEY LTD.	0.02
JALGAON INVESTMENTS PVT.LTD.	0.02
IDFC INFRASTRUCTURE FINANCE LTD.	0.02
CAPITAL INDIA FINANCE LTD.	0.02
CHOLAMANDALAM FINANCIAL HOLDINGS LTD.	0.02
J.C.FLOWERS ASSET RECONSTRUCTION PVT.LTD.	0.02
MONEYWISE FINANCIAL SERVICES PVT.LTD.	0.02
NAVI TECHNOLOGIES LTD.	0.02
MUTHOOTTU MINI FINANCIERS LTD.	0.02
KOTAK INVESTMENT ADVISORS LTD.	0.02
FLOREAT INVESTMENTS PVT.LTD.	0.02
MENSA BRAND TECHNOLOGIES PVT.LTD.	0.02
AMRIT MALWA CAPITAL LTD.	0.02
TRUCAP FINANCE LTD.	0.02
KLM AXIVA FINVEST LTD.	0.02
SARVAGRAM FINCARE PVT.LTD.	0.02
BOB FINANCIAL SOLUTIONS LTD.	0.02
UTKARSH TRADING & HOLDINGS LTD.	0.02
CREDAVENUE PVT.LTD.	0.01
FIT CONSULTING & SERVICES PVT.LTD.	0.01
PROFECTUS CAPITAL PVT.LTD.	0.01
SINDHUJA MICROCREDIT PVT.LTD.	0.01

FIVE-STAR BUSINESS CREDITS LTD.	0.01
RUPEEK CAPITAL PVT.LTD.	0.01
VIJAYALAKSHMI INVESTMENTS & HOLDINGS PVT.LTD.	0.01
WELSPUN FINANCIAL SERVICES LTD.	0.01
MADURA MICRO FINANCE LTD.	0.01
STANDARD CHARTERED CAPITAL LTD.	0.01
LOANTAP CREDIT PRODUCTS PVT.LTD.	0.01
BERAR FINANCE LTD.	0.01
SEEDS FINCAP PVT.LTD.	0.01
HEDGE FINANCE LTD.	0.01
KOSAMATTAM FINANCE LTD.	0.01
DEUTSCHE INVESTMENTS INDIA PVT.LTD.	0.01
EMAMI CAPITAL MARKETS LTD.	0.01
FINQUEST FINANCIAL SOLUTIONS PVT.LTD.	0.01
ICICI SECURITIES PRIMARY DEALERSHIP LTD.	0.01
MARWADI FINLEASE PVT.LTD.	0.01
MIDKOT INVESTMENTS PVT.LTD.	0.01
RIKZEN CONTRA PVT.LTD.	0.01
RKSV SECURITIES INDIA PVT.LTD.	0.01
SBI GLOBAL FACTORS LTD.	0.01
SURYODAY SMALL FINANCE BANK LTD.	0.01
ZUARI INTERNATIONAL LTD.	0.01
PROTIUM FINANCE LTD.	0.01
CENTRUM MICROCREDIT LTD.	0.01
MAHAVEER FINANCE INDIA LTD.	0.01
AIL CONSULTANTS PVT.LTD.	0.01
ORANGE RETAIL FINANCE INDIA PVT.LTD.	0.01
CREST VENTURES LTD.	0.01
ARTHMATE FINANCING INDIA PVT.LTD.	0.01
MONEYBOXX FINANCE LTD.	0.01
ASA INTERNATIONAL INDIA MICROFINANCE LTD.	0.01
FINOVA CAPITAL PVT.LTD.	0.01
RELIGARE COMMODITIES LTD.	0.01
EDUVANZ FINANCING PVT.LTD.	0.01
APTUS FINANCE INDIA PVT.LTD.	0.01
ARISTO SECURITIES PVT.LTD.	0.01
FINCARE BUSINESS SERVICES LTD.	0.01
KOTAK ALTERNATE ASSET MANAGERS LTD.	0.01
SHAPOORJI PALLONJI FINANCE PVT.LTD.	0.01

COSMEA FINANCIAL HOLDINGS PVT.LTD.	0.01
PAYU FINANCE INDIA PVT.LTD.	0.01
EDELWEISS FINVEST LTD.	0.01
CRISS FINANCIAL LTD.	0.01
SALEM ERODE INVESTMENTS LTD.	0.01
MUFIN GREEN FINANCE LTD.	0.01
DIGAMBER CAPFIN LTD.	0.01
MINTIFI FINSERVE PVT.LTD.	0.01
TRILLIONLOANS FINTECH PVT.LTD.	0.01
KRISHNAIAH PROJECTS PVT.LTD.	0.01
CASPIAN IMPACT INVESTMENTS PVT.LTD.	0.01
CHOICE FINSERV PVT.LTD.	0.01
ORIGO COMMODITIES INDIA PVT.LTD.	0.01
SUGMYA FINANCE PVT.LTD.	0.01
RIVIERA INVESTORS PVT.LTD.	0.01
SHIKSHA FINANCIAL SERVICES INDIA PVT.LTD.	0.01
PRATHAMESH ENTERPRISES PVT.LTD.	0.01
PRACHAY CAPITAL PVT.LTD.	0.01
THIRUMENI FINANCE PVT.LTD.	0.01
MONEYMART SECURITIES PVT.LTD.	0.01
UPMOVE CAPITAL PVT.LTD.	0.01
WHEELSEMI PVT.LTD.	0.01
SI CAPITAL & FINANCIAL SERVICES LTD.	0.01
RARE ASSET RECONSTRUCTION LTD.	0.01
VEDIKA CREDIT CAPITAL LTD.	0.01
DVARA HOLDINGS	0.01
INDIABULLS RURAL FINANCE PVT.LTD.	0.01
SAGAR DEPOSITS & ADVANCES LTD.	0.01
YOGAKSHEMAM LOANS LTD.	0.01
QGO FINANCE LTD.	0.01
MANSUKH SECURITIES & FINANCE LTD.	0.01
UV ASSET RECONSTRUCTION CO.LTD.	0.01
ALPHA ALTERNATIVES VENTURES PVT.LTD.	0.01
BELSTAR MICROFINANCE PVT.LTD.	0.01
SUNGLOW FININVEST PVT.LTD.	0.01

References

1. Additional Tier 1 issuance documents in case of a 'Regulation S' issuance (i.e., not sold to onshore US investors)

    a. European bank example: http://www.cnmv.es/portal/verDoc.axd?t={fbe2d95b-34a2-451c-b1f5-db71a1bb5a90}

    b. UK bank example: https://www.rns-pdf.londonstockexchange.com/rns/0503P_1-2022-6-15.pdf

2. Additional Tier 1 issuance documents in case of a 'SEC Registered' issuance (broadest distribution including in the US):

    a. European bank example: https://www.ing.com/Newsroom/News/Features/Debt-securities-ING-Groep-N.V.-AT1-New.htm

    b. UK bank example: https://home.barclays/content/dam/home-barclays/documents/investor-relations/fixed-income-investors/2022/220809-BPLC-USD2bn-PNC7-8.000-per-cent-AT1.PDF

3. Ammann, M., Blickle, K., and Ehmann, C. (2017). Announcement effects of contingent convertible securities: Evidence from the global banking industry. European Financial Management, 23(1):127–152.
4. AT-1 bonds just need to be traded often to survive after Sebi rules – Mint, March 24, 2021
5. AT1 bonds – Testing the boundaries of an equity-debt hybrid – CRISIL
6. AT1 capital/CoCo bonds: what you should know – Euromoney, July 16, 2019
7. Baker, M. and Wurgler, J. (2015). Do strict capital requirements raise the cost of capital? bank regulation, capital structure, and the low-risk anomaly. American Economic Review, 105(5):315–20.
8. Banks raise over Rs 37,000 crore via AT1 bonds amid capital ratio concern – Business Standard, December 23, 2021
9. Baron, M., Verner, E., and Xiong, W. (2020). Banking crises without panics. NBER Working Paper No. 26908.
10. Basel III Capital Regulations - Perpetual Debt Instruments (PDI) in Additional Tier 1 Capital – Eligible Limit for Instruments Denominated in Foreign Currency/Rupee Denominated Bonds Overseas – October 4, 2021
11. BCBS, 2011. Basel III: A global regulatory framework for more resilient banks and banking systems, June 2011. Basel Committee on Banking Supervision.
12. Berg, T. and Kaserer, C. (2015). Does contingent capital induce excessive risk-taking? Journal of Financial Intermediation, 24(3):356–385.
13. BIS Quarterly Review, September 2013.
14. Bolton, Patrick, Samama, F., 2012. Capital access bonds: Contingent capital with option to convert. Econ. Pol. 27, 275–317.
15. Chan, S. and van Wijnbergen, S. (2017). Coco design, risk shifting incentives and financial fragility. CEPR Discussion Paper No. DP11099.
16. Everything you need to know about AT1s/CoCos – Twenty-four asset management, February 25, 2022
17. Fatouh, M. and McCunn, A. (2019). Shareholder risk-taking incentives in the presence of contingent capital. Bank of England Working Paper No. 775.

18. Fiordelisi, F., Pennacchi, G., and Ricci, O. (2019). Are contingent convertibles going- concern capital? Journal of Financial Intermediation, page 100822.
19. FITCH Ratings - Access to Fresh Capital Key to Indian State Banks' Competitiveness, Feb 03, 2022.
20. FSI Briefs - Upside down: when AT1 instruments absorb losses before equity.
21. FSB, 2015. Principles of loss-absorbing and recapitalization capacity of G-SIBs in resolution. Financial Stability Board.
22. Goncharenko, R., Ongena, S., and Rauf, A. (2020). The agency of cocos: Why con- tingent convertible bonds aren't for everyone. Journal of Financial Intermediation, page 100882.
23. How do AT1 CoCos compare to other risk assets? - Lidia Treiber, Wisdom Tree, November 19, 2019
24. Hesse, H. (2018). Incentive effects from write-down CoCo bonds: An empirical analysis.
25. https://m.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=17995#C7
26. https://www.bis.org/fsi/fsisummaries/defcap_b3.pdf
https://www.bis.org/publ/bcbs189.pdf
27. https://www.fimmda.org/pdf/Valuations/methodology/Corp-Bond-Methodology-24-05-2017.pdf
28. Indian Banks AT1 Bonds: Equity Versus Debt – Special Report Fitch Ratings
29. Martynova, N., Perotti, E., 2018. Convertible bond and bank risk-taking. J. Financ. Intermed. 35, 61–80.
30. Mutual funds: Know the risks associated with AT1 bonds – Financial Express – May 25, 2021
31. Pennacchi, G., Tchistyi, A., 2019a. Contingent convertibles with stock price triggers: The case of perpetuities. Rev. Financ. Stud. 32 (6), 2302–2340.
32. Pennacchi, G., Vermaelen, T., Wolff, C.C., 2014. Contingent capital: The case of COERCs. J. Financ. Quant. Anal. 49, 541–574.
33. Pennacchi, G., Tchistyi, A., 2019b. On equilibrium when contingent capital has a market trigger: A correction to Sundaresan and Wang Journal of Finance (2015). J. Finance 74, 1559–1576.
34. Perpetual bonds back in favour, PSBs raise over Rs 24,000 crore in three months – Economic Times – December 24, 2021

35. PSBs roll over AT1 bonds ahead of call option in FY22 - Financial Express – December 23, 2021
36. Public Sector Banks Successfully Roll Over AT-1 Bonds Due In FY22: ICRA – Bloomberg Quint – December 22, 2021
37. Relative Value in Bank AT1 Securities - Neuberger Berman – July 02, 2022
38. Risk-taking and uncertainty: do contingent convertible (CoCo) bonds increase the risk appetite of banks? Bank of England working paper - Mahmoud Fatouh, Ioana Neamțu and Sweder van Wijnbergen – August 2021
39. S. Avdjiev, B. Bogdanova and P. Bolton et al. / Journal of Financial Economics 138 (2020), CoCo issuance and bank fragility
40. Valuation of Additional Tier 1 Contingent Convertible Bonds (AT1 COCO) - Accounting for extension risk – Karl Larsson, KTH, Stockholm, Sweden.