

CREDIT OPINION

14 July 2021

Update

 Rate this Research

RATINGS

Credit Suisse Group AG

Domicile	Zurich, Switzerland
Long Term Debt	Baa1
Type	Senior Unsecured - Fgn Curr
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

Contacts

Michael Rohr +49.69.70730.901
 Senior Vice President
 michael.rohr@moodys.com

Yana Ruvinskaya +33.1.53.30.33.93
 Associate Analyst
 yana.ruvinskaya@moodys.com

David Fanger +1.212.553.4342
 Senior Vice President
 david.fanger@moodys.com

Laurie Mayers +44.20.7772.5582
 Associate Managing Director
 laurie.mayers@moodys.com

Ana Arsov +1.212.553.3763
 MD-Financial Institutions
 ana.arsov@moodys.com

Credit Suisse Group AG

Update following rating action and methodology revision

Summary

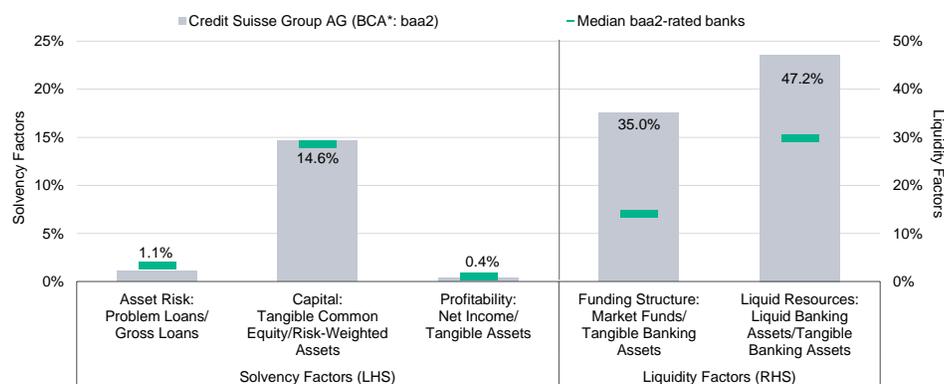
We assign Baa1 senior unsecured debt ratings to [Credit Suisse Group AG](#) and A1/P-1 senior unsecured debt and deposit ratings to its principal bank subsidiary, [Credit Suisse AG](#) (CS). We further assign a baa2 Baseline Credit Assessment (BCA) and Adjusted BCA to CS, as well as A1/P-1 Counterparty Risk Ratings. These ratings have been affirmed or downgraded on 13 July 2021 and the corresponding outlooks were changed to stable from negative.

The downgrades reflect revisions to our Advanced Loss Given Failure (LGF) framework, leading to the removal of equity credit for high-trigger Additional Tier 1 (AT1) instruments from CS's going-concern capital. The downgrade of CS's BCA and long-term ratings further reflects our view on (1) a higher-than-anticipated risk appetite and deficiencies in CS's risk management and related control processes and frameworks; (2) potential additional strain on the bank's financial profile during remediation of recent matters; and (3) the potential for client defections and franchise impairment from the possible reputational effects the most recent events may have on CS.

The lowering of the bank's BCA to baa2 further takes account of CS's reduced profitability potential and resulting lower ability to generate capital. This is despite its meaningfully lowered operating cost base, providing a strong shock absorber against potential additional adverse developments or unexpected events. The baa2 BCA also incorporates the bank's strong liquidity and funding profile.

Exhibit 1

Rating Scorecard - Credit Suisse Group AG - Key financial ratios



*The baa2 BCA relates to Credit Suisse Group AG's main operating bank, Credit Suisse AG.

Source: Moody's Investors Service

Credit strengths

- » Large global wealth management franchise and well-positioned domestic banking franchise provide a significant source of stable earnings
- » Strong liquidity position and superior funding profile displaying a favorable term structure
- » Still solid capitalisation provides protection to bondholders against larger unexpected losses

Credit challenges

- » Potential pressure on solvency metrics as a result of financial, regulatory or reputational losses arising from the supply chain funds and Greensill exposures and the losses in its prime brokerage franchise
- » To fully remediate any findings of significant corporate governance, risk, audit or compliance control shortcomings as well as foster a highly effective risk control and governance framework across segments with strict limit setting and resulting strong oversight on aggregate risks
- » Avoid significant client attrition and subsequent loss of business stemming from the ongoing uncertainties following the supply chain funds wind-down and prime brokerage-related losses
- » High reliance of the group's integrated business model on a higher share of capital markets businesses versus other GIBs, with less diversification
- » Exposure to leveraged finance and high-yield debt markets presents tail risk, despite robust track record and underwriting standards

Outlook

- » The outlook on CS's ratings is stable, reflecting our anticipation of manageable strain on the bank's financial profile and, in particular, its capital position stemming from potential additional losses in relation to the aforementioned matters, as well as moderate potential for client defections and franchise impairment from the possible reputational effects these events might have on the bank's integrated businesses.
- » We also expect any potential reductions in risk appetite in areas outside the bank's prime brokerage business as part of a possible strategic review and related investments or charges to not meaningfully and sustainably impair CS's ability to earn a medium-term return on equity of around 10%.
- » The stable outlook further assumes that enhancements with regard to the bank's risk appetite, risk awareness and its related risk control and governance frameworks are implemented swiftly and that any internal or external findings get remediated in full. Any further signs or evidence of additional deficiencies in its risk management, audit, compliance or governance control processes and frameworks could trigger a change in outlook to negative. These potential additional deficiencies in cross-divisional governance and risk control potentially pertaining to the aforementioned matters as well as uncertainties regarding the bank's future strategic direction are captured by maintaining a one-notch downward adjustment for Corporate Behaviour in CS's scorecard, leading to a positioning of the scorecard at the high-end of the range, despite carrying a stable outlook.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Factors that could lead to an upgrade

- » Although highly unlikely at present, CS's BCA and long-term ratings could be upgraded if the group (1) demonstrates that it has fully addressed and remediated the significant corporate governance, risk, audit or compliance control shortcomings relating to its failed hedge fund client and the supply chain funds and Greensill exposures and that similar cases are less likely to occur in the future; (2) achieves a sustainable improvement in its profitability to well above its communicated targets; (3) successfully manages its risk appetite in its investment bank and adjacent segments, in particular with regard to leveraged lending and other non-investment-grade exposures; (4) develops and constantly delivers on meaningful further, visible improvements to its risk control, audit, compliance and governance frameworks, allowing for better oversight on aggregate risks taken within the bank's integrated business model across segments; and (5) extends the share of revenue, profits and resources generated from and allocated to its more stable wealth management and Swiss universal banking businesses while maintaining a strong performance in its investment bank.
- » A return to a higher BCA and, thereby, long-term ratings would also be conditional upon any potential restructuring or additional strategic refinements not resulting in a sustained negative impact on CS's financial profile, in particular its capital position, and overall franchise.

Factors that could lead to a downgrade

- » The ratings could be downgraded if (1) we determine in part based on findings of investigations or regulatory probes that CS maintains a higher-than-anticipated risk appetite, in particular in its capital-markets oriented segments or products, or that any identified shortcomings in the bank's risk control or awareness, audit, compliance or governance frameworks are unlikely to be fully addressed in a timely manner; or (2) CS suffers from additional significant financial and reputational repercussions such as large unexpected losses, fines and meaningful client attrition, substantially eroding its solvency and liquidity metrics, in particular if caused by sustained client or revenue attrition or franchise impairment.
- » The ratings could further be downgraded should there be a significant and larger-than-anticipated decrease in the bank's existing stock of loss-absorbing liabilities. Although regarded highly unlikely at present, this may lead to fewer notches of rating uplift as a result of our Advanced LGF analysis.

Key indicators

Exhibit 2

Credit Suisse Group AG (Consolidated Financials) [1]

	12-20 ²	12-19 ²	12-18 ²	12-17 ²	12-16 ²	CAGR/Avg. ³
Total Assets (CHF Billion)	800.2	782.9	764.3	791.1	813.6	(0.4) ⁴
Total Assets (USD Billion)	905.3	808.5	775.3	811.8	800.5	3.1 ⁴
Tangible Common Equity (CHF Billion)	40.4	50.2	45.5	46.6	43.4	(1.8) ⁴
Tangible Common Equity (USD Billion)	45.7	51.8	46.2	47.8	42.7	1.7 ⁴
Problem Loans / Gross Loans (%)	1.1	0.7	0.8	0.8	0.9	0.8 ⁵
Tangible Common Equity / Risk Weighted Assets (%)	14.6	17.2	16.0	17.1	16.1	16.2 ⁶
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	7.6	4.2	4.7	4.4	5.6	5.3 ⁵
Net Interest Margin (%)	0.8	1.1	1.1	1.0	1.2	1.1 ⁵
PPI / Average RWA (%)	1.5	1.4	1.3	0.9	-0.7	0.9 ⁶
Net Income / Tangible Assets (%)	0.4	0.6	0.2	0.4	-0.2	0.3 ⁵
Cost / Income Ratio (%)	79.6	79.4	82.2	88.4	110.7	88.1 ⁵
Market Funds / Tangible Banking Assets (%)	35.0	32.0	35.9	35.6	37.8	35.2 ⁵
Liquid Banking Assets / Tangible Banking Assets (%)	47.2	46.8	46.2	48.2	49.4	47.6 ⁵
Gross Loans / Due to Customers (%)	75.1	77.6	79.3	77.6	77.9	77.5 ⁵

[1] All figures and ratios are adjusted using Moody's standard adjustments. [2] Basel III - fully loaded or transitional phase-in; US GAAP. [3] May include rounding differences because of the scale of reported amounts. [4] Compound annual growth rate (%) based on the periods for the latest accounting regime. [5] Simple average of periods for the latest accounting regime. [6] Simple average of Basel III periods.

Sources: Moody's Investors Service and company filings

Following the publication of our revised Banks Methodology in July 2021, only the 2020 ratios reflect the change in treatment of high-trigger Additional Tier 1 instruments.

Profile

Credit Suisse Group AG is a global banking and financial services group and the holding company of the Switzerland-based main operating bank Credit Suisse AG. It provides private banking, asset and wealth management and investment banking services to corporate, institutional and government clients, high-net-worth individuals (HNWIs) and ultra-high-net-worth individuals (UHNWIs) worldwide, as well as affluent and retail clients in Switzerland. As of year-end 2020, it reported total consolidated assets of CHF806 billion and assets under management of almost CHF1.5 trillion.

The bank's BCA benefits from its Strong+ Macro Profile

While nearly three-quarters of Credit Suisse's revenue are derived from activities in Switzerland and North America, operating environments to which we currently assign Strong+ and Very Strong - Macro Profiles, respectively, this is partly offset by the bank's sizeable operations in the EU and in the Asia-Pacific region, which have weaker Macro Profiles. This results in a Strong+ weighted Macro Profile for Credit Suisse.

Detailed credit considerations

Revised Asset Risk score reflects deficiencies in CS's risk management, risk awareness and related governance control processes

We have lowered CS's Asset Risk score by one notch to baa2, reflective of our assessment of CS's higher-than-anticipated risk appetite coupled with its assumed lower cross-divisional awareness of possible risks and exposures that could severely affect its profitability and, in an adverse scenario, its capital position. We are additionally considering remaining uncertainties concerning CS's risk appetite and risk awareness through a qualitative adjustment.

Although we anticipate that CS may enhance its governance and risk management practices, including from implementing the results of internal and external investigations, the extent and effectiveness of these measures is uncertain. In addition, the final financial and reputational implications of the aforementioned events for CS are also unclear and have the potential to cumulatively exert strain on the bank's financial profile. Further, as indicated by similar cases in the past, the investigation and remediation of these matters will likely consume a significant amount of bank resources and managerial focus and take time to resolve, during which CS will remain subject to heightened reputational, financial as well as regulatory risks.

The negative adjustment further captures the group's higher reliance on and exposure to capital markets activities than several of its global investment banks (GIBs) peers as well as the bank's specific exposure to leveraged finance activities and typical risks associated with large global wealth management activities, such as market, operational, reputational or legal (litigation) risks.

Supporting its current financial profile and baa2 BCA, the bank's strong first-quarter pre-provision earnings helped offset a large part of the hedge fund / prime brokerage-related losses and we would expect the bank to post a small net profit for this year. We further expect the bank to maintain its strong liquidity and funding profile, characterised by a peer-leading liquidity coverage ratio (LCR) and an above-average maturity profile of its more confidence-sensitive market funding, supporting its overall financial strength and BCA.

Qualitative adjustments capture risk management shortcomings, strategic uncertainty and high reliance on capital markets activities

The deficiencies in cross-divisional governance and risk control or awareness revealed by the material losses from unwinding concentrated leveraged equity and derivatives' exposures following the failure of a US hedge fund client, in addition to the aggregate risk the group assumed in relation to Greensill's founder and his companies culminating in the wind-down of CS's supply chain finance funds, continue to lead to a one-notch downward adjustment for Corporate Behaviour in CS's scorecard. In addition, this adjustment captures uncertainties regarding the bank's future strategic direction and the impact any more major restructuring may have on its solvency factors and, thereby, its financial profile.

We generally consider capital markets activities to be both opaque and potentially volatile, posing significant challenges for the management of such activities. The bank's exposure to global investment banking activities will continue to pose risks for creditors because of the volatile revenue profile; the inherent risk-management and risk-governance challenges these businesses present; the opacity of risk taking; the significant market, counterparty and operational risks intrinsic to the group's investment banking business; and the confidence-sensitivity of their customer and funding franchises. These structural challenges continue to result in a one-notch negative qualitative adjustment to CS's BCA in respect of remaining 'Opacity and Complexity', an adjustment shared with all large GIBs at present.

Sustainably improved returns from capital markets operations will be essential to stabilise profitability and support franchise

In response to the most recent events, CS has already announced cuts to its prime brokerage activities that, together with other measures, will reduce its Investment Bank (IB) leverage exposure by at least \$35 billion. And there could be additional business cuts or exits in areas that carry high risk or consume inordinate resources in terms of risk-weighted assets (RWA) or leverage exposures.

The bank is undertaking a strategic review of its business model and mix under new chairman Antonio Horta-Osario which aims to stabilise its franchise and revenue; foster stronger risk management, assessment and controls; as well as reinforcing a culture of personal accountability and responsibility.

These measures taken alone are positive, but come with potential trade-offs for CS's underlying profitability and franchise strength. A sharp reduction in capital markets operations or a large-scale business model overhaul would make it difficult for the bank to earn its cost of capital because of revenue attrition and restructuring costs. And a large reduction in risk appetite would undermine CS's ability to underwrite new business or maintain the lucrative client relationships it has fostered for decades through an integrated business model.

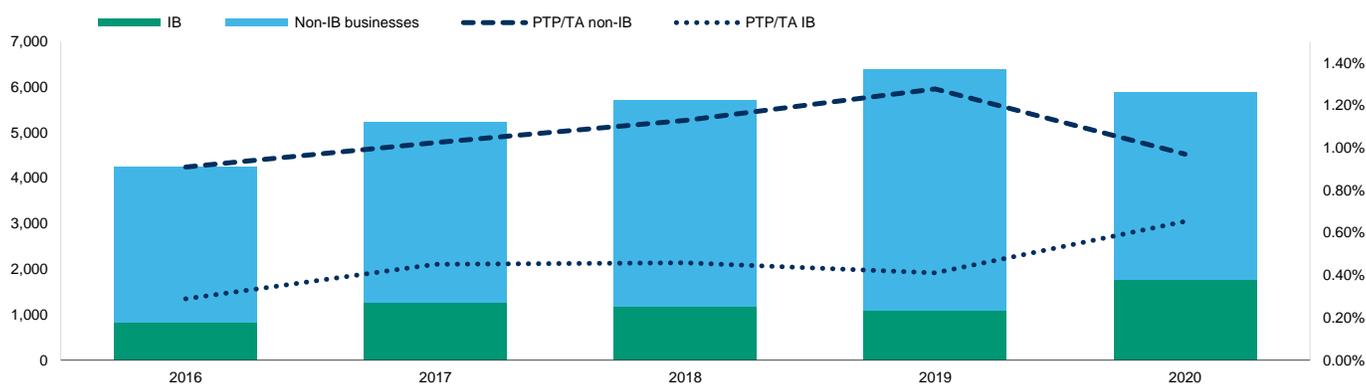
Setting these caveats aside, quick and steady progress in repositioning its business model would be credit positive for CS, producing more stable, predictable earnings and freeing up capital to invest in the strategic segments that distinguish – and ultimately safeguard – its franchise.

Any large-scale overhaul of CS's business model is likely to aim first and foremost at resolving the structurally low profitability of its Investment Bank. Since its 2015-18 restructuring, this segment has contributed about 20% to the group's pretax profitability, but its results have lagged the group's overall return on assets (Exhibit 3). The IB's profitability in part suffers from comparison with other, more stable segments across CS's integrated business model. However, the segment's stubbornly high compensation expenses and inordinate consumption of resources also contribute to its comparatively low returns.

Exhibit 3

The Investment Bank has chronically underperformed CS's more stable businesses

Pretax profit by segment (CHF million) and pretax return on assets by segment (%)



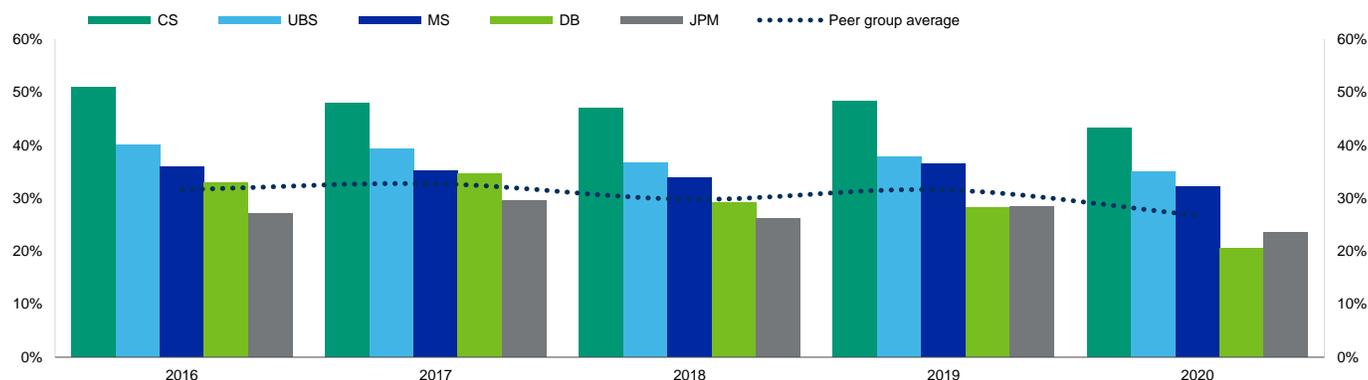
PTP = Pretax profit (adjusted); TA = Total assets; IB = Investment Banking; excludes Corporate Center

Sources: Company reports, Moody's Investors Service

Compensation and benefits expense equaled 47% of the IB's revenue base during the 2016-20 period, well above the peer group average of 31% (Exhibit 4). This substantially higher cost base in part reflects the large pool of specialists CS requires to handle the complex high-yield and leveraged finance products it offers through its fixed-income franchise. And despite this investment in talent, specialized fixed-income products have not helped increase the IB's revenue and returns. Nor has cross-selling of capital markets products to CS's wealth management or corporate banking clientele materially increased the IB segment's contribution to overall group profitability.

Exhibit 4

CS displays the highest compensation ratio in its peer group IB segment* compensation and benefits over total segment revenue



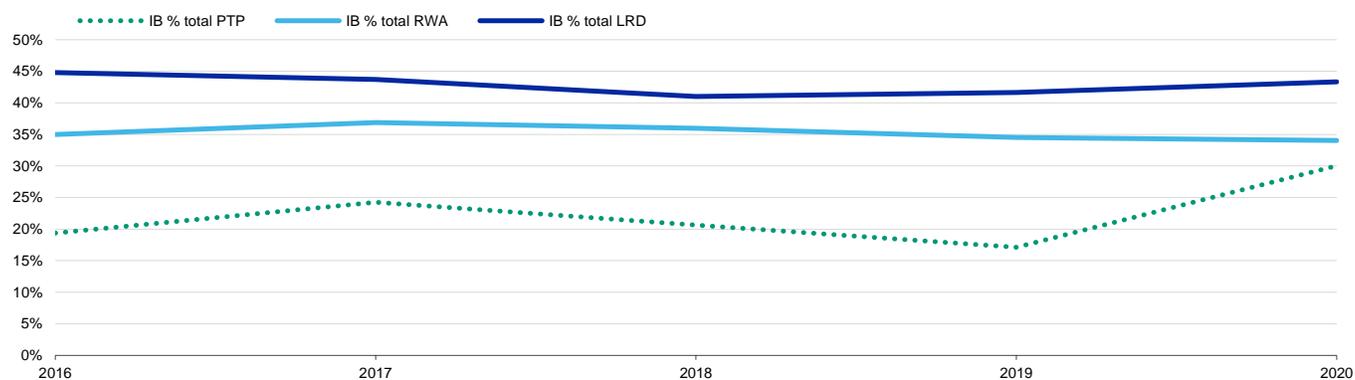
*Segments as defined by the reporting banks.

Sources: Company reports, Moody's Investors Service

CS aims to limit the IB's resource consumption following its segment reshuffle and the resulting restatement of its historic financial data in Q3 2020 (2020: 34% of group RWA; Q1 2021: 37%¹). The segment's RWA consumption has hovered at this level over the past couple of years, but has not appreciably declined since the group's 2015-18 restructuring concluded (Exhibit 5, light blue line). And the IB consumes an even higher proportion of the group's leverage exposure, and is back to 2016-17 levels of around 45% (dark blue line).

Exhibit 5

The IB's resource consumption and risk have not produced commensurate profitability IB pretax profit share versus RWA and LRD share



PTP = Pretax profit (adjusted); RWA = Risk-weighted assets; LRD = Leverage ratio denominator; IB = Investment Banking; excludes Corporate Center.

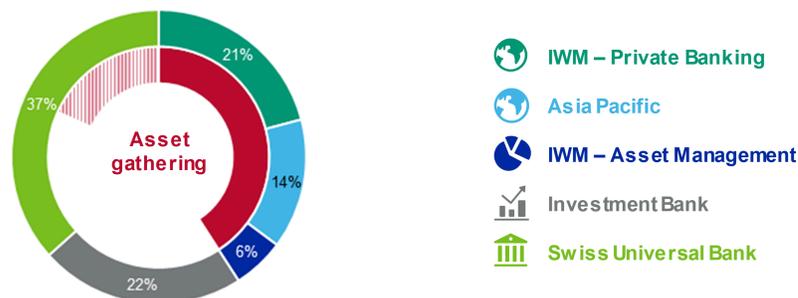
Sources: Company reports, Moody's Investors Service

An increased share of earnings from more stable, less capital-intensive businesses will help buffer unexpected losses

Leading up to the recent setbacks in prime brokerage and asset management, CS has grown its sources of recurring revenue, particularly in asset and wealth management-related businesses. This effectively lowered its dependence on more volatile Investment Bank income (Exhibit 6). The favourable market environment helped in the bank's effort to increase the share of earnings from less capital-intensive businesses. CS's more stable divisions – the Swiss Universal Bank (SUB), International Wealth Management (IWM) and the private banking business within the Asia-Pacific segment – have together consistently consumed about 60% of the group's RWAs and leverage exposures (excluding the Corporate Center) while contributing almost three quarters of the group's pretax profit (Exhibit 6). The steady and predictable earnings from these three divisions will help buffer potential adverse developments in capital markets that could exert significant strain on CS's earnings generation in related businesses.

Exhibit 6

Asset-gathering and Swiss universal banking businesses help offset capital markets-related earnings volatility Cumulative pretax profit by segment (2017-2020)



Excludes Corporate Center. The Swiss Universal Bank also generates a significant part of its pretax profit from CS's Swiss private banking (asset-gathering) business.

Sources: Credit Suisse Group AG and Moody's Investors Service estimates

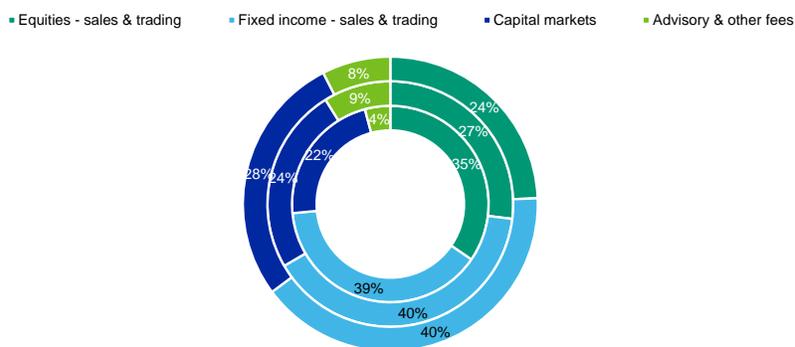
Leveraged lending remains one key risk within Credit Suisse's capital markets franchise

However, sustaining steady, robust earnings through adverse market conditions will remain a challenge because, even at reduced size, the capital markets franchise will continue to rely on healthy fixed income and equity markets. Solid client activity for high-yield products in debt capital markets and leveraged finance markets will be particularly important (Exhibit 7).

Moreover, any adverse development in the leveraged finance and sponsor industry could damage CS's ability to sustain revenue, as would a severe deterioration in global leveraged finance markets. CS will have to maintain strong underwriting criteria to help shield itself from losses when the benign cycle for these exposures turns. CS also runs a smaller flow business in fixed income – such as FX or Rates – than many of its peers and therefore relies on client demand for yield products that it can cross-sell from its wealth management businesses into the Investment Bank, and vice versa.

Exhibit 7

CS's capital markets franchise is focused on fixed income, and more concentrated than market-leading peers CS capital markets revenue by type, 2013 versus 2019 and 2020



Outer circle 2020, mid circle 2019, inner circle 2013. Capital markets includes Debt Capital Markets, Equity Capital Markets and certain advisory revenue. 2020 and 2019 based on USD disclosure; 2013 in Swiss Franc.

Sources: Company reports, Moody's Investors Service

Underlying asset quality remains strong

Putting aside counterparty credit and market risk losses resulting from the aforementioned matters, we believe the group's underlying asset quality in its loan book will remain supported by its low problem loan ratio and generally sound credit risk management capabilities. Historically, CS has had a low level of asset risk within its wealth management and Swiss universal banking businesses, as reflected in the group's low problem loan ratio (1.1% as of 31 December 2020). Given the current market environment, we would

also not expect CS to compromise on its credit risk standards despite lending growth that could add greater asset risks in the non-investment banking units, for example its growth ambition in nonstandard securities-based lending in IWM and APAC. Given the most recent events, however, we expect CS to at least temporarily scale back on this ambition.

Capital score reflects methodology revisions and CS's generally bondholder-friendly distribution policy

We have lowered our assigned Capital score by one notch to aa3, one notch above the group's initial score. The lowering reflects our revised view of the capital instruments likely to provide CS with equity-like loss absorption before the point of non-viability. The resulting removal of equity credit for high-trigger AT1 instruments from the bank's going-concern capital means that the bank has a reduced capacity to absorb unexpected losses before the point of failure, adding to its weaker solvency position and lower BCA.

The assignment of the score one-notch above the revised initial score reflects our expectation of a strengthened capital position and leverage ratio as well as the bank's generally conservative approach to capital management safeguarding its future slightly higher capital levels and ratios despite regulatory pressures, reducing risks for creditors.

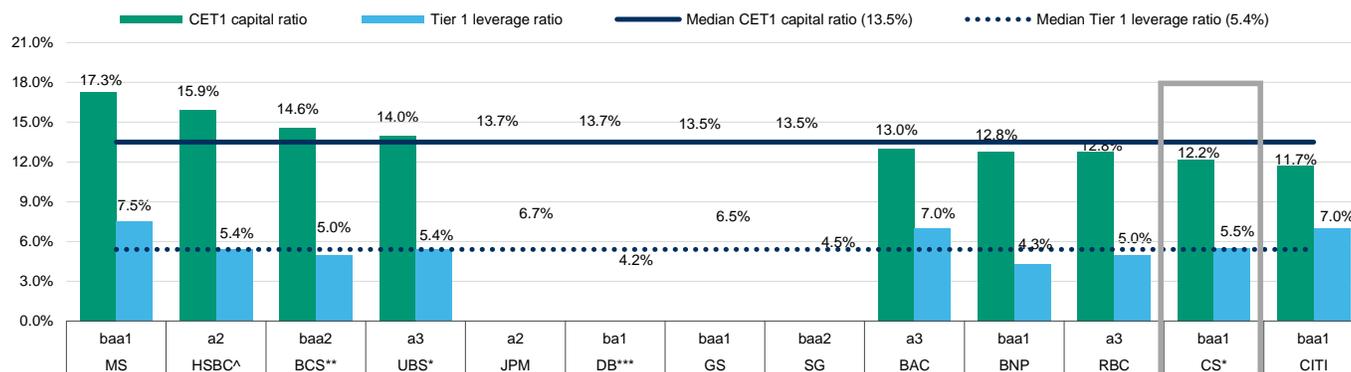
CS reported a CET1 capital ratio of 12.2% in the first quarter, down 70 basis points (bps) sequentially and up 10 bps year-over-year. CS initiated measures to restore its CET1 capital ratio to around 13% and its CET1 leverage ratio to a minimum of 4.0%, the latter having declined to 3.8% in Q1 2021 (Q1 2020: 4.2%), thereby representing a meaningfully reduced buffer of 30 bps over the bank's minimum CET1 leverage ratio requirement.

CS has initiated several measures benefiting these ratios, in addition to risk-weighted asset (RWA) reductions and asset sales within its IB business. First and foremost, CS announced the successful placement of mandatory convertible notes in April 2021 with total estimated net proceeds of CHF1.7 billion. The notes were fully placed to core shareholders, institutional investors and ultra-high net worth individuals. The notes will mature within six months at the latest and add approximately 55 bps to the bank's CET1 capital ratios and approximately 17 bps to its CET1 leverage ratio. In addition, the dividend will be cut, the share buyback program has been put on hold and board compensation will be meaningfully reduced.

Exhibit 8

CS's CET1 capital ratio temporarily slipped to below the median of Moody's-rated GIBs

CET1 capital and Tier 1 leverage ratios, as of 31 March 2021



(1) Basel III fully phased in advanced approach for all US banks; (2) Tier 1 leverage ratio for US banks is the supplemental leverage ratio (SLR).

*UBS and CS regulatory leverage ratios reflect Common Equity Tier plus low-trigger Additional Tier 1 and high-trigger Additional Tier 1 securities.

**Barclays (BCS) leverage is reflective of the spot UK leverage ratio.

***DB Q1 2021 leverage exposure includes certain central bank balances ("Euro-based exposures facing Eurosystem central banks") that could normally be excluded following the European Central Bank's decision (EU) 2020/1306 until 27 June 2021. Excluding these items, DB's leverage ratio would have been 4.6%.

^HSBC's Q1 2021 leverage exposures are calculated using the end point definition of capital and the IFRS 9 regulatory transitional arrangements.

Sources: Companies' results presentations and financials, Moody's Investors Service

The sharp sequential drop in CS's CET1 capital ratio was largely because of the US hedge fund-related losses burdening the bank's first quarter results. RWAs also increased CHF28 billion sequentially, largely driven by FX moves (CHF14 billion) and a temporary CHF6 billion add-on imposed by the Swiss regulator in relation to the US hedge fund positions. With regard to the latter, CS announced that it has divested 98% of its related positions and will incur an additional CHF600 million loss to be booked in the second quarter of this year, reducing its CET1 capital ratio by another 20 bps and its CET1 leverage ratio by 5 bps. This loss will be offset by a similar gain

resulting from the initial public offering of Allfunds Group to be booked in the second quarter, lifting its CET1 ratio by 25 bps and its CET1 leverage ratio by 10 bps.

Medium-term financial targets burdened by events and necessary investments

Our assigned ba1 Profitability score reflects our medium-term expectation of a Net Income (NI)/Tangible Assets (TA) ratio of below 0.5% (2020: 0.33%).

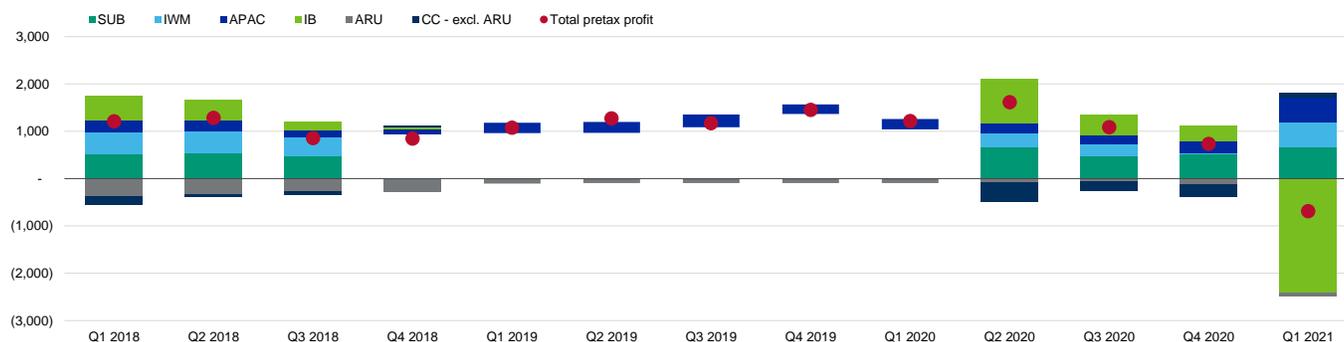
In Q1 2021, CS reported pretax losses of CHF757 million and a net loss of CHF252 million (Exhibit 9). The adjusted net return on tangible equity (ROTE) stood at a negative -2.8% (Q1 2020 adjusted: 6.4%), while the adjusted annualised return on assets (ROA) and RWAs stood at a negative -0.13% and -0.36%, respectively (Q1 2020 adjusted: 0.34% and 0.93%, respectively).

CS's business setbacks in early 2021 have the potential to substantially curtail the bank's ability to generate earnings on par with those of the preceding two years, and put its targeted return on tangible equity of 10%-12% at risk. The banks' results will be burdened by further losses as it unwound most of its positions relating to its defaulted US hedge fund client as well as potential losses resulting from the Greensill-related suspended supply chain funds either as a result of litigation or regulatory fines or other efforts to mitigate franchise and reputational impairment.

Exhibit 9

Hedge fund losses in the IB negated otherwise strong underlying business performance

Credit Suisse Group's adjusted profit before tax by segment, CHF million



SUB: Swiss Universal Bank, IWM: International Wealth Management, APAC: Asia-Pacific, IB: Investment Bank, ARU: Asset Resolution Unit (pre-2019: SRU or Strategic Resolution Unit), CC: Corporate Center. Q1 2020 pretax profit include a one-time gain from the sale of InvestLab (CHF268 million). We have not adjusted for gains on equity investments of CHF144 million spread across the segments in Q1 2021 in the exhibit.

Sources: Company results presentations and financials, Moody's Investors Service

On top of these two key reverses to its franchise and earnings, CS will likely have to contend with lower pre-provision profitability as client-driven trading revenue normalises from extraordinarily high levels in 2020 and during the first half of 2021. A pronounced decline in trading activity would hit CS harder than some peers given its comparatively high reliance on transaction-driven capital markets revenue and high exposure to the underwriting of leveraged lending and high-yield debt transactions. Aside these items, pressure on pre-provision profitability could further increase as CS pulls forward necessary investments to foster a stronger risk culture and awareness. It might also embark on a strategic repositioning following its internal reviews that could lead to additional restructuring and transformation charges.

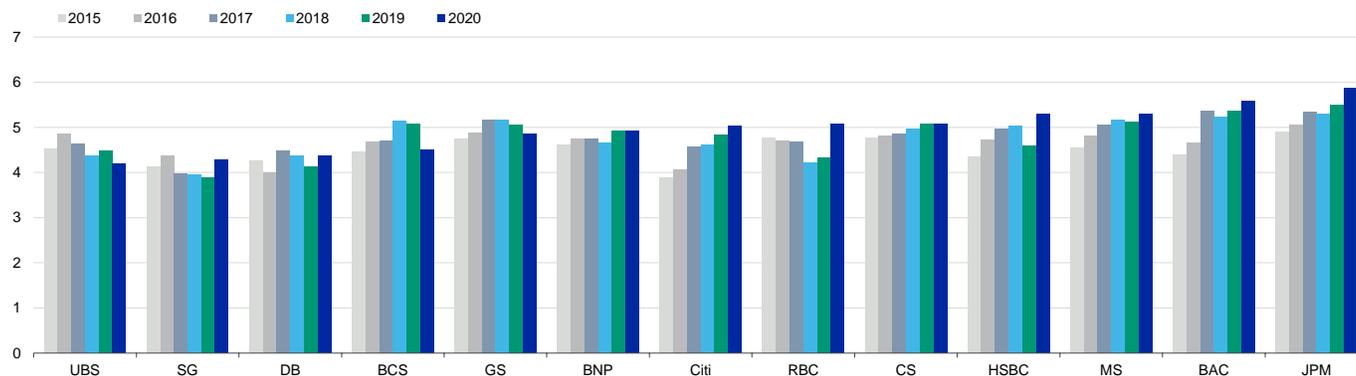
Solid funding profile and favorable debt maturity profile

Our baa2 Funding Structure score has been assigned three notches above the group's ba2 initial score. The positive adjustment reflects the group's significantly improved total loss-absorbing capacity (TLAC) amounting to CHF105.6 billion as of the end of the first quarter (Q1 2020: CHF92.9 billion), corresponding to a TLAC ratio of 34.8%, well above the regulatory requirement. The adjustment further captures the favorable maturity profile and strong quality of CS's long-term debt. We estimate the weighted average maturity of CS's TLAC-eligible long-term market funds to be around 6.5 years, superior to many of its GIB peers. We further estimate the funding tenure of the bank's long-term senior debt is around five years (Exhibit 10). This funding structure will give CS greater flexibility to manage refinancing costs as well as groupwide funding and liquidity needs, increasing its ability to weather periods of heightened market or spread volatility.

Exhibit 10

Credit Suisse has one of the longest funding tenures within its peer group

Average weighted maturity of long-term debt in market funds in years



Midpoint approach used for disclosed maturity buckets in absence of more detailed information across all peers. Maturity of 7.5 years applied to >5 year bucket across all banks.

Sources: Company reports, Moody's Investors Service

According to our calculations, market funding fluctuated around 35% of tangible banking assets (TBAs) over the past years. Depending on the final regulatory rebates, the proportion of TLAC funding on total market funding will slightly fluctuate, but we expect overall market funding to stay below 35% of TBAs over time, mainly because of CS's excess funding beyond the Swiss regulator's strict requirements. At the same time, Swiss regulation ensures that CS will largely maintain its maturity profile and level of TLAC debt over the next few years, safeguarding the aforementioned structural benefits and ensuring funding structure stability.

Significant positive structural liquidity and comprehensive liquidity management

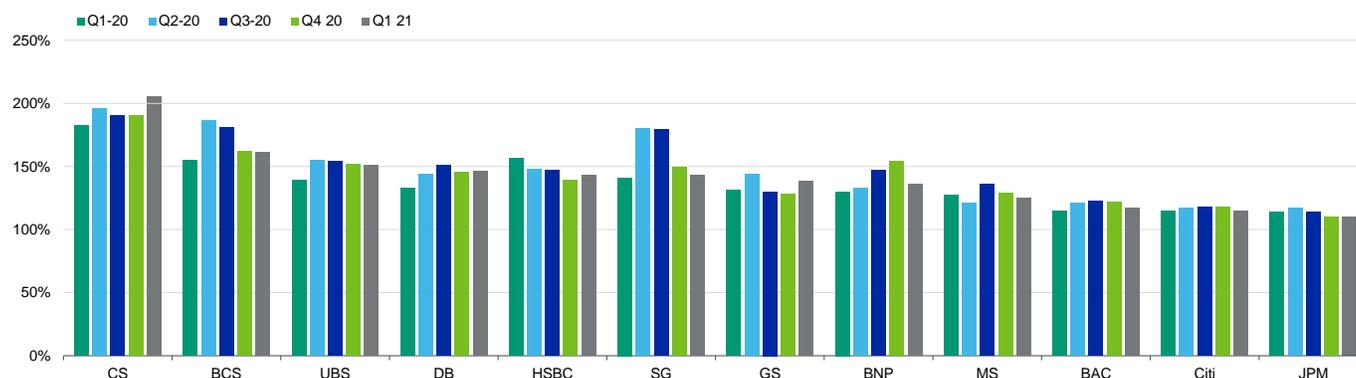
Our aa3 Liquid Resources score has been assigned at the initial score level and reflects Credit Suisse's sizeable volume of liquid assets and the resulting strong liquidity position. The assigned score contains a one-notch downward adjustment to the initial score to reflect asset encumbrance on a sizeable portion of assets that are designated as liquid in our initial ratio and score. At the same time, we make an offsetting one-notch upward adjustment based on our consideration of the group's conservative management of liquidity across its various branches and subsidiaries.

Management retains a strategy to maintain liquidity well above the group entities' unconsolidated requirements. When combined, these requirements are meaningfully above the group's consolidated regulatory requirements, which will keep its peer-leading LCR well in excess of the 100% regulatory minimum. This is further reflected in the group's reported liquidity coverage ratio (LCR) of 205% in Q1 2021, well above the 135% average for its global investment bank (GIB) peer group (Exhibit 11).

Exhibit 11

Credit Suisse's conservative liquidity management supports peer-leading liquidity coverage ratio (LCR)

Global Investment Banks' LCR, Q1 2020 - Q1 2021

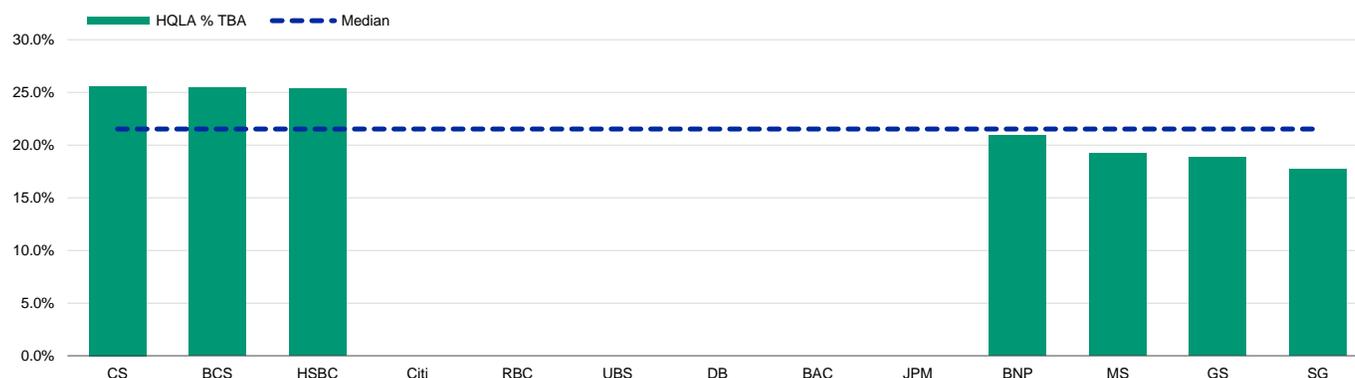


Sources: Company reports, Moody's Investors Service

CS further benefits from strong on-balance-sheet liquidity, with a reported liquidity reserve and other unencumbered liquid assets of CHF231 billion as of the end of the first quarter, largely comprising central bank cash and other highly liquid securities. Its high share of cash deposits with central banks, unencumbered government securities, and other highly rated non-sovereign obligations further enhances the quality of its liquid assets. Moreover, high-quality liquid assets (HQLA) have grown to above 25% of its total assets as of the end of 2020, a clear credit strength (Exhibit 12.) We expect CS to maintain its strong liquidity position, further benefiting from having prepositioned additional HQLA with the Swiss National Bank, that - in conjunction with its high cash on balance sheet and some contingent liquidity through mortgage loans - will also act as an additional buffer in times of potential stress.

Exhibit 12

High quality liquid assets (HQLA) support strong balance sheet liquidity HQLA as a % of tangible banking assets (TBA)



Average weighted HQLA reported in banks' Q4 2020 LCR disclosures; LCR measure incorporates 'due from financial institutions' as liquidity inflow, but not as part of the banks' HQLA stock.

Sources: Company reports, Moody's Investors Service

Maintaining above-average liquidity and strong capital ratios remains important to CS because of its sizeable global wealth management and capital markets franchises. The deposits and short-term market funding of these businesses may be more confidence-sensitive than for traditional banks, exposing CS to liquidity stress in an adverse scenario (e.g., a material reputational event). In addition, we believe that an extended period without access to wholesale funding would still require significant balance sheet shrinkage that could impair earnings and franchise value. CS is also exposed to sizeable contingent liquidity obligations related to its capital market activities that are not captured in our liquidity and funding ratios.

Overall, CS has an a3 Combined Liquidity Score, derived from its assigned aa3 Liquid Resources score and its assigned baa2 Funding Structure score. The combined score reflects CS's strong liquidity resources mitigating its partial reliance on market funds, as well as the latter's favourable term structure.

Environmental, social and governance (ESG) considerations

The global banking sector has been classified as "Low" risk in our [environmental risk heat map](#)² and as "Moderate" risk in our [social risk heat map](#)³.

In line with our general view for the banking sector, CS has a low exposure to environmental risks. For social risks, we also place CS in-line with our general view for the banking sector, indicating a moderate exposure to such risks. This includes considerations in relation to the [coronavirus outbreak](#), given the substantial implications for public health and safety and deteriorating global economic outlook, creating a severe and extensive credit shock across many sectors, regions and markets.

Governance⁴ is highly relevant for CS, as it is to all banks.

The deficiencies in cross-divisional governance and risk control or awareness revealed by a the material losses from unwinding concentrated leveraged equity and derivatives' exposures following the failure of a US hedge fund client, in addition to the aggregate risk the group assumed in relation to Greensill's founder and his companies culminating in the wind-down of CS's supply chain finance funds, have led to a one-notch downward adjustment for 'Corporate Behaviour' in CS's scorecard. As details of the underlying fact

patterns will only emerge slowly over time, we believe CS will meanwhile remain subject to heightened reputational, financial as well as regulatory risks.

Because of the complexity of its global operations, CS's ratings incorporate a one-notch downward adjustment for 'Opacity and Complexity' in the qualitative section of our BCA scorecard. A complex legal structure and global footprint increases management challenges and the risk of strategic errors. In the case of CS and other global investment banks, it is also combined with complex capital market activities, with significant exposure to derivatives and structured products, which also makes reporting and oversight more difficult, as illustrated during the 2007/08 financial crisis.

Support and structural considerations

Loss Given Failure (LGF) analysis

Credit Suisse AG and Credit Suisse Group AG are subject to the Swiss bank resolution framework, which we consider to an operational resolution regime. Therefore, we apply our recently revised Advanced LGF analysis, assuming residual tangible common equity (TCE) of 3% and post-failure losses of 8% of tangible banking assets, a 25% run-off in junior wholesale deposits and a 5% run-off in preferred deposits. We further assign a 100% probability to deposits being preferred to senior unsecured debt, thereby reflecting depositor preference by law in Switzerland.

Revision of our Banks Methodology benefits CS Group AG's senior unsecured debt ratings as well as subordinated debt issuances

CS's ratings were impacted by our revised notching guidance thresholds at lower levels of subordination and volume in the liability structure that have been applied to all Swiss banks. The ratings were further impacted by our methodology update including all Additional Tier 1 (AT1) securities issued by CS in our Advanced LGF framework, eliminating the previous analytical distinction between those high-trigger instruments that were deemed to provide equity-like absorption of losses before the point of failure and other AT1 securities, thereby providing greater protection to more senior debt holders in CS's liability structure.

For Credit Suisse AG's junior deposits and senior unsecured debt, our Advanced LGF analysis indicates an extremely low loss-given-failure, resulting in three notches of rating uplift from the bank's baa1 Adjusted BCA, prior to government support. This is because of the substantial volume of deposits and the significant amount of bank-level senior unsecured debt outstanding, supported by the high volume of subordinated debt classes, namely senior unsecured and subordinated debt at the holding company level, protecting bank-level depositors and senior unsecured debt-holders. In the unlikely event of failure or resolution, this would allow for losses to be spread across a larger volume of creditors, lowering the severity of loss for individual senior bank depositors or debt-holders.

The Baa1 rating for senior unsecured debt issued by or guaranteed by Credit Suisse Group AG sits one notch above the bank-level BCA, reflecting our view that such obligations are likely to face a low loss-given-failure, resulting in one notch of additional rating uplift as a result of our LGF analysis. The improved notching arises because of the recognition of high-trigger AT1 instruments in our Advanced LGF analysis per our revised Banks Methodology, affording greater protection to debt issued by Credit Suisse Group AG. Our [forward-looking view](#) on CS's senior holding company debt ratings continues to factor in the loss absorbency we expect CS to build and maintain.

For junior securities issued or guaranteed by Credit Suisse AG or Credit Suisse Group AG, our Advanced LGF analysis indicates a moderate loss-given-failure, given the adequate volume of debt and increased protection from more subordinated instruments, including high-trigger AT1 securities and residual equity. We incorporate additional notching for junior subordinated and preference share instruments reflecting the risk of coupon suspension and distressed exchange prior to a potential resolution.

Government support considerations

Swiss authorities have implemented² a credible and flexible bank resolution framework that includes provisions for burden-sharing with senior creditors. We therefore believe there is a 'Low' probability of government support for parent holding company debt issued (or guaranteed) by Credit Suisse Group AG. This reflects the resolution objectives of Swiss authorities, who have espoused single point of entry (SPE) resolution as their preferred strategy, exposing holding company creditors to loss in order to shield the bank's own senior creditors and depositors.

The deposit and senior debt ratings for Credit Suisse AG and its branches benefit from one notch of government support uplift, reflecting our view that there remains a 'Moderate' probability of government support for those rating classes at the operating company level.

For junior securities issued or guaranteed by Credit Suisse AG or Credit Suisse Group AG, the potential for government support is 'Low' and the ratings on those securities do not include any related uplift.

A1/P-1 Counterparty Risk Ratings (CRRs)

The bank's CRRs are positioned four notches above the baa2 Adjusted BCA, reflecting the extremely low loss-given-failure provided by subordinated instruments to the more senior CRR liabilities and one additional notch of government support uplift assuming a 'Moderate' level of support.

A1(cr)/P-1(cr) Counterparty Risk Assessment (CR Assessment)

The bank's CR Assessment is positioned four notches above the baa2 Adjusted BCA, based on the buffer against default provided by more subordinated instruments, primarily senior unsecured debt, to the senior obligations represented by the CR Assessment and one additional notch of government support uplift assuming a 'Moderate' level of support.

Because the CR Assessment captures the probability of default on certain senior operational obligations, rather than expected loss, we focus purely on subordination and take no account of the volume of the instrument class.

Methodology and scorecard

Methodology

The principal methodology we use in rating Credit Suisse is the [Banks Methodology](#), published in July 2021.

About Moody's Bank Scorecard

Our Bank Scorecard is designed to capture, express and explain in summary form our Rating Committee's judgement. When read in conjunction with our research, a fulsome presentation of our judgement is expressed. As a result, the output of our scorecard may materially differ from that suggested by raw data alone (though it has been calibrated to avoid the frequent need for strong divergence). The scorecard output and the individual scores are discussed in rating committees and may be adjusted up or down to reflect conditions specific to each rated entity.

Rating methodology and scorecard factors

Exhibit 13

Credit Suisse Group AG

Macro Factors							
Weighted Macro Profile		Strong +		100%			
Factor	Historic Ratio	Initial Score	Expected Trend	Assigned Score	Key driver #1	Key driver #2	
Solvency							
Asset Risk							
Problem Loans / Gross Loans	1.1%	aa3	↔	baa2	Market risk	Operational risk	
Capital							
Tangible Common Equity / Risk Weighted Assets (Basel III - fully loaded)	14.6%	a1	↑	aa3	Risk-weighted capitalisation	Expected trend	
Profitability							
Net Income / Tangible Assets	0.4%	ba1	↔	ba1	Expected trend	Return on assets	
Combined Solvency Score		a2		baa1			
Liquidity							
Funding Structure							
Market Funds / Tangible Banking Assets	35.0%	ba2	↑	baa2	Term structure	Market funding quality	
Liquid Resources							
Liquid Banking Assets / Tangible Banking Assets	47.2%	aa3	↔	aa3	Stock of liquid assets	Asset encumbrance	
Combined Liquidity Score		baa2		a3			
Financial Profile							
				baa1			
Qualitative Adjustments				Adjustment			
Business Diversification				0			
Opacity and Complexity				-1			
Corporate Behavior				-1			
Total Qualitative Adjustments				-2			
Sovereign or Affiliate constraint				Aaa			
BCA Scorecard-indicated Outcome - Range				baa2 - ba1			
Assigned BCA				baa2			
Affiliate Support notching				0			
Adjusted BCA				baa2			
Balance Sheet							
		in-scope (CHF Million)	% in-scope	at-failure (CHF Million)	% at-failure		
Other liabilities		281,307	35.4%	330,012	41.5%		
Deposits		356,000	44.7%	319,688	40.2%		
Preferred deposits		263,440	33.1%	250,268	31.5%		
Junior deposits		92,560	11.6%	69,420	8.7%		
Senior unsecured bank debt		71,988	9.0%	49,858	6.3%		
Dated subordinated bank debt		2,510	0.3%	2,510	0.3%		
Senior unsecured holding company debt		43,968	5.5%	53,705	6.8%		
Preference shares(holding company)		15,919	2.0%	15,919	2.0%		
Equity		23,867	3.0%	23,867	3.0%		
Total Tangible Banking Assets		795,559	100.0%	795,559	100.0%		

Debt Class	De Jure waterfall		De Facto waterfall		Notching		LGF Notching Guidance vs. Adjusted BCA	Assigned LGF notching	Additional Notching	Preliminary Rating Assessment
	Instrument volume + subordination	Sub-ordination	Instrument volume + subordination	Sub-ordination	De Jure	De Facto				
Counterparty Risk Rating	18.3%	18.3%	18.3%	18.3%	3	3	3	3	0	a2
Counterparty Risk Assessment	18.3%	18.3%	18.3%	18.3%	3	3	3	3	0	a2 (cr)
Deposits	27.1%	18.3%	27.1%	18.3%	3	3	3	3	0	a2
Senior unsecured bank debt	18.3%	12.1%	18.3%	12.1%	3	3	3	3	0	a2
Senior unsecured holding company debt	12.1%	5.3%	12.1%	5.3%	1	1	1	1	0	baa1
Dated subordinated bank debt	5.3%	5.0%	5.3%	5.0%	0	0	0	0	0	baa2
Dated subordinated holding company debt	5.3%	5.0%	5.3%	5.0%	0	0	0	0	0	baa2
Holding company non-cumulative preference shares	5.0%	3.0%	5.0%	3.0%	-1	-1	-1	-1	-2	ba2

Instrument Class	Loss Given Failure notching	Additional notching	Preliminary Rating Assessment	Government Support notching	Local Currency Rating	Foreign Currency Rating
Counterparty Risk Rating	3	0	a2	1	A1	A1
Counterparty Risk Assessment	3	0	a2 (cr)	1	A1(cr)	
Deposits	3	0	a2	1	A1	A1
Senior unsecured bank debt	3	0	a2	1		A1
Senior unsecured holding company debt	1	0	baa1	0	(P)Baa1	Baa1
Dated subordinated bank debt	0	0	baa2	0		(P)Baa2
Dated subordinated holding company debt	0	0	baa2	0		(P)Baa2
Holding company non-cumulative preference shares	-1	-2	ba2	0	Ba2 (hyb)	Ba2 (hyb)

[1] Where dashes are shown for a particular factor (or sub-factor), the score is based on non-public information.

Source: Moody's Investors Service

Ratings

Exhibit 14

Category	Moody's Rating
CREDIT SUISSE GROUP AG	
Outlook	Stable
Senior Unsecured	Baa1
Subordinate Shelf	(P)Baa2
Pref. Stock Non-cumulative	Ba2 (hyb)
CREDIT SUISSE INTERNATIONAL	
Outlook	Stable
Counterparty Risk Rating	A1/P-1
Bkd Bank Deposits	A1/P-1
Counterparty Risk Assessment	A1(cr)/P-1(cr)
Issuer Rating	A1
CREDIT SUISSE AG	
Outlook	Stable
Counterparty Risk Rating	A1/P-1
Bank Deposits	A1/P-1
Baseline Credit Assessment	baa2
Adjusted Baseline Credit Assessment	baa2
Counterparty Risk Assessment	A1(cr)/P-1(cr)
Issuer Rating	A1
Senior Unsecured	A1
Subordinate MTN	(P)Baa2
Commercial Paper	P-1
Other Short Term	(P)P-1

CREDIT SUISSE (USA), INC.	
Outlook	Stable
Bkd Senior Unsecured	A1
CREDIT SUISSE AG (SYDNEY) BRANCH	
Outlook	Stable
Counterparty Risk Rating	A1/P-1
Deposit Note/CD Program	--/P-1
Counterparty Risk Assessment	A1(cr)/P-1(cr)
Senior Unsecured -Dom Curr	A1
Commercial Paper	P-1
CREDIT SUISSE AG (NEW YORK) BRANCH	
Outlook	Stable
Counterparty Risk Rating	A1/P-1
Bank Deposits	A1/P-1
Counterparty Risk Assessment	A1(cr)/P-1(cr)
Senior Unsecured	A1
Subordinate MTN	(P)Baa2
Commercial Paper	P-1
Other Short Term	(P)P-1
CREDIT SUISSE AG (GUERNSEY) BRANCH	
Outlook	Stable
Counterparty Risk Rating	A1/P-1
Counterparty Risk Assessment	A1(cr)/P-1(cr)
Senior Unsecured	A1
Other Short Term	(P)P-1
CREDIT SUISSE AG (NASSAU) BRANCH	
Outlook	Stable
Counterparty Risk Rating	A1/P-1
Counterparty Risk Assessment	A1(cr)/P-1(cr)
Senior Unsecured	A1
Subordinate MTN	(P)Baa2
Other Short Term	(P)P-1
CREDIT SUISSE GROUP FUNDING (GUERNSEY) LTD	
Outlook	Stable
Bkd Senior Unsecured	Baa1
CREDIT SUISSE AG (TOKYO) BRANCH	
Outlook	Stable
Counterparty Risk Rating	A1/P-1
Counterparty Risk Assessment	A1(cr)/P-1(cr)
Senior Unsecured -Dom Curr	A1
CREDIT SUISSE AG (LONDON) BRANCH	
Outlook	Stable
Counterparty Risk Rating	A1/P-1
Bank Deposits	A1/--
Counterparty Risk Assessment	A1(cr)/P-1(cr)
Senior Unsecured -Fgn Curr	A1
Senior Unsecured -Dom Curr	Aa3
Subordinate	Baa2
Other Short Term	(P)P-1

Source: Moody's Investors Service

Endnotes

- 1 Original guidance was to limit the IB's resource consumption to one-third of deployed capital. CS updated its guidance in April 2021 and now plans to reduce IB leverage exposure by at least \$35 billion and to no more than the prior-year level by the end of 2021.
- 2 Environmental risks can be defined as environmental hazards encompassing the impacts of air pollution, soil/water pollution, water shortages and natural and man-made hazards (physical risks). Additionally, regulatory or policy risks, like the impact of carbon regulation or other regulatory restrictions, including the related transition risks like policy, legal, technology and market shifts, that could impair the evaluation of assets are an important factor. Certain banks could face a higher risk from concentrated lending to individual sectors or operations exposed to the aforementioned risks.
- 3 Social risk considerations represent a broad spectrum, including customer relations, human capital, demographic and societal trends, health and safety and responsible production. The most relevant social risks for banks arise from the way they interact with their customers. Social risks are particularly high in the area of data security and customer privacy, which is partially offset by sizeable technology investments and banks' long track record of handling sensitive client data. Fines and reputational damage because of product mis-selling or other types of misconduct is a further social risk. Societal trends are also relevant in a number of areas, such as shifting customer preferences toward digital banking services increasing information technology costs, ageing population concerns in several countries affecting demand for financial services or socially driven policy agendas that may translate into regulations that affect banks' revenue bases. Pressure on profitability can be particularly severe for small banks that have limited options to mitigate declines in net interest income, their main revenue source. By contrast, large institutions equipped with resources to invest in new businesses or technology will be somewhat able to overcome these challenges.
- 4 Corporate governance is a well-established key driver for banks and related risks are typically included in our evaluation of the banks' financial profile. Further factors like specific corporate behaviour, key person risk, insider and related-party risk, strategy and management risk factors and dividend policy may be captured in individual adjustments to the BCA. Corporate governance weaknesses can lead to a deterioration in a company's credit quality, while governance strengths can benefit its credit profile. When credit quality deteriorates because of poor governance, such as breakdown in controls resulting in financial misconduct, it can take a long time to recover. Governance risks are also largely internal rather than externally driven.
- 5 The framework supported making the largest Swiss banks, including CS, resolvable by establishing holding company structures and creating a Swiss banking subsidiary. These were important steps in overcoming the main obstacles for the two Swiss G-SIB's resolvability: namely their global reach and high interconnection with other parts of the financial system.

© 2021 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$5,000,000. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY550,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454