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Banking - Global

The impact of environmental, social and governance risks on bank ratings

Environmental, social and governance (ESG) risks are becoming increasingly important for bank regulators, investors and stakeholders in general. This report examines the ESG risks banks face, and explains how they are captured in our credit analysis. ESG risk factors such as investment in environmentally harmful industries, misconduct issues, and governance failings can affect bank credit strength.

ESG risks are becoming more significant. ESG risks cover a range of factors related to the sustainability and social impact of banks' activities and investments. Although some ESG risks such as governance are established drivers of bank creditworthiness, they are becoming more significant for banks due to changes in regulations, government policy, social attitudes, and market developments. In several cases, these have been prompted by climate change. Banks are exposed to ESG risks directly, as well as indirectly through their loans and investments.

Sustainable finance is influencing banks' behaviour. Policymakers, consumers and investors expect banks to play a key role in funding the development of a sustainable economy. The rise of sustainable finance opens up new lending opportunities for banks, but also exposes them to increased risk of asset stranding, regulatory penalties, capital constraints, and reputational damage. Regulatory incentives to promote sustainable finance can give rise to credit risk, as they can distort risk measurement.

ESG risks are captured in our bank credit analysis. ESG risks shape our view of a bank's credit strength as they affect our assessment of its asset quality, capital strength, profitability, liquidity and funding. For example, climate change may undermine the repayment capacity of borrowers in carbon-intensive or weather-dependent sectors, reducing both asset quality and profitability. Our bank credit analysis includes a qualitative adjustment for corporate behaviour that directly measures governance risk.

ESG risk exposure varies by region. Physical exposure to environmental risk is greater for banks in developing countries, which tend to be more agriculture-dependent. Risks arising from the shift to a low-carbon economy are higher in Europe, where climate change has been a matter of public concern for some time, but are also growing fast in some emerging economies highly exposed to carbon-intensive industries. The risk of misconduct litigation is greater in developed countries, which typically have stricter consumer protection laws. Governance is a key driver of credit quality, and is relevant for all banks.

ESG risks are becoming more significant

ESG risks, often thought of as a single risk category, in fact span a broad range of qualitative and quantitative factors related to the sustainability and social impact of a bank's activities and investments. Several institutions have sought to define ESG risks, but no single set of definitions has become universally accepted. One purpose of this report is to define the ESG risks that affect Moody's analysis of bank credit risk more precisely.

Some ESG risks are well-established drivers of bank creditworthiness. Governance quality, for instance, has long been a key contributor to bank credit strength. Nevertheless, ESG risks have become more significant for the banking sector in recent years. This is principally due to evolving regulations, policy measures, market developments, and underlying changes in social attitudes as a result of which banking sector activities previously considered acceptable are now increasingly challenged.

Social risks, for instance, have become more pronounced for banks after the global financial crisis contributed to a negative shift in popular attitudes towards banks. This has made customer backlashes against business practices deemed to be socially unacceptable, a social risk, more likely. Similarly, the transition to a low carbon economy, accelerated by the 2015 Paris Agreement, is gradually increasing environmental risk for banks. These include risks associated with investments in technologies which may become obsolete as less carbon-intensive alternatives emerge. Overall, we believe that growing awareness of climate change and its consequences has played a key role in increasing the relevance of ESG risks.

ESG risks typically affect banks' creditworthiness through the same channels as conventional risks. For instance, an increase in customer defaults can result from an environmental hazard such as drought, just as it can from an increase in interest rates or unemployment. Similarly, an inadequate commercial strategy and socially unacceptable business practices can both result in a loss of customers, hitting profitability.

Although ESG risks are separate and are typically managed as such by banks, they can have the same impact on a bank's credit profile. For example, reputational damage that affects a bank's franchise can be the consequence of governance failings (e.g. the bank facilitating money laundering), social considerations (e.g. the bank misselling financial products) or environmental factors (e.g. the bank financing environmentally harmful projects). A bank that fails to manage any of the three individual ESG risk factors may also experience reduced demand for its market issuances, as investors worldwide increasingly attach high importance to ESG issues.

Banks are exposed to ESG risks directly, but also indirectly through their balance sheets, given their role as lenders and investors. Governance-related risks have historically had the most direct impact on bank creditworthiness. Environmental risks primarily affect banks indirectly through their investment and lending decisions. Social risks can also arise indirectly, for example when the credit quality of a borrower weakens because of social considerations.

Environmental risks may also influence bank capital in future, as regulators may incorporate environmental considerations into banks' prudential requirements. The quality of a bank's governance can itself influence its exposure to environmental and social risks, with better-governed banks likely to face fewer such risks.

Sustainable finance is influencing banks' behaviour

Sustainable finance has become a key theme globally in recent years, driven by international agreements aimed at promoting investments that take account of ESG considerations. The most important of these include the Paris Climate Agreement (December 2015), the UN 2030 Agenda for Sustainable Development (September 2015) and the European Commission Action Plan on Sustainable Finance (March 2018).

The rise of sustainable finance has put banks under particular pressure for two reasons. Firstly, banks are the backbone of the global financial system, and consequently play a key role in financing the projects required to establish a sustainable economy. Secondly, banks' expertise in credit risk management makes them uniquely qualifed to ensure that increased funding for sustainable assets and activities does not come at the expense of financial stability.

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.moodys.com for the most updated credit rating action information and rating history.

Regulators and policymakers are one of the main driving forces in the shift towards sustainable finance. Although banks are exposed to regulatory and policy risks as they affect their investment decisions, the level of environmental regulation directly aimed at banks is currently low. However, we expect this to change as a result of a gradual increase in regulation designed to: (1) ensure that the financial system is resilient to climate-related risks; and (2) support the implementation of environmental policies.

On the former, several regulatory bodies have acknowledged that climate-related risk is a source of financial risk, including the Network for Greening the Financial System (NGFS) in its October 2018 progress report. Some proposed measures require banks to enhance their governance structures around climate-related risks, and incorporate such risks into their risk management frameworks, including scenario analysis and capital stress testing processes.

On the latter, politicians and regulators are increasingly likely to co-opt banks in the implementation of climate change policies, given their unique role in capital formation and allocation. As a highly regulated sector, the banking industry presents policy makers with a wide array of tools to implement environmental measures through macro and micro prudential regulation. These include capital charges and credits, or mandatory environmental risk criteria in lending and investment decisions.

The European Parliament and the UK's Prudential Regulation Authority have already proposed to incorporate environmental considerations into banks' prudential frameworks, demonstrating Europe's leadership role in the development of environmental regulation. The EU proposal contemplates a dedicated prudential treatment of bank exposures to assets or activities with an environmental or social impact - a controversial initiative if it leads to changed capital requirements for brown and/or green assets.

ESG risk disclosure is another area of concern for regulators. The EU's non-financial reporting directive (Directive 2014/95/EU) requires large companies to publish regular reports on the social and environmental impact of their activities. The European Commission has proposed to expand the directive to include climate-related information as part of its Sustainable Finance Action Plan. Although other regions' disclosure requirements are weaker, we expect most banks globally to increasingly publish ESG related information, and particularly information related to climate change.[1]

Sustainable finance is not driven solely by regulation. Bank stakeholders are becoming increasingly aware of ESG issues, and are demanding improved ESG management. This is illustrated by investors' rapid integration of ESG factors into their asset allocation decisions. Signatories to the Principles for Responsible Investment (PRI), which take ESG considerations into account in their investment policies, had combined assets under management of USD82 trillion in 2018, an increase of 19% from the previous year. Pressure to meet ESG targets also arises from bank shareholders exercising their voting rights according to ESG criteria, as well as from bank customers. Pressure from stakeholders and markets can take effect more quickly than regulation. A combination of technological innovation and consumers' response to climate change is accelerating the implementation of sustainable finance.

In this context, banks are increasingly under pressure to re-focus their strategy and business models on sustainability, and to integrate ESG considerations into their investment decisions. The rise of sustainable finance offers banks opportunities to unlock new lending markets, and to reinforce their relationship with clients, for instance by advising them on the impact of ESG factors on their businesses. Banks can also reinforce their franchise value through strong management of ESG factors.

However, it also potentially exposes banks to increased capital constraints, asset stranding, and fines or litigation in the event of non-compliance with new regulations. New regulation will also add compliance costs, and banks may forgo currently profitable businesses because of the way they might develop over the long-term. At the same time, engaging in or facilitating activities with a significant negative environmental impact may inflict reputational damage on banks, tarnishing their brands. Increased credit risk can also arise from regulatory incentives to promote sustainable finance as they have the potential to distort risk measurement.

Bank exposure to reputational damage largely depends on how aware their stakeholders are of ESG issues, but we believe that the risk is more material for larger banks. This is because any negative externalities they create will affect a larger number of people, given their large size and broader geographic footprint.

ESG risks are captured in our bank credit analysis

Our assessment of a bank's baseline credit assessment (BCA), a measure of its standalone credit strength, [2] is based on five key financial ratios and three qualitative factors. These are in our view the key indicators of how likely the bank is to default in the absence of external support. Any positive or negative impact from ESG considerations would influence our assessment of these eight indicators, affecting our overall view of the risk of bank failure in turn.

Strong corporate governance is at the core of a bank's financial health. Our qualitative adjustment for corporate behaviour measures governance risk directly. However, the absence of an explicit corporate behaviour adjustment for most banks does not indicate a lack of governance strengths or weaknesses, rather that their governance quality is already reflected in other rating factors. The impact of governance risk is typically greatest in our assessment of asset risk, as a poor risk governance framework can lead to severe deterioration in asset quality. Governance risk can also materially affect profitability via fines or regulatory sanctions because of governance breaches.

Environmental and social risks have historically had a low impact on banks' credit profiles, but their influence can still be material. Environmental factors can increase risk in banks' investment portfolios, and therefore lead to a deterioration in asset risk. If they cause financial losses, or if banks forgo profitable businesses on environmental grounds, they can also weigh on profitability.

Social risks are less likely to affect asset quality, but they can have a material impact on profitability, for example through litigation, regulatory fines, or regulatory measures that constrain earnings. Social factors can also have a positive impact on profitability, as in the case of banks which grow thanks to financial inclusion initiatives.

The potential inclusion of ESG considerations in banks' prudential frameworks may also affect our assessment of their capital adequacy. A number of recent regulatory proposals would incorporate environmental considerations into bank capital requirements. Regulators may also incorporate ESG risks into their supervisory work, for instance by taking account of banks' resilience to climate change when conducting stress tests.

Reputational damage because of poor ESG performance can affect banks' profitability and liquidity. The loss of customers whose ESG expectations have not been met may affect a bank's business volumes and therefore its earnings capacity. Customers may also withdraw their funds, and the banks' issuances may attract less market interest, as investors increasingly integrate ESG considerations into their investment decisions.

Exhibit 1 shows the rating factors that make up our BCA methodology, with a brief description of how our assessment captures ESG risks, directly or indirectly.

Exhibit 1

ESG risks relate to rating factors

Moody's bank rating methodology

RATING FACTOR	ENVIRONMENTAL	SOCIAL	GOVERNANCE	COMMENT
SOLVENCY				
Asset Risk	✓		✓	Together with traditional financial factors, environmental factors influence banks' asset quality in terms of credit risk and market risk. Bank exposure to environmental risk is generally low, although it can be material in cases of concentrated lending to individual sectors or projects. Risk governance determines banks' risk appetite, and is therefore a key driver of asset risk. Poor risk governance can translate into severe asset quality issues.
Capital	✓			Capital may become subject to a variety of regulatory measures designed to capture enviromental considerations (e.g. green supporting factor, brown penalising factor). Bank regulators may also take account of banks' resilience to climate change risk in their stress testing methodologies.
Profitability	✓	✓	✓	ESG factors can affect a bank's profitability. Governance failings can expose banks to sizeable financial penalties, for example, and banks with weak ESG credentials are exposed to the risk of losing customers. Social considerations can have a positive impact on profitability for banks which leverage on financial inclusion to grow.
LIQUIDITY				
Funding structure	✓	✓	✓	Bank investors are increasingly integrating ESG criteria into their investment decisions, putting pressure on banks to show strong ESG credentials. This trend is likely to spread to depositors, which may demand a premium from banks with poor ESG credentials. The use of sustainable funding sources (e.g. green bonds) helps banks increase their funding diversification.
Liquid resources				
QUALITATIVE CONSIDERATIONS				
Business diversification				
Opacity and complexity				
Corporate behaviour			✓	We do not assign a separate score for corporate governance quality in our bank scorecard. Instead, governance considerations influence the score we assign to the scorecard factors. We have also adjusted the financial profile of some banks downward due to corporate behaviour considerations, where we felt that the risk function and governance framework was not adequate for the risks being run, or that the rigour of the board and management oversight was poor. More exceptionally, we apply a positive adjustment where we believe that a bank has an extremely strong approach to risk management.

Source: Moody's Investors Service

ESG factors can also influence bank ratings through the Macro Profile, an assessment of banks' operating and economic environment. The Macro Profile draws heavily on three of the rating factors used in the sovereign rating methodology, and ESG considerations are included in the assessment of each of these factors. One of them, institutional strength, is directly and closely linked to governance risk, while environmental and social risks are indirectly related to all sovereign rating factors. For further details on the influence of ESG risks on sovereign ratings, see Environmental, social and governance risks influence sovereign ratings in multiple ways.

Governance is the main ESG risk for banks

A bank's corporate governance and risk management framework are key drivers of its credit quality. As risk-taking institutions, banks need to ensure that their investment decisions are commensurate with their risk appetite by putting in place appropriate risk management structure, as well as strong compliance and control functions. Unlike environmental and social risks, which can be driven by external factors such as regulation or demographic change, governance risks are largely internal.

In several cases, poor risk governance has led to severe asset quality deterioration, eventually resulting in bank failure. For instance, several Spanish savings banks failed in the early 2010s because of their high exposure to the highly cyclical real estate market. This partly reflected their very poor governance structure, which left them open to a high degree of political interference. Similarly, the one-vote-per-shareholder rule in Italy's cooperative banks prior to reforms in 2015 gave employees and small shareholders significant influence over some institutions. This severely constrained the banks' ability to remedy corporate governance shortcomings and implement best practices.

Governance failings can also lead to breaches of money laundering or tax regulations, exposing banks to sizeable financial penalties, and to prolonged regulatory investigations that can absorb significant resources and management focus. Between 2012 and 2018, European banks paid over $16 billion in fines for facilitating money laundering. The credit implications can be material: in October 2018, we downgraded Danske Bank (A2/A2 negative, baa1) following an announcement that the US Department of Justice (DoJ) was looking into potential money laundering at Danske's Estonian branch between 2007-2015.

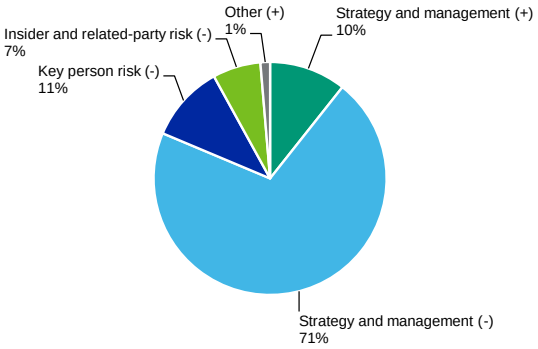
Governance quality is particularly important for banks because they operate with higher leverage and are generally more confidence-sensitive than corporates, particularly regarding their funding arrangements. The consequences of a governance breach can go beyond the immediate impact, such as a financial penalty or asset quality deterioration. In some cases, there can also be reputational damage leading to franchise erosion, resulting in a loss of business, or customers withdrawing funds.

We do not assign a score for quality of risk governance when determining a bank's financial profile, which reflects our view of its solvency and liquidity. Rather, our assessment of governance quality influences the scores that we assign to the different solvency and liquidity scorecard factors.

In some cases however, credit considerations related to corporate governance are not fully captured in any of the solvency or liquidity factors on our scorecard. To determine such banks' BCAs, we apply a qualitative adjustment to their financial profile. This adjustment typically reflects idiosyncratic corporate governance issues captured through behavioural aspects of a bank, which we assess under a broad qualitative framework which we term "corporate behaviour".

We assess corporate behaviour around six factors: key person risk, insider and related-party risk, strategy and management, dividend policy, compensation policy and accounting policy. Corporate behaviour adjustments are mostly but not exclusively negative: in a very small number of cases, where a bank has shown a strong and sustained stewardship over time, we have applied a positive adjustment. For example, we adjust the BCA of Svenska Handelsbanken AB (Aa2/Aa2 stable, a2) up by one notch to account for the bank's track record of exemplary long-term stewardship.

Exhibit 2
Distribution of corporate behaviour adjustments



(+) denotes a positive corporate behaviour adjustment, (-) when negative
Source: Moody's Investors Service

Social risk includes a wide range of potential hazards

Social risks arise from a bank's interaction with its stakeholders and society at large. This is the broadest of the three ESG risks, and typically affects credit quality through litigation, as well as reputational, operational, and regulatory channels. Social risks generally have a moderate impact on bank credit quality. Although social risks in some cases are high, banks' financial and operational flexibility, and their long track record of adjusting to emerging social issues, act as mitigants.

Banks are exposed to social risks directly through their dealings with customers, employees, and other stakeholders. Examples include the possibility of regulatory penalties or reputational damage for failing to treat customers fairly. Social risks can also stem from external factors such as legislative changes prompted by underlying changes in social attitudes. Regulations requiring banks to prioritize lending to particular sectors of the economy are an example.

Banks are also exposed to social risk indirectly through their lending and investment decisions. The most significant social risks for banks are those they are directly exposed to, as their portfolio flexibility and diversification help mitigate risks from their indirect exposure.

The social risks that private sector issuers generally are exposed to fall into five categories: customer relations, human capital, health and safety, responsible production and demographic and societal trends (see Exhibit 3). For banks, the most significant of these categories is customer relations. Fines and reputational damage due to product mis-selling and other mis-conduct is a key social risk within this category. Bank exposure to this type of risk tends to be more acute in developed countries, where such behaviour is under close regulatory scrutiny, and has previously resulted in sizeable litigation charges. The design of complex and/or speculative financial products, as witnessed during the financial crisis, increases the risk of product mis-selling.

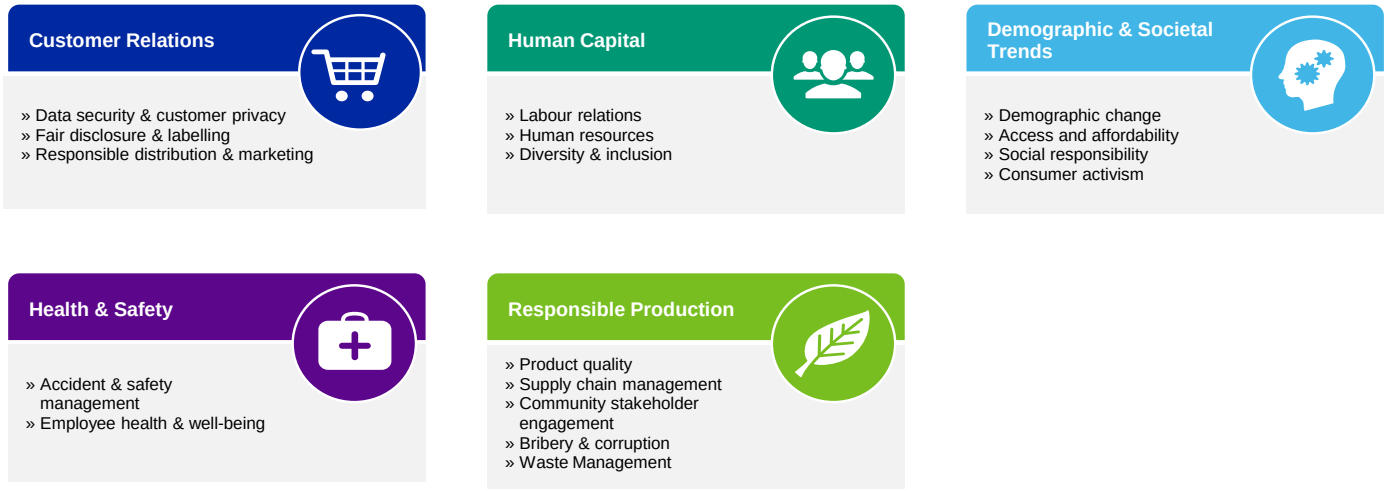
Past examples include the mis-selling by several banks globally of US residential mortgage-backed securities (RMBS) that later inflicted losses on investors. They also include the sale by UK banks of payment protection insurance (PPI) alongside loans, often without making it clear to the customer that they were buying insurance as well. Accumulated PPI-related charges for the four largest UK banks amounted to £37 billion as of the end of 2018. Global investment banks, which have been subject to several litigation issues since the beginning of the financial crisis in 2008, have built up close to $290 billion of provisions against potential litigation charges.

US lender Wells Fargo Bank, NA (Aa1/Aa2 negative, a2) is a high profile example of an individual bank that has been adversely affected by social risks related to customer relations. Fined in 2016 for its deficient consumer banking sales practices, the bank has since entered into multiple consent orders with its regulators, following revelations of further misdeeds. These forbid Wells Fargo from growing its total assets beyond their year-end 2017 level, triggering a change in the bank's rating outlook to negative in February 2018.

Exhibit 3

Five social categories are most material to credit

Social categories most relevant for private sector (nongovernmental) issuers



Individual issues listed are representative and are not intended to be exhaustive. Categories draw from existing global standards (such as the Sustainability Accounting Standards Board),frameworks and literature

Source: Moody's Investors Service

The handling of data security and customer privacy is another critical area for banks in the customer relations category, as they have access to large amounts of personal data. This is illustrated by UK lender TSB Bank plc's (Baa2 negative, baa2)[3] well-publicized difficulties in migrating to a new technology platform in April 2018. As a result of these problems, TSB's customers became targets for fraud and "phishing", while some inadvertently accessed the accounts of other TSB users. The bank incurred costs to improve customer fraud protection and detection and, as a result of the problematic IT migration, is subject to potential regulatory action. On 15 April 2019, TSB announced a Fraud Refund Guarantee, making it the first UK bank to commit to covering customers against all types of transactional fraud losses.

Data security risk is becoming increasingly relevant for banks with the expansion of online banking and tightening regulatory standards, although the associated credit risk is to some extent mitigated by sizable technology investments, and the banks' track record of handling sensitive client data.

Human capital is also a source of social risk for banks, although we expect the credit impact to be more modest. Collective bargaining or labour policy can weigh down sector level profitability, while the recruitment and retention of highly specialised workers is becoming increasingly important for banks as they push ahead with digitalisation.

Social risks can also stem from societal trends and other external factors which are less within the bank's control. For example, a growing customer preference for digital banking increases banks' technology costs and favours the entry of digital, non-banking competitors. Population ageing, which affects borrowing and saving habits, is a further concern in several countries.

Social policy agendas may also lead to regulatory changes that affect banks' revenues. For example, the Bolivian government in 2015 issued a regulation requiring banks to allocate a minimum share of total lending at capped rates to the so-called productive industries and social housing. It also required universal banks to allocate at least 60% of their total loan portfolio to the productive sector and to social housing within five years. Since the rate caps are below market rates, the regulation weighs on Bolivian banks' profitability. It may also pressure banks to relax their credit standards so as to comply with the lending allocation threshold, weakening their asset quality.

Similarly, land reforms in South Africa include a proposed change to the constitution to allow for expropriation of land without compensation. While it is uncertain how and when the reform will be implemented, it has the potential to reduce the value of the collateral backing many bank loans, putting upward pressure on banks' cost of risk.

Such regulatory changes also occur in developed markets. In 2014, the EU approved a measure (Directive 2014/17/EU) giving mortgage customers added protection in response to improper practices by several lenders during the financial crisis. The regulation, which

increased transparency over credit agreement terms, loan prepayment rights and foreclosure proceedings, imposed additional compliance costs on banks, and also reduced their fees in some areas.

Social considerations may also unlock opportunities for banks. For example, efforts to expand financial inclusion and access to banking services in emerging markets helps support economic development by improving access to credit, which in turn supports banking sector growth. The spread of microfinance also helps banks to develop their business in emerging markets, by granting small loans to consumers or businesses who otherwise would have no access to credit.

Environmental risk exposure is generally low but increasing

Environmental risks take a number of different forms. Our global environmental risks heat map identifies the five categories of environmental risk that are most material to an issuer's credit quality (see Exhibit 4).

Exhibit 4

Categories of environmental risk that are most material to credit quality

AIR POLLUTION
Industrial emissions with potential to harm health and habitats, excluding CO2, but including nitrous oxides, sulfur oxides, and particulate matters.

SOIL/WATER POLLUTION & LAND-USE RESTRICTIONS
Pollution from industrial, agricultural waste, and surface-water run-off. Land restrictions to preserve habitats, watersheds, species, etc.

CARBON REGULATIONS
Impact of current/future policy initiatives that seek to reduce the amount of CO2 and other greenhouse gases emitted at a national and global level.

WATER SHORTAGES
Caused by a decrease in available water supplies (e.g. due to drought) or an increase in demand.

NATURAL AND MAN-MADE HAZARDS
Includes chronic climate trends (e.g. warming, rising sea levels), extreme weather events (e.g. flooding) and industrial disasters/incidents.

Source: Moody's Investors Service

Banks' current balance sheet exposure to environmental risk is generally low. Their own environmental footprint does not typically raise credit concerns, and their main exposure to environmental risks is indirect, through their investment and lending decisions. This indirect exposure is less significant for banks that are well diversified both by industry and geography. Moreover, the relatively short duration of bank loans provides lenders with some ability to rebalance their portfolios as stranded assets and other environmental risks emerge over time.

However, we expect environmental risks to become more significant for banks in the future, particularly as the transition to a low carbon economy accelerates, the physical effects of climate change increase, and climate policy changes the regulatory environment. The impact of these developments on bank credit strength will depend on how quickly they take place, with longer time frames giving banks greater opportunity to adapt to changed circumstances. It will also depend on the level of engagement that policymakers and regulators seek from banks to meet their environmental objectives.

Risks from climate change are difficult to assess, because they develop over long or uncertain time horizons, and are subject to a variety of potential policy measures and economic growth scenarios. This can result in a wide range of potential credit outcomes for affected companies, increasing credit risk volatility in banks' investment portfolios.

The impact of Hurricane Irma on Dominican banks in September 2017 illustrates how portfolio diversification can mitigate lenders' exposure to environmental risks. Irma mainly affected the north of the Dominican Republic, where tourism and agriculture are key economic activities. However, Dominican banks incurred relatively limited losses as the tourism and agriculture sectors accounted on average for only 8% of their loan books respectively (June 2017 data).

Some banks whose business models rely on serving particular economic sectors can be more materially exposed to environmental risks. For example, agricultural banks have high lending exposure to the agribusiness sector, which is heavily influenced by natural disasters and extreme weather events. Agricultural banks in less developed regions such as Africa or Latin America are typically more affected by environmental risk than their developed world counterparts.

This is because these countries' less advanced agricultural technology makes farmers more vulnerable to extreme weather (e.g. poor irrigation systems). Moreover, in countries such as Ethiopia, Kenya, Rwanda or Cambodia, where agriculture accounts for over 30% of GDP, environmental risks can create asset quality concerns for virtually all domestic lenders.

The impact of environmental risk on banks also depends on how developed their domestic economy is. For instance, the impact of major hurricanes on US banks in 2017 was heavily offset by federal government aid, property insurance, and disaster relief programs that helped fund reconstruction.

Auto finance companies are another example of lending institutions with material exposure to environmental risks. Environmental pressures are changing consumer preferences and pushing policymakers to back electric and alternatively fuelled vehicles, which could reduce the value of used petrol-driven cars. Many auto finance companies in North America and Europe are exposed to second hand car values because they lease vehicles to customers and take them back when the contract expires. In Europe, residual value risk for auto finance companies is aggravated by changing perceptions of diesel cars, in light of the ongoing debate about regulations and tax levels for diesel engines, and growing customer reluctance to acquire diesel cars.

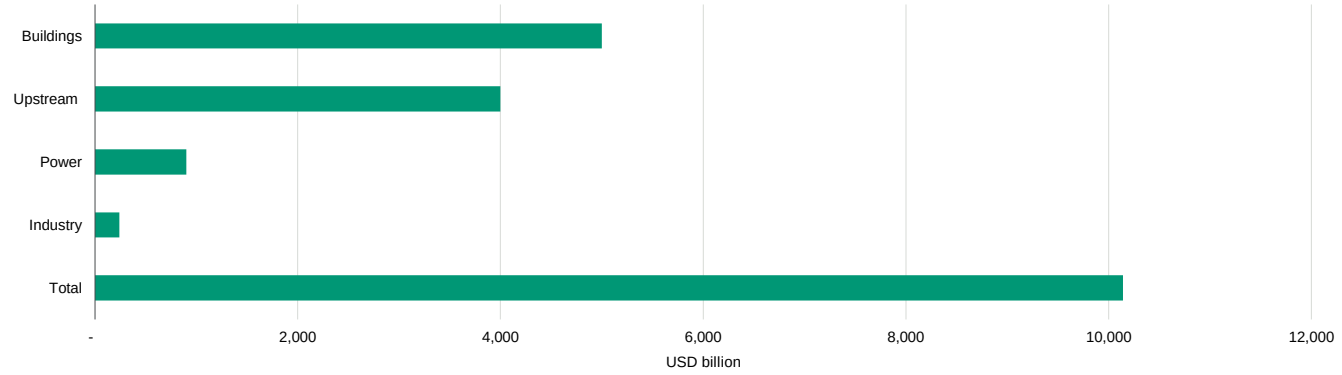
The transition to a low carbon economy also creates environmental risks for banks as it could expose them to stranded assets - assets which cease generating the expected returns before they reach the end of their economic life. Assets in the fossil fuel supply chain and power generation sector are vulnerable to stranding as a result of policy changes, market forces, or technological developments that favour new, less carbon-intensive alternatives.

According to the International Renewable Energy Agency (IRENA), reducing CO2 emissions sufficiently to prevent global temperatures rising by more than 2°C above pre-industrial levels – a key Paris Agreement goal – would generate stranded assets of $10 trillion between 2016 and 2050. While our baseline scenario assumes a more moderate reduction in CO2 emissions[4], the IRENA analysis helps illustrate how CO2 restrictions are having a tangible impact on the biggest CO2 generating sectors globally.[5]

According to IRENA, the real estate sector, which banks typically have high exposure to, would be the most affected due to stricter energy efficiency requirements, although we would expect some mitigating actions (e.g. building upgrade) to limit the loss. The risk is specially high in the United States and Western Europe, where buildings have a low stock turnover. Some regulatory initiatives have been implemented in Europe to improve the energy efficiency of rented properties. The UK Minimum Energy Efficiency Standard, which came into force in April 2018, establishes a minimum level of energy efficiency of 'E' (on an A-G scale) for privately rented property in England and Wales. In the Netherlands, a proposed measure requires that all office buildings have at least a level C energy label from January 2023, or be taken out of use. According to Dutch Central Bank data, 46% of bank loans related to commercial real estate in the Netherlands are collateralised by properties with lower-range (from D to G) energy labels.

Exhibit 5 shows the breakdown of stranded assets by sector as estimated by IRENA, assuming the global energy system is decarbonised in line with the Paris Agreement.

Exhibit 5
Breakdown of cumulative stranded assets in 2015-2050 by sector



The figures presented correspond to IRENA's REmap scenario. This scenario considers an accelerated renewables and energy efficiency deployment until 2050, which will deliver emissions reductions that have a two-out-of-three chance of maintaining a global temperature change below two degrees Celsius above pre-industrial levels

Source: IRENA

Chinese and Indian banks' exposure to coal fired power plants is another example of bank vulnerability to asset stranding. This is because China and India, although heavily reliant on coal fired power generation, are pushing to increase solar power generation. As a result, a high proportion of both countries' relatively new coal-fired power plants may never operate at their intended capacity. According to IRENA, between 25% and 45% of Chinese and Indian power generators' assets by value could become stranded. This could have a knock on effect on the banking sector.

Among emerging economies, the risk of stranded assets is particularly high in China, given the public authorities' focus on green finance. This is illustrated by the recent Renewable Portfolio Standard issued by China's National Energy Administration, which aims to increase consumption of renewable energy so as to reduce carbon emissions in line with the Paris Agreement. Chinese banks have for some time been encouraged to diversify away from "over-capacity" industries, which tend to overlap heavily with polluting industries.

ESG risk exposure varies by region

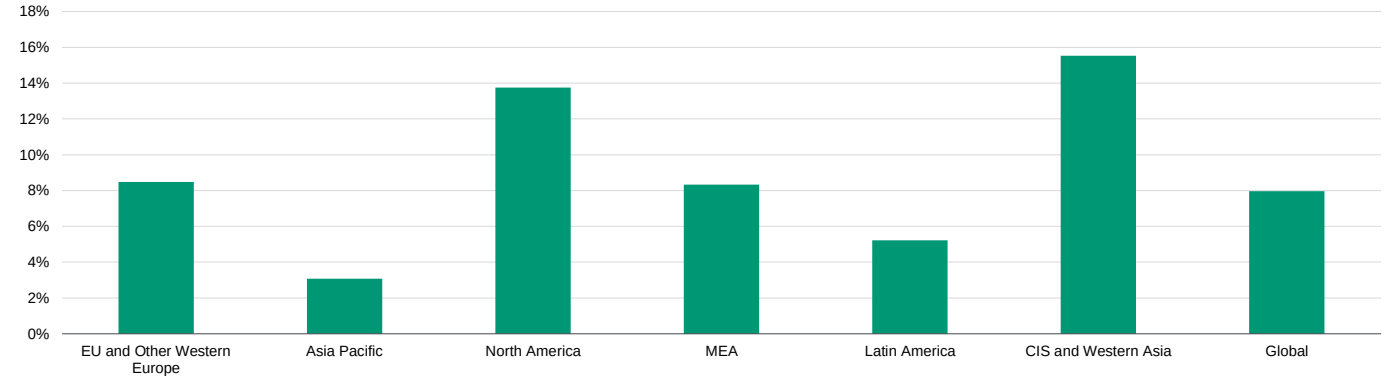
All banks worldwide are exposed to ESG risks. However, the type of exposure and its impact on credit varies by region.

» Governance factors are relevant for all banks, regardless of the region they operate in. Although governance risks are largely issuer-driven, certain governance weaknesses are relatively common for banks in specific geographies. For instance, banks in the CIS region have relatively high exposure to related-party and key-person risks, which is among the key factors that have led to bank failures in the region. Negative corporate behaviour adjustments are most common in the CIS region (see Exhibit 6).

Exhibit 7

Corporate behaviour adjustments are most common in CIS / Western Asia

% of BCAs adjusted for corporate behaviour, by region



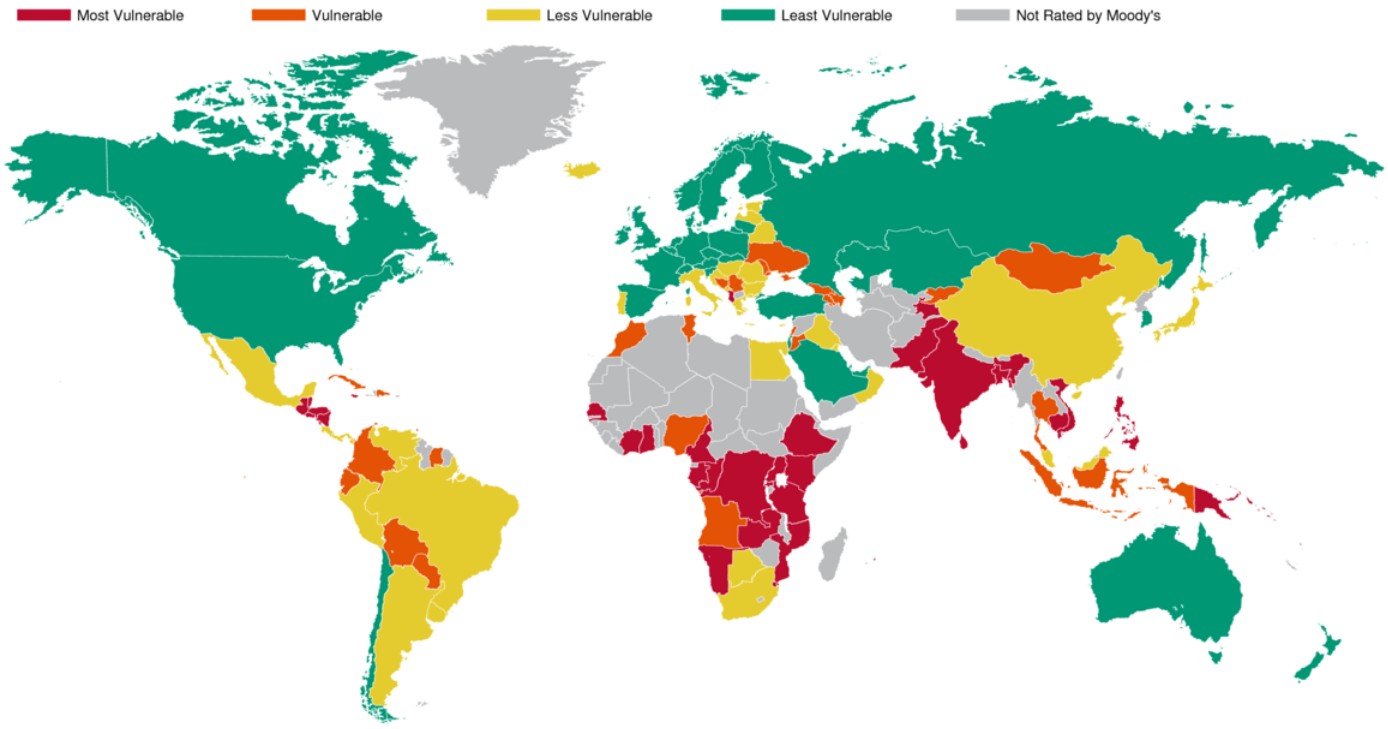
Source: Moody's Investors Service

» Banks around the world are exposed to social risks, but the type of social issues and concerns that are important to regulators and the public differs considerably by region. Litigation risk as a result of misconduct tends to be higher in developed countries, where such behaviour is under close regulatory scrutiny and is more likely to be disapproved of by the general public. Likewise, consumer protection legislation tends to be more onerous in developed markets.

» Environmental risks can be divided between those arising from environmental regulation, market or policy initiatives, and direct environmental hazards. Physical exposure to environmental risk is generally higher in developing countries, which tend to be more reliant on agriculture, less economically diversified, and disproportionately affected by the increasing frequency and/or severity of natural disasters. The exhibit below shows all the countries we rate shaded according how susceptible their credit quality is to the physical effects of climate change.

Exhibit 8

Susceptibility of Moody's-rated sovereigns' credit quality to the physical effects of climate change



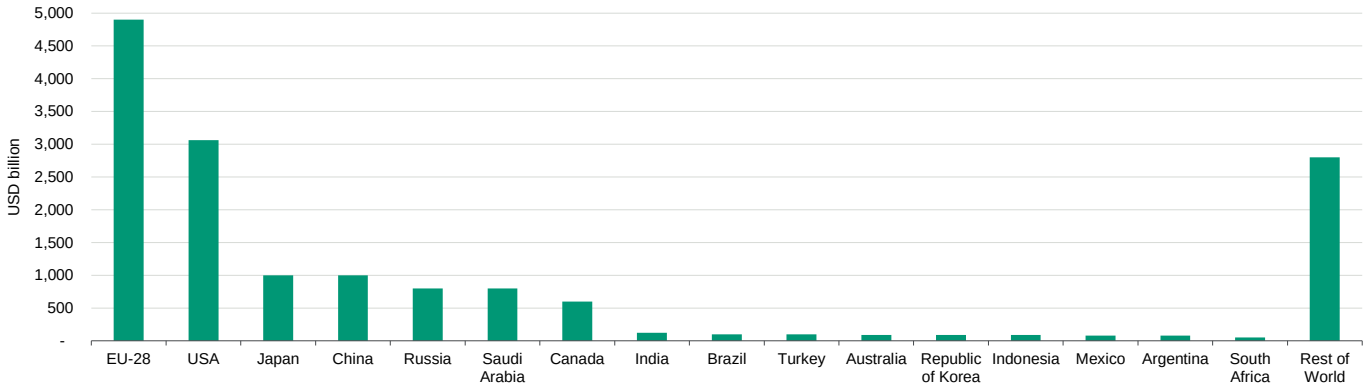
Source: Moody's Investors Service

The impact of environmental regulation, market and policy initiatives is generally higher in Europe, where climate change has been a popular concern for some time now. This is reflected in regulatory initiatives to assess banks' resilience to climate change, or changes to banks' prudential frameworks. But risks from the transition to a low-carbon economy are growing fast in some emerging countries that are highly exposed to carbon-intensive industries as social awareness of environmental issues grows. Exhibit 8 shows a breakdown of stranded assets (assuming a decarbonisation of the global energy system in line with the Paris Agreement) estimated by IRENA by region.

Exhibit 9

The volume of potential stranded assets is highest in the EU and the US

Breakdown of cumulative stranded assets in 2016-2050 by region (REmap scenario)



Source: IRENA

In response to the growing awareness of sustainability in financial markets, several banks worldwide are implementing sectoral policies which exclude or restrict the provision of financial services to companies considered to have a negative ESG impact. We believe that these policies are largely driven by reputational considerations, and thus typically focus on the ESG issues that are most important to stakeholders in each region. A key focus of these policies are polluting companies in Europe (e.g. coal-fired power plants), weapons manufacturers in the US, or the palm oil industry in Asia, a significant contributor to deforestation.

Moody's related publications

- Moody's Environmental, Social and Governance (ESG) webpage
- Cross-Sector - Global: Frequently asked investor questions about environmental, social and governance issues, 5 March 2019
- Cross-Sector — Global: Social issues can be material to private issuers' credit quality but are not typically the primary driver, 20 February 2019
- General Principles for Assessing Environmental, Social and Governance Risks, 9 January 2019
- Environmental Risks – Global: Heat map: 11 sectors with $2.2 trillion debt have elevated environmental risk exposure, 25 September 2018
- Sovereigns – Global: Environmental, social and governance risks influence sovereign ratings in multiple ways, 27 June 2018
- How demographics will shape labor markets and credit trends, 17 May 2018
- Environmental Risks - Sovereigns: Credit profiles of small, agriculture-reliant sovereigns most susceptible to climate change risk, 15 May 2018

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Endnotes

1 In June 2017, the Financial Stability Board's (FSB) Task Force on Climate Related Financial Disclosures (TCFD) published its recommendations for consistent climate-related financial disclosures across all industries. These are voluntary at present, but we expect significant political and private sector momentum to support their adoption over time.

2 Our rating approach for banks builds around four components, of which the BCA is the most sensitive to the impact of ESG factors. For further details see our rating methodology for banks.

3 The bank ratings shown in this report are the bank's deposit rating, senior unsecured debt rating (where available) and Baseline Credit Assessment.

4 Our baseline scenario is based upon a forecast of the global emissions pathway if all countries were to implement their intended nationally determined contributions (INDCs) maintained as part of the Paris Agreement.

5 See Moody's environmental risks global heat map.

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