MOODY'S INVESTORS SERVICE

OUTLOOK

21 November 2019

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Banking System Outlook - Germany

Slowing economy and rising profitability challenges drive our negative outlook

We have changed the outlook on Germany's (Aaa stable) banking system to negative from stable because we expect profitability and the overall creditworthiness of banks in the country to weaken over the next 12 to 18 months.

Extended ultra-low interest rates make operating conditions difficult for German banks. Net interest income generation is getting more difficult to sustain due to very low interest rates that have persisted since 2016. Our GDP growth forecast is 0.6% for 2019 and 1.0% for 2020, reflecting slowing global trade. Unemployment below 4% and low corporate and household debt will keep borrowers' debt repayment capacity high. The weaker trade outlook, however, has resulted in negative outlooks for Germany's key industries: the automotive sector and its suppliers, chemicals and manufacturing.

Weak profitability will decline further as net interest income falls. German banks have had limited success in adapting their high cost structure to their low-risk, low-margin lending profiles and weak fee income generation. Traditional commercial banks and in particular deposit-funded institutions will struggle to out-earn their costs in the low rates environment, even though loan-loss provisions are unsustainably low.

Asset quality will remain stable. The debt repayment capacity of German borrowers will remain high, supported by the low interest burden, a strong labour market and buoyant domestic demand. Conservative lending to cyclically sensitive German corporate sectors means that any increase in problem loans will be measured and gradual.

Capital will remain stable. The retention of weak pre-provision income generated in 2019/20, in combination with risk-weighted asset optimisation and moderate balance-sheet growth, will result in largely stable capital.

Continued increases in customer deposits are proving costly for banks. A lack of fixed-income return alternatives and customer reluctance to shift into equity and fund investments have boosted banks' deposits. These now fund more than 40 percent of systemwide bank assets. Faced with continued ultra-low rates, a growing number of German retail banks are considering charging their largest retail depositors negative rates.

This report was republished on 11/21/2019 to correct the outlook direction in the title of Exhibit 1

The likelihood of government support for the largest banks is moderate. We assume a moderate likelihood of government support for systemically important banks and banking groups and a low probability for all other banks in the financial system.

Exhibit 1
Overview of key drivers for Germany's negative banking system outlook

Operating environment	Deteriorating	- Lower GDP growth forecast for 2019/20 as a result of increasing trade tensions and Brexit which will weigh on German exports
		= Household indebtedness, consumption and unemployment will stay relatively stable
		- Persistently low interest rates are increasingly challenging for German banks
Asset quality	Stable	= Most German banks maintain a low-risk, low-margin asset profile, despite some pressure to increase their yields
		= Underwriting standards will remain largely stable
Capital	Stable	+ Prudent earnings retention will be supported by the introduction of countercyclical buffers
		- Continued lending growth will increase risk-weighted assets
Profitability and efficiency	Deteriorating	- Low interest rate environment will sustain pressure on net interest margins
		- Ongoing need for investment to catch up with technological innovation
		- Loan-loss provisioning costs will rise as provisioning releases tail off
Funding and liquidity	Stable	+ Banks have broad and diversified access to deposits, covered bond and senior unsecured funding
		= Finalisation of MREL requirements will require less frequent issuers to issue MREL-eligible debt, while larger banks are already compliant and will tend to replace junior senior maturities with cheaper senior preferred funding
Government support	Stable	= German banks operate under the EU's resolution regime BRRD, under which losses are primarily borne by equity and debtholders. We therefore assume there is little likelihood of government support many banks and only a moderate likelihood of support for the senior debts and deposits of the banks that are systemically important or part of systemically important banking groups in the German financial system. We do not expect to change our view over the outlook horizon.

Source: Moody's Investors Service

Exhibit 2
Key indicators for rated German banks

Core Scorecard Ratios	2014	2015	2016	2017	2018
Problem Loans / Gross Loans	4.0%	3.4%	3.1%	2.6%	2.1%
Tangible Common Equity / Risk Weighted Assets	13.4%	14.3%	14.7%	16.1%	15.3%
Net Income / Tangible Assets	0.3%	0.1%	0.1%	0.2%	0.1%
Market Funds / Tangible Banking Assets	42.1%	39.9%	40.8%	38.8%	37.9%
Liquid Banking Assets / Tangible Banking Assets	38.1%	41.0%	40.6%	42.3%	39.1%
Additional Ratios					
Loan Loss Reserves / Problem Loans	49.7%	53.9%	55.3%	57.7%	56.8%
Tier 1 Ratio	13.6%	14.8%	15.0%	16.0%	15.2%
Tangible Common Equity / Total Assets	4.8%	4.9%	4.9%	5.2%	5.3%
PPI / Average RWA	1.5%	1.3%	1.2%	1.3%	1.0%
Cost / Income Ratio	71.6%	74.2%	76.6%	74.4%	79.0%

Notes: i. All ratios are asset-weighted averages for our rated banks and may be adjusted to reflect our analytical views. ii. We exclude some banks to avoid distortion and double-counting; these are Sparkassen-Finanzgruppe, Sparkassenverband Baden-Wuerttemberg, the six German development banks, and nine subsidiaries of other rated entities (as of end-2018)[1] iii. Historic ratios may differ from previous outlooks, given changes in the sample of rated banks.
Source: Moody's Banking Financial Metrics

Exhibit 3

Rated German banks as of 15 November 2019

Rated Banks / Groups	Banking Sector	Total Assets (Dec 2018, € billion)	Deposit Rating	Outlook	Senior Unsecured / Issuer Rating	Outlook	Junior Senior Unsecured	BCA
Sparkassen-Finanzgruppe	public	2,178	-	-	Aa2	NEG	-	a2
Deutsche Bank AG	commercial	1,348	A3	NEG	A3	NEG	Baa3	ba1
DZ BANK AG	co-operative	519	Aa1	NEG	Aa1	NEG	A1	baa2
Kreditanstalt fuer Wiederaufbau	development	486	Aaa	STA	Aaa	STA	-	-
Commerzbank AG	commercial	462	A1	STA	A1	STA	Baa2	baa2
UniCredit Bank AG	commercial	287	A2	STA	A2	STA	Baa3	baa2
DB Privat- und Firmenkundenbank AG	commercial	276	A3	NEG	-	-	-	ba1
Landesbank Baden-Wuerttemberg	public	241	Aa3	STA	Aa3	STA	A2	baa2
Bayerische Landesbank	public	220	Aa3	STA	Aa3	STA	A2	baa2
Sparkassenverband Baden-Wuerttemberg	public	197	-	-	Aa2	RUR	-	-
ING-DiBa AG*	commercial	171	A2	STA	-	-	-	a2
Landesbank Hessen-Thueringen GZ	public	163	Aa3	STA	Aa3	STA	A2	baa2
Norddeutsche Landesbank GZ	public	154	Baa2	RUR	Baa2	RUR	Ba1	b2
NRW.BANK	development	149	-	-	Aa1	STA	-	-
DekaBank Deutsche Girozentrale	public	100	Aa2	STA	Aa2	STA	A1	baa2
Landwirtschaftliche Rentenbank	development	90	Aaa	STA	Aaa	STA	-	-
Volkswagen Bank GmbH	commercial	83	A1	STA	A1	STA	A3	baa2
Volkswagen Financial Services AG	commercial	80	-	-	A3	STA	-	-
Deutsche Kreditbank AG	commercial	77	A1	STA	A1	STA	A2	baa2
Bausparkasse Schwaebisch Hall AG	co-operative	72	Aa1	NEG	Aa1	NEG	-	baa2
L-Bank	development	70	Aaa	STA	Aaa	STA	-	-
Hamburg Commercial Bank AG	public/com.**	55	Baa2	STA	Baa2	STA	Baa3	ba2
Deutsche Apotheker- und Aerztebank eG	co-operative	45	Aa1	STA	(P)Aa1	-	A2	baa1
Landesbank Berlin AG	public	43	Aa2	STA	Aa2	STA	A2	baa2
Aareal Bank AG	commercial	43	A3	STA	A3	STA	(P)Baa1	baa3
Muenchener Hypothekenbank eG	co-operative	40	Aa3	NEG	Aa3	NEG	A2	ba1
Berlin Hyp AG	public	27	Aa2	STA	Aa2	STA	A2	ba1
KfW IPEX-Bank GmbH	commercial	27	Aa2	STA	-	-	-	a3
Sparkasse KoelnBonn	public	27	A1	STA	(P)A1	-	Baa1	baa2
Kreissparkasse Koeln	public	26	Aa3	NEG	Aa3	NEG	A3	a3
UBS Europe SE	commercial	25	Aa3	STA	Aa3	STA	-	baa1
Bayerische Landesbodenkreditanstalt	development	22	Aaa***	STA	Aaa***	STA	Aaa***	-
LfA Foerderbank Bayern	development	21	Aaa	STA	Aaa	STA	-	-
J.P. Morgan AG	commercial	21	Aa1	STA	Aa3	STA	-	a2
Deutsche Hypothekenbank (Actien-Gesellschaft)	public	21	Baa2	RUR	Baa2	RUR	Ba1	b2
DVB Bank S.E.	co-operative	20	Aa1	NEG	-	-	A1	baa2
Oldenburgische Landesbank AG	commercial	19	Baa2	STA	Baa2	STA	-	baa3
Landesbank Saar	public	15	A1	STA	A1	STA	-	ba1
Debeka Bausparkasse AG	commercial	9	Baa3	NEG	-	-	-	ba1
Siemens Bank GmbH	commercial	7	-	-	A1	STA	-	-
Citigroup Global Markets Europe AG	commercial	6	-	-	A1	STA	-	-
Standard Chartered Bank AG	commercial	5	A1	STA	A1	STA	-	baa2
Morgan Stanley Bank AG	commercial	3	A1	STA	A1	STA	-	baa2
Bausparkasse Mainz AG	commercial	2	A2	NEG	-	-	-	baa2
Morgan Stanley Europe SE	commercial	1	-	-	A1	STA	-	-

Notes: i. "Co-operative banks" refers to member banks of Bundesverband der deutschen Volksbanken and Raiffeisenbanken (BVR), "public banks" refers to members of Sparkassen-Finanzgruppe (S-Finanzgruppe), "development banks" operate under a public mandate and are subject to certain competitive restrictions, "commercial banks" refers to all other entities listed; ii. S-Finanzgruppe has a Corporate Family Rating; iii, The table shows each bank's stand-alone credit strength as indicated by our Baseline Credit Assessment (BCA). Long-Term Bank Deposit, Senior Unsecured and Junior Senior Unsecured Ratings reflect a bank's stand-alone credit strength, plus affiliate and government support considerations, and our Advanced Loss Given Failure analysis. iv, Siemens Bank GmbH and Volkswagen Financial Services AG are specialised finance institutions rated under our Finance Company methodology and - together with development banks - are excluded from ratio calculations in this report.

* ING-DiBa AG's ratings are based on the financials of ING Holding Deutschland GmbH

** Hamburg Commercial Bank AG will transfer from public to commercial sector before 2022

*** The deposit and issuer ratings of Bayerische Landesbodenkreditanstalt are BACKED deposit, issuer and junior senior unsecured ratings that benefit from a guarantee by the Free State of Bavaria (Aaa stable)

Source: Moody's Investors Service

Rating universe

We rate 45 German credit institutions, including development banks, specialised lenders and public-sector banking associations (Exhibit 3). These institutions account for 80% of banking system assets as of December 2018. Unrated banks mainly comprise smaller regional and specialised institutions and the small, local cooperative and savings banks. The average (asset-weighted) rating for German banks as of 15 November 2019 was A1 for long-term senior unsecured debt and deposits. The average (asset-weighted) Baseline Credit Assessment (BCA), our assessment of a bank's standalone financial strength, was baa2[2].

Operating conditions are deteriorating as ultra-low interest rates coincide with a weaker economic outlook

With domestic reference interest rates negative [3] for medium- and even long-term loans, German banks have been struggling to defend their revenue base, which for most has traditionally been focused on the generation of net interest income.

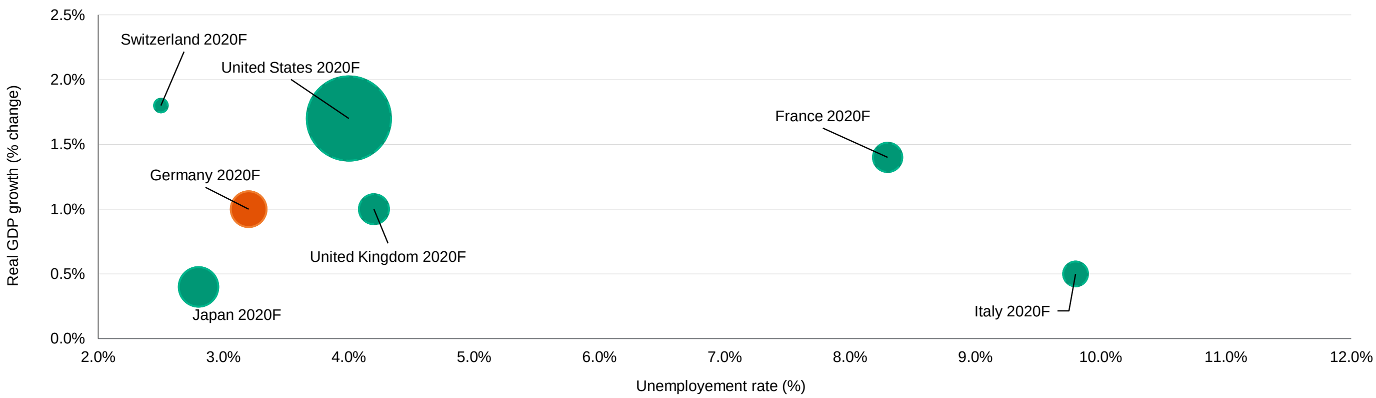
On the other hand, low interest rates, together with wage growth driven by a tight labour market (unemployment remains below 4%) will bolster domestic consumption and private household disposable income and will continue to support both demand for residential real estate and the debt repayment capacity of borrowers. Modest household indebtedness will also provide stability for the banks' domestically focused loan books.

We expect real GDP growth of 0.6% in 2019 and 1.0% in 2020, down from 1.5% in 2018, and below potential growth, which we estimate at 1.5%. Risks to our forecast have increased, however, given the prolonged uncertainty around the terms of the planned British exit (or Brexit) from the European Union (EU), and that international trade disputes, oil prices, as well as stress in emerging markets and in the euro area could weigh on global growth.

Germany's highly competitive corporate sector will benefit from solid domestic demand, but the outlook for global trade has weakened in light of growing trade tensions. Accordingly, we have negative outlooks for industry sectors that are at the core of the German economy, including the automotive sector, automotive parts suppliers, chemicals and manufacturing. Scepticism about the outlook for the export-oriented German economy has also marked negative trends in business and economic sentiment surveys.

Exhibit 4

Slower GDP growth reflects global factors, while low unemployment supports domestic demand



Size of the bubble represents nominal economic output
Source: Moody's Investors Service

Low interest rates will impair banks' margins

Persistently negative interest rates and a flat yield curve[4] will maintain pressure on banks' net interest margins, their main income source. Germany's smaller, purely deposit-funded banks will be hardest hit. Their maturing loans and securities will continue to reprice at lower rates, while interest rates paid on retail deposits have in practice reached a floor, at or close to 0% (banks are usually reluctant to charge retail customers for deposits, but have been opening up to this option recently). Margins on new lending will also remain under pressure due to intense interbank competition in residential mortgage and corporate lending, paired with the ability of market-funded institutions to pass on significantly more competitive funding levels to their clients.

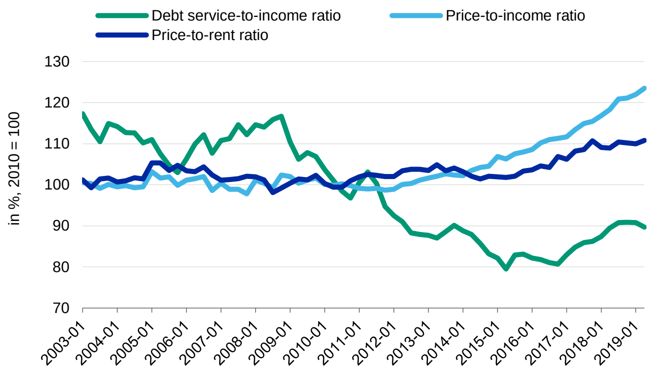
House price inflation will decelerate

After years of unabated price growth, strong demand for German residential real estate has remained broadly intact, but conditions for continued price rises have turned less favourable.

Very low mortgage rates, as well as space and supply constraints remain supportive of high residential property prices, but wage growth has not kept pace and rental costs, though high, are starting to trail (Exhibits 5 and 6). Moreover, there is a growing political debate about the introduction of unconventional local policy measures (such as price caps) to curtail rent increases, most prominently in Berlin. This could prompt potential home buyers to switch to the rental market and lower demand from professional investors in housing markets.

Exhibit 5

Residential property prices are supported by low interest rates, but income growth has not kept and rental costs are also falling behind

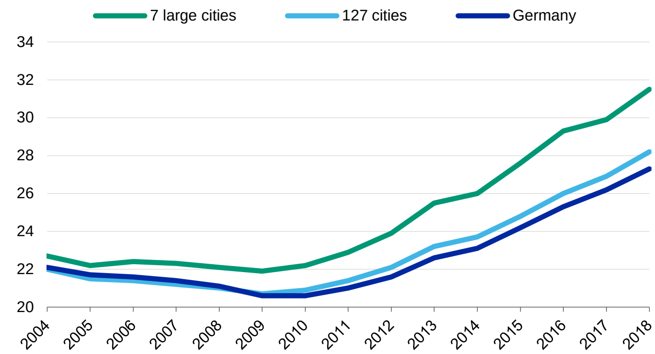


Source: Deutsche Bundesbank calculations based on data provided by vdpResearch GmbH and the Federal Statistical Office (Destatis)

Exhibit 6

Purchase prices have risen significantly faster than rents, particularly in large German cities

Purchase price/annual rent multiple of freehold apartments in Germany



Source: Bundesbank calculations for prices and new lettings of apartments based on data provided by bulwiengesa AG

Profitability pressure will intensify for many banks as ultra-low interest rates depress net interest income

German banks' main revenue base has been centered around the generation of interest income from deposit-funded lending operations. It will continue to deteriorate as persistently low interest rates progressively weaken net interest income.

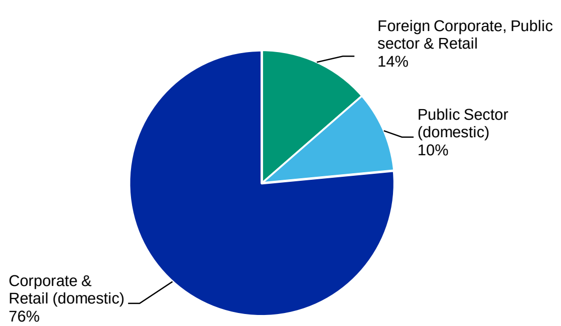
We expect banks to be less successful than in past years in avoiding interest income decline through increasing their lending volumes and shifting loan books away from low risk public-sector lending because a more challenging economic environment has already led to a greater degree of caution among most lenders.

Exhibit 7

Within three years, public sector exposures have quickly lost weight...

Lending exposures to non-banks by German banks as of September 2016

Total exposure as of September 2016: €3.26 trillion



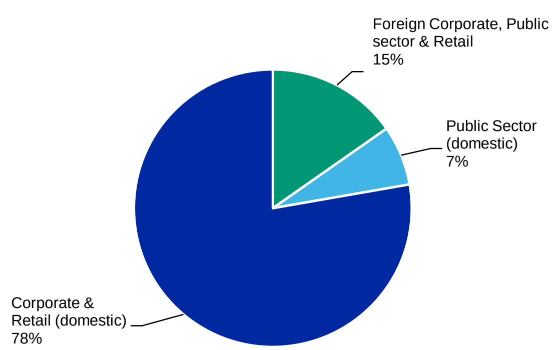
Source: Deutsche Bundesbank

Exhibit 8

... accompanied by a pronounced growth of corporate & retail lending

Lending exposures to non-banks by German banks as of September 2019

Total exposure as of September 2019: €3.65 trillion (+12%)



Source: Deutsche Bundesbank

At the same time, banks have long been hesitant to pass on negative deposit rates charged by the European Central Bank (ECB) to retail and small and medium enterprise clients. We nevertheless expect negative rates for depositors to become more widely used and at lower deposit balance thresholds. Although the gradual introduction and popular backlash against it will likely keep the pace of interest expense relief slower than the loss of interest income from loan and securities investment portfolio repricing.

Low interest rates have bolstered the debt repayment capacity of German borrowers, but the additional benefit banks can derive from further loan-loss reserve reversals (the result of better recoveries and lower new NPL formation) appears very limited, given that the level of annual loan loss provisioning at the overwhelming majority of domestic banks is already very low (Exhibit 9).

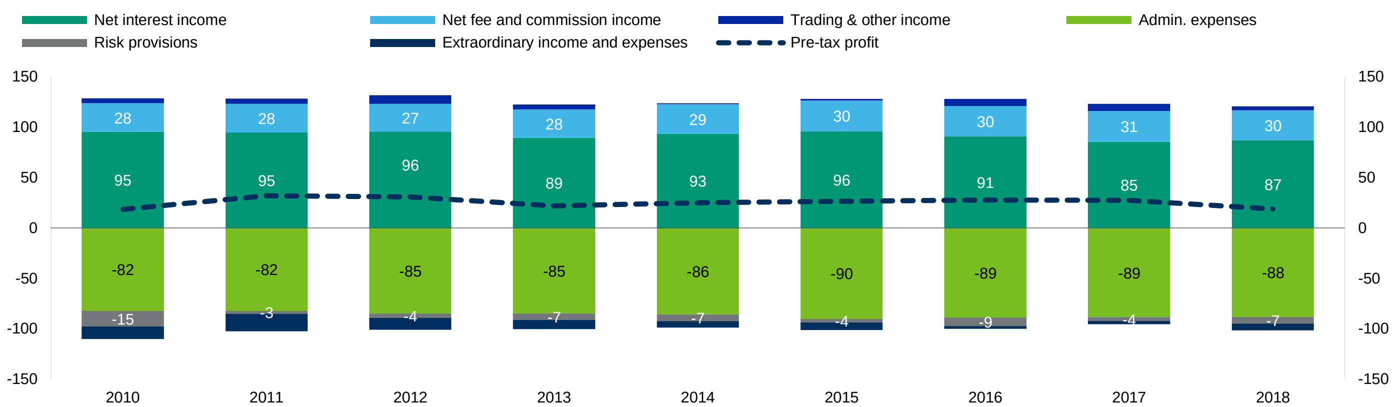
Focus on lower-risk lending products constrains pre-provision income

The success of German banks in tapping higher-margin lending or fee income generation opportunities has been limited to some select niche institutions. Pre-provision income remains subdued at German banks. We attribute this lack of operational profitability foremost to the banks' high cost bases and their focus on low-risk, low-return collateralised lending activities. In 2018, the gap between operating expenses and the net interest income generated narrowed, yet for 2019 and 2020 we expect further deterioration of the net interest income in light of the additional decline of yields along the entire curve.

Exhibit 9

Development of fee income and of expenses will need to gain momentum to absorb expected weaker net interest results in 2019 and beyond

Profit and loss accounts of German banks in € billion



Source: Deutsche Bundesbank

Attractive areas of interest and fee income are out of reach for many banks

Credit cards: Credit cards are an example of how cost-conscious client behaviour in Germany works to the detriment of bank earnings. Whereas interest rates on revolving credit card balances are around 15%, promising attractive returns for issuing banks, the market of actual credit cards with installment repayment plans is less than 20% of the 34 million German credit cards in circulation[5], with a total outstanding claims amount of €4.6 billion or about €800 per installment credit card.

Auto finance: Germany is a leading auto lending and leasing market. In principle, lenders and lessors benefit from a large volume of outstanding loans and leases in this segment, in excess of €200 billion as of year-end 2018, according to estimates by the German captive auto finance association BDA. Yet the dominance of the captive finance subsidiaries of automotive manufacturers, which command two thirds of financing volumes, according to BDA, as well as competition from a range of leasing firms outside the ownership of German banks, limit the relevance of auto loan and lease assets for rated German banks significantly (except for the rated captive Volkswagen Bank GmbH (A1/A1 stable, baa2)[6]).

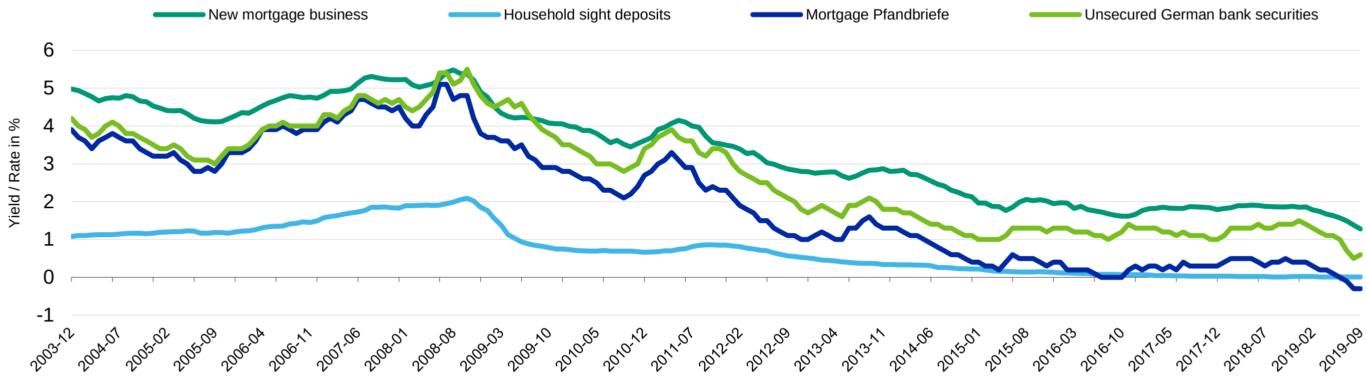
Fee income: German banks lag international peers in developing alternative sources of fee income. Though banks have started to increase fees for retail services, several consumer friendly rulings in German courts and intense competition limit the sector's ability to achieve adequate reimbursement. Historically, German clients have proven less open to asset management products than their European neighbors, when measured against the level of wealth available for investment and a persistent rise in current account deposits at German banks signals recycling additional funds into assets under management remains challenging. The German Government's plan to introduce a financial transaction tax on securities trades has the potential to further reduce customer interest in securities transactions, tax bank profits or to move trading volumes abroad, if not introduced in a coordinated fashion with other EU countries.

Continued low interest rates will hit smaller banks hardest

Larger German banks will find it easier than smaller peers to absorb ultra-low rates thanks to their access to market funding. They will be able to more closely match the development of their funding costs with that of asset returns should interest rates remain low, because most market funds can follow interest rates into negative territory whereas 0% is usually lowest rate that can be applied to retail customers. The ability to fund at negative rates will alleviate pressure from the continued downward repricing of fixed-rate mortgage loans and other long-term assets once these assets come up for renewal.

In contrast, banks funded almost entirely by household deposits, such as the smaller German savings and cooperative banks, are preparing for the painful exercise of gradually introducing negative interest rates for a growing proportion of their client base in order to restore the depressed net interest margins of their new business activities (Exhibit 10). In a survey conducted by BaFin earlier this year, close to half the managers of small and medium-sized banks indicated that under a low interest rates scenario akin to present conditions, they would consider applying negative interest rates to the deposits of retail clients. Less than one third excluded this for retail and corporate customers.

Exhibit 10
Retail deposits have so far reached a floor at zero but market funds can dip further if necessary

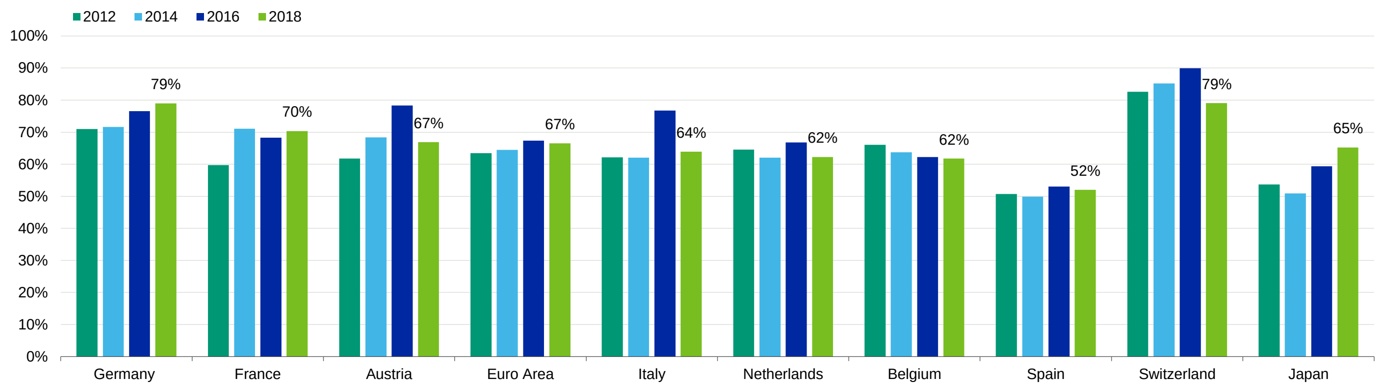


Source: Deutsche Bundesbank

German banks' cost base is persistently high

German banks have had very limited success in improving their high cost-to-income ratios. The sector's cost-to-income ratio was 79% in 2018, far higher than all other banking systems (Exhibit 11).

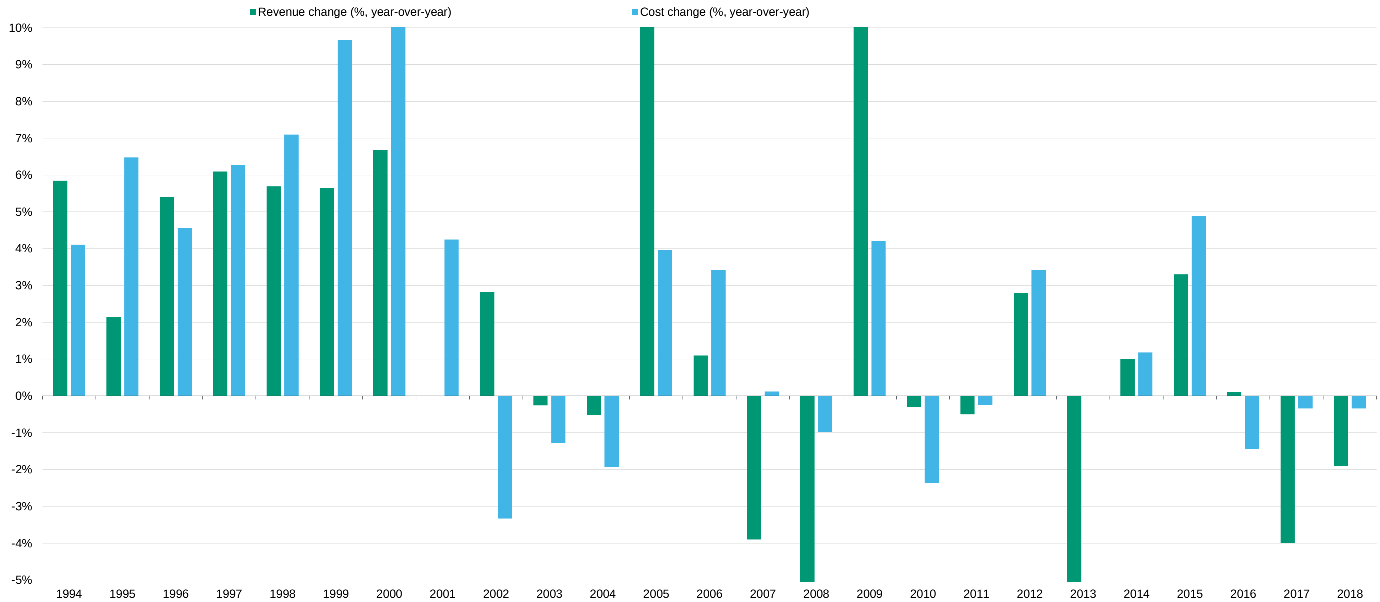
Exhibit 11
German banks' cost/income ratios are the among the highest globally



Source: Moody's Investors Service

The banks will find it hard to achieve meaningful expense savings in the short term, as investment needs related to regulatory requirements and technology improvements remain high. The track record of matching cost and revenue dynamics over the past years has been weak and is unlikely to improve in the short term in light of continued revenue headwinds.

Exhibit 12
Limited efficiency gains in German banking sector have further stagnated in recent years



Source: Deutsche Bundesbank

Cost-to-income ratios within our group of rated German banks are spread over a wide range, from less than 50% to above 100%, which highlights steep differences in the ability of banks to successfully operate within a comparable operating environment. If such large differences persist, we believe regulators and owners of high-cost industry participants may increasingly lean towards steeper restructuring measures such as sales of unprofitable business lines and continued industry consolidation.

Branch networks maintained by German banks are large and costly by international standards. At the end of 2018, there was one German bank employee per 145 inhabitants, far more than the EU average with 1 employee per 192 inhabitants. The ECB has cited one in 250 as a benchmark in its 2018 summary of business model reviews.

Many banks are executing cost-cutting measures, including mergers and acquisitions within the cooperative and savings banks segments, and digitalisation of processes and client interaction. These measures, however, have lifted initial investment costs. Furthermore, additional regulatory and reporting requirements, such as the EU's updated Markets in Financial Instruments Directive (MiFiD 2) and Payment Services Directive (PSD2) have triggered extra costs to modernise fragmented IT infrastructure.

Very low provisioning levels have supported German banks' operating income until now. We see a risk, however, that higher provisioning costs in the future and additional net income pressure may lead German banks to partly scale back on investments in technology, which would weaken the sector's technological position in an international context and vis-à-vis innovative and technology-driven non-banks.

Fintech in focus

Digital innovation in financial services is placing a premium on efficiency and opening up competition that will continue to disrupt the German banking system. (*For details on the credit implications of digital innovation, please see our report on the* Bank of the Future). Germany ranks 12th among the 28 EU member states in the European Commission's 2019 Digital Economy and Society Index (DESI), only slightly above the EU average.

Technological innovation is threatening higher margin business

German banks have traditionally focused on net interest income generation through deposit-funded lending to a thriving export-oriented economy and in the form of secured property-backed loans. They have placed less emphasis on improving products and services that would allow them to diversify their revenue streams and as a result they are vulnerable to advances in niche areas by non-bank competitors, both small and agile financial technology firms (fintechs) and Bigtech such as Google and Apple. At the same time, even their core lending is at risk of margin attrition where competitors are able to lower prices and enhance customer experience though efficient and intuitive online services.

In retail online payments, paydirekt GmbH, a cross-sector joint venture of German banks, as well as bank-sponsored peer-to-peer payments options, such as Kwitt, are struggling to take meaningful market share from the well-established global competitor PayPal and from nimble fintechs such as Sweden's Klarna or the UK's Transferwise. In turn, other than in France, the payment processing chains facilitating online payments, including acquiring and risk management services for merchants are, to a large extent, dominated by international non-bank processors, including Germany's Wirecard AG (Baa3 stable). The industry is highly competitive and prone to rapid technological innovation, and requires continued heavy investment that exceeds the investment capacity of most incumbent German banks.

Examples of product innovation in higher margin areas also include a surge in non-documentary trade finance in the form of reverse factoring solutions offered by newcomers such as CRX Markets or Greensill Bank AG.

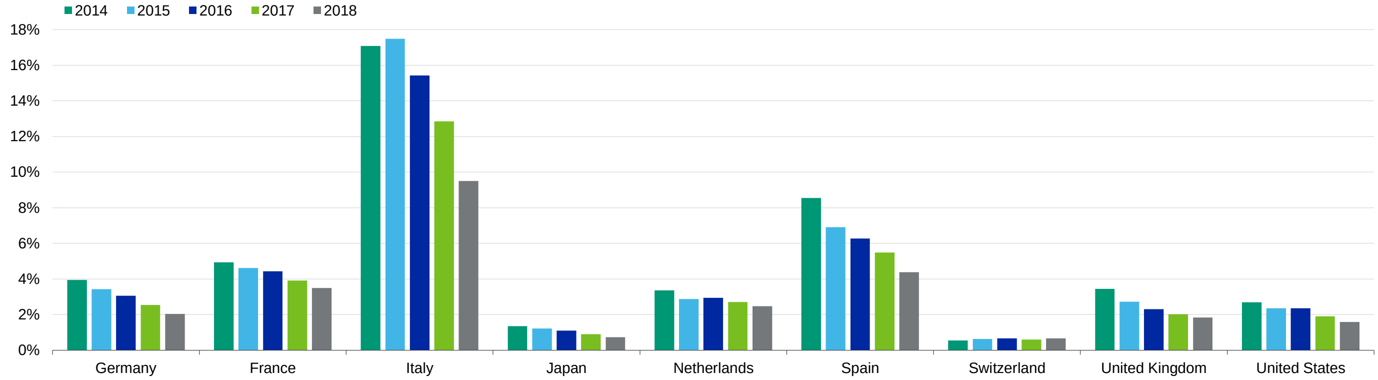
Where banks remain product manufacturers, but fail to maintain the direct client relationship, profit margins have reduced as a result of improved price transparency and greater competition. This has been the case in foreign-exchange hedging solutions for corporate treasurers, where the 360T platform, now owned by Deutsche Boerse AG, has successfully established itself as a domestic market-leading intermediary between banks and clients.

The recent entry into force of the EU's second payment services directive (PSD2) could expose German banks to similar threats from account information service providers (AISPs) that can alert their users to favourable loan or deposit rates across the market, eroding the customer inertia that has traditionally deterred bank customers from switching to rival providers.

Asset quality will remain stable

Problem loans are declining at German banks, a result of improving quality in the domestic mortgage, consumer and corporate loan books as well as stabilisation in the stressed shipping lending segment, where material efforts to reduce exposure have offset new problem loan formation. Nonperforming loans (NPLs)[7] represented 2.1% of gross loans at the end of 2018, a percentage that compares favourably with many large EU banking systems (Exhibit 13).

Exhibit 13
Problem loans have declined in recent years
Nonperforming loans as % of gross loans for rated banks by system



Source: Moody's Banking Financial Metrics

For 2019 and 2020, the performance of domestic retail loans will remain sound, owing to stable employment and low interest rates. For corporate exposures, in particular to companies with a higher dependence on export sales, continued solid performance will depend on skillful and conservative underwriting of the lenders, given headwinds from slower global growth and risks to growth related to global trade tensions and Brexit.

Focus of the corporate loan book on collateralised exposures will support loan quality, but results in real estate concentration risks

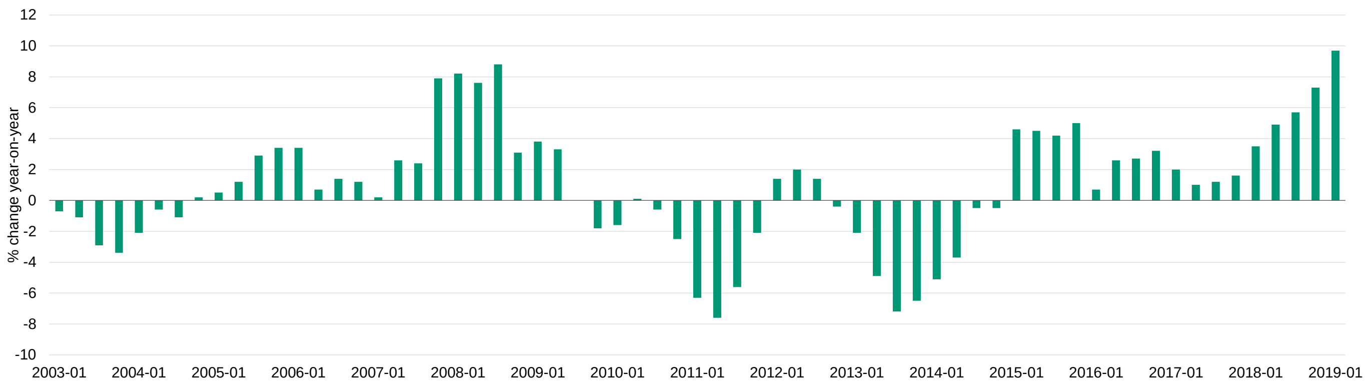
Commercial real estate (CRE) lending is an area where German banks compete successfully on a European scale, with a significant volume of non-German exposures in their lending books. Germany's large CRE lenders, which include most Landesbanks, can refinance domestic and non-domestic CRE loans on advantageous terms through well-established mortgage covered bond programmes that benefit from strong investor demand and low funding costs. We therefore expect CRE lending to remain a key part of the banks' asset mix, despite the exposure of real estate to economic downturns and to longer-term structural changes, such as changing consumer purchase habits and the growing relevance of remote and co-working arrangements.

New business growth of German CRE lenders in recent years has been foremost related to non-domestic markets, which are a growing portion of the overall portfolio mix. More than 36% of the €110 billion in CRE collateral[8] contained within German covered bond programmes as of 30 June 2019 were non-German commercial mortgage loans. The most popular markets for German banks are the UK (8%), France (7%), and the U.S. (6%). Within the German banking system, there is a wide variation of approaches to CRE, ranging from a very limited role for Germany's largest commercial banks to an almost pure domestic approach or an almost exclusively non-German approach for some specialist lenders. Jointly, the 11 German banks with double digit € billion CRE loan portfolios as of June 2019 reported an aggregate domestic and non-domestic exposure close to €230 billion, up more than 10% from year-end 2017[9].

Exhibit 14

Commercial property backed lending growth has grown dynamically in recent quarters

Growth rate of outstanding domestic and non-domestic CRE loans of German banks



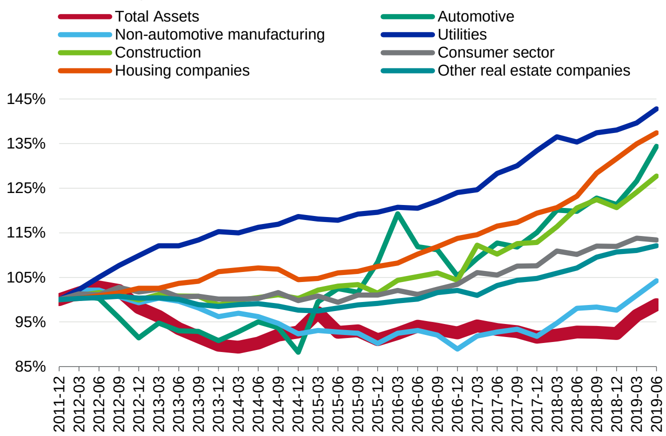
Source: Deutsche Bundesbank

The role of property-related corporate lending of the German banking system has grown faster than total assets have, in line with the growing role of corporate lending within the asset composition of Germany's banks. With the exception of the utilities sector, loans to housing companies, other real estate companies and the construction sector have outgrown most of the largest corporate sectors in terms of loan growth over the last years, as shown in exhibit 15. Overall, the lion share of the German banking system's corporate domestic exposures relates to the broader services sector category, including non-bank financials, which by far outweighs the role of manufacturing companies as corporate borrowers.

Exhibit 15

Corporate lending, in particular to real estate related sectors, has outpaced total bank assets growth...

Growth of German banks' loan books to select domestic corporate sectors and total asset growth



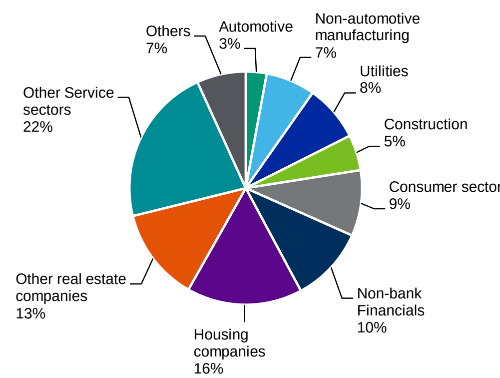
Note: Year-end 2011 = 100%

Source: Deutsche Bundesbank

Exhibit 16

... with service sector related exposures dominating domestic corporate loan books

Domestic corporate lending sector split as of June 2019



Source: Deutsche Bundesbank

In parallel to corporate lending growth, German banks have cut back their exposure to problematic shipping loans through repeated loan restructurings, sales of bad debt and securitisations, with the result that remaining exposure is now better balanced with their loss-absorbing capacity and no longer presents a significant tail risk for the German banking system.

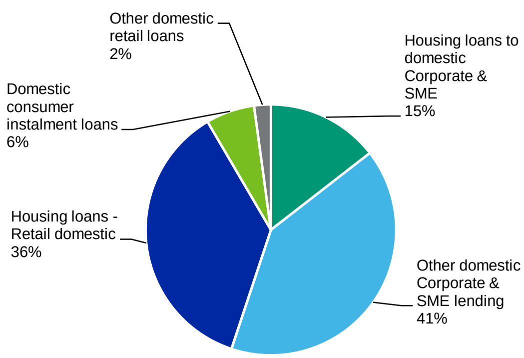
Residential mortgages are a core low risk component of German bank lending

More than 80% of loans extended to German households finance the acquisition or construction of properties. Strong demand for residential property in Germany and rising prices have contributed to a solid growth in residential mortgages outstanding, but mortgage book growth has remained moderate and sustainable (Exhibit 18).

Exhibit 17

Residential mortgage lending is Germany's key retail lending product

Split of domestic retail and corporate lending exposures of German banks as of June 2019

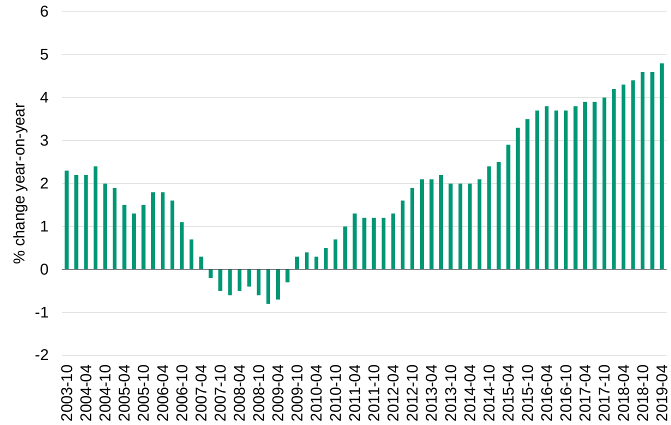


Source: Deutsche Bundesbank

Exhibit 18

Growth of residential mortgage loans to households outstanding has remained moderate

Growth rate of outstanding domestic loans of German banks for house purchases



Source: Deutsche Bundesbank

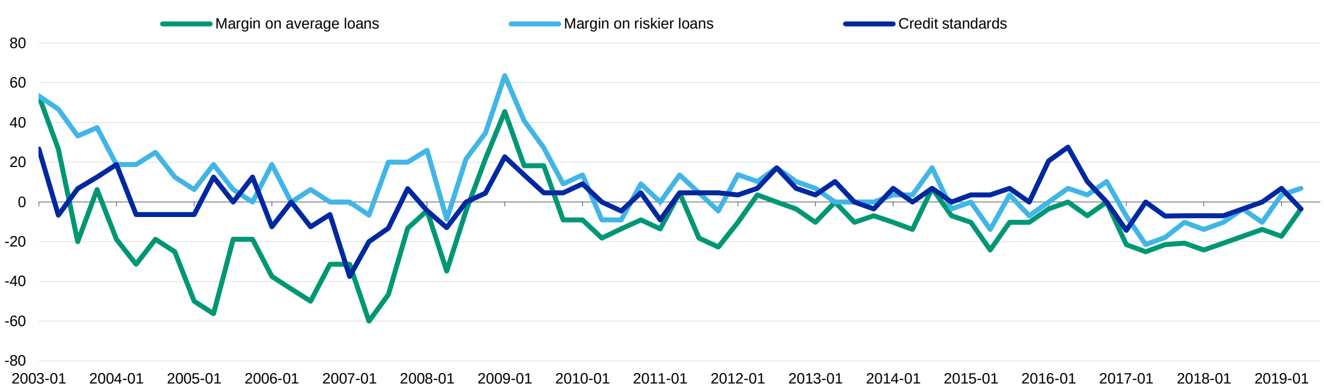
Stiff competition for new mortgage business has kept lending margins low, as shown in exhibit 19. Despite some attrition, overall mortgage underwriting practices remain sound and are supported by faster standard repayment schedules, a prevalence of loans with greater than 20% of equity[10] and extended periods of fixed interest rates, which now exceed 10 years for almost half of newly underwritten residential mortgage loans, according to Bundesbank data[11].

Non-mortgage consumer lending and leasing in Germany, which according to the Bundesbank account for approximately 27% of German household debt, represent less than 20% of the retail exposures of Germany's banks, which implies that a significant proportion of these higher margin assets resides with non-bank creditors, including e.g. specialised leasing firms.

Exhibit 19

Residential mortgage lending margin pressure showed signs of moderation year-to-date, and lending criteria have remained broadly stable

Net result of quarterly Bank Lending Survey responses for residential mortgage loans in Germany



Note: Values are the net result of positive and negative bank lending survey responses in % of all responses. Positive values mean more respondents report improving margins and tighter lending standards than declining margins and looser standards

Source: Deutsche Bundesbank

Capital ratios are sound and will remain largely stable this year and next

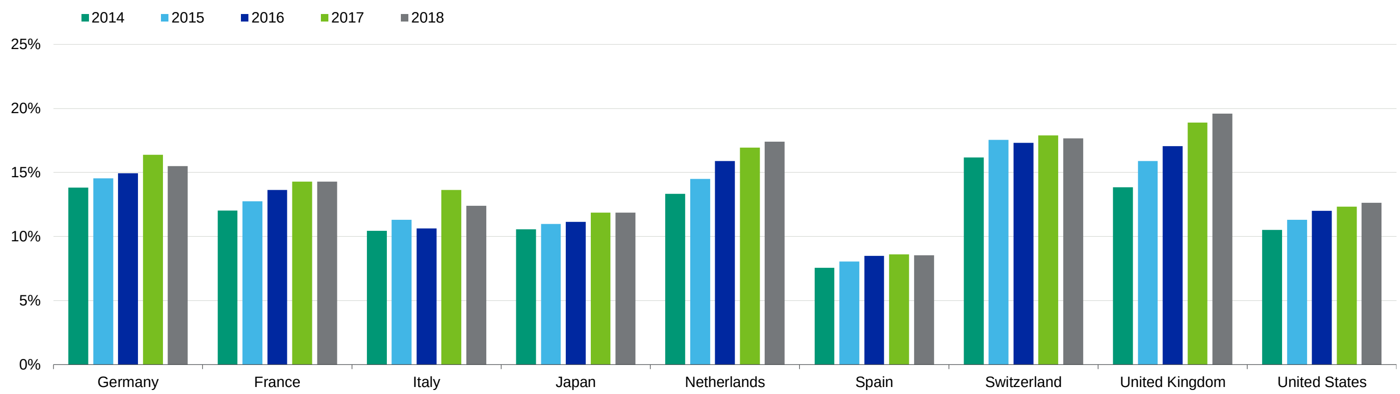
We expect German banks to maintain stable tangible common equity (TCE) ratios[12] over our outlook period. Modest earnings retention for 2019 and 2020 will largely be offset by higher risk-weighted assets, as we anticipate German banks will take advantage of the continued loan demand both corporate and retail customers to expand their balance sheets moderately.

The aggregate TCE ratio of German rated banks was 15.3% at the end of 2018, up from 7.2% at year-end 2010. During the same period, the aggregate leverage ratio (TCE to total assets) rose to 5.3% from 2.4% (Exhibits 19 & 20). These ratios are now close to the average for our rating universe in the euro area. TCE ratios among our rated banks are now mostly adequate, but leverage ratios below 5% remain a relative weakness for a few banks, most notably those with large volumes of real-estate assets on their books, since risk weights on real estate are low. All our rated banks comply with the 3% minimum regulatory leverage ratio which will become a binding measure by June 2021.

Exhibit 20

German banks' risk-weighted capital ratios declined moderately in 2018...

Tangible common equity (TCE) % risk-weighted assets (RWA) for rated banks by system

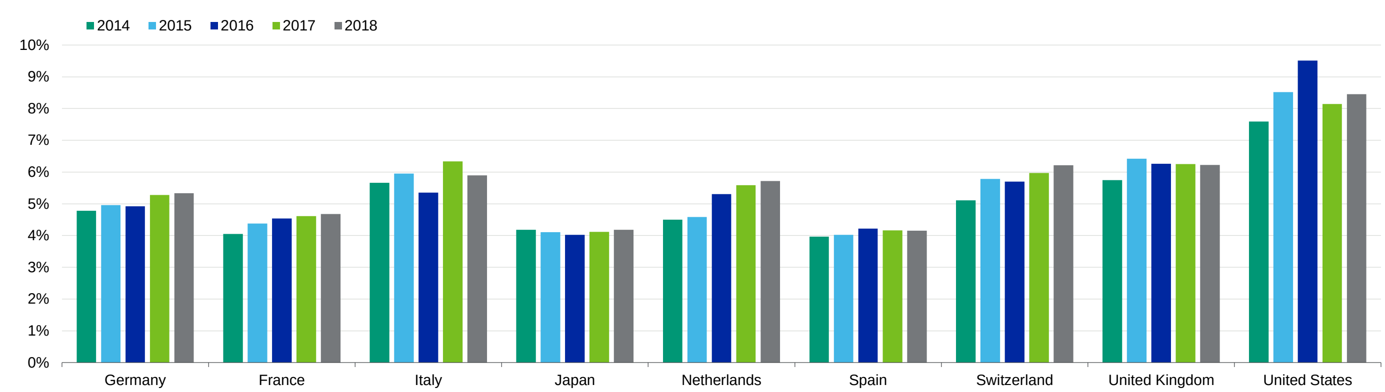


Source: Moody's Banking Financial Metrics

Exhibit 21

... whereas leverage ratios remained broadly unchanged

TCE % total assets for rated banks by system



Source: Moody's Banking Financial Metrics

Capital ratios are well above minimum requirements

The regulatory capital ratios of our rated German banks are well above Basel III minimum requirements. The combined Basel III transitional Tier 1 ratio stood at 15.2% at the end of 2018. With Pillar 1 capital plus capital conservation buffer requirements of 7% CET1 and 8.5% Tier 1 under the EU's Capital Requirements Regulation and Directive (CRR/CRD IV), and an additional Pillar 2[13] requirement and guidance that usually amounts to between 1% and 3%, our rated banks are, on average, adequately capitalised. The data available for 111 large EU banks falling under the EU's Single Supervisory Mechanism (SSM) show average Tier 1 ratios of 15.6%[14] as of June 2019, which is broadly in line with our German grouping.

German banks will benefit from long transition periods for stricter capital requirements

We expect that German banks will need to further increase their capital cushions in the years to come, by retaining most of their earnings and optimising their risk-weighted assets. This is because more stringent capital requirements are gradually being phased in.

As of July 2020, a countercyclical buffer of 0.25% of domestic risk-weighted assets will be added to minimum capital requirements, with the potential for further increases in response to loan growth in real estate lending.

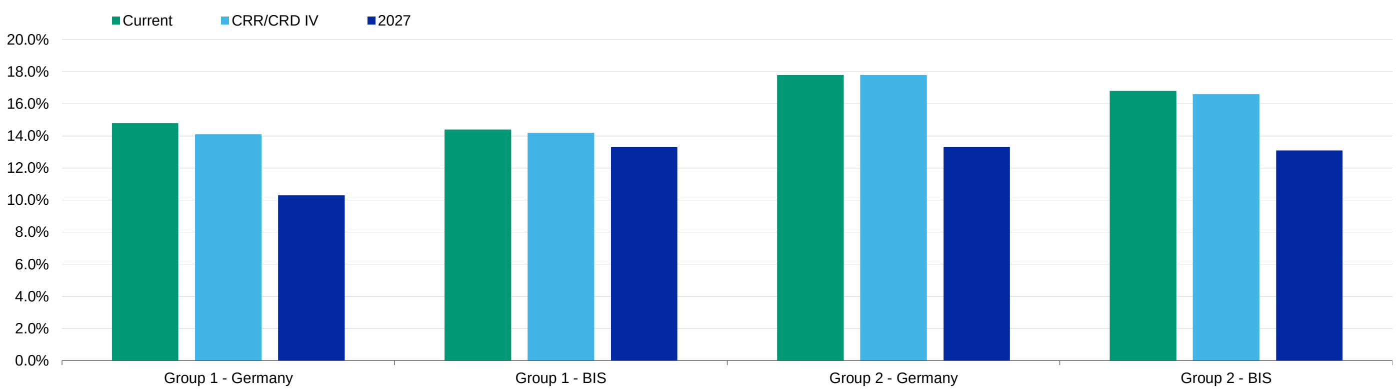
The Bundesbank's periodic Basel III monitoring report, a quantitative impact study based on 32 German banks' year-end 2018 accounts, finds that German banks have made significant progress in addressing anticipated stricter capital requirements. There is virtually no capital gap with the fully phased-in CRR/CRD IV requirements effective in 2024.

Full implementation by 2027 of the Basel III reform package - which limits divergence between the standardised approach to calculating risk-weighted assets and the banks' own internal models[15] - is proving more challenging, in particular for the seven largest German banks, as shown in Exhibit 22.

Exhibit 22

Full implementation of Basel requirements by 2027 will be more demanding for the largest German banks

Tier 1 ratio of German banks and global peers



Note: The regulatory Pillar 1 minimum Tier 1 capital requirement is at 8.5% (6.0% Tier1 and 2.5% capital conservation buffer), excluding individual further buffer requirements. Among German banks, the seven largest of the 32 banks within the study constitute "Group 1", based on absolute core capital in excess of €3 billion and an international scope of operations. The other 25 are "Group 2".

Source: Deutsche Bundesbank, Bank for International Settlements (BIS)

Taxed reserves under German GAAP provide additional loss-absorbing capacity, but pension discounting practices require ongoing adjustment

Around half of Germany's rated banks base their regulatory capital ratios on German GAAP accounting standards, rather than IFRS. These may have an additional source of loss-absorbing capacity that is not incorporated in their official CET1 or Tier 1 ratios. These are taxed reserves under article 340f of the German commercial code (HGB), which are created by booking provisions on loans and securities over and above regulatory or financial requirements. These reserves are kept out of regulatory capital ratios, thereby understating profitability and capital and are used mainly for the purpose of earnings stability.

A discussion paper by the Deutsche Bundesbank, published in January 2017, estimates 340f reserves were €47.5 billion for the German banking system as a whole at year-end 2014. Since then, we consider that they will likely have stayed roughly stable, as some banks have transferred 340f reserves into core capital while others have continued to accumulate them. As an example, the cooperative bank sector, which accounted for more than a quarter of the German banking system's year-end 2014 340f reserves, moderately accumulated additional 340f reserves between then and year-end 2018.

At the same time, banks reporting under local GAAP standards will need to use at least a part of these reserves to offset the gradual lowering of the discount rate used to book pension liabilities under German GAAP from 3.21% as of year-end 2018 (about double the rate customarily used by IFRS reporting companies) closer to longer-term market interest rates. Disclosures and approaches to dealing with liabilities from previously customary defined benefit plans vary, but the need to address the economic overhang from generously discounted pension liabilities is a common feature for local GAAP-based German bank accounts.

German banks show severe capital erosion in our forward-looking stress scenario

We conduct a scenario analysis to gauge the solvency of banks under both a base case and a low probability, highly stressed scenario that is roughly equivalent to a 1-in-25-year event. The base case is based on Moody's current macroeconomic forecasts. The stressed scenario is designed to be globally comparable and is based on a common approach to derive loan and securities losses, as well as stressed income. It includes a set of assumptions regarding loan and asset growth and income haircuts, among other variables and it looks at how these factors will affect capital.

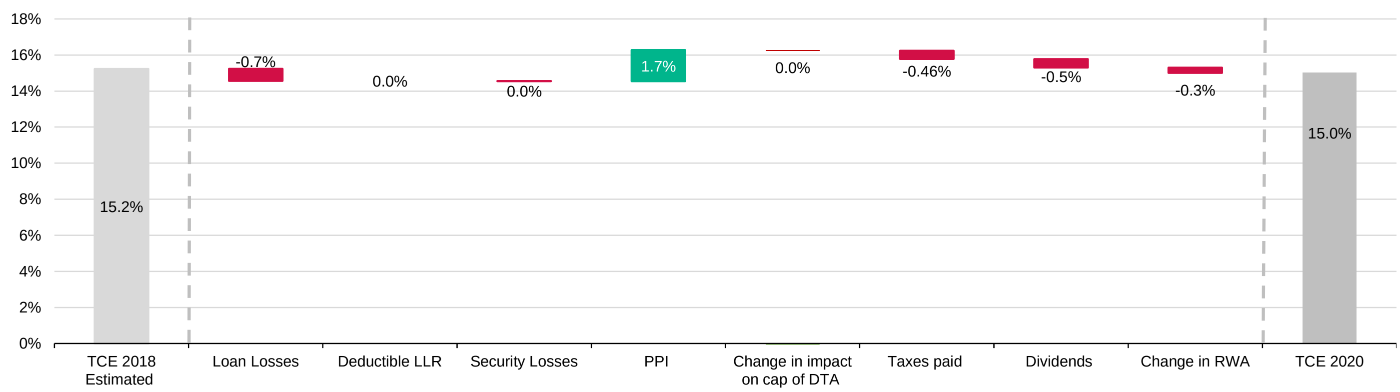
Base-case scenario: stable capital

Under our baseline (or most likely) scenario, we expect the systemwide capital ratio (tangible common equity/risk-weighted assets) of 15.2% to decline moderately (minus 23 basis points) over a two-year horizon, i.e. from end 2018 to end 2020. Income generation in the system would remain weak. At the same time, the banks still benefit from moderate loan loss provisions that absorb slightly less than 40% of pre-provision income. In addition, growth in RWAs, reflecting continued balance sheet growth and recalibrations of internal models for RWA calculation, would lower the TCE ratio by 30 basis points. [16]

Exhibit 23

German banks: evolution of capital under our base-case scenario

TCE/risk-weighted assets in %



Note: Excluding S-Finanzgruppe

Source: Moody's Investors Service

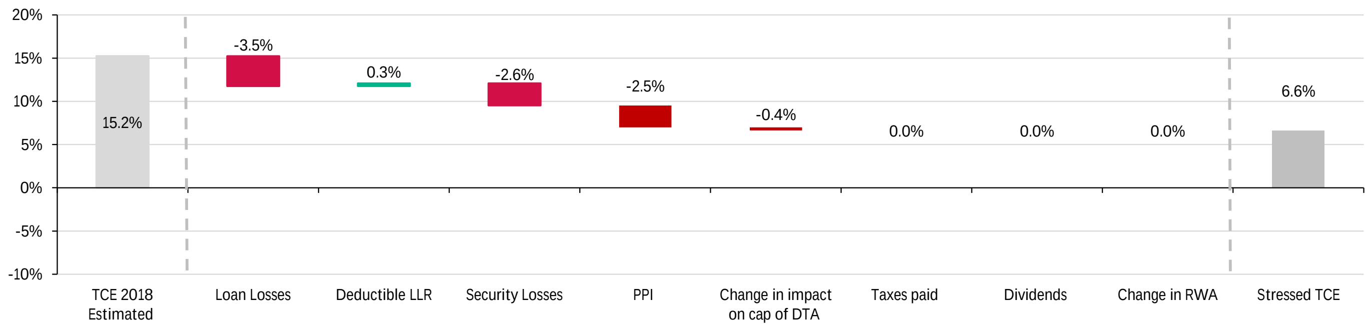
Stress scenario: Severe impact under stressed conditions

We also consider an alternative stress scenario.[17] This is not our base-case expectation but a measure of the capacity of banks to withstand highly stressed conditions. It therefore informs our opinion on the creditworthiness of the system as a whole. The results of our stress scenario on our rated banks show that the impact would be severe, leaving the system with capital equivalent to about 6.6% of risk-weighted assets at the end of the two-year horizon, compared with 15.2% at the end of 2018.

Exhibit 24

German banks: evolution of capital under our stress scenario

TCE/ risk-weighted assets in %



Excludes S-Finanzgruppe

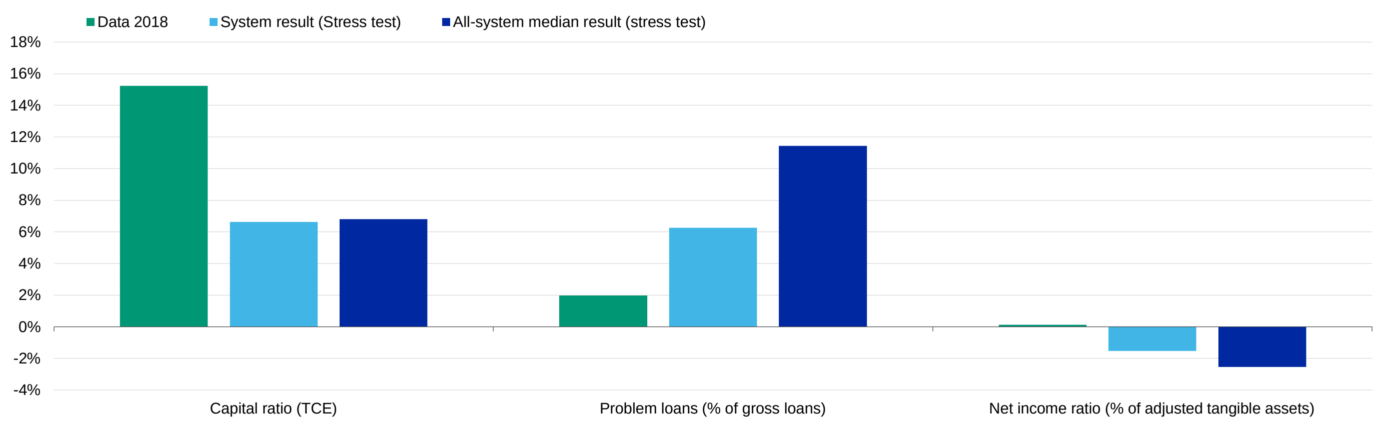
Source: Moody's Investors Service

This result is driven by nonperforming loans rising to more than 6% of gross loans. We estimate losses on securities to be 17% of the starting capital. Pre-provision income also causes losses under this scenario, due to a high cost base compared to income.

This stress test is by design severe and as such is not comparable with regulatory measures of stress capital, for example. At system level, the TCE ratio would fall by 8.6 pp in the stressed scenario (Exhibit 24). This is in line with the peers in the region, underperforming the global median. Compared to peers, this banking system is more resilient to loan losses, but more vulnerable to a fall in income.

Exhibit 25

Solvency metrics under Moody's stress test – Germany versus median banking system



Source: Moody's Investors Service

The heavy toll on the capital ratio in the adverse scenario is mainly driven by severe loan losses (-3.5% of RWA) and by high losses on securities (-2.6% of RWA), together with negative pre-provision income. The severe global assumptions applied, including a three notch downgrade of securities such as German Government Bonds (Bunds), however, do not take into account the significant hidden capital reserves under German GAAP (article 340f HGB).

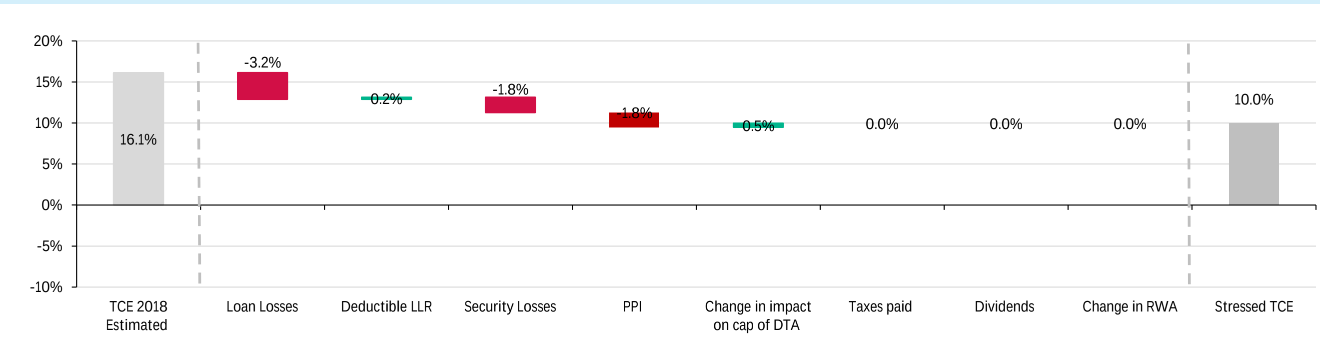
Institutional protection schemes[18] afford greater loss-absorbency for their savings bank and cooperative bank members

As an extension to our stress scenario exercise, we applied our adverse scenario to Sparkassen-Finanzgruppe (S-Finanzgruppe), the national association of German savings banks and Bundesverband der deutschen Volksbanken und Raiffeisenbanken (BVR), the national association of German cooperative banks.[19] These represent all member banks of the two large institution protection schemes in Germany. The primary savings banks and cooperative banks each have a narrow local or regional focus, but their combined market share in customer deposits is greater than 50%. The mutual support promise of a broad and diversified network of banks results in positive rating uplift for rated individual member banks, because our standalone rating assessment of the diversified group is generally higher than that of its individual constituents. The decline in capital when applying the adverse case to this sample is significantly less severe, with the stressed TCE result 340 basis points higher than for the rated banks only (Exhibit 24).

Exhibit 26

Inclusion of banking groups with institutional protection schemes significantly reduces the negative capital impact of stress scenario

TCE / risk-weighted assets in %



Note: In comparison to Exhibit 23, sample includes S-Finanzgruppe and BVR and excludes all individual member banks.
Source: Moody's Investors Service

German banks benefit from ample funding and liquidity

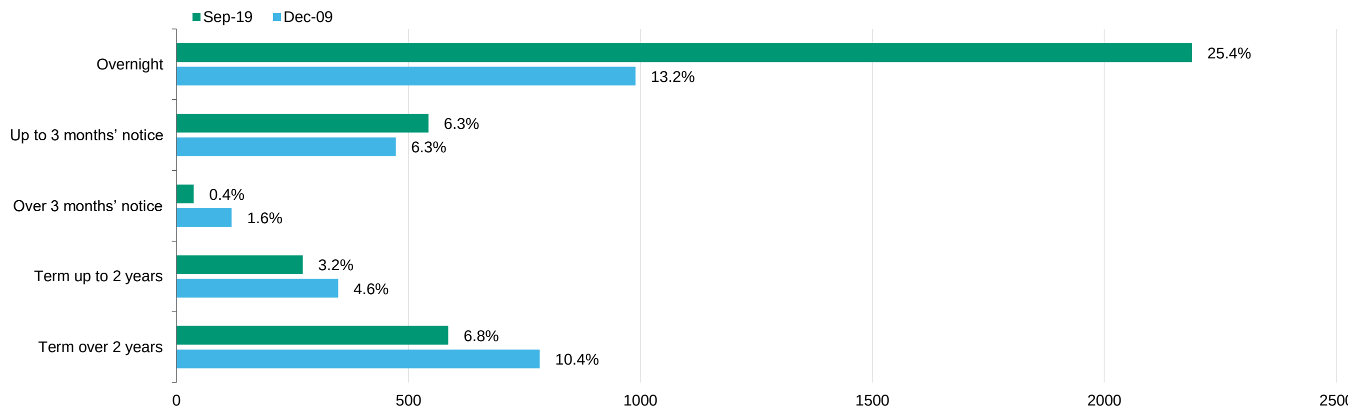
German households strongly prefer liquid assets, which has translated into a significant increase in current account deposits at German banks since the financial crisis. These deposits now cover more than a quarter of the total assets of Germany's banking system and have led to declining loan-to-deposit ratios, particularly for the small, unrated savings banks and cooperative banks. The local savings and cooperative banks have largely passed their excess deposits as intrabank funding to their rated central institutions, including DZ BANK AG (Aa1/Aa1 negative, baa2), DekaBank Deutsche Girozentrale (Aa2/Aa2 stable, baa2) and the Landesbanks. This has helped them reduce their dependence on confidence-sensitive capital market funding.

Customer deposits have historically attracted interest rates below wholesale market-funding terms to compensate for the costs associated with maintaining a diversified retail deposit base. This no longer holds true in the current low interest rate environment (shown in exhibit 10) and the increased deposit base has become costly for the banks. Given the dominant role of customer deposits as the banking system's leading funding tool, the capacity of banks to pass through negative rates to their depositors will be one lever, besides cost reductions and non-interest income increases, they can use to address profitability pressures.

Exhibit 27

The volume of current account deposits has more than doubled over the past decade

Outstanding volume in billion euro and as % of total banking system assets



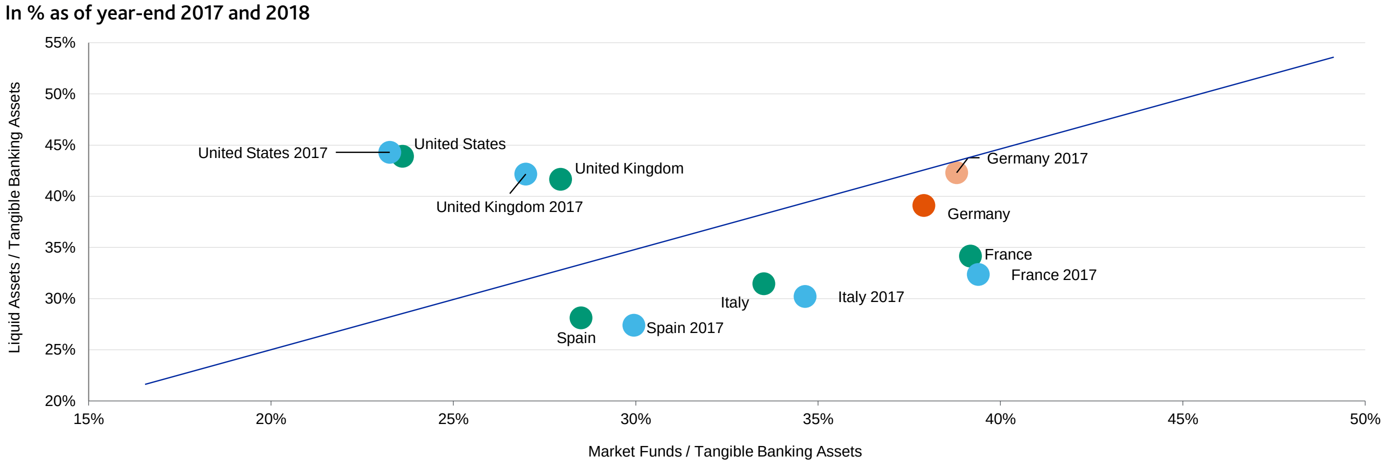
Source: Deutsche Bundesbank

The banks' remaining reliance on market funding is mitigated by the presence of public-sector guarantees for development bank funding and by the strong covered bond franchises of German banks. The stock of Pfandbriefe (German covered bonds) outstanding as of 30 June 2019[20] amounted to €362 billion, split into €244 billion mortgage, €117 billion public sector, and €2 billion shipping and aircraft Pfandbriefe. Because of a 60% loan-to-value (LTV) ceiling and a track record of zero defaults, Pfandbriefe represent a particularly cheap form of funding for German banks.

Exhibit 28

Improving reliance on capital market funding for Moody's rated banks and mitigation by substantial liquid asset balances

In % as of year-end 2017 and 2018



Source: Moody's Banking Financial Metrics

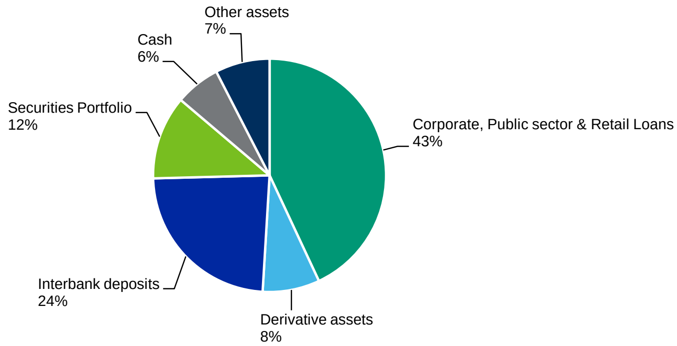
Banks comfortably comply with regulatory liquidity and funding requirements

German banks have maintained a high level of liquid assets on their balance sheets (exhibit 28). In 2018, however, weighted-average liquid banking assets of rated banks declined somewhat from 42.3% of tangible banking assets to 39.1%, reflecting strong new lending business that gave German banks an opportunity to convert parts of their ample liquid resources into more profitable loans. We believe German banks will aim to continue such conversions into loans. But the weaker macroeconomic outlook for 2019/20 limits the extent to which they can do this without increasing their exposure to assets vulnerable to the weakening economy.

Exhibit 29

Liquid assets of German banks represent a large part of total assets

German banks' total assets split as of June 2019



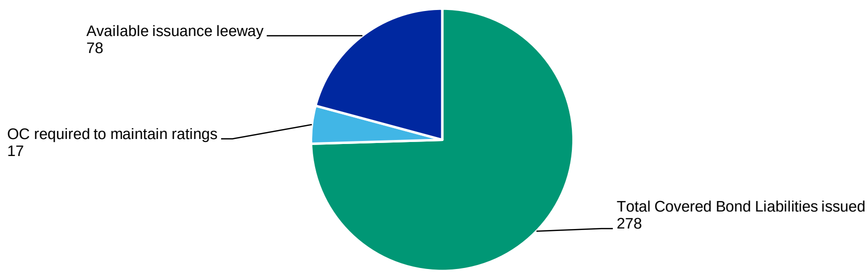
Source: Deutsche Bundesbank

German banks have recourse to ample funding and any appetite for ECB funds is primarily driven by the ECB's favourable borrowing terms. In addition, German banks benefit from the strong market position of the Pfandbrief product. Under their mortgage and public-sector covered bond programs - which offer the issuers the option to further lower funding costs through attractively priced new issuances - German banks have ample new issuance headroom before lower overcollateralisation levels would result in downgrades of their covered bond credit ratings.

Exhibit 30

German banks could on aggregate issue up to €78 billion of further covered bonds before ratings would be downgraded

Amounts in € billion



Data as of June 2019, except for three programs for which March 2019 data was used

Source: Moody's Investors Service

In terms of regulatory compliance levels, German banks show an aggregate Liquidity Coverage Ratio[21] that is well above minimum requirements. Based on Basel III monitoring data of 32 German banks published by the Bundesbank, all were in compliance with 100% LCR minimum levels as of December 2018, with the seven largest banks having an average LCR of 137% and the remainder having an LCR of 182%.

German banks will generally be comfortably in compliance with the minimum requirements for own funds and eligible liabilities[22] (MREL) that are in the process of being set by the Single Resolution Board (the European Banking Union's resolution authority) and German financial regulator BaFin. This is because under Germany's transposition of the EU's Bank Recovery and Resolution Directive (BRRD), the largest part of senior unsecured bank debt issued before 21 July 2018 was statutorily subordinated and placed pari passu with junior senior unsecured bonds (often referred to as "senior non-preferred"), making it MREL-eligible.

German banks in a position of overcompliance with MREL position will have leeway to replace maturing MREL-eligible instruments with cheaper senior unsecured liabilities (often referred to as "senior preferred" debt). Banks' new issuance plans will reflect the individual circumstances and degrees of MREL compliance of each institution.

Lower car sales in key countries add risks for captive lenders and auto ABS

Auto finance originators are taking measures in response to stalling car sales in the main European markets, a credit negative for auto lenders and securitised transactions. In Germany and the UK, captives are expanding into the used-car segment due to saturation in the new vehicle market. We also expect captives to increase origination of balloon loans or leases with residual value risk in other European markets, potentially forcing non-captives into riskier origination practices in order to compete.

Stalling new vehicle sales in Europe prompt additional support measures by captives. It follows a long period of growth, attributable to highly supportive financing offerings by captives in a prolonged low interest-rate environment. The latter is instrumental in promoting lease and lease-type products.

Strategies to increase new car penetration rates are reaching their limits in the Anglo-German market. Measures to further reduce monthly installments and attract new customers are near exhaustion, as there is limited scope for higher origination of balloon loans and leases with residual value. Moreover, captives will not be able to indefinitely extend the maturities of financing products because longer tenors reduce residual value accuracy and can raise the frequency of customers returning their vehicles with negative equity.

Saturation of new car financing means captives will increasingly focus on used cars. The used-car market represents a strategic consideration for captives, given the relative size of the market and their lower penetration rate for used vehicles. However, exposure to technological obsolescence risks will increase among captives and their securitised transactions, as they increase their RV exposure through lease-type products in the used-car area. Captives are at risk of becoming holders of a significant fleet of unutilised combustion-engine vehicles, amid an evolving regulatory framework accompanying the carbon transition process.

German covered bonds exhibit strong collateral characteristics

Increasing German real-estate prices, both residential and commercial, are broadly credit positive for German covered bonds. While there is higher equity for mature loans to cover potential losses, the bonds already benefit from the statutory protection provided by Germany's covered bond law, the Pfandbrief Act. The 60% loan-to-value (LTV) threshold prescribed in the Pfandbrief Act ensures that only loan parts equal to the first 60% of a property's lending value are eligible for cover pools. Not only is this 60% LTV threshold lower than in most other covered bond laws, but the use of lending value as opposed to market value for property valuations is also conservative.

On 21 August 2019, the Association of German Pfandbrief issuers (vdp) and its member banks announced minimum standards for the issuance of green mortgage covered bonds (Grüne Pfandbriefe). Grüne Pfandbriefe are backed by mortgage loans that refinance energy efficient properties that meet certain minimum standards. The initiative of the German Pfandbrief banks is credit positive because it will diversify the issuer's investor base and make new funding sources available to increase the issuer's green mortgage lending. Yearly reports on impact investing will increase transparency of use of proceeds. The replenishable nature of the cover pools gives issuers the opportunity to further improve standards as market evolves.

Likelihood of government support for large banks is moderate

German banks operate under the EU's resolution regime, the BRRD, under which, in the event of bank failure, losses are primarily borne by equity and debt holders. Germany has transposed the BRRD into national law and since modified its rules several times to reflect both amendments of the BRRD and national idiosyncrasies.

The last modification, effective since 21 July 2018, more closely aligned German law with the EU directive in terms of the ranking of newly issued senior unsecured bonds (see Funding section above). German banks now have the option to issue senior unsecured bonds without complex features, either in junior senior format - i.e. designated for bail-in - or as senior unsecured instruments.

Junior senior unsecured bonds are specifically designed to absorb losses in a bank failure once subordinated debt instruments have been exhausted and are therefore eligible for MREL. With the 2018 law amendment, German lawmakers also clarified that all outstanding plain vanilla senior unsecured bank bonds will rank at the junior senior unsecured seniority level (i.e. MREL-eligible).

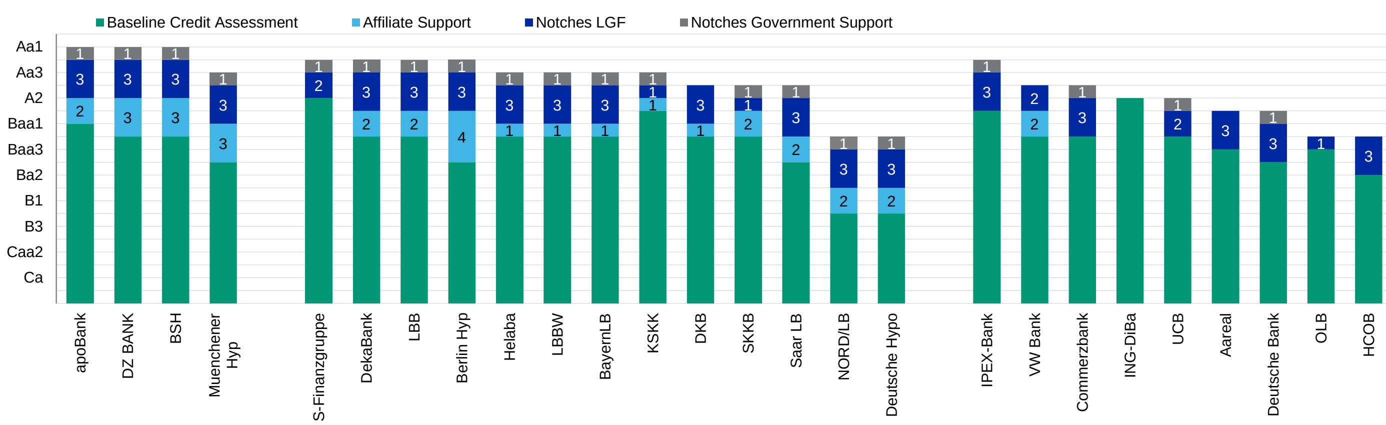
In line with our practice in other European countries where such junior senior debt classes have been established, we believe the likelihood of government support for the instruments is low, which results in no rating uplift.

At the same time, we continue to assume there is, at best, a moderate likelihood of government support for bonds ranking at the level of senior unsecured ("senior preferred") or above, including, for instance, institutional deposits. This moderate support assumption, which results in one notch of uplift to their credit ratings, applies only to instruments issued by banks or member banks of banking groups that are systemically important for the German financial system. For all other German banks, we assume a low probability of government support, resulting in no uplift for any of their ratings.

The government support considerations currently included in our senior unsecured debt and deposit ratings (Exhibit 31) reflect the fact that we consider a large number of rated German banks to be systemically important, either because of the institution's significance for the banking system or because it is part of the two - in our view - systemically important sectors; cooperative banking and public-sector banking.

Exhibit 31

Selected German banks' long-term senior unsecured debt, deposit and issuer ratings and their components



Note: Aa2 of S-Finanzgruppe is a corporate family rating. Deposit, senior unsecured debt or issuer ratings for select banks with assigned BCA shown, except where BCAs are derived directly from parent, for full rating details please refer to Exhibit 3; banks' full names included in this chart are shown in the endnote[23]

Source: Moody's Investors Service

Moody's related research

Sector and Macro Profiles:

» Covered bonds – Germany: Germany - Legal framework for covered bonds, July 2019 (1178095)

» Banking System Profile Germany, December 2018 (1144148)

» Germany Macro Profile: Strong+, October 2019 (1118518)

Sector and Issuer In-depth:

» Kreditanstalt fuer Wiederaufbau: Germany's largest development bank faces twin challenges from low interest rates and rising costs, October 2019 (1182800)

» Deutsche Bank AG: Sweeping revamp of business model will be credit positive when and if achieved, July 2019 (1182309)

» Government of Germany – Aaa Stable: Regular update, July 2019 (1183081)

» Bank Stress Tests - Global: Frequently asked questions about Moody's approach to stress testing, July 2019 (1124169)

» Cross-Sector - Germany: Germany well placed to withstand the impact from rapid population ageing, June 2019 (1164623)

» Stress Testing Banks: A Globally Comparable Approach, November 2016 (1044659)

Rating actions:

» Moody's affirms several German banks' ratings, changes outlook to negative from stable, October 2019 (411820)

Rating Methodologies:

» Banks, August 2018 (1128883)

» Finance Companies, December 2018 (1116508)

» Government-Related Issuers. June 2018 (1104983)

Sector and Issuer Comments:

» Deutsche Bank AG: Q3 2019: Continued execution in a challenging market environment, October 2019 (1200061)

» DekaBank Deutsche Girozentrale: Consolidation within the German savings banks' sector is gaining pace, October 2019 (1198377)

» Banking - Germany: Stress test survey shows extended low interest rates will pressure profitability, September 2019 (1195311)

» Commerzbank AG: Commerzbank intends to sell its most profitable asset to fund domestic turnaround, a credit negative, September 2019 (1195861)

» Residential real estate – Germany: Berlin rent cap proposal will erode margins and property values, a credit negative, June 2019 (1179828)

» Banking - Germany: Proposed countercyclical buffer for German banks is credit positive, May 2019 (1178057)

» Building and loan associations - Germany: Stable 2018 business activity is insufficient to solve structural earnings pressure, March 2019 (1163449)

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.

Definition of a banking system outlook

Banking system outlooks represent our forward-looking assessment of fundamental credit conditions that will affect the creditworthiness of banks in a given system over the next 12-18 months. As such, banking system outlooks provide our view of how the operating environment for banks, including macroeconomic, competitive and regulatory trends, will affect asset quality, capital, funding, liquidity and profitability. Banking system outlooks also consider our forward-looking view of the systemic support environment for bank creditors.

Since banking system outlooks represent our forward-looking view on credit conditions that factor into our bank ratings, a negative (positive) outlook suggests that negative (positive) rating actions are more likely on average.

Overview of Banking System Outlooks

Exhibit 32

Banking system outlook table

As of 21 November 2019

Banking System	Positive	Stable	Negative
Argentina			Negative
Armenia	Positive		
Australia		Stable	
Austria		Stable	
Azerbaijan	Positive		
Bahrain		Stable	
Bangladesh			Negative
Belarus		Stable	
Belgium		Stable	
Bermuda		Stable	
Bolivia		Stable	
Brazil		Stable	
Canada		Stable	
Chile		Stable	
China		Stable	
Colombia		Stable	
Cyprus	Positive		
Czech Republic		Stable	
Denmark		Stable	
Egypt	Positive		
Finland		Stable	
France		Stable	
Germany			Negative
Greece	Positive		
Hong Kong			Negative
Hungary		Stable	
India		Stable	
Indonesia		Stable	
Ireland	Positive		
Israel		Stable	
Italy			Negative
Japan			Negative
Kazakhstan	Positive		
Korea		Stable	
Kuwait		Stable	
Lebanon		Stable	
Malaysia		Stable	
Mexico			Negative
Mongolia		Stable	
Morocco		Stable	
Netherlands		Stable	
New Zealand		Stable	
Nigeria		Stable	
Norway		Stable	
Oman			Negative
Pakistan			Negative
Paraguay		Stable	
Peru		Stable	
Philippines		Stable	
Poland		Stable	
Portugal		Stable	
Qatar		Stable	
Russia		Stable	
Saudi Arabia		Stable	
Singapore		Stable	
Slovakia	Positive		
South Africa		Stable	
Spain		Stable	
Sri Lanka			Negative
Sweden		Stable	
Switzerland		Stable	
Taiwan		Stable	
Thailand	Positive		
Turkey			Negative
Ukraine		Stable	
United Arab Emirates		Stable	
United Kingdom		Stable	
United States		Stable	
Uruguay		Stable	
Uzbekistan		Stable	
Vietnam		Stable	

Source: Moody's Investors Service

Appendices

Germany's Macro Profile: Strong +

The Macro Profile is a rating input used to determine each bank's Baseline Credit Assessment. It is designed to capture the system-wide factors that are predictive of the propensity of banks to fail.

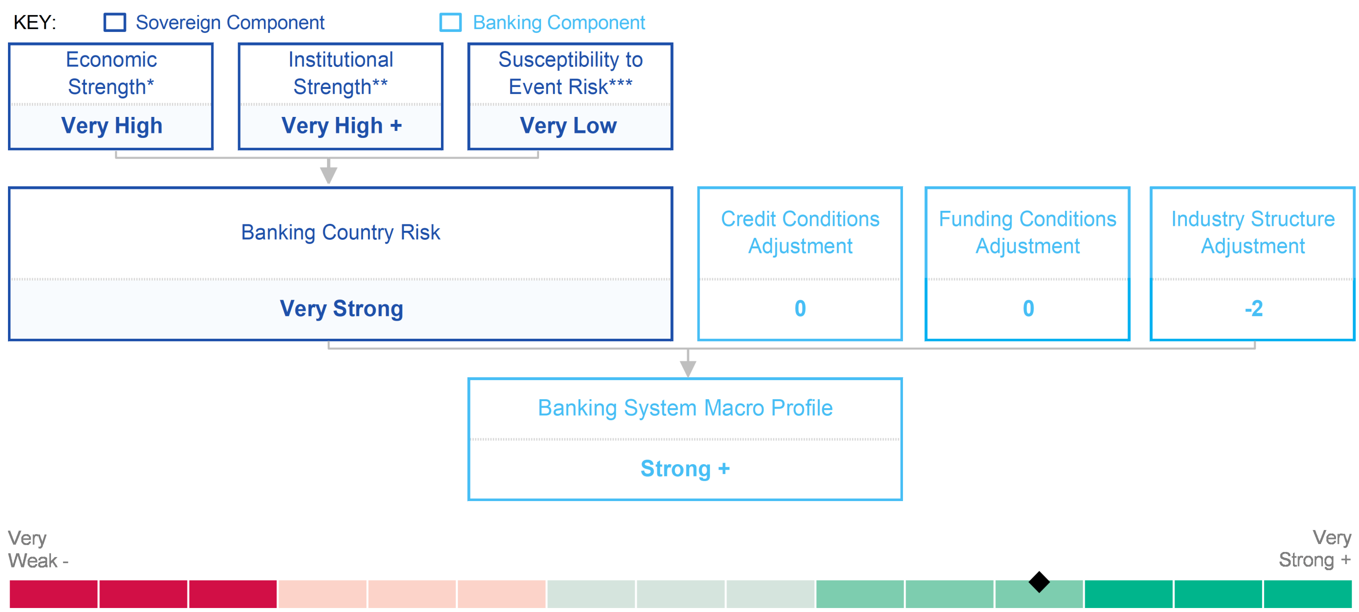
Banks in Germany (Aaa stable) benefit from operating in a very large, competitive and diversified economy and in an environment of very high institutional strength. The Macro Profile of "Strong+" reflects Germany's substantial economic strength and its institutional framework and effectiveness, which ranks among the highest possible globally, but also a banking industry that too often is unsuccessful in adapting costs to revenue changes.

We have lowered Germany's banking system Macro Profile to "Strong+" from "Very Strong-" by applying an additional downward notch adjustment to the Industry Structure score (to a total of two notches from one notch previously) to reflect an even more challenging operating environment, mostly stemming from adverse interest rate developments.

A more adverse interest rate environment, in which yields have compressed along the entire curve and risk margins have shrunk increasingly jeopardises traditional interest-incomedriven business models. The German banking sector, already among the least efficient globally, faces heightened pressure to reduce costs and grow revenues from non-interest income. At the same time, technological disruption reinforces the need to invest massively in new technologies.

Read the full report, Germany's Macro Profile: Strong +. For more information about Moody's Macro Profiles, please see Moody's Macro Profiles: A Compendium and consult Moody's Bank Rating Methodology.

Exhibit 33
Arriving at Germany's macro profile



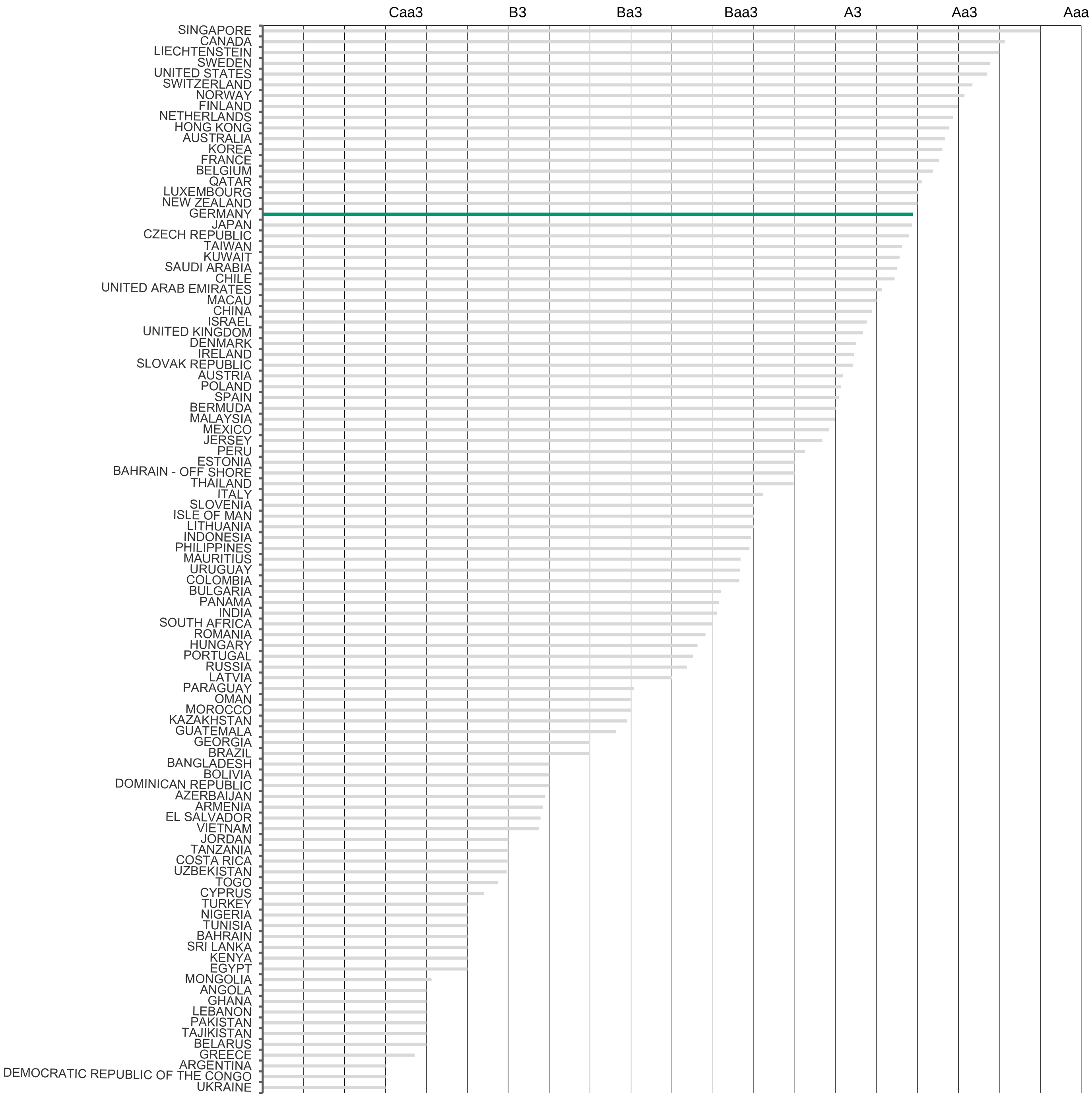
*excluding adjustment related to "credit boom"
**excluding adjustment related to track record of sovereign default
***excluding banking factors

Note: The macro profile is a rating input used to determine each bank's Baseline Credit Assessment. It is designed to capture the systemwide factors that are predictive of the propensity of banks to fail. For more information, please consult Moody's Bank Rating Methodology.
Source: Moody's Investors Service

Average Long-Term* Rating (Asset-Weighted) - Moody's Rated Banks**

Exhibit 34

Ratings data as of October 28, 2019



*Because not all rated banks necessarily have the same rating class outstanding, rating included in 'Long-Term Rating' column is determined by an internal algorithm, which is described here.

**Includes all banks assigned a BCA.

Source: Moody's Investors Service

Endnotes

1 These are Bausparkasse Schwaebisch Hall AG, Citigroup Global Markets Europe AG, DB Privat- und Firmenkundenbank AG, Deutsche Hypothekenbank (Actien-Gesellschaft), Deutsche Kreditbank AG, DVB Bank S.E., J.P. Morgan AG, Morgan Stanley Bank AG and Standard Chartered AG

2 These averages include all rated entities, and hence includes several occasions of overlaps between parent and subsidiary ratings as well as between associations and their individual members. The average long-term ratings also include backed ratings of development banks.

3 The European Central Bank kept rates on hold at its October meeting, with the main refinancing rate remaining at 0% and the deposit rate lowered to -0.5%. The ECB reiterated it expects key interest rates to remain at their present or lower levels until the inflation outlook reaches a level close to 2%.

4 The flat yield curve means there is little difference between short-term and long-term interest rates on bonds of the same credit quality.

5 as of year-end 2018, source Deutsche Bundesbank

6 Bank ratings shown in this report are deposit and senior unsecured or issuer ratings and their outlook and the bank's Baseline Credit Assessment

7 We define nonperforming loans as impaired loans and all loans 90 days past due.

8 Excluding multi-family properties and excluding savings banks.

9 Source: Jones Lang LaSalle - New business report real estate financing 1H19, October 2019.

10 based on conservative German loan-to-value measurement standards

11 For an overview on German new business residential mortgage underwriting practices, please refer to e.g. Europace's EBIx index

12 Tangible Common Equity (TCE) = (Common shares + retained earnings and related reserves + treasury stock + foreign currency translation) minus (Goodwill and other Intangible Assets) minus (Deferred Tax Assets) plus (Impact of Cap on Deferred Tax Assets). We measure capital by TCE to risk-weighted assets to ensure global data availability.

13 Pillar 2 capital is bank-specific and aims to capture idiosyncratic risks at individual banks)

14 Source: ECB Supervisory Banking Statistics

15 The reform package, sometime referred to as "Basel IV" will restrict divergence of banks' own calculations from the standardised approach to a maximum of 72.5%, among other measures.

16 Our baseline forecasts are based on econometric models and a set of assumptions. Probabilities of default per asset class are derived from our forecasts for problem loans, and general assumptions on loan book growth and write-off rates that have been adapted to the particular circumstances of the system. The model includes macroeconomic variables such as real GDP growth, unemployment, inflation and exchange rate. For investments and securities held to maturity (government, corporate and other securities), we use idealized tables based on current ratings. In line with our Rating Methodology, we do not book losses on the available for sale securities. We assume that securities in the trading book do not generate profit or losses. In general, we assume that pre-provision income, risk-weighted assets and adjusted tangible assets grow as a function of the size of the economy, although we test and adjust these assumptions against their recent and likely evolution. Dividend pay-out ratios are kept constant throughout the forecasting period, or adjusted to include reasonable changes in banks' dividend policies.

17 For a full description of our stress testing approach see Stress Testing Banks: A Globally Comparable Approach. Our approach is based on a 1-in-25-year event and consists of three main components: loan losses calculated using a multiplier approach; security losses calculated using idealized loss rates based on the ratings of the bonds held to maturity or available for sale or calculated using an expected shortfall approach for bonds in the trading book as well as equity securities; stressed pre-provision income, based on haircuts on net interest income (33%) and on non-trading, non-interest income (75%). We also take a static balance-sheet assumption, maintaining RWA or operating expenses constant.

18 An Institutional Protection Scheme is a contractual arrangement among a group of banks to safeguard their solvency and liquidity. As regulatory recognised IPSs, supervised mutual support schemes can be treated similarly to legal banking groups according to the EU CRR / CRD IV, affording a number of regulatory privileges. The most important among these privileges - which in Germany apply to both the public-sector banks (including Sparkassen and Landesbanks) and the cooperative banks sector - are capital relief on cross-sector lending and stakeholdings, and higher allowances for single borrower exposures, i.e. beyond the usual large loan limits applicable to banks, if these exposures are to fellow members in the sector.

19 To avoid an overlap among the entities subject to the stress test, this sample excludes all rated individual member banks of either institutional protection scheme.

20 Data as per Verband deutscher Pfandbriefbanken (vdp), includes members of vdp and covered bonds issued by primary banks of S-Finanzgruppe.

21 The Liquidity Coverage Ratio requires banks to hold sufficient high-quality liquid assets to fund cash outflows for 30 days.

22 The MREL requirement adds a layer of "bail-in" debt to banks' capital that is designed to take losses in a bail in, ahead of senior debtholders and institutional deposits, but after capital.

23 List of banks (abbreviation in parenthesis): Aareal Bank AG (Aareal), Deutsche Apotheker- und Aerztebank eG (apoBank), Bausparkasse Schwaebisch Hall AG (BSH), Bayerische Landesbank (BayernLB), Berlin Hyp AG (Berlin Hyp), Commerzbank AG (Commerzbank), DekaBank Deutsche Girozentrale (DekaBank), Deutsche Bank AG (Deutsche Bank), Deutsche Kreditbank AG (DKB), Deutsche Hypothekenbank AG (Deutsche Hypo), DZ BANK AG (DZ BANK), Hamburg Commercial Bank AG (HCOB), ING-DiBa AG (ING-DiBa), KfW IPEX-Bank GmbH (IPEX-Bank), Kreissparkasse Koeln (KSKK), Landesbank Baden-Wuerttemberg (LBBW), Landesbank Berlin AG (LBB), Landesbank Hessen-Thueringen GZ (Helaba), Landesbank Saar (Saar LB), Muenchener Hypothekenbank eG (Muenchener Hyp), Norddeutsche Landesbank GZ (NORD/LB), Oldenburgische Landesbank AG (OLB), Sparkasse KoelnBonn (SKKB), Sparkassen-Finanzgruppe (S-Finanzgruppe), UniCredit Bank AG (UCB) and Volkswagen Bank GmbH (VW Bank).

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