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Risk Practice

Managing and monitoring credit risk after the COVID-19 pandemic

The unique features of the pandemic-triggered recession have led banks to move more quickly to build real-time data and analytics into their credit-decision engines.

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The coronavirus pandemic is a humanitarian crisis that continues to affect lives and livelihoods around the world. It has forced regional and national economies to close for weeks and months at a time, causing hardship—sometimes of existential gravity—for many populations. As of late July 2020, more than 14 million cases have been confirmed worldwide; the virus has taken the lives more than 600,000 people. There is much more epidemiological work to do, as the pandemic remains dangerously active.

Countermeasures taken to contain the virus and save lives stopped the economy from functioning. With lockdowns now being lifted and businesses restarting, lending institutions are faced with a new and unfamiliar environment, in which they must evaluate and monitor credit risk with limited visibility and access to reliable data. Early experience is revealing a path forward, as banks distinguish the varying impact the crisis is having on different sectors and subsectors of the economy, and direct more attention to the financials and business models of individual households and companies. Data and analytics capabilities are proving essential to the solution. Leading banks are accelerating digital transformation to enable real-time monitoring and effective mining of transaction data, while automating the feeding of results into decision making. New approaches are emerging quickly not only for underwriting and monitoring but also for customer assistance and loss mitigation (which will be the topic of a separate article).

The economic damage emerges

The damage to businesses and economies is becoming more visible every day. Forecasting institutions and scenario planners are estimating significant contractions in global GDP. In the eurozone, GDP contracted by −3.6 percent in the first quarter of 2020. The severity of the outbreak and the response varies by country, factors which will affect the size of the contractions. For the second quarter, when the lockdowns were in full effect, the european Central Bank (ECB) estimates that the eurozone GDP contraction will be −13 percent. The economy is expected to recover slowly, with subdued consumer spending and business investment; the ECB foresees a eurozone GDP contraction of −8.7 percent in 2020 overall.

In the United States, the lockdown triggered massive unemployment. The US GDP contraction of −5 percent in Q1 exceeded analyst expectations; the US Federal Reserve's mid-range forecast is for a −6.5 percent contraction in 2020 overall. The Fed has estimated that pandemic-related loan losses for big US banks could reach $700 billion in a worst-case scenario ("double-dip" or W-shaped recession), pushing banks close to their capital minimums.

Data and analytics capabilities are proving essential to the solution.

Clearly, the global economy faces a serious recession and a period of recovery that will vary by region and by sector. The McKinsey Global Institute and Oxford Economics have developed (and continually update) a set of economic scenarios to help analyze the contours of recovery. In McKinsey's executive survey on these scenarios, the scenario that has consistently attracted a high share of votes (A1) suggests hefty GDP contractions in 2020: −9 percent in the United States, −4.5 percent in China, and −11.5 percent in the eurozone. In Europe, according to this same scenario, higher average risk costs are expected compared to previous crises, especially for Italy and Spain (though for Spain, not as high as in the 2011–12 sovereign debt crisis). Yet even for Germany and France, risk costs would double compared to previous crises (Exhibit 1).
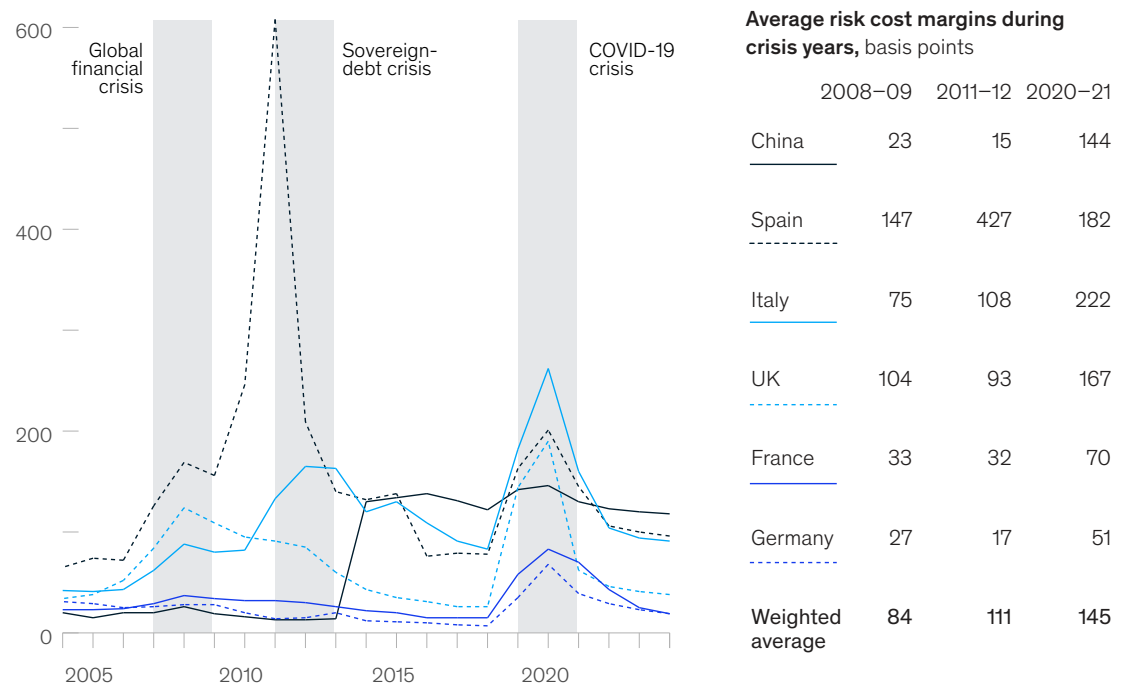
A sounder, better-capitalized financial system

The financial system is fortunately better equipped for rapid crisis management today than it was in past crises. Banks are in a much stronger capital position, partly as a result of regulatory reforms implemented since the global financial crisis of 2008−09.

Exhibit 1

According to COVID-19 recovery forecasts, risk cost margins globally will mainly exceed levels experienced in previous crises.

Estimated risk cost margins (risk costs/lending balance) 2005–25,[1] basis points

Average risk cost margins during crisis years, basis points

	2008−09	2011−12	2020−21
China	23	15	144
Spain	147	427	182
Italy	75	108	222
UK	104	93	167
France	33	32	70
Germany	27	17	51
Weighted average	84	111	145

[1]Estimates based on scenario A1 in the series of COVID-19 recovery scenarios developed by the McKinsey Global Institute and Oxford Economics. A1 is defined by an effective response, but a (regional) virus resurgence coupled with partially effective economic and political interventions. Scenario A1 correlates with a 10% global GDP contraction in 2020.
Source: Central bank data; annual reports; McKinsey Global Banking Pool

Financial institutions maintain significantly higher core tier 1 capital ratios today, and have higher provisions coverage ratios for nonperforming loans, than in previous crises (Exhibit 2).

Another stabilizing factor is the trend toward canceling dividend payouts in 2020, a move recently urged by many regulators globally, including the European Systemic Risk Board (the ECB's risk-watchdog group) and the US Federal Reserve. The Fed and central banks have also offered considerable support in the crisis. The ECB, for example, is offering favorable refinancing terms (TLTRO III) in the form of a funding line with an interest rate of −1.0 percent. This money can be used for more lending or, alternatively, redeposited with the ECB at a rate of −0.5 percent (which would result in a risk-free carry trade of 50 basis points).
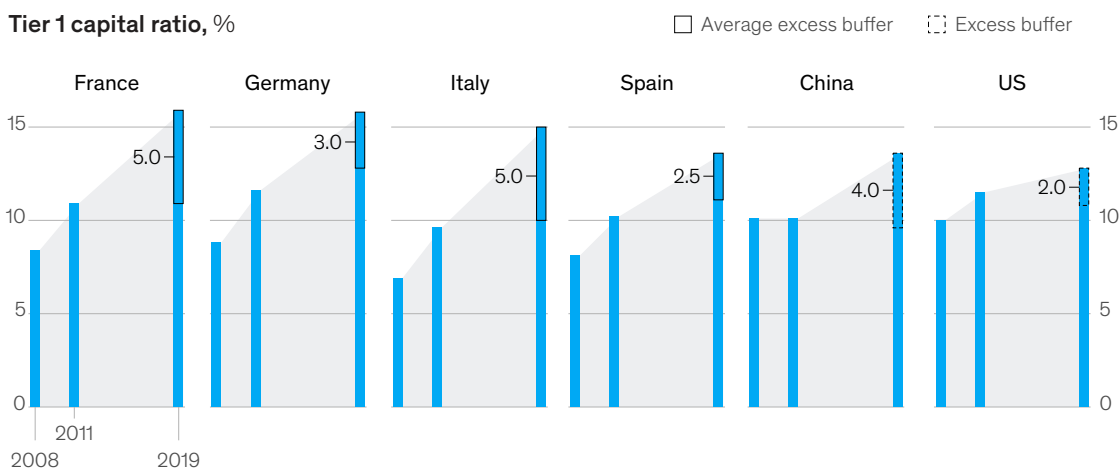
The US government's Paycheck Protection Program has supported the payrolls of millions of small businesses during the lockdown period, with loans totaling $520 billion as of early July. The Federal Reserve continues to intervene in the corporate-bond market: its programs could reach $750 billion in value, and it has extended hundreds of billions of dollars in loans to distressed corporations.[1]

Adjusting to new dynamics in credit-risk management

From the perspective of financial institutions, the conditions that the COVID-19 crisis triggered have specific implications for managing and mitigating credit risk. In the past three months, banks have been adjusting to the new dynamics and exploring potential new approaches to the challenges. The

Exhibit 2

Since the global crisis of 2008–09, the financial system has become better equipped for rapid crisis management.

Tier 1 capital ratio, %   □ Average excess buffer   ⸬ Excess buffer

	France	Germany	Italy	Spain	China	US
	5.0	3.0	5.0	2.5	4.0	2.0

2008   2011   2019

Nonperforming loan coverage ratio,[1] %

France		Germany		Italy		Spain	
2008	2019	2008	2019	2008	2019	2008	2019
43.8	50.2	38.3	39.0	40.3	53.7	31.0	42.9

Reserve coverage ratio,[2] %

China		US	
2008	2019	2008	2019[3]
116.4	186.1	83.3	140.5

[1]This ratio is the product of loan loss provisions (LLPs) on nonperforming loans (NPLs) divided by the gross book value (GBV) of the NPLs.
[2]This ratio is the product of the overall LLPs divided by the GBV of the NPLs.
[3]First half of 2019 only.
 Source: ECB; EBA; Bank of Italy; Bank of Spain; Federal Reserve; CBIRC; SNL Financial

[1] The Fed has also offered the "Main Street" lending program, designed to support small and midsize businesses, but it has attracted very few borrowers.

Certain industries did better in the crisis and struggled to meet rising demand. Others were little affected. But certain sectors have been severely challenged.

analyses gauge the impact of the crisis on national or regional economies as a whole, the impact by sector and subsector, and specific credit-risk problems requiring real-time monitoring. The analyses are already revealing five unique effects of this crisis on credit risk. The first three—the effects on underwriting and monitoring—are the subject of this paper (Exhibit 3).

In the present crisis, changes in creditworthiness differ by sector and subsector to a greater

degree than they did in previous recessions. Certain industries, such as food distributors, did better in the crisis and struggled to meet rising demand. Others, such as telecommunications and pharmaceuticals, were little affected. But as we all know, certain sectors—such as travel, transportation, tourism, and hospitality—have been severely challenged. A sector and subsector analysis of the corporate-loan portfolio of one Spanish bank clarifies such differences (Exhibit 4).

Exhibit 3

The COVID-19 crisis has triggered five major changes to the credit-risk environment.

**Dynamics, challenges, and potential new approaches to credit risk**

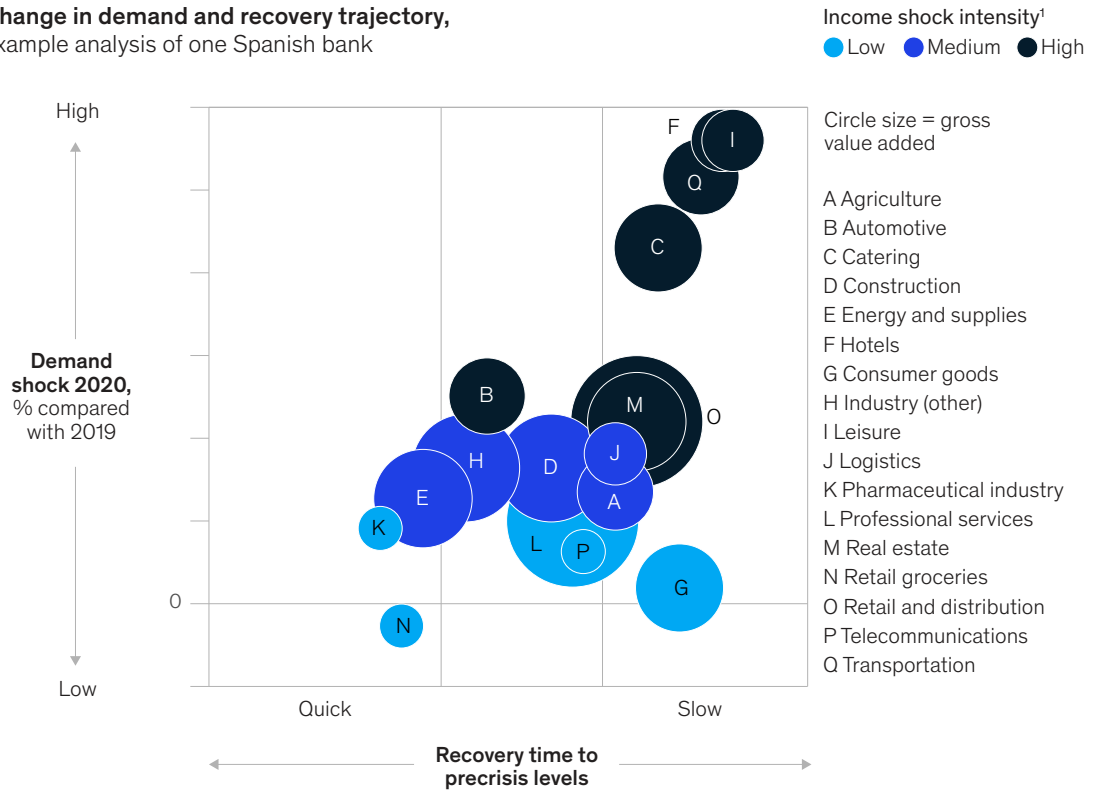|	**1**	**2**	**3**	**4**	**5**
Dynamics/ challenges	Changes in credit worthiness at sector and subsector level	Hard to differentiate between borrowers in the same sector or subsector	Pertinent data on crisis conditions are scarce, lagging, and not fed automatically into decision making	Socially responsible collections needed to meet changing customer preferences	A large wave of nonperforming exposures is beginning and must be addressed in new ways
Potential new approaches	Analyze demand shocks and recovery trajectories and translate to probability-of-default multipliers	Go deeper into borrower financials and business model to estimate resilience to COVID-19-crisis effects	Mine transaction data to derive cash flow, affordability; mine alternative high-frequency data to derive revenue trends; auto-feed results into decision engine	Shift to a customer-assistance interaction model and make it a priority in a digital transformation	Develop sector-specific solutions, augment capacity, and evaluate cost–benefit of organic versus inorganic options

Exhibit 4

The crisis-induced shock to profit and loss will differ by sector and subsector, along with recovery paths.

Change in demand and recovery trajectory,
example analysis of one Spanish bank

Income shock intensity[1]

● Low ● Medium ● High

Demand shock 2020, % compared with 2019

High / Low

Recovery time to precrisis levels — Quick / Slow

Circle size = gross value added

A Agriculture
B Automotive
C Catering
D Construction
E Energy and supplies
F Hotels
G Consumer goods
H Industry (other)
I Leisure
J Logistics
K Pharmaceutical industry
L Professional services
M Real estate
N Retail groceries
O Retail and distribution
P Telecommunications
Q Transportation

[1]Calculations are based on a sample of more than 500,000 companies in SABI database; estimated impact is a summary of more detailed calculations. Recovery trajectories are plotted to the A1 scenario developed by McKinsey and Oxford Economics; this scenario foresees a muted global recovery, including a 10% GDP contraction in the eurozone in 2020, as well as slow long-term growth. Bubble sizes reflect gross-value-added contributions, calculated as GDP + subsidies − product taxes (for the real-estate industry, 65% of the value corresponding to owner-occupied rentals has been added). Excluded are the following sectors: financial institutions (including insurance), defense, health and social security, and education.
Source: Eurostat

Still, to evaluate creditworthiness properly in the context of this crisis, banks must go beyond analyses of sectors or subsectors and assess individual borrowers. Business models can be very different from one company to another within the same subsector and will therefore be either more or less suited to survival and a faster recovery in the current environment. Some businesses have a strong online presence, for example, and others do not. Banks cannot therefore conclude from a subsector analysis alone whether or not a specific borrower is in trouble.

Furthermore, the conventional sources of data typically used in credit-risk assessments became obsolete overnight. The crisis presented itself as a powerful exogenous shock at the end of a largely benign global credit cycle. Both supply and demand were equally suppressed, suddenly. Also suddenly, the six- or 12-month-old data on which lenders relied in the past were no longer useful in evaluating the resilience of individual borrowers. Creative approaches to acquire and utilize high-frequency data are the order of the day.

The conventional sources of data typically used in credit-risk assessments became obsolete overnight.

While not the focus of this article, collections and loss-mitigation approaches will also change. What is different is that many affected borrowers never imagined that they would be unable to pay their debts. In some countries, including the United States, corporate leverage has risen to unprecedented levels in recent years. Meanwhile, bank workout departments have shrunk to a fraction of the capacity that will be needed. Governments have fortunately intervened to help unexpectedly distressed businesses through repayment holidays and other supportive policies. The interventions have made it difficult, however, for banks to assess the situation in the second half of 2020, when some of these policies are due to expire.

A second issue is that quite apart from the COVID-19-crisis dislocations, traditional collections methods (calls, email, letters) are becoming less effective as customer preferences decisively shift toward digital interaction with their banks. The large wave of nonperforming exposures (NPEs) currently forming will soon absorb institutional resources.

Toward real-time, data-driven analysis and decision making

In response to the crisis, leading financial institutions are beginning to approach underwriting and monitoring with a new configuration of sector analysis, borrower resilience, and high-frequency analytics. A key trend we have observed is that leaders are moving relatively quickly from a sector view to a subsector view and finally an obligor view, using real-time data and analytics, which then supports decision making. Most banks have

developed refined hypotheses about specific subsectors and are approaching (or have already arrived at) an obligor view of risk assessment.

Beyond this horizon are approaches using real-time business data in decision making and advanced analytics to review credit-underwriting processes. The transition to these new methods will help banks cope with the present crisis but also serve as a rehearsal for the step change that, in our view, credit-risk management will have to make in the coming months and years. The best banks will keep and expand these practices even after the crisis, to manage credit risk more effectively while better serving clients and helping them return to growth more quickly.

Assessments of sectors and subsectors have become very important in this crisis (as Exhibit 4 shows), while historical analysis can be misleading. The distinctly different profiles banks recognize within subsectors depend on varying demand patterns, supply-chain factors, and market organization. Much attention has focused on reopening the economy, but banks and businesses should also think about horizons: different regions and countries are at different stages of the pandemic and thus reopening at different speeds. Public-health officials warn that the pandemic may have new waves, which will delay sustainable reopening.

Economies that are now mostly open are experiencing trade and supply-chain distortions from lagging former partner economies. By sector, the new normal will come at different speeds as
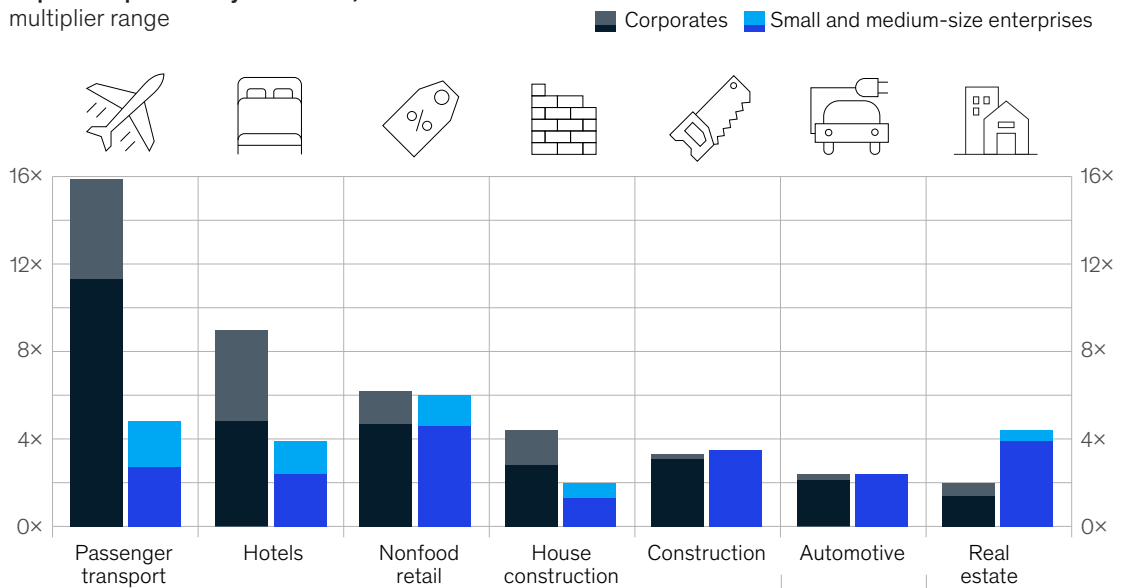
lockdowns are lifted. The recovery trajectory of each subsector will depend on the dimensions of the recession in each country and on the effect of restrictions on demand and supply after lockdowns are lifted. (Restrictions on business travel, for example, might endure even if leisure travel resumes, as it did after previous crises.) Office real estate may prove resilient in the short term, as physical-distancing protocols increase demand for space, but may suffer if remote working takes hold in the long term. Retail real estate could decline for a while in all but the most desirable locations. Lenders will need to think through these eventualities and codify perspectives in their analyses.

The analysis of sectors and subsectors translates into a probability-of-default (PD) shock. This will vary widely, according to subsector. One UK bank quantitatively analyzed the PD change for each sector by stress-testing the profit and loss of the counterparties on the basis of the expected shock and recovery trajectories for each sector, reassessing the debt repayment ability accordingly. The results proved that the PD shock can vary three or four times in magnitude. As Exhibit 5 shows, automotive subsectors might follow very different recovery trajectories: the maintenance and repair of vehicles could recover more quickly, for example, than their manufacture or sale.
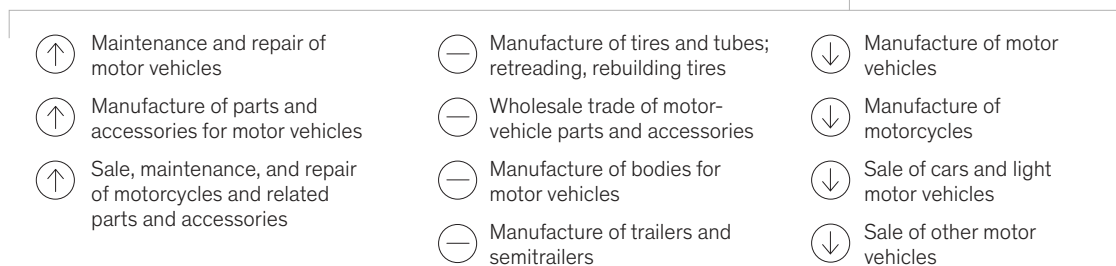
Exhibit 5

Sector analysis shows that probability-of-default shocks differ among subsectors.

Impact on probability of default,
multiplier range

■ Corporates ■ Small and medium-size enterprises

Automotive subsector focus, qualitative scale

(↑) Maintenance and repair of motor vehicles

(↑) Manufacture of parts and accessories for motor vehicles

(↑) Sale, maintenance, and repair of motorcycles and related parts and accessories

(−) Manufacture of tires and tubes; retreading, rebuilding tires

(−) Wholesale trade of motor-vehicle parts and accessories

(−) Manufacture of bodies for motor vehicles

(−) Manufacture of trailers and semitrailers

(↓) Manufacture of motor vehicles

(↓) Manufacture of motorcycles

(↓) Sale of cars and light motor vehicles

(↓) Sale of other motor vehicles

The public-health dimensions of the present crisis led one US bank to develop composite risk scores at the intersection of geography and industry sector. This approach helped the bank differentiate more clearly among borrowers (Exhibit 6).

Even at the level of individual obligors, resilience will vary. Since banks underwrite obligors, not sectors or subsectors, they will have to recognize winners and losers within each subsector. The distinction can be determined by obligors' level of financial stress and operational flexibility. Financial resilience will be determined less by pre-COVID-19 profitability than by indebtedness and liquidity—attributes that will establish a borrower's ability to weather the crisis. Operational flexibility, including the soundness and adaptability of a business model in the new environment, is determined by the cost base and

the possibility that it can shrink in line with demand. These factors can be evaluated through transaction data: current-account inflows, credit-line utilization, and the evolution of point-of-sale transactions.

In the United States, banks are using pooled corporate-treasury data, previously used for business benchmarking, to track cash-flow performance by region and sector. The importance of transaction data is also growing in Asia and in developing markets generally. There, banks have long relied on qualitative factors, which they seek to use as objectively as possible, to counter the shortage of more concrete financial data. These banks now also explore publicly available data as a means of cross-checking and validating qualitative information.

Exhibit 6

A US bank assessed the impact of COVID-19 lockdowns, using risk levels for each industry–geography intersection.

Anonymized risk levels[1] by geography with industry sectors
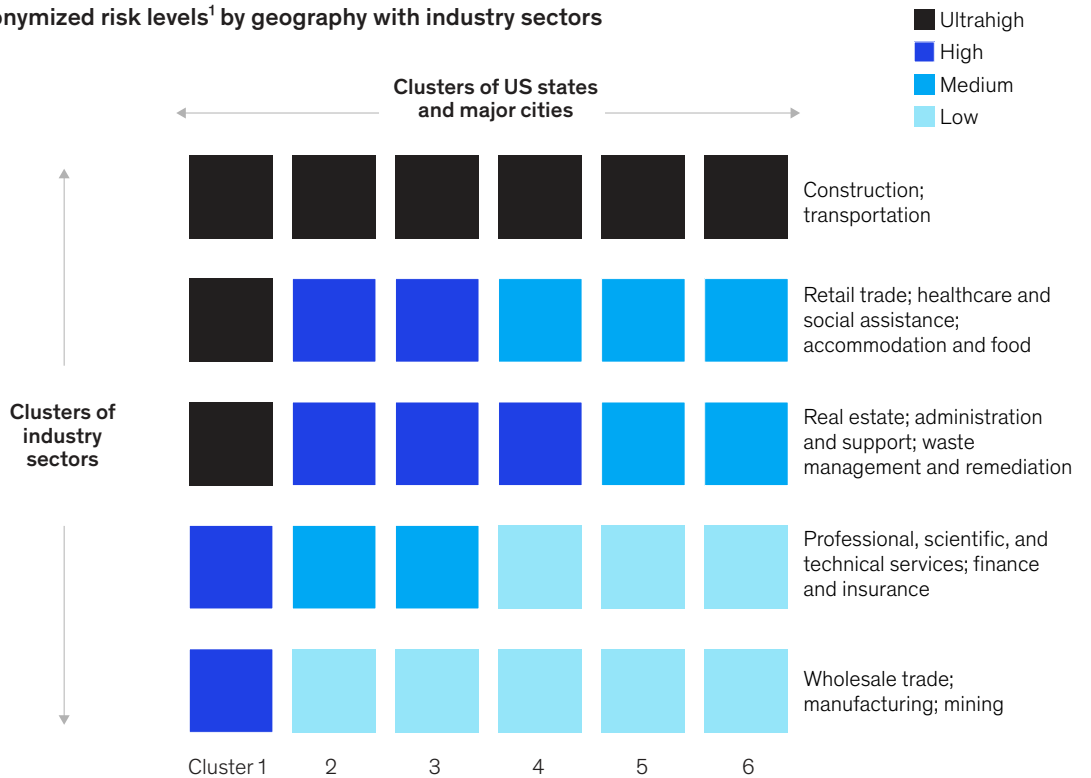
[1]Risk levels are based on a composite risk score, taking into account appropriately weighted industry and geographical factors.

Operating-model characteristics are among the qualitative factors that can predict future effects. Some are relevant for all sectors, such as seasonality or reliance on lockdown-disrupted suppliers, markets, and customers. Others will be sector specific, such as the respective shares of domestic versus international customers in parts of the hotel and hospitality sector,[2] will be sector specific. In retailing, to take another example, a healthy online presence can make all the difference (Exhibit 7).

Insights on sectors and obligors will inform the updated credit processes of banks. Consider these factors:

— *Financial data.* The latest balance sheet rather than a profit-and-loss (P&L) view is needed to reveal the cash position and leverage.

— *Debt-servicing capacity.* The credit assessment should include projections by sector (for retail banking as well).

— *Transaction data.* Access to and the inclusion of transaction data by counterparty is important, especially in sectors highly disrupted by the crisis. Movements in the current-account balance are also important.

— *Alternative data sources.* To augment older financial data, banks are using high-frequency data on the pandemic, foot traffic, restaurant reservations, weekly jobless claims, and other indicators.

— *Qualitative factors.* Portfolio monitoring should include crisis-specific questions and external data sources, such as public data on the performance of subsectors.

Exhibit 7

Within subsectors, banks are using resilience drivers to differentiate among obligors, drawing data from internal and external sources.

Measuring resilience, illustrative

Levers	Sublevers	Metrics	Proxies
Financial leverage Benchmark financial resilience at start of crisis	Core financial metrics	Profitability Indebtedness Liquidity	Pre-COVID-19 EBITDA margin Pre-COVID-19 debt-to-equity ratio Pre-COVID-19 cash ratio
	Risk behavior	Obligor risk profile	Current rating, nonperforming exposure status, days past due
Operational flexibility Assess obligor resilience within sector	Transaction data	Transaction data	Current-account inflows and outflows, net balance Credit-line utilization POS transaction numbers
	Operating-model characteristics	Sector agnostic	Seasonality (revenue % of Q2–Q3) Reliance on COVID-19-disrupted suppliers Reliance on COVID-19-disrupted customers Dependence on COVID-19-disrupted geographies
		Sector specific	Qualitative measures specific to sector

Hospitality
- ☐ Mix of guests
- ☐ Seasonality and location focus
- ☐ Hotel type
- ☐ Impact of health and safety protocols

Consumer goods and retail
- ☐ Online presence
- ☐ Online-revenue share
- ☐ Store location
- ☐ Size of store network
- ☐ Impact of implementing protocols

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[2] Domestic customers have proved to be more resilient after crises.

— *Processes and templates.* Simplified templates and preapproved limits and delegation will help shift the pipeline of applications quickly while resources and processes are adapting to the increase in problem-credit workloads.

— *Portfolio risk appetite.* To steer midterm underwriting, banks should update their risk appetite to account for the sector-specific impact of the crisis on customers new to the bank or new to lending.

Banks have not used transaction data very much, because these data are unstructured and available only in very large volumes. They are sometimes used in aggregate for transaction scores, for example, though not at the level of individual transactions. But advanced analytics has made it possible for

banks to analyze every payment that a corporate or small business makes and receives—mapped to customers, debt payments, and tax payments. Some banks are now doing this. Exhibit 8 reflects the experience of a UK bank that developed a transaction-level classification before the pandemic and embedded it in the credit-assessment engine. Now that the economy is in crisis, that engine lies at the core of the bank's credit-risk assessment. These transaction data show the extent of the crisis-related disruption at a hypothetical client with a healthy profit.

The two final points in the list above—processes and templates, and portfolio risk appetite—also demand attention. Processes should be simplified because the number of applications, including those for government-guaranteed loans, is mounting quickly.

Exhibit 8

Real-time transaction-data classification and analytics can ultimately replace financial and qualitative analysis.

Transaction classification,[1] £ thousand, disguised example

†Transaction classification–based information. Average monthly operating profit.
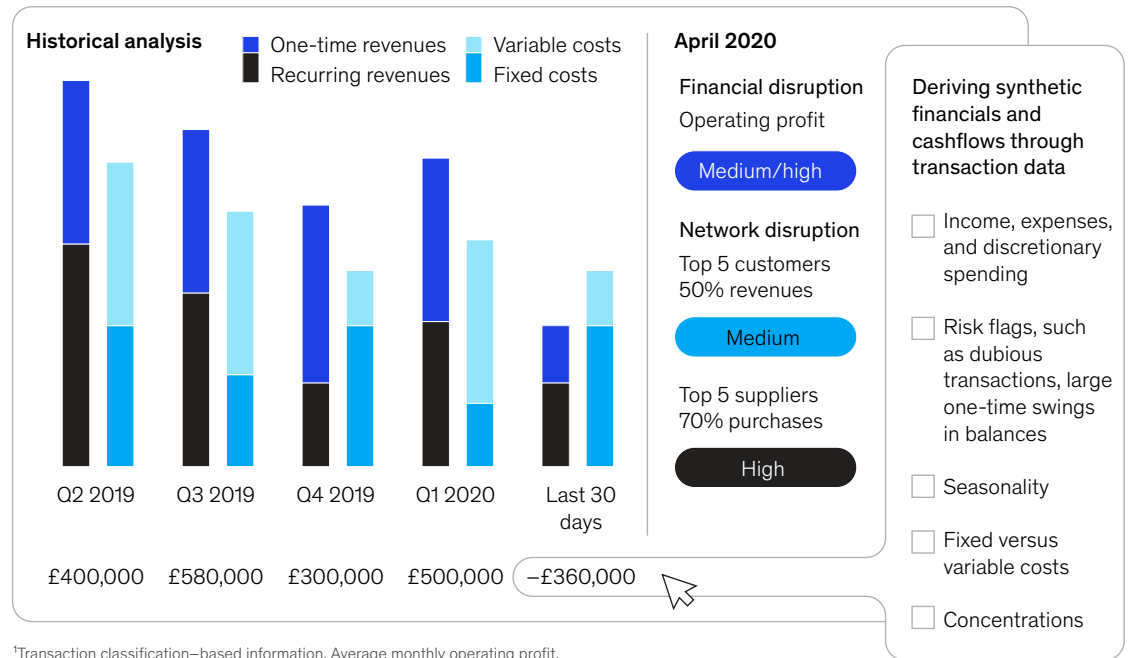
As part of the US Paycheck Protection Program, for example, banks had to process 4.5 million forgivable loans for small businesses within weeks. For many banks, a speedy response has become important not only to provide a strong customer experience but also to survive as a business: the line between liquidity and insolvency hangs in the balance. Last, banks should review their overall risk appetite and portfolio thresholds. In countries with smaller guarantee schemes, for example, banks may have to identify their priority sectors, to align with the policy environment.

The implications for banks of developing a detailed, timely understanding of the financial performance of customers are far-reaching. From the perspective of credit risk, banks will be able to make more informed, speedier credit-underwriting decisions. They will also be able to estimate risk costs and the impact of the crisis more accurately. A granular understanding of customers and real-time data about them enable better and faster interventions to support them, "nowcasting" of financials, and

better monitoring of the effects of the downtrend. These capabilities are useful not only for credit and risk functions but also for the business as a whole, since they can help shape commercial actions and customer-recovery strategies.

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New approaches to credit-risk management give banks an opportunity to shape their culture and reputation for the coming years. Most banks use a credit engine that tries to combine a sector-oriented view with data-driven analysis. The shift toward data analysis will be unfolding in the recovery from the lockdowns, and once the change is complete, banks will retain these data-forward approaches because they support better, more timely, and more differentiated credit underwriting and monitoring. The recovery is thus acting as a catalyst for the faster adoption of new techniques whose importance banks have recognized for a number of years.

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