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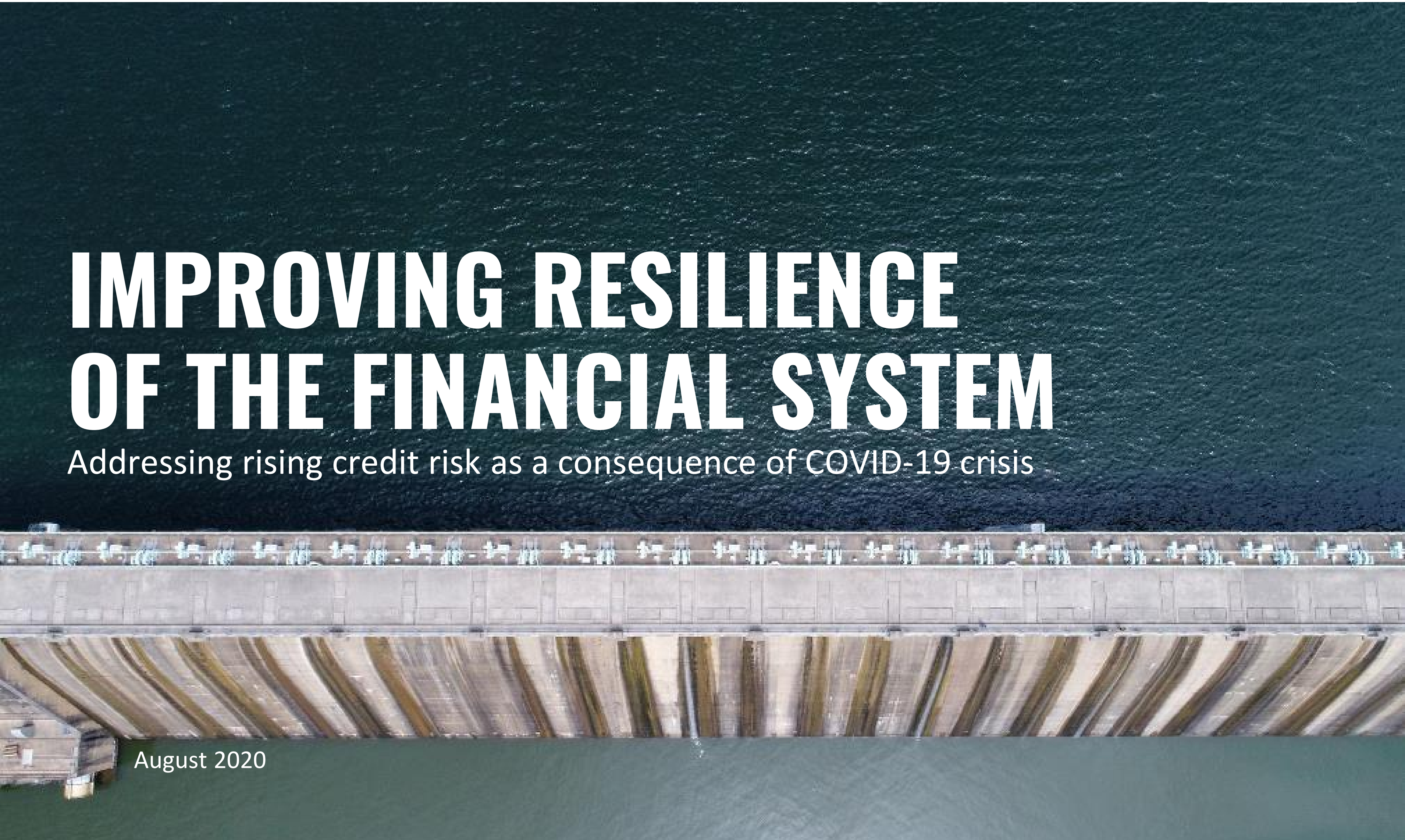


IMPROVING RESILIENCE OF THE FINANCIAL SYSTEM

Addressing rising credit risk as a consequence of COVID-19 crisis

August 2020

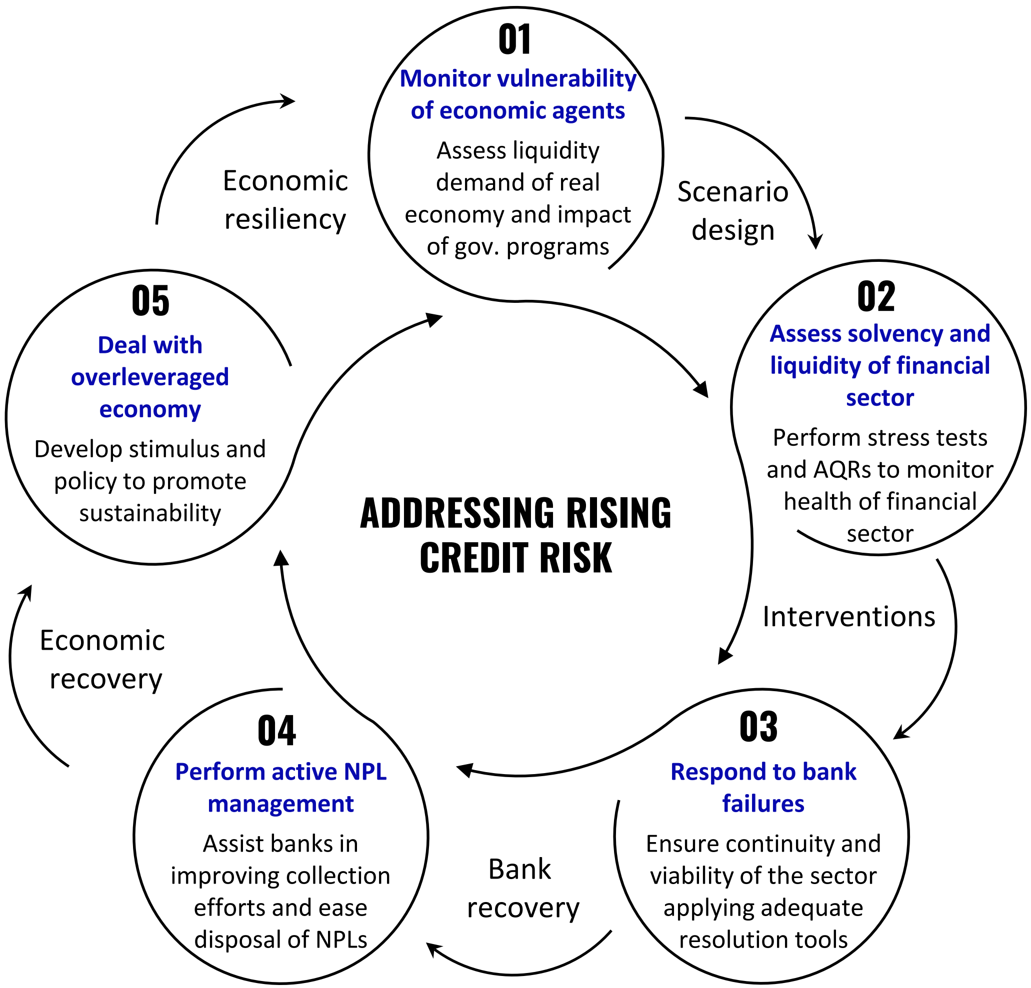
CONFIDENTIALITY

BACKGROUND

- Since the outset of the COVID-19 crisis, Oliver Wyman has been supporting ASBA developing **recommendations to increase the resilience and preparedness of their financial systems**
- During the first phase of our collaboration, we focused on identifying **financial and banking services** that are **critical for the functioning of the economy and financial stability** – we developed short-term recommendations and **action plans to safeguard** the functions identified
- The work revealed several **medium-term initiatives** that could improve the resilience of the financial systems concerned, increase their level of development and strengthen financial inclusion. We are exploring the following themes:
  - Improving **access to electronic payment systems** and banking services
  - Fostering **access to lending** facilities for the economy
  - Addressing **rising credit risk** due to deterioration of portfolios and state support programs
  - Promoting **digitalization** at client-facing front-end and within the financial system's backbone
- ASBA requested us to focus on the issue of **rising credit risk and bank health** as well as related **supervisory policy and measures** given the relevance of the topic for its members – as the COVID-19 crisis evolves, deterioration of credit portfolio is becoming a concern for banking supervisors
- Three **workshop sessions** were held to present and discuss material with ASBA members – feedback was requested throughout to ensure pertinence of materials prepared
- This document summarizes the work related to addressing rising credit risk as a consequence of COVID-19 crisis

THE MACRO DOWNTURN WILL INCREASE VULNERABILITIES IN THE REAL ECONOMY, IMPACT BANKS' LOAN BOOKS AND PROFITS, AND REQUIRE SUPERVISORY ATTENTION

Initiatives need to focus on the banking sector *and* the real sector for monitoring, analysis and policy action



01

MONITOR VULNERABILITY OF ECONOMIC AGENTS

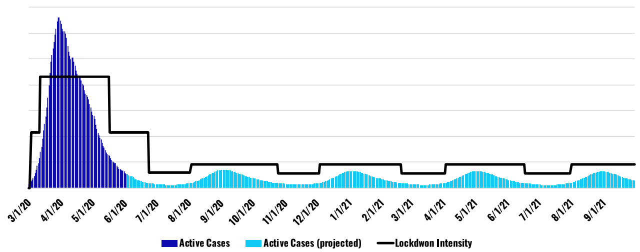
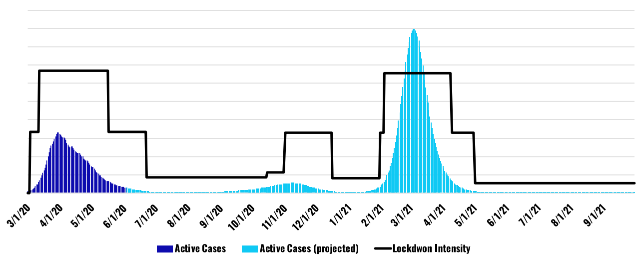
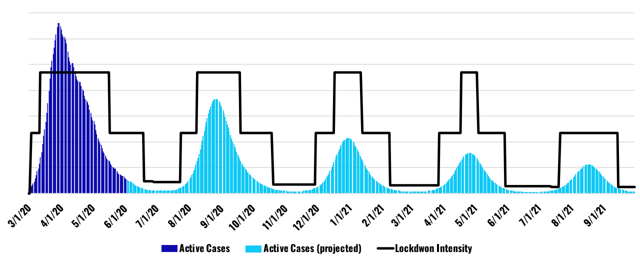
Why is this important?

- Core characteristic of COVID-19 crisis is its **asymmetric impact** across sectors
  - Companies in sectors highly exposed to containment measures, such as food services, will suffer significantly
  - Impact at country level will depend on ingoing financial health and sector mix of the economy
- Adequate analytical toolkit, enabling modelling with the **sufficient granularity**, will be cornerstone to crisis management
  - Using shocks at company level to build up macro variables will allow to assess impact of different pandemic scenarios or government measures on **GDP or unemployment**
  - Integrating liquidity needs by sector to unemployment and economic impact, will allow to **tailor policy action**
- Forecasting of real economy impact can then be translated to impact on the financial sector, particularly credit book, to assess effect on financial stability

What are the priorities?

- Rapidly obtain a view of the impact of COVID-19 on the real economy, producing a heat map of most affected sectors
- Assess the implications of government-sponsored support programs on the real economy to assure their effectiveness and tailor new policy action
- Use results to assess impact on bank’s credit book and translate to financial sector specific assessment

SCENARIOS TO BE BUILT BASED ON EPIDEMIOLOGICAL CONSIDERATIONS

Selected scenarios	Evolution	Description
Smart & Lucky (**base** case)		• A rapid build up of testing and tracing capabilities supports a successful transition out of lockdown • New outbreaks are easily identified and quickly contained preventing future major outbreaks • Confidence gradually builds as the economy beds down into the new normal
Winter Return (**adverse** case)		• Assumes some benefits of seasonality in Summer months • Virus threatens another major outbreak in the Autumn/Winter leading to the need for one or perhaps two further lockdowns • Possible that case load will be higher second time around but potentially offset by higher hospital capacity ***Scenarios used on subsequent pages***
Long-haul Containment		• Every attempt to exit leads to fresh outbreaks and the need to tighten containment measures again • No benefits of seasonality assumed • Assumes the gradual build up of immunity over multiple years leading to less stringent lockdowns further into the future • The economy is constantly being dragged in and out of various states of containment

Note: Possible to generate as many scenarios as required to adapt to the situation needs (ie country specific, set of vulnerabilities to be tested…)

MODELLING AT COMPANY LEVEL ALLOWS TO CAPTURE THE ASYMMETRIC IMPACT OF THE CRISIS EFFECTIVELY…

Scenario and lock-down patterns

SECTOR-BASED ASSUMPTIONS

Revenue shock
- Depth
- Length
- New normal
- Recovery period
- Pent-up demand

Cost shocks
- Direct external
- HR
- Others (Rent, Depreciation…)

Cash flows
- Days receivable outstanding
- ST and LT debt

GRANULAR COMPANY DATA

Basic data
(client or sector-level)
- P&L
- Balance Sheet,
- Cash flow (if avail.)
- Key bank-specific indicators/segments

Version 1.0 runs on easily available data for a 1st run

\+

Enriched data
(version 2.0)
- Transactional data
- Open banking data (current account, credit card, POS)
- …

SUSTAINABILITY CRITERIA

Survival & Sustainability
Support measures must be sufficient for the company to withstand the crisis (Debt/EBTDA)

Repayment
Company must be able to repay the higher debt load

COMPANY-LEVEL MODELLING

Company-level monthly stressed cash-flows

- Financial Statement projections
- Credit Exposure analysis
- Credit Affordability

Pre-mitigation

Post-mitigation

GOV. SUPPORT MEASURES

Authorities
- Moratoria
- Guarantee schemes
- Tax delay/forfeit
- Equity injections

OUTPUTS

LIQUIDITY NEEDS & FORECASTS
- Company level results
- Sector level results

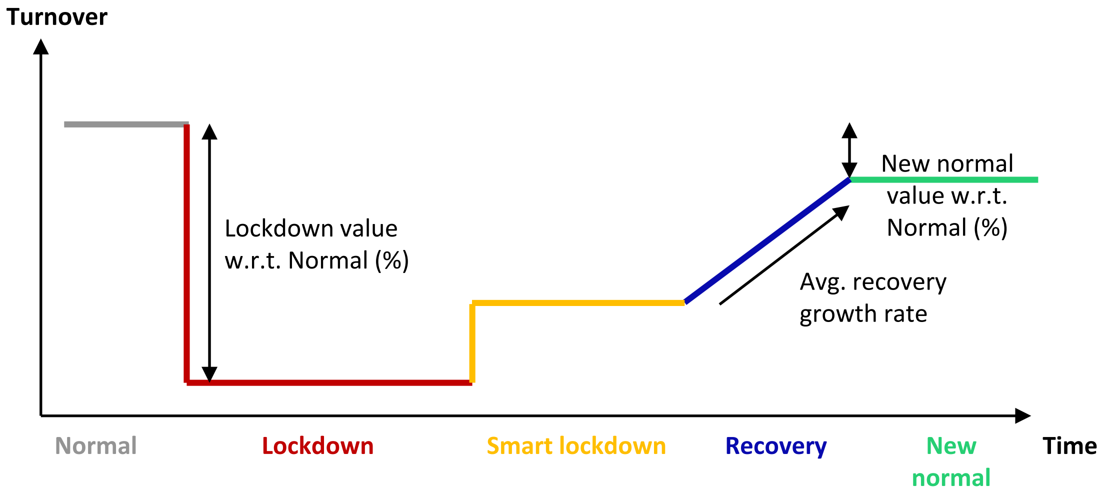
MACRO VARIABLES
- GDP
- *Unemployment*
- *Real disposable income*
- *House price index*

… INCORPORATING SECTOR-BASED SCENARIO ASSUMPTIONS TO PROJECT FINANCIALS

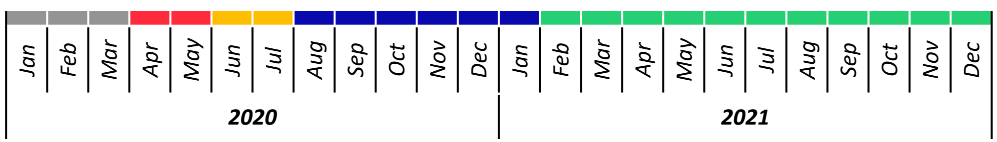
Main assumptions

Illustrative

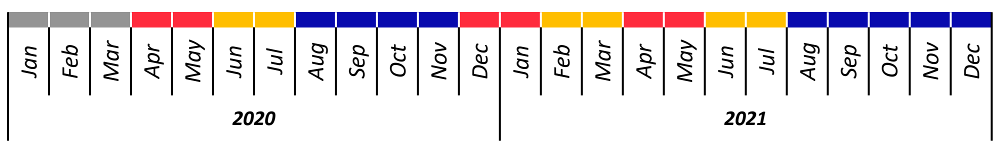
Pandemic scenarios



Single lockdown - Base scenario



Winter lockdown – adverse scenario



General assumptions:

Interest of new debt	**5%**
Maximum years to repay debt	**5**
Cash buffer available	**20%**
Free Cash Flow used to pay off the debt	**70%**
Economic growth rate (new normal)	**3%**

Seasonality settings applied to accommodation and food services

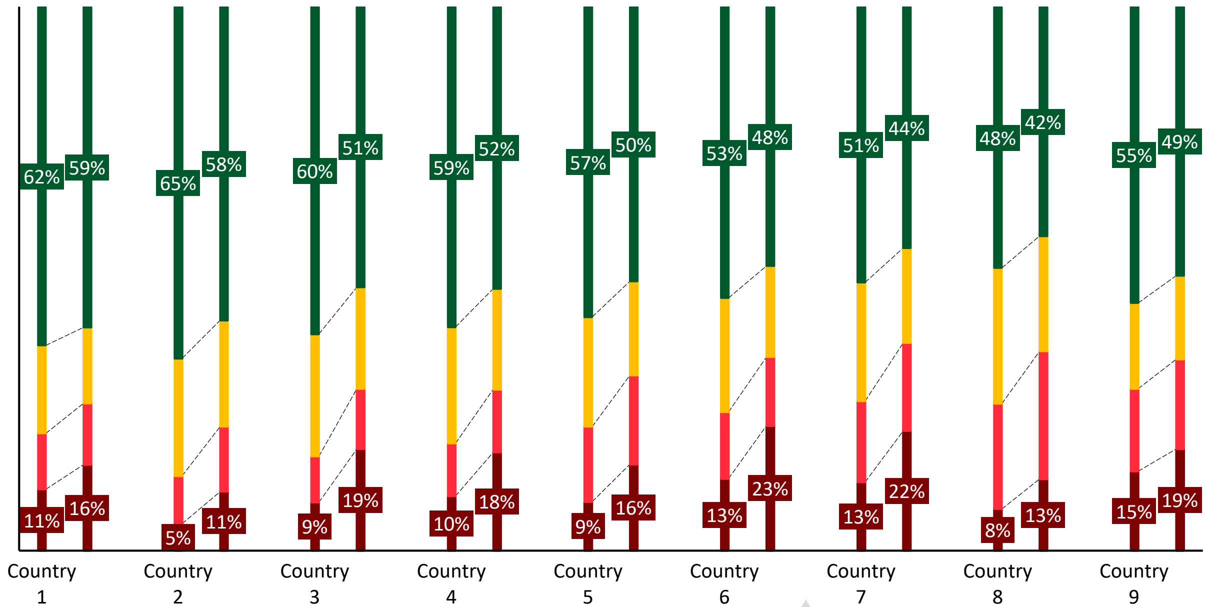
Sector specific assumptions:

	Percentage change		
Metric	**Full lockdown**	**Smart lockdown**	**New normal**
Revenues	-40%	-25%	-5%
Variable costs	-35%	-30%	-5%
Payroll costs	-20%	-20%	-5%
Fixed costs	-20%	-20%	-5%

RESULTS ACROSS COUNTRIES EVIDENCE THE MAGNITUDE OF CRISIS AND THE IMPACT OF A SECOND LOCKDOWN

Viability assessment: Base vs. Adverse scenario

% number of companies, disguised country examples



Differences between countries explained by

- Starting financial health of corporate sector:
  - Resilience (i.e. cash buffers)
  - Leverage
  - Profitability
- Weight of most affected sectors on economy

Categories

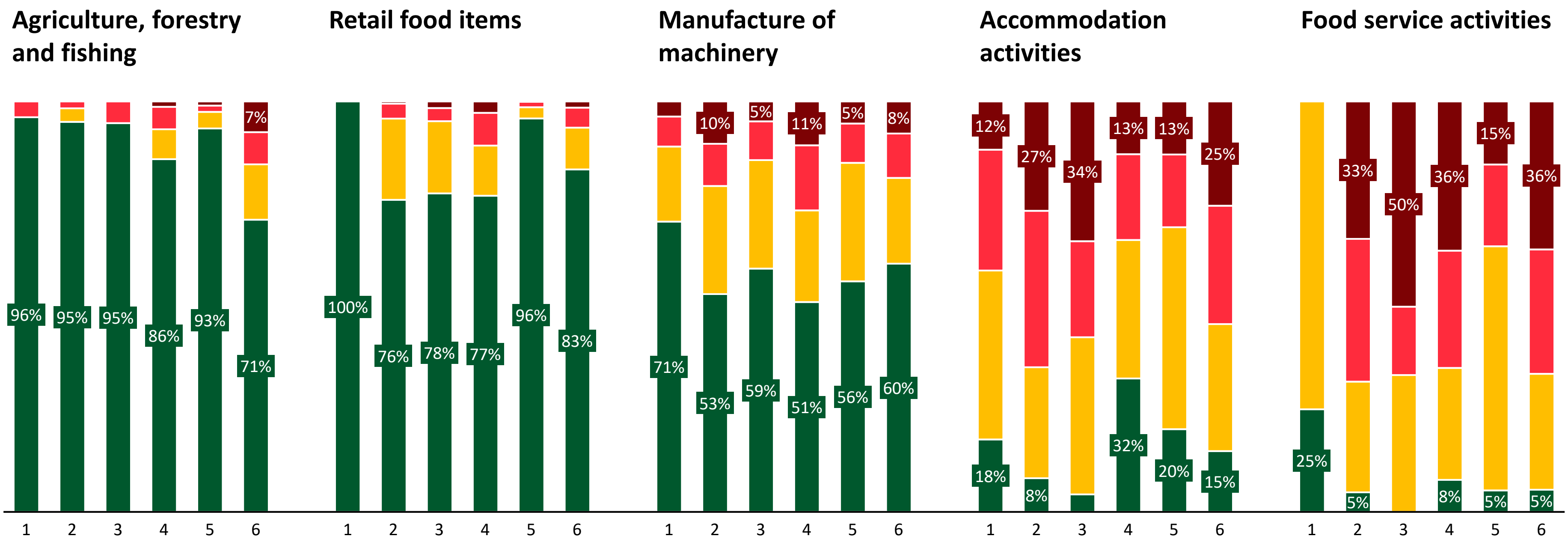
Category	Rating
No liquidity need Able to face crisis without additional liquidity need	No change expected
Viable with liquidity injection Need additional liquidity to face crisis, but able to fully repay interest and principal over 5 yr	Possible temporary downgrade
Potential Zombies Need significant liquidity to face crisis; will be able to serve interest on debt, but not able to fully repay principal over 5Y to return to pre-crisis debt levels	Likely longer-term downgrade
Financially challenged Unable to pay off incremental debt raised during COVID-19. Recap or debt restructuring likely; likely driving rising NPLs	Near default rating

Source: Oliver Wyman analysis

SECTOR-LEVEL VIEW HELPS VISUALISE DEGREE OF ASYMMETRY

Viability assessment by sector – Overview for selected sample

Base scenario, % of total number of companies per viability bucket, disguised country examples



Spikes within country 6 due to pockets of ingoing vulnerability

Broadly similar levels of ingoing profitability across countries within the sector driving less differentiation in output across countries

Country 3 relatively high impact due to lower ingoing profitability (7%) vs. other geographies (~12%). Large skews between business vs. holiday accommodation starting to show

Large skews within sectors of individual countries driving differences variation in sector groupings. Impacts highly sensitive to country specific lockdown profiles

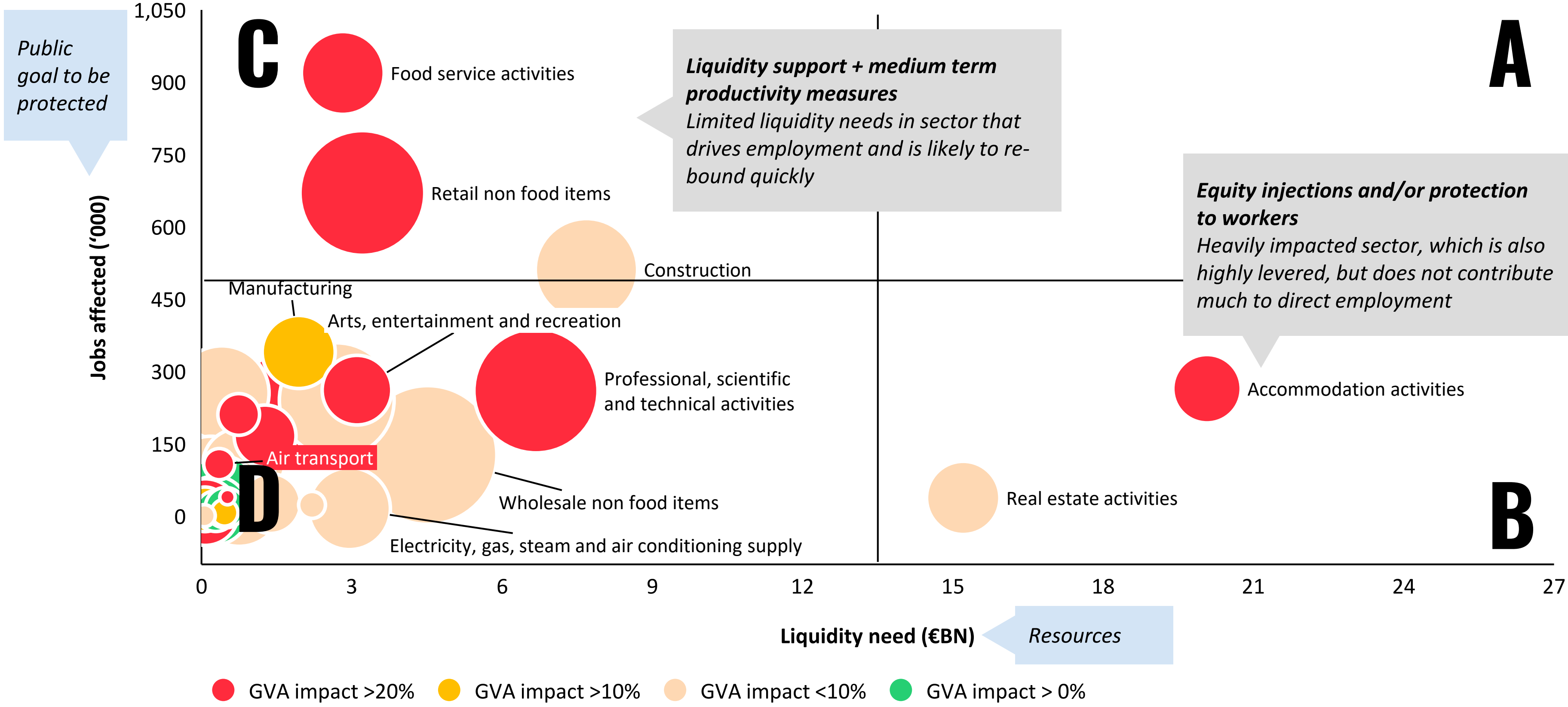
Financially challenged · Potential zombie · Liquidity needed but affordable · No liquidity need

Source: Oliver Wyman analysis

INTEGRATING LIQUIDITY NEEDS, GDP AND UNEMPLOYMENT ALLOWS TO BETTER DESIGN FUTURE POLICY ACTION

Impact on sectors by key dimensions

2020-21, Liquidity (€BN), Employment 2020Q1 (‘000), GVA = bubble size, GVA impact (2020 vs. 2018) = colour, disguised country example

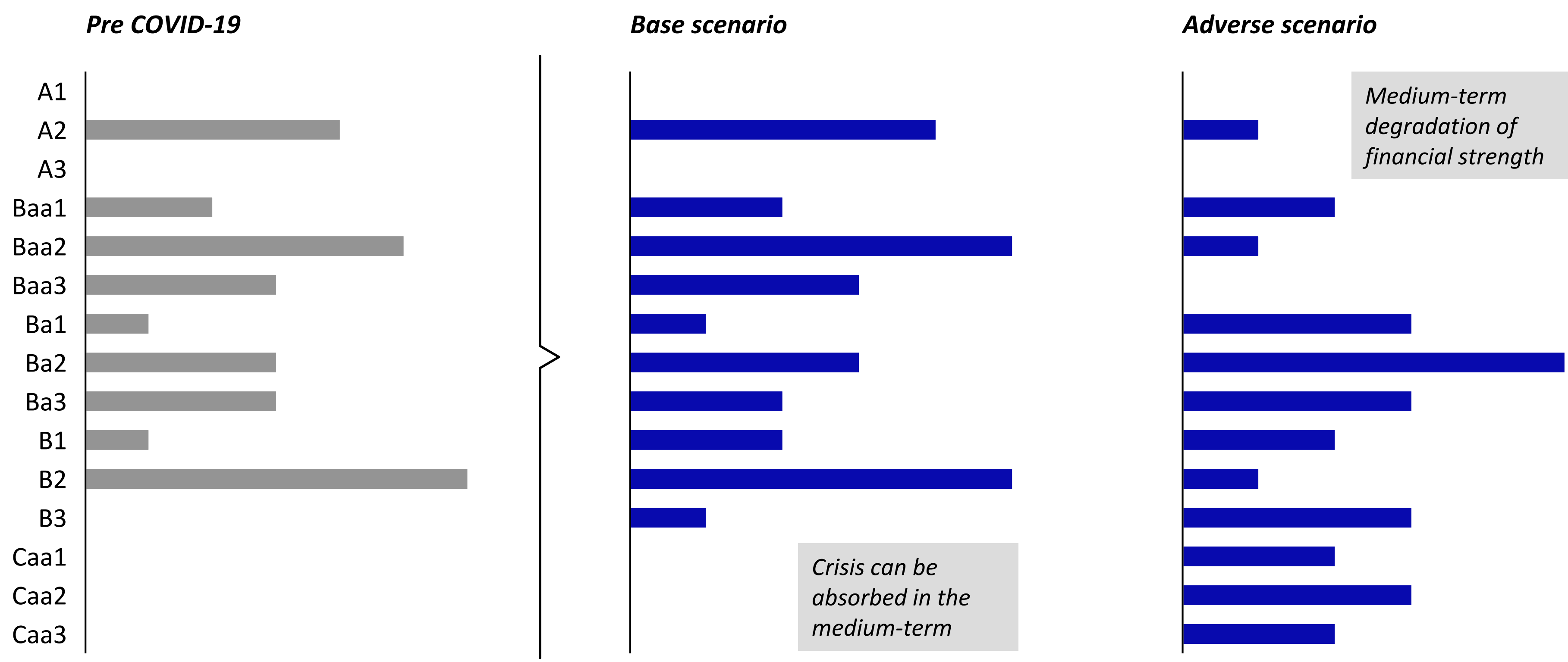


Note. Liquidity need was extrapolated to whole economy based on a scaling factor (Revenues)
Source: National bureau of statistics, central bank, Oliver Wyman analysis

MODELLING AT COMPANY LEVEL ALLOWS TO ASSESS RATING MIGRATION, IMPACT ON PROBABILITY OF DEFAULT, AND LONG-TERM CRISIS IMPACT

Pre COVID-19 Rating Distribution
Dec 2019, Disguised country example

2021 EOY Rating Distribution based on Cash Flow Projections
Disguised country example



Can be used to project credit book losses at entity level, but also to model macro-economic impact and recovery and growth scenarios

Source: Oliver Wyman analysis

SUPERVISORS TO DEVELOP TOOLKIT TO ASSESS VULNERABILITY AND IMPACT OF MEASURES ON REAL ECONOMY, ALLOWING TO DIRECT ACTION

Recommendations

Measure		Actions required
01	**Estimate top-down vulnerability and liquidity need per sector and business type**	• Track short term liquidity needs per sector building a model based on data from public sources and banks (e.g. tax filings, bank loan data (at various aggregation levels), credit bureaus, social security institutions and commercial databases (mostly for mid-sized/ larger companies)) • Estimate the impact on the informal sector and how it affects other business sectors and households
02	**Build up macro variables based on bottom-up analysis**	• Develop macro-economic scenarios that assess the impact of COVID-19 at aggregate level • Project different recovery scenarios based on expected pandemic evolution
03	**Assess the impact of mitigation measures on overall economy**	• Use output to assess the need and impact of policy actions to support the economy • Assess trade-off between available resources (e.g. liquidity need) and public goals to be protected (e.g. employment) to tailor policy action
04	**Identify a heat map of credit risk**	• Use company level modelling to assess credit rating migration and corresponding shock on probability of default – allow to estimate impact on loan book • Apply forecast of macro variables to assess impact on retail credit book

02

ASSESS SOLVENCY AND LIQUIDITY OF FINANCIAL SECTOR

Why is this important?

- The market recession caused by COVID-19 crisis will almost certainly leave heavy traces on bank balance sheets:
  - **Loan portfolios will deteriorate** due to borrowers‘ reduced ability to pay
  - Central bank crisis response on **policy rates will impact margins**
  - **FX movements** come with valuation impact and funding pressures
  - **Subdued lending** will depress banks‘ profitability and their ability to replenish capital buffers
- All banks will be impacted, albeit to a different degree
  - The recession hits the entire economy
  - To which extent a bank is impacted depends on its balance sheet structure and lending portfolio, but
  - … less on its size and complexity
- Regulatory elements might cause **cliff effects**
- Support programs can impact bank health positively and negatively!

What are the priorities?

- Quickly obtain an overview of the **health of the entire banking system**, not only covering specific groups of institutions
- Obtain a heatmap of “banks at risk”
  - In the short term through increased cost of risk and losses in loan portfolio
  - In the medium term through decreased profit generation capacity
- Assess the implications of government-sponsored support programs for the real economy on bank health
- Assess the banks’ ability to lend considering capital and liquidity constraints
- Use quick, top-down results to obtain overview and define priorities
- Perform more thorough assessments to guide concrete supervisory interventions

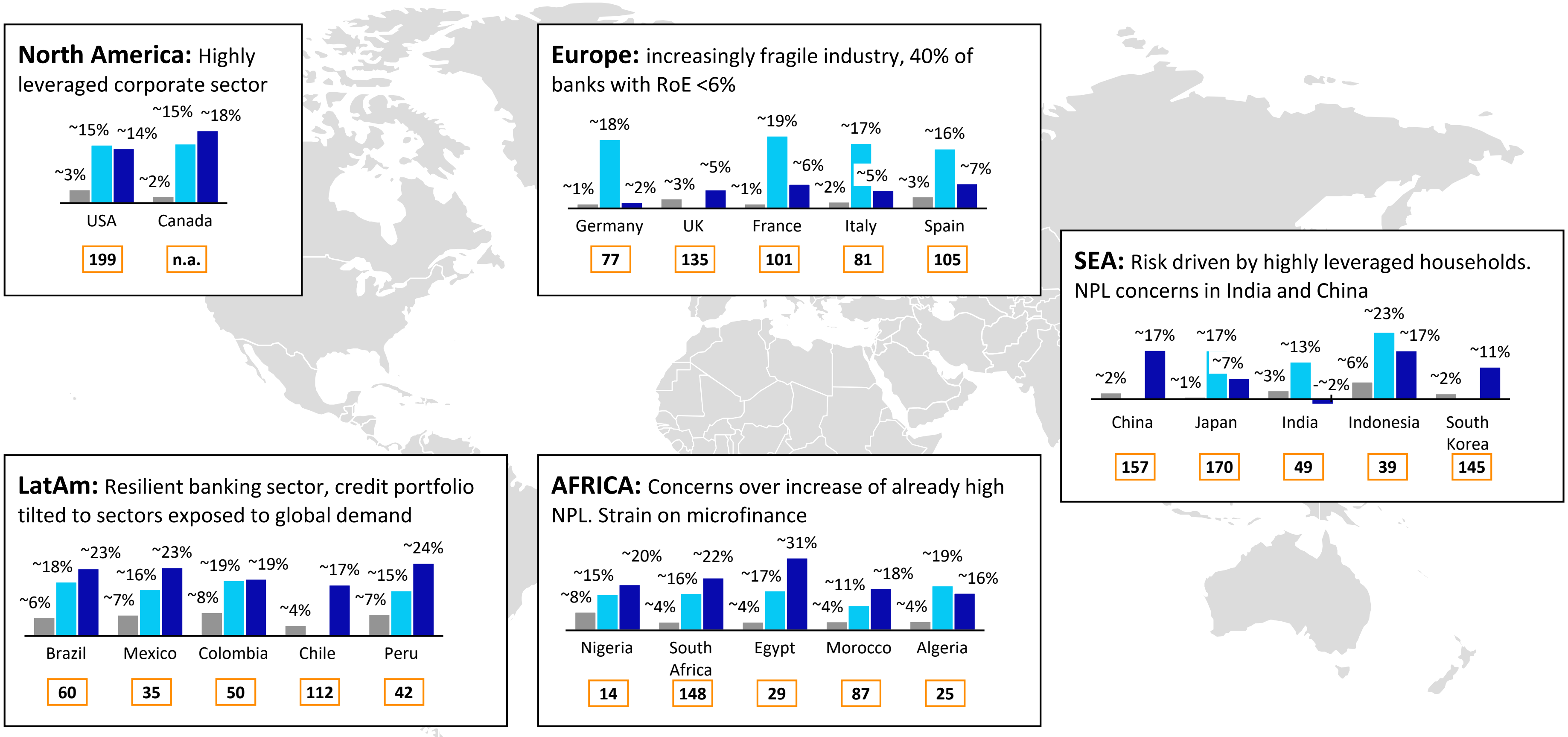
FINANCIAL SECTOR: KEY PART OF THE SOLUTION TODAY… PART OF THE PROBLEM TOMORROW?

Starting point stronger than prior crises

Overview of starting point of financial services at a global level

Latest available data

Net interest income (%) Regulatory capital (%) Return on equity (%, before tax) Domestic credit to private sector (% of GDP)

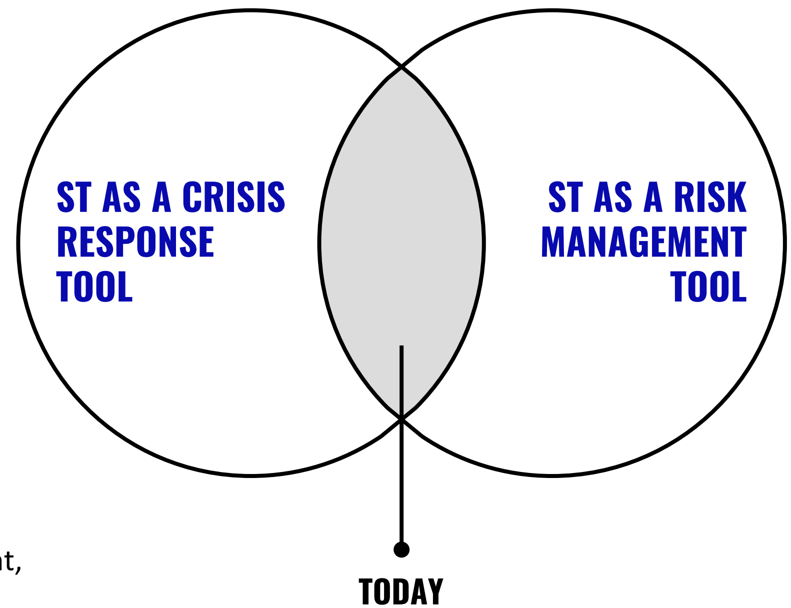


Source: Worldbank

STRESS TESTING CAN BE USEFUL IN PEACETIME AND CRISIS TIMES, BUT APPROACH AND PRIORITIES DIFFER

At this stage, stress testing is most helpful to assess the crisis-related impact on bank balance sheets, to prioritize policies and prepare supervisory action

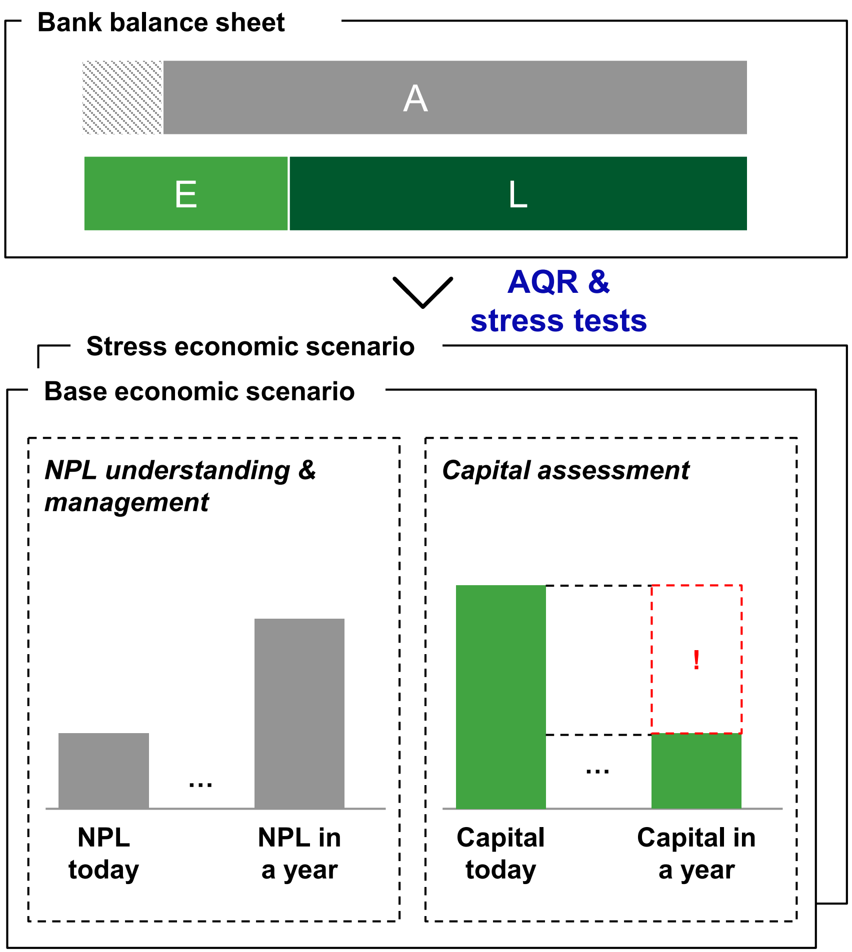
- Crisis stress test is deployed as a **one-time response** to a specific crisis (e.g. US, Ireland, Spain, Greece)
- Main objective is to **measure crisis impact** on bank health and viability
- Main purpose is to
  - Inform **supervisory action** including **capital and resolution** decisions
  - Inform **policy priorities** (macro and micro)
- Also important are
  - Ensure **market transparency**
  - (Re)build **market confidence** in banking system
- **Quantitative robustness** is important, but difficult to achieve given forecasting and modelling challenges



- Regulatory stress test is a **regular occurrence** (yearly, varying focus)
  - Main objective is to **assess banks' resilience against economic** and other adverse developments
  - Main purpose is to
    - Develop a **horizontal view** (spanning the entire banking system) view on risk in the system
    - Identify **weak(er) banks**
    - Inform **horizontal and bank-specific policy** (e.g. Pillar 2)
  - Also important are
    - Strengthen the **structured dialog with banks**
    - Assessment of an institution's **risk identification, measurement, and management capabilities** (qualitative)
- **Sensitivity analysis** more important than accurate point-in-time assessment

ASSET QUALITY REVIEWS (AQR) AND STRESS TESTS ARE ANALYTICAL TOOLS THAT PROVIDE A FORWARD-LOOKING VIEW INTO BALANCE SHEET HEALTH

Deploying AQR and Stress tests



Asset Quality Review (AQR): a point in time assessment of the accuracy of the carrying value of banks' assets

- Focus almost exclusively on assets
- Requires detailed analysis, e.g. re-underwriting of some loans
- Horizon is around 1 year or more (asset dependent) but a static view

Stress test: a forward looking examination of the resilience of banks' solvency under one or more hypothetical scenarios

- Full balance sheet and income statement
- Requires comprehensive analysis, more model intensive
- Horizon is 2–5 years and a dynamic view

Overlap and similarities

- Analysing recent behavior of credit loss components
  - Probability of Default (PD), Loss Given Default (LGD), Exposure At Default (EAD)
- Understanding composition and valuation of non-lending portfolio (e.g. level-3 assets)
- Impact of structural ALM position

CONSIDERING THE NEED FOR A TIMELY ASSESSMENT, A TOP-DOWN EXERCISE IS ADVISABLE AT THIS TIME

Top-down
(higher-level estimation exercise)

- **Advantages:**
  - Can be implemented in limited time
  - Adjustments to scenarios and methodology can be applied on shorter notice
  - Based on existing data (various sources, see later)
  - Usually quite good at assessing impact on entire sector and groups of banks
  - Prepares the ground for bottom-up assessment
- **Disadvantages:**
  - Not suitable to identify idiosyncratic aspects at specific banks, which in practice can cause substantial impact (positive and negative)
  - Non consideration of banks‘ management action (capital measures, financial and operational restructuring, etc.)
  - Not suitable as only source for determining formal supervisory measures

Bottom-up
(bank-specific health assessment)

- **Advantages:**
  - Done right, provides robust assessment of individual banks‘ specific situation
  - Is based on the analysis of a bank‘s specific exposures (sample-based and individual assessment)
  - Includes extensive data validation and verification
  - Can be used as basis for supervisory interventions
  - Allows for consideration of forward-looking management action (e.g., capital raise, disposals, restructuring, growth initiatives)
- **Disadvantages:**
  - Takes 6-12 months, depending on scope
  - Acquisition of necessary data requires substantial on-site work (by bank and independents, including audit companies)
  - Requires extensive preparation (rule book) and infrastructure
  - Extensive challenge of banks projections (e.g., on new lending, margins, loss scenarios) necessary to ensure consistency

DATA AVAILABILITY IS KEY FOR A SUCCESSFUL ASSESSMENT, AND TIME CONSTRAINTS DICTATE APPROACH, ACCURACY AND THE USE OF RESULTS

How to obtain adequate data for a solvency assessment

- *Usually, banks' regular supervisory reporting is highly aggregated. Several countries have more granular reporting frameworks, but there is no common standard*
- *In the majority of countries there is no line-by-line reporting regime on risk characteristics of borrowers, collateralization of exposures and distressed loans, expect for reporting of provisions. Recognition of NPLs or UTPs is poorly defined and reported*
- *Considering the preparation time required for a bottom-up assessment, data availability should be reviewed immediately*

Top-down assessment

- **Public data sources**
  - Aggregated bank data, possibly broken down by industry of borrower and other high-level characteristics as well as collateralization
  - Economy-wide and sector/asset-specific vulnerability data
  - Blended data sourcing approach, covering banks, public (e.g. tax) and private (e.g. credit bureau) data
- **Quickly to obtain**
  - Mapping and consistency issues introduce methodological challenges and inaccuracies
  - Multi-day/week exercise, can be refined iteratively

Bottom-up assessment

- **Bank loan book**
  - Detailed loan tapes with loan-by-loan information on exposures and counterparties
  - Historic recovery curves to estimate recoverability and time profile
  - Comprehensive loan files for larger exposures
- **Burdensome to produce**
  - Data is often scattered around banks, needs to be consolidated and mapped to specific reporting requirements
  - Data quality and availability issues need to be addressed with great effort ("data cleansing")

COVID-19 CRISIS COMES WITH UNIQUE CHALLENGES REGARDING SCENARIO DESIGN

"Typical" stress test scenario design

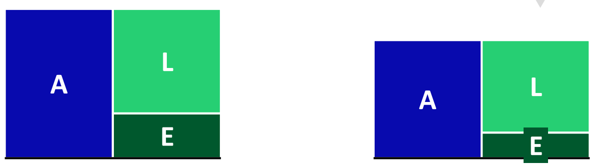
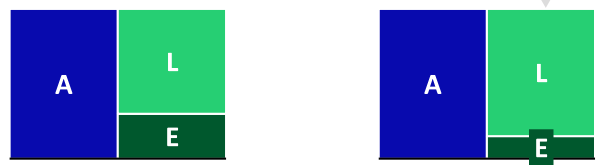
- Based on economy-wide macro-variables
  - GDP Growth, Unemployment, Inflation, Real Estate Prices, Interest Rates, FX Rates
  - Projected on a yearly basis over a 3-5 year time horizon
  - Assume macro-economic impact can be assessed based on DSGE and SVAR models
  - Deltas smooth and not very deep (e.g. „-3% recession")
- Transposition of macro-developments on loss rates, new lending, etc. very coarse and based on historical data
- Issues
  - COVID-19 crisis exceptionally fast and deep, economic impact immediate
  - Impact varies greatly across economic and business segments
  - High relevance of existing buffers in the economy
  - Swift actions by economic agents and government

Scenario design to account for COVID-19 crisis

- Additionally based on granular, sector-specific vulnerability assessment
  - Allows to consider immediate impact
  - Takes into accoung existing buffers and mitigating actions by economic agents
  - Considers state-sponsored support actions
  - Allows to model cross-border dependencies
  - Enables more targeted estimation of default probabilities and loss amounts
  - Considers more fast-paced changes, such as swift catch-up (positive) or multiple flare-ups of crisis (negative)
- Issues
  - "Still just a forecast and a model": Uncertainties
  - Easier to perform and more robust top-down than bottom-up

APPROACH TO BALANCE SHEET MODELLING DEPENDS ON THE POLICY SIGNAL THAT REGULATOR WANTS TO SENT

Methodology – Balance sheet modelling

Purpose	*Show that banks has* ***enough capital to keep solvency in crisis***	*Show that banking system has enough capital to keep solvency the crisis* ***AND perform it's intermediary role with the same capacity to support the economy during the crisis***[1]
Balance sheet assumption	**Dynamic** Bank behavior in crisis is microprudentially optimal, but it provides less credit and can absorb fewer losses  *Current state* *Crisis*	**Static or dynamic with restriction to assets decline** If bank is required to maintain pre-crisis lending capacity, it will mitigate negative effect of the crisis for his clients. However, RWA will be higher and bank absorb more losses, which will lead to higher burden on capital adequacy ratio in crisis and **higher P2G add-on**  *Current state* *Crisis*
Key advantages	✓ More realistic scenario – in actual crisis assets of the banking system decline. Also if banks have enough capital to provide credit, it doesn't guarantee they will do so since it may not be economically optimal ✓ Lower capital add-ons due to stress-testing: – Lower RWA in stress scenario – Potentially higher capital in stress scenario since bank's behaviour is microprudentially optimal i.e. higher profit	✓ Stronger macroprudential signal – banking system has enough capital not just to survive, but also to absorb negative effect of the crisis on the economy by continuation of it's intermediary role ✓ Simple rules for stress test application – bank can't stop lending to meet capital requirements (no "shrinking to safety")

1. From CCAR-2019 results document:
"The Federal Reserve projects asset and liability balances using a common framework for determining the effect of its scenarios on balance sheet growth. This framework is consistent with the Federal Reserve's policy that aggregate credit supply does not contract during the stress period."

A WIDE RANGE OF MODELS COVER ALL MAJOR COMPONENTS OF THE BALANCE SHEET AND INCOME STATEMENT

Models employed

Starting Capital + (A) Pre-provision net revenue (PPNR) - (B) Banking book credit losses - (C) Other losses

divided by

(D) Balance and RWA

= Capital Ratio

Pre-tax net income: calculated by combining projections of revenue, expenses, loan-loss provisions, and other losses, including:

- (A) **PPNR:** Defined as net interest income (interest income minus interest expense) plus noninterest income minus noninterest expense
- (B) **Banking book credit losses:** Includes corporate loans, commercial real estate loans, domestic first-lien residential mortgages, domestic home equity loans/home equity lines of credit, domestic credit cards, and domestic auto loans
- (C) **Other losses:** Composed of losses on loans held for-sale (HFS) or for investment and measured under fair value option (FVO), other-than-temporary impairment (OTTI) losses on investment securities in available-for-sale (AFS) and held-to-maturity (HTM) portfolios, trading and private equity, credit valuation adjustment (CVA) and incremental default risk (IDR), and losses from the largest counterparty default (LCPD) for firms with substantial trading, processing, or custodial operations

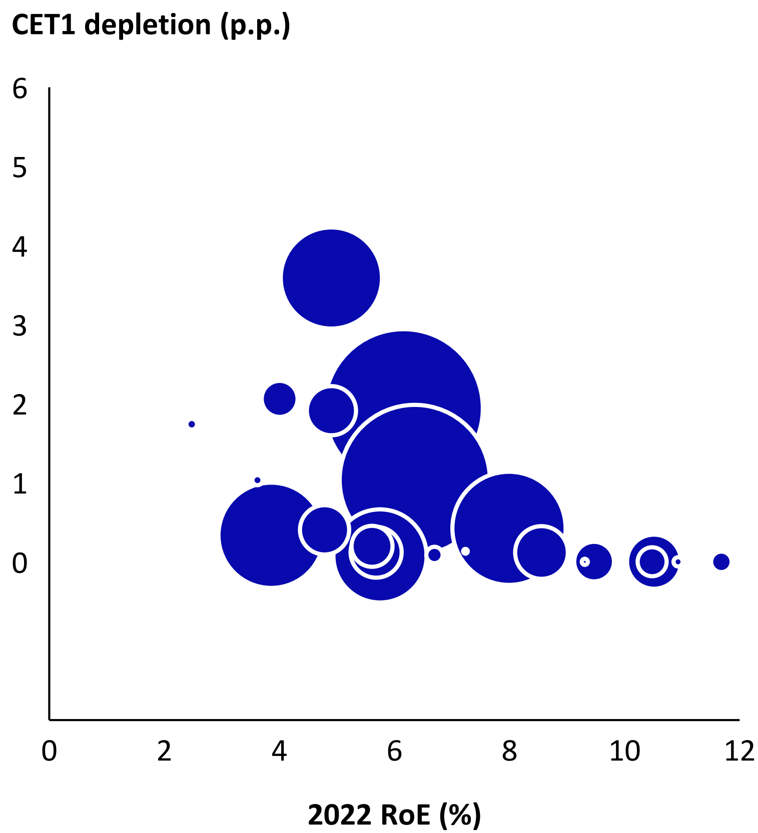
(D) **Balance and RWA**: estimated considering industry-level loan and non-loan asset growth forecast based on macroeconomic variables and applying credit risk weights

Considerations for Latin America & Caribbean

- Relevance of idiosyncratic risk factors of each country:
  - Exposure to **FX risk**
  - Dependence on **commodity prices**
  - Correlation with **credit risk**
- Relevance of role of **informal sector** on PPNR and credit risk

EXAMPLE: TOP DOWN STRESS TEST ALLOWS TO ASSESS POSITION POST SHOCK TO DETERMINE RESILIENCE OF FINANCIAL SECTOR….

2022 RoE and CET1 depletion – Example for selected countries
Base case scenario, by country (bubble size = 2019 capital)



Source: Oliver Wyman analysis, Companies' financial statements

% of Industry Common Equity by 2022 RoE and CET 1%
Base case scenario, selected region

Concentration

2019 – share of industry Common Equity

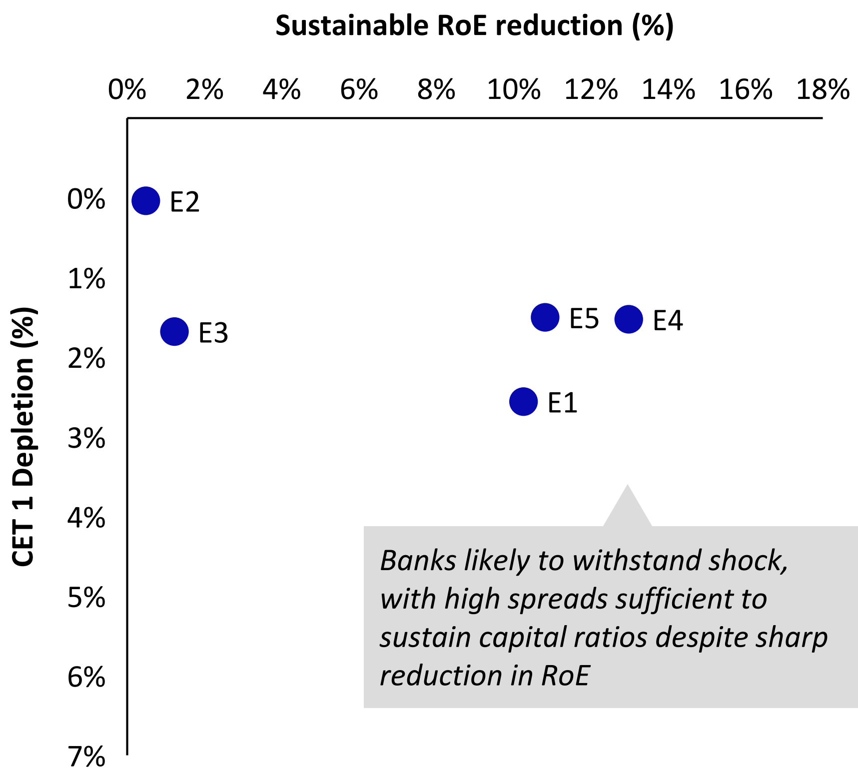
CET1 ratio	Return on equity: <4%	4-8%	>8%
>12%	13%	39%	39%
<12%	0%	1%	8%

2022 – share of industry Common Equity

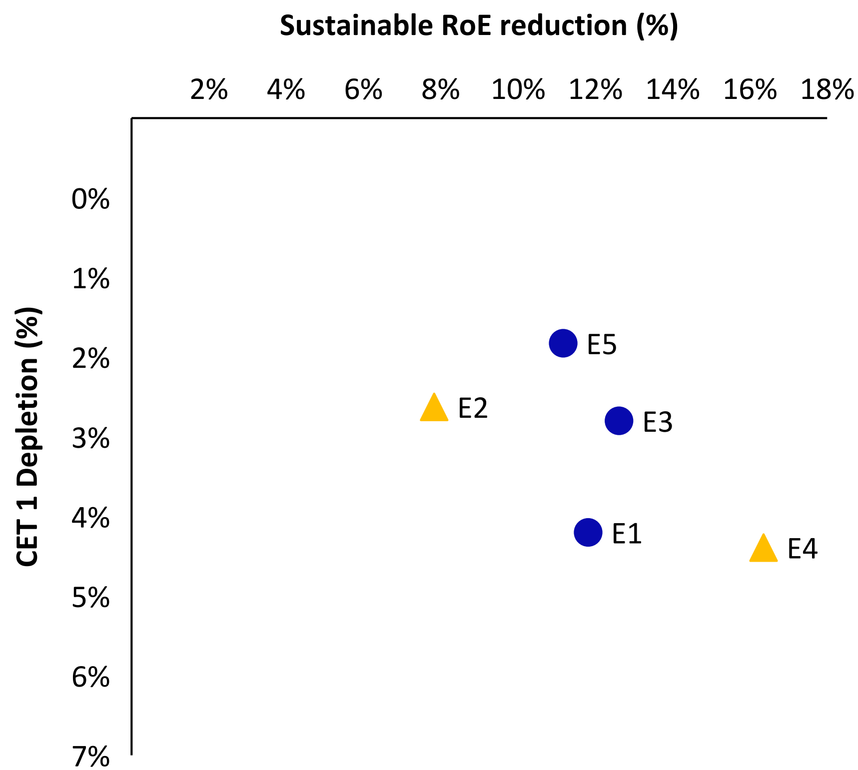
CET1 ratio	Return on equity: <4%	4-8%	>8%
>12%	9%	52%	8%
<11%	5%	18%	8%

… AND ASSESS THE IMPACT AT ENTITY LEVEL, INCLUDING NON-SYSTEMIC BANKS TO DIRECT POLICY ACTION

Base scenario – disguised emerging country
Banks' capital and profitability levels pre and post COVID-19 if all impacts (debt, losses and PPP) occur at the same time



Adverse scenario – disguised emerging country
Banks' capital and profitability levels pre and post COVID-19 if all impacts (debt, losses and PPP) occur at the same time



Above Threshold Below Capital Conservation Buffer

Source: Banks' public filings, Oliver Wyman analysis

RECOMMENDATIONS FOCUSED ON STRENGTHENING STRESS TEST TOOLKIT AND ON AD-HOC EXERCISES TAILORED TO CURRENT CIRCUMSTANCES

Recommendations

Measure		Actions required
01	Enhance data coverage and quality for top-down stress test	• Estimate (top-down) banks' exposures to specific asset classes • Obtain distributional data on borrower and loan characteristics as well as collateral • Obtain data on vulnerability of borrowers broken down by sectors
02	Adjust stress scenarios and methodology to account for particularities of COVID-19 crisis	• Develop stress test scenario based on borrower vulnerabilities as to avoid modelling issues related to general macro-variables in light of the very specific type of the crisis (fast and deep) • Adjust scenario to country-specific particularities, such as: – FX risk – Commodity dependent – Interest rate risk • Ensure PPNR models reflect the correlation between risk factors and the interconnection of informal sector
03	Perform top-down stress test	• Obtain a rough view on the solvency situation of the banking sector and each single banks under various scenarios using a model-based approach (potentially sample-based) • Use heatmap to define supervisory priorities (general policy at system level, "watchlist" for specific banks
04	Prepare bottom-up AQR and stress test	• In case the problem is sizable, prepare for conducting a bottom-up stress test on the entire system or those banks that are considered troubled • Preparation includes policy and principles, process and governance as well as exhaustive data calls banks need to prepare for

03

RESPOND TO BANK FAILURES

Why is this important?

- Broad impact of the recession on the banking sector might cause a larger number of banks to get in trouble and ultimately fail. Such a scenario constitutes a systemic issue even if each bank for itself is far from being systemic
- The usual solutions to deal with idiosyncratic failures of small banks (i.e. merge with a competitor or sell it to larger bank) might not be available
- Each bank failure comes with operational risk for authorities involved. A larger number of failures within a very short timeframe will most likely overburden the operational capacity of authorities
- Capital buffers in the system might not be sufficient to cover all deposits or even the insured ones
- Financial safety nets (e.g. deposit insurance) or write-down of liabilities might not work at scale given macro-economic and financial stability concerns

What are the priorities?

- Assess capital and liquidity needs of the system to gauge the size of the problem
- Have a heatmap available to see which banks might be prone to failure in the short-term and in the medium term. Define trigger points (capital and liquidity) at which resolution actions should commence
- For those banks on the heatmap, proactively identify potential merger candidates ensuring the emerging institution can survive
- Review options and assess possible size for the provision of Emergency Liquidity Assistance at systemic scale
- Review options and assess possible size of public solvency support
- Define and implement a clear communication plan to banks, the public, other authorities and the government

THE APPROACH TO DEAL WITH BANK FAILURES IS DICTATED BY THE SIZE OF THE ISSUE AND AVAILABLE BUFFERS AND SAFETY NETS

01	02	03
Idiosyncratic failure of a few small banks	**Idiosyncratic failure of one large, systemic bank**	**Systemic failure of larger parts of the banking system**
Pre-built **buffers in the financial system, safety nets and the economy at large** are sufficient to deal with the problem **swiftly and sustainably**.	Pre-built buffers, together with **temporary, partial risk absorption by the state** can be used to manage the issue, while **containing (not avoiding) economic damage** at large and **protecting financial stability**.	Existing buffers and financial safety nets are **not sufficient**. Financial recovery IS severely hampered and delayed by **overarching macro-economic situation**. **Public-private burden sharing** is required over an extended period.
TYPICAL APPROACH		
• **Full or partial sale** to healthier competitor • **Deposit payout** through Deposit Guarantee Scheme (DGS) • **Liquidation of assets** over time • Pretty straight forward, but needs to be implemented well	• **Partial sale** of assets and liabilities • **Partial recapitalization** through **shareholders and creditors (bail-in)** • Creation of a **bridge bank** to gain time • **Temporary public solvency and liquidity support** (government and central bank)	• **Large-scale recapitalizations** with significant **public involvement** (solvency, liquidity) – “**open bank assistance**” • Large-scale **restructuring of the system** (consolidation) • Creation of **systemic distressed asset vehicles**
NOTABLE CONSTRAINTS		
Capitalization of potential acquirers (now and in future), capacity of DGS, uncertainty	Fiscal/public debt capacity, ability of creditors to absorb losses	Fiscal/public debt capacity, currency strength, acceptance of forbearance

EVEN A GRADUAL RESPONSE REQUIRES A VIEW ON THE POTENTIAL "END-GAME" TO BE EFFECTIVE AND CREDIBLE

01

Idiosyncratic failure of a few small banks

Pre-built buffers in the financial system, safety nets and the economy at large are sufficient to deal with the problem swiftly.

02

Idiosyncratic failure of one large, systemic bank

Pre-built buffers, together with temporary, partial risk absorption by the state can be used to manage the issue, while containing (not avoiding) economic damage at large.

03

Systemic failure of larger parts of the banking system

Existing buffers and financial safety nets are not sufficient. Financial recovery severely hampered and delayed by overarching macro-economic situation. Public-private burden sharing is required over an extended period.

IN WHICH SCENARIO ARE WE TODAY?

Common pitfalls:

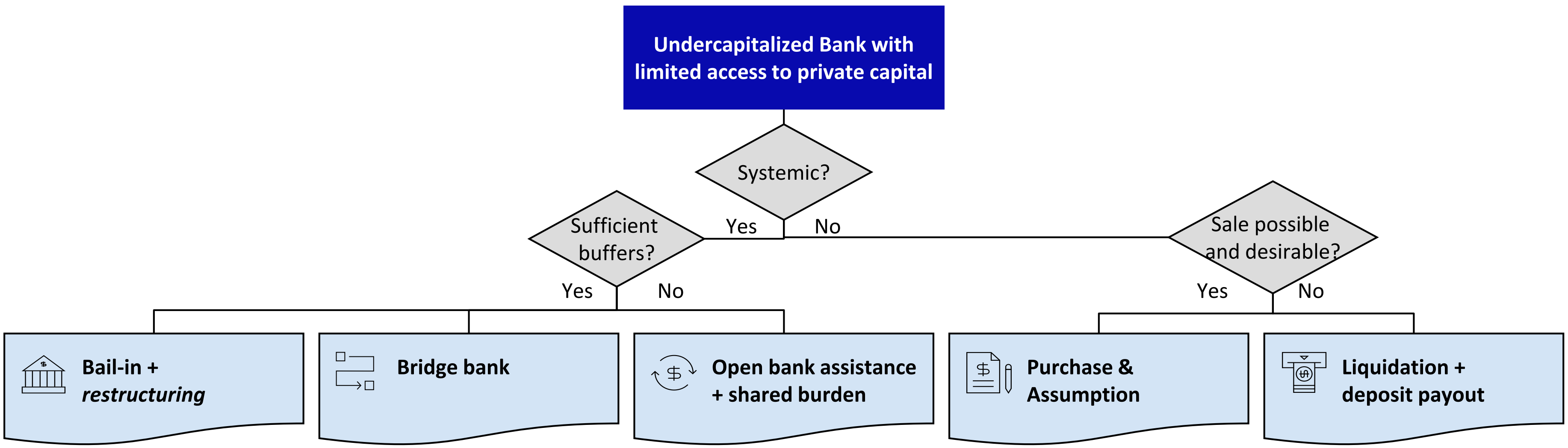
- Scale of the overall **issue is underestimated** at first (idiosyncratic vs. systemic)
- Escalating situation requires **change of strategy in the middle** of a crisis
- Actions implemented in the meantime (such as merging banks, exhausting buffers) prove **not to be working** but have absorbed time and room to maneuver – **limiting further options**
- Inconsistent communication results in a **loss of confidence** within government, financial system and markets
- Growing size of the problem **challenges operational capacity** of sector and authorities
- **Broader solutions** require **several authorities acting in concert**

Guiding principles:

- Have a clear view on **potential escalation paths** and a strategy to address them consistently
- Assess potential solutions for **sustainability under several scenarios** (e.g., avoid merging two weak banks, do not provide ELA to effectively insolvent firms without exit strategy)
- Keep in mind **macro-feedback loops** (e.g. loss-absorption capacity in the economy, banks' ability to lend in recovery)
- Be aware of your and other stakeholders' **capacities and constraints**
- **Coordinate** among authorities domestically and – where relevant – across borders
- **Act in time!**

OPTIONS TO DEAL WITH BANK FAILURE VARY DEPENDING ON REMAINING BUFFERS, CAPITALIZATION OF POTENTIAL ACQUIRERS AND CAPACITY OF DGS

Overview of alternatives to deal with bank failures (idiosyncratic case)



Bail-in + *restructuring*

- Capital injection from creditors/shareholders
- Restructuring of existing obligations

Bridge bank

- Temporary entity to preserve essential services and value
- Sold/resolved in the longer term

Open bank assistance + shared burden

- Deep, structural restructuring with public backstop (guarantees/direct)

Purchase & Assumption

- Purchase of all or some assets and assuming liabilities by a healthy institution (i.e. merger), other assets liquidated

Liquidation + deposit payout

- Failed bank's credit machinery stops
- Deposits are paid out using remaining assets (potentially pre-financed by DGS); if not sufficient insured deposits will be covered by DGS

SPECIFIC AMC

- Offloading of certain portfolios of **one or small group of** failing banks for recovery outside banking system

SYSTEMIC AMC

- Offloading of certain portfolios of **a larger group** failing banks for recovery outside banking system

RESOLUTION PROCESS COMPRISED OF 3 MAIN STAGES – TIMING AND COMPOSITION VARY CONSIDERABLY DEPENDING ON CIRCUMSTANCES

Operational considerations - Illustration of resolution process

1 Pre-closure		**2 Closure**		**3 Post-closure**
	Gain control (over weekend)	*Confirmation of resolution strategy and plan*	*Initiate resolution*	
Preparation	›	**Assessment** **Operational management**	›	**Execute resolution**
<1 day (e.g. trading loss)		<1 weekend (e.g. Insured Deposit Transfer)		<1 week (e.g. IDT)
~1-4 weeks (e.g. funding/solvency crisis)		~1 week (e.g. P&A)		~1-3 month (e.g. sale of ‘new’ bank)
>1 month (e.g. investigation into fraud)		>1 year (e.g. bridge bank)		>2 years (e.g. insolvency of ‘old’ bank)
	Resolution trigger		**Resolution decision**	

PREPARATORY ACTIVITY CAN CONTINUE RIGHT UP UNTIL THE TRIGGER WHICH FORCES THE AUTHORITIES TO INTERVENE

Key elements of preparatory activity during the pre-closure stage

1. LEGAL REVIEW

Analyse legal framework to identify legal tools to implement restructuring, and understand legal obligations and rights of stakeholders.

2. FINANCIAL/ OPERATIONAL REVIEW

Review balance sheet and liquidity position and develop strategy to preserve assets and minimise liabilities, risks and potential claims.

Details on following slides

3. STRATEGY

Review restructuring options and set out restructuring hypothesis.

Details on following slides

5. DETAILED PLANNING

Plan and carry out pre-closure tasks.

Plan closure and post-closure tasks.

4. RESOURCING

Set out engagement structure, and establish working and legal relationships.

Clarify path to resolution funding, and set up required lines of funding.

MAJOR ELEMENTS OF THE PREFERRED RESOLUTION STRATEGY MUST BE MAPPED OUT…

Operational considerations – Strategy

Illustrative example: Closed Purchase & Assumption

Element	Key areas to address
High-level definition of the 'perimeter' under consideration for sale, under a closed purchase and assumption arrangement (P&A).	• Identification of insured deposits (taking netting into consideration, if relevant) • Identification of systemically important operations (i.e. to be continued post-transaction) • Treatment of central bank funding • Treatment of secured lending (e.g. repo) • Treatment of non-performing loans • Approach to fair valuation of assets on transfer
Identification of a short list of potential buyers	• Appetite and suitability (whether strategic or financial) • Strategic rationale • Financial strength and potential synergies
Modelling of cost and cash-flow implications for involved parties, under base/best/worst case scenarios, assuming the resolution of P&A is successful	• Sale price/fair value • Additional capital requirements • Incremental funding and liquidity support • Operational efficiencies (e.g. implications of P&A on costs of planned restructuring, such as branch closures) • Potential need for 'sweeteners' to be offered to acquiring bank
Consideration of alternative scenario if bridge bank solution needs to be pursued	• Run-off vs sale of assets • Flexibility around time horizon for run down • Ability to lend under specific circumstances
'War-gaming' of potential sources of disruption or 'blockers' to the desired resolution strategy of P&A	• Ability to find buyer • Ability to execute split according to the 'perimeter' (if required) • Liquidity and resource constraints (e.g. if creditors or depositors pull funding in advance of closure) • Legal routes to prevent or stall the transaction (e.g. by owners, financial creditors) • Assessment of systemic implications

… ASSETS NEED TO BE VALUED …

A clear view on the value of assets (and liabilities) is necessary at various stages of the process of dealing with a failing bank

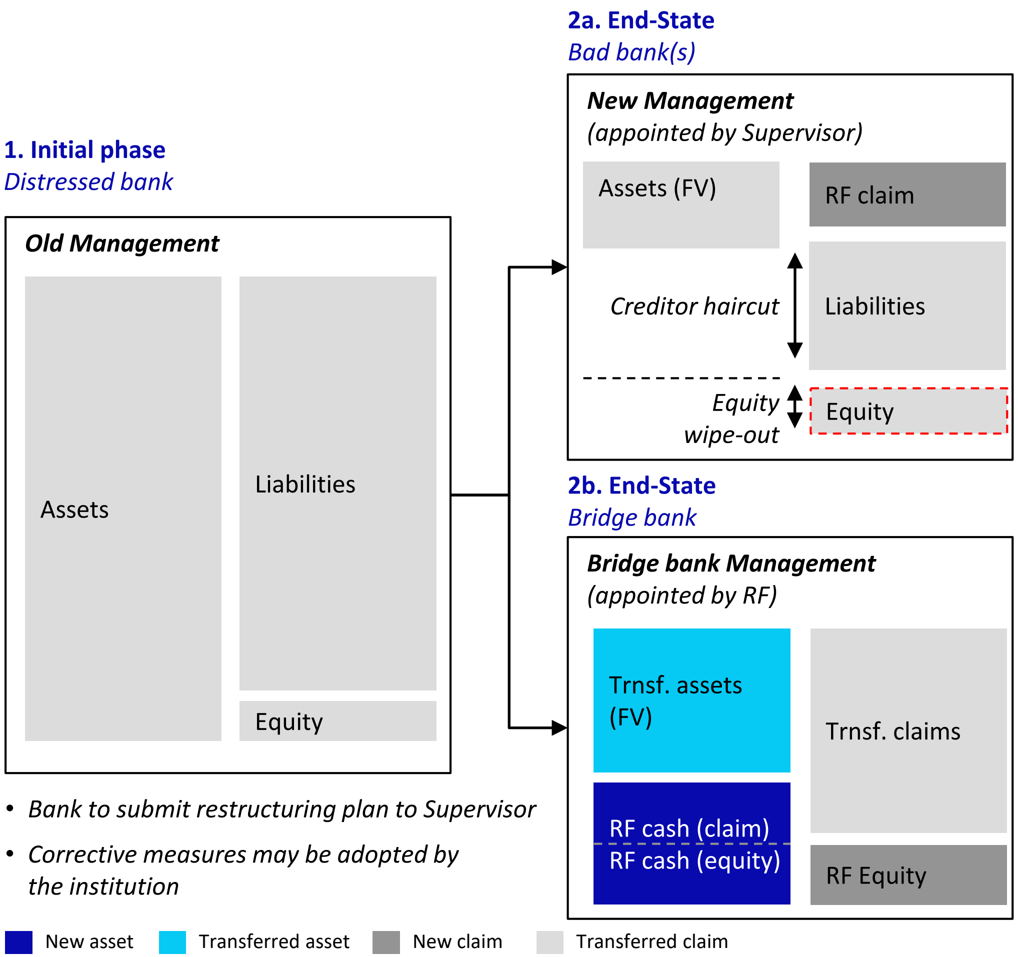
- Supervisory tools (protective measures, recapitalization requirements down to the withdrawal of the license) depend on meeting defined trigger points regarding the capitalization of the bank, in turn depending on the valuation of assets (and liabilities)
- All resolution strategies depend on the structure of the balance sheet
- ELA capacity depends on the availability of collateral
- Portfolio transfers and sales require a clear view on asset values from the perspective of the selling bank, the supervisor and the acquirer (and its supervisor)
- Public support (solvency, liquidity) needs to be properly gauged and risks assessed
- Liquidation proceedings as well as decisions on liabilities (haircuts, bail-in) require valuations by law
- There are several types of valuations: fair value (market price), long-term economic value, gone-concern basis

A provisional valuation should be prepared to provide an immediate basis for decision making, with a comprehensive valuation to be performed subsequently

- The first decisions (Bank failing? Provision of ELA? Parameters of P&A?) need to be taken under time pressure, which does not allow for a comprehensive valuation process
- A provisional valuation needs to be performed rather quickly
- Good preparation (availability of data at bank and supervisor, clarity on valuation principles, clarity on economic assumptions, line-up of advisors that can be entrusted with independent valuations) can reduce risk and uncertainty
- Remaining uncertainty is to be addressed by incorporating a conservative buffer to prevent a later correction to the downside. The buffer can subsequently be released
- A comprehensive valuation must be performed later on to validate decisions taken and perform adjustments as necessary

…AND COSTS, CASH FLOWS, LIABILITIES AND CLAIMS IDENTIFIED AND QUANTIFIED

Illustrative example
Bridge bank



- *Bank to submit restructuring plan to Supervisor*
- *Corrective measures may be adopted by the institution*

Commentary

- Resolution Authority mandated to identify assets and liabilities to transfer to bridge bank
  – Cannot transfer liabilities used in the computation of own funds (e.g. equity, contingent convertibles)
  – Fair-value assessment of assets conducted by external auditors at the time of transfer/sale
- Resolution Fund (RF) to fill gap between assets and liabilities transferred to the bridge bank
- Losses on transferred/sold assets (excluding guaranteed deposits) covered by RF through:
  – Additional cash injections in the bridge bank (RF cash) and a senior claims with the distressed bank (RF claim)
  – Transfer of additional assets to the acquiring bank
- Guaranteed deposits can only be covered by the RF given no excessive deposit coverage and no verified unavailability of funds
- Deposit Insurance Guarantee Fund will cover any guaranteed deposits that have not been transferred to the bridge bank
- Bridge bank is allowed to operate for a 2 – 5 year period

RECOMMENDATIONS FOCUSED ON DEVELOPING A STRATEGY TO DEAL WITH FAILING BANKS TAILORED TO COVID-19

Recommendations

	Measure	Actions required
01	**Develop a system-wide resolution strategy**	• Based on the "heatmap", develop increasingly detailed strategy to sustainably deal with failing banks in an escalating scenario, including an "end-game" strategy that involves large-scale restructuring of the system • Obtain clarity on the capacity of existing buffers, including capital in banks, potential loss transfers to various classes of creditors, systemic safety nets (deposit insurance), public solvency and liquidity support
02	**Address policy obstacles and ensure operational capacity**	• Review legal framework for adequacy in light of the developing situation and potentially necessary measures, identify necessary actions • Review and develop operational playbooks for bank interventions • Assess operational capacity of involved authorities and safety net elements for adequacy to deal with the potential scale of interventions, identify measures to temporarily and swiftly increase capacity if needed • Activate and – if necessary – strengthen crisis inter-agency coordination committees, ensure timely information flow and collaboration on identifying and implementing resolution strategies at systemic scale
03	**Prepare for a valuation process**	• Develop guidelines to be followed in provisional and comprehensive valuations, including methodology and assumptions • Form an opinion on the banks' ability to provide necessary data in a timely manner, require preparatory measures • Assess supervisor's capacity and preparedness to perform provisional and comprehensive valuations of the required complexity and at scale and line up outside, independent support if necessary • Closer to failure, request banks to provide required data such as up-to-date financial statements and reporting on assets and liabilities, including explanations on applied principles and assumptions
04	**Develop a comprehensive communication strategy**	• Apply a communication strategy that keeps external parties informed throughout the crisis scenario • Ensure communication remains consistent over time as the situation escalates • Do not communicate problems without also communicating solutions!

04

PERFORM ACTIVE NPL MANAGEMENT

Why is this important?

- While loan workout is a well-known theme for banks, experience shows that a large increase in volume of distressed assets require more systematic approaches, covering organization, policy, products and monitoring, but also governance and decision-making
- Proactive engagement with borrowers can itself help reduce PDs and LGDs
- Stop-gap solutions – such as moratoria – can in the worse case delay and exacerbate the problem
- Banks' internal reporting systems are based on provisions that often fail to capture all dimensions of the issue in a timely manner
- Information regularly exchanged with supervisors does not provide adequate transparency
- Practical knowledge related to large-scale NPL issues is usually scarce at supervisors, impeding judgement and quality of supervisory action
- Legal and regulatory frameworks often come with high administrative burden for NPL resolution, impeding swift action and incentivizing to "hold out"

What are the priorities?

- Ramp up reporting requirements to allow for supervisory awareness of loan portfolios well ahead of the recognition of provisions
- Review banks' abilities to deal with a broad increase of credit risk from a structural and operational perspective
- Provide guidance and requirements to banks on the organisation, governance, processes and products
- Ensure banks focus on solutions that fix the NPL problem sustainably
- Review legal and regulatory framework for efficiency in dealing with viable as well as "hopeless" borrowers
- Ensure creditors have incentives to cooperate on joint cases
- **BANKS MUST NOT HOLD OUT AND WAIT FOR THE ISSUE TO SOLVE ITSELF!**

BEST PRACTICES IN NPL AND ARREARS MANAGEMENT ENABLE A SWIFT RESPONSE TO DETERIORATION AND ADEQUATE SOLUTIONS

Organization and Governance

- In "good times", NPL management is centered around bespoke restructuring of a lower number of mid/large cases, and collection processes for simple, retail exposures
- As numbers increase, a more industrialized organization needs to be established to allow for the swift and ongoing management of a larger portfolio, including through separate, centralized restructuring units
- Governance arrangements need to ensure the bank can decide on cases. Reporting structures need to allow management to have transparency on developments

Portfolio segmentation

- Process and solutions for NPLs depend on their characteristics. A clear segmentation by several dimensions is necessary to apply the right process
- Segmentation dimensions include: Borrower type (individual, SME, corporate), Product (Mortgage, Overdraft, Credit Card, Credit Line, Investment Loan, etc.), Days past due (UTP, early, late arrears, restructure, recovery), Exposure (high/low), Risk score, etc.

Process

- A larger volume of cases requires clear and time-bound processes including criteria, decision and escalation points as well as responsibilities
- Processes are aligned with the portfolio segmentation. Depending on the process step, different parts of the restructuring organization might be responsible, depending on standardization and complexity
- Processes should be standardized to the extent possible, and near-time monitoring frameworks (and KPIs) should be in place

Solutions

- The solution agreed with a client needs to be consistent with the financial problem to be faced
- Short-term solutions (such as repayment holidays or plans) are only adequate if the problem is only temporary in nature or cannot be assessed at this time. Structural issues need to be addressed with solutions that impact the NPV of a loan (interest rate reductions, write-offs), which is why banks try to avoid them
- Solutions that rely on the realization of collateral (e.g. foreclosure) do not work in systemic crises and come with material risks for banks if collateral were to be taken on the banks' balance sheet

In addition (not detailed here): Systems, Staff and Performance Measurement

EXAMPLE: ARREARS MANAGEMENT PROCESS WITH CLEAR ESCALATION POINTS AND STANDARDIZED SOLUTIONS

Arrears management process

Process	**Collection Early & Late Arrears Teams**	**Temporary Forbearance**	**Restructure**	**Exit**
Decisions/Solutions	Transfer client to specialized team	Pay Interest Only/ Interest plus	Term Extension	Assisted Voluntary Sale
	Client offered repayment solutions	Pay < Interest	Capitalisation of Arrears	Shortfall Sale
	Terminate relationship and writeoff	Moratoria	Temp Int. Rate Reduction	Trade Down
			Perm Int. Rate Reduction	Mortgage Rescue
			Split Loan	
	Temporary solutions for temporary problems		"Sustainable" solutions for structural problems	

TIMELY AND COMPREHENSIVE RECOGNITION OF DISTRESSED LOANS IS KEY FOR SUPERVISORS AND BANK MANAGEMENT ALIKE

Issues with NPL reporting

- There is no common international standard on what constitutes an NPL
  - Often based on "Days past due" (90+ days)
  - In some countries depending on collateral (not an NPL to the extent collateralized)
  - Prone to evergreening through adjustment of contract ahead of NPL classification
  - No best-practice on when to treat a restructured exposure as "cured"
  - Oftentimes rules are ambiguous on the recognition of interest on NPLs, inflating PnL and capital
- Provisions to be recognized in line with locally applicable accounting rules; often less robust than IFRS (which was materially amended to that end)
- In most countries there is no guidance on reporting of restructuring processes from an operational and financial perspective
- => Depending on the specificities of reporting rules, reported NPL numbers might significantly understate the issue

Actions to strengthen transparency and reduce lag

- Establish a robust NPL definition banks need to adhere to in their external reporting but also internal management; objectives:
  - Loans should be flagged as soon as it is 1 day past due (early arrears) or is considered unlikely to pay (UTP)
  - Loans should account on gross basis regardless of collateral
  - A modification of the loan contract should not reset the time counter …
  - … unless a solution is considered sustainable and has demonstrated to work over a considerable observation period
  - NPLs should not accrue interest!
- Banks should report on their NPL numbers on a monthly basis, broken down by client segment and collateral
- For banks with material NPL portfolios operational reporting should be established as well as reduction plans together with capital budgets, which are then monitored on an ongoing basis

EFFECTIVE RESOLUTION OF NPLS REQUIRES A WELL-FUNCTIONING SET OF LEGAL TOOLS FOR DEBT COLLECTION, RESTRUCTURING, AND DISPOSAL

Conditions that need to be met

- A systemic NPL crisis can not be managed alone by banks enforcing and liquidating collateral, although it is a important tool to convince borrowers to cooperate
- A clear and efficient legal framework underpins both individual enforcement actions and insolvency proceedings and requires appropriate legislation as well as robust institutions
- The legal framework should enable the timely, transparent, and predictable recovery of claims, while protecting value for all concerned parties
- There should be no informational and tax obstacles. Credit bureaus for banks with relevant information on debtors, and publicly searchable debt and property registers are important for efficient debt workouts but also for policy design

Critical aspects to address

- Reforms in legislation and institutions are often needed to address a systemic crisis. An assessment of the existing framework is the essential first step to introduce reforms
- If the crisis is systemic and high NPLs reach important proportions, the economic effects may warrant additional public policy intervention. Examples include:
  - Enhancing debt enforcement and foreclosure processes to achieve faster asset recoveries (“**stick**”)
  - Providing swift ways to restructure without the intervention of courts, including debt discharge for individuals under clearly defined conditions without moral hazard (“**carrot**”)
  - Creditor coordination frameworks and supervisory guidance on NPL resolution
- Further examples include facilitating the rapid exit of nonviable firms and the rehabilitation of viable firms

RECOMMENDATIONS FOCUSED ON SETTING THE GROUNDS TO MANAGE A LARGE INCREASE OF NPL VOLUMES

Recommendations

Measure		Actions required
01	**Review NPL management processes of local banks to issue recommendations**	• Review quantitative and qualitative capacity of banks to deal with a market increase of loans at risk and arrears so that borrowers in difficulty can be proactively engaged with • Draft recommendations or rules to ensure banks take adequate steps in dealing with distressed loans • Review characteristics of repayment plans in the market to ensure they are adjusted to ability to pay rather than postponing default to later periods
02	**Strengthen reporting requirements**	• Increase scope and frequency of data reporting within banks and to supervisor, promote data granularity, requiring segmentation of NPL portfolio, to ensure both supervisors and bank's have sufficient visibility • Review NPL recognition and provisioning rules to ensure timely capture of a deteriorating loan book
03	**Ensure legal and regulatory framework is conducive to NPL resolution**	• Review legal framework for obstacles to a swift resolution of NPLs • Incentivize banks to agree on a "code of conduct" stipulating expectations and rights for banks and borrowers in a debt restructuring process • For individuals, review the effectiveness of personal bankruptcy frameworks to allow the write-down of debt once certain repayment conditions have been met • For businesses, allow for the restructuring of viable, but overindebted companies outside a formal bankruptcy process • Ensure enforcement regimes, including collateral enforcement, work effectively to provide sufficient incentives to borrowers to cooperate

05

SUPPORT DELEVERAGING WITH SYSTEMIC SOLUTIONS

Why is this important?

- Banks face higher volumes of NPLs as a consequence of liquidity shortage and demand shocks
- Businesses that have been viable before the crisis might now have debt challenges due to crisis impact
- Large NPL portfolios distract banks from providing lending into a recovering economy due to capital and operational impact
- Banks might prefer quick liquidation over long-term restructuring, which can be damaging if it concerns otherwise viable companies
- Systemic solutions to manage NPLs can encourage front-book lending fostering investment and leading to economic recovery
- A coordinated approach can lead to greater transparency and improved credibility of assets value, resulting in higher market valuations for participating banks
- However, systemic solutions should not pave the way for long-term warehousing of non-viable debt
- Structuring and calibration of solutions (e.g. scope and transfer price) can be tricky

What are the priorities?

- Determine need of systemic solution to handle high volume of NPLs
- Assess different systemic alternatives based on country-specific characteristics
- Coordinate with different government bodies to increase attractiveness of domestic distressed assets for investors

In this presentation, we will focus on Asset Management Companies (AMC)

ASSET MANAGEMENT COMPANIES CAN LEAD TO SIGNIFICANT BENEFITS FOR THE HEALTH OF THE BANKING SYSTEM AND FACILITATE NPL RESOLUTION

Benefit	Description	Evidence: Ireland (NAMA)	Evidence: Spain (SAREB)
Reduce P&L drag of NPLs	• Removal of non-interest earning assets from balance sheet improves banks' profitability • Smaller balance sheet makes banks less vulnerable to funding squeeze and reduces interest expense	◑	◕
Lower cost of funding	• Removal of doubtful assets from balance sheets reduces uncertainty for debt and equity investors • Exchange of illiquid assets against central bank eligible AMC bonds increases access to repos with favourable conditions	◔	●
Encourage front-book lending	• Asset transfer frees up balance sheet capacity for new lending • Allows bank management to divert attention from asset work-out to normal banking business	◕	○
Higher market valuations for participating banks	• Removal of distressed assets increases attractiveness of participating banks for traditional bank investors • If government was required to support the participating banks, increase in valuation multiples increases likelihood of repaying taxpayer support	●	◑
Improved value extraction from NPLs and reduced moral hazard	• Loan workout process receives full attention within AMC whose NPL portfolio is large enough to warrant highly specialised team • AMC can be more flexible in debtor negotiations thank banks, reducing its exposure to debtors' moral hazard (speculating on a debt write-off)	◕	◑
Greater transparency and improved credibility of assets value	• Involvement of third parties in setting up and valuing the transferred assets increases accuracy and credibility in prices of the assets • AMC is well placed to report on market trends and progress in cleaning up the NPL, increasing transparency in entire sector	◕	●

SEVERAL DESIGN PRINCIPLES OF ASSET MANAGEMENT COMPANIES ARE KEY FOR A SUCCESSFUL SETUP

01
Mandate

Maximize the recovery value of transferred assets

Reduce public contingent liabilities over a fixed lifespan

Clear commercial focus

02
Governance

Board and senior management should be composed of individuals independent of government or active market players, with relevant expertise and market credibility

03
Independence

Autonomous entities, with flexibility over pay and staffing

Ability to hire advisory firms and to set and execute operational and valuation policies

Adequate protection from litigation for staff

04
“Sunset” clauses

Limited lifespans to avoid the risk of creating a permanent bureaucracy and to establish the right incentives to realize assets values expeditiously

05
Valuation of assets

Performance in maximizing value should be measured against a realistic benchmark

Current values should be compared to the starting balance sheet

06
Transparency and accountability

Prepare audited financial statements based on current market valuations of assets, with oversight by appropriate governance bodies

07
Funding

Operating budget should be separated from the funding allocated for asset purchases

Government bonds used to fund asset purchases should be remunerated at market rates

ONCE THE DECISION TO CREATE AN ASSET MANAGEMENT COMPANY IS TAKEN, DETAILED DEFINITION OF DESIGN ELEMENTS IS REQUIRED

Design element	Description
Ownership	• Set of investors who provide equity capital to AMC • AMC can be majority owned by the public or by private shareholders
Eligible banks and assets	• Need to define which banks can transfer, which can't or which are obliged to • Set of assets to be transferred from banks' balance sheets to AMC • Likely to consider bank specific factors (e.g. for viable banks, perimeter can be set by asset class, for non-viable entities might be residual balance sheets following asset sales)
Loan servicing	• Clear operational responsibilities and strong capacity for loan servicing, including effective restructuring of the type of assets in scope of the AMC • Oftentimes: Appointment of qualified external servicing companies
Size	• Depending on the size of state guarantees and transferred assets, authorities can create a single AMC covering all transferred assets, or create separate AMCs by asset class
Funding and pricing of assets	• See **subsequent** slide
Legal and tax advantages	• Structure can include legal and tax advantages, e.g. establishment of funds with assets where third parties can buy a participation, and have some tax advantages
Length of mandate	• Mandate for number of years over which the company has to dispose all assets
Operational setup	• Organization and governance model for AMC • Identification of senior management to run AMC's activities, Budget and resource requirements • Need to define operating model: e.g. recovery strategy, IT infrastructure, staffing & incentives

Clear understanding of the interconnections between several design parameters is critical for the decision process and the successful AMC setup

FUNDING AND PRICING OF ASSETS ARE CORNERSTONE DECISIONS WHEN SETTING UP AN AMC

Transfer price haircut

- 3 approaches can be taken:
  - Net book value: all future losses will be absorbed by the carve out
  - Fair value adjusted for portfolio sale discount (i.e. liquidity premium)
  - Exit value, accounting for liquidity premium and rapid sell premium
- Transfer price has a direct impact on future return

Leverage

- Selected to improve return to the equity…
- … but ensuring that it provides enough cushioning to the debt (comfort to senior bond holders)

Senior bond structure

- A flexible repayment profile is required to allow the carve out funding to develop its mandate (rent, land development, etc.)
- Structuring in tranches to allow for exposure selling in the future

Cost of debt

- Should be fixed to minimise costs with reference to market conditions upon origination

State involvement

- Equity holding by the State (through the MoF or the RF)
- State guarantee to attract private investors and/or to provide liquidity to the bonds (if remaining in the ceding entity balance sheet)

TRANSFER PRICING HAS IMPORTANT IMPLICATIONS FOR THE AMC

The right transfer pricing is critical to minimizing the risk of significant losses, setting the right incentives, and avoiding moral hazard

Transfer prices allowing moderate returns and creating attractive investments are to be preferred

High level implications of transfer price level

Transfer price set as…	Implications for selling bank	Implications for AMC (and its investors)
Carrying value by banks	• No capital destruction – capital accretive in every case • However, different levels for each bank • State aid consideration if public sector participates	• Most likely unable to generate any value – would only accept it if subsidised through management fees • May generate perverse incentives
LTEV		
Long term economic value, close to recovery value through the cycle	• Maybe capital accretive depending on specifics of portfolio (trade off of loss vs. RWAs)	• May lead highest absolute cash recovery (disregarding time effect) • Would need to be subsidised through e.g. management fees to be attractive
“Retail” resolution, close to recovery value bank could achieve today	• This can be achieved by banks today if right operational set up is in place – creating organisation to deal with it is a problem	• Moderate returns (e.g. teens) can be achieved without subsidy • Would be attractive if enough volume can be achieved
“Wholesale” resolution, close to fire sale	• Banks unlikely to sell at this price given associated capital destruction	• Attractive IRRs and limited downside as short WAL

Selling at these levels requires structured approaches to align parties incentives

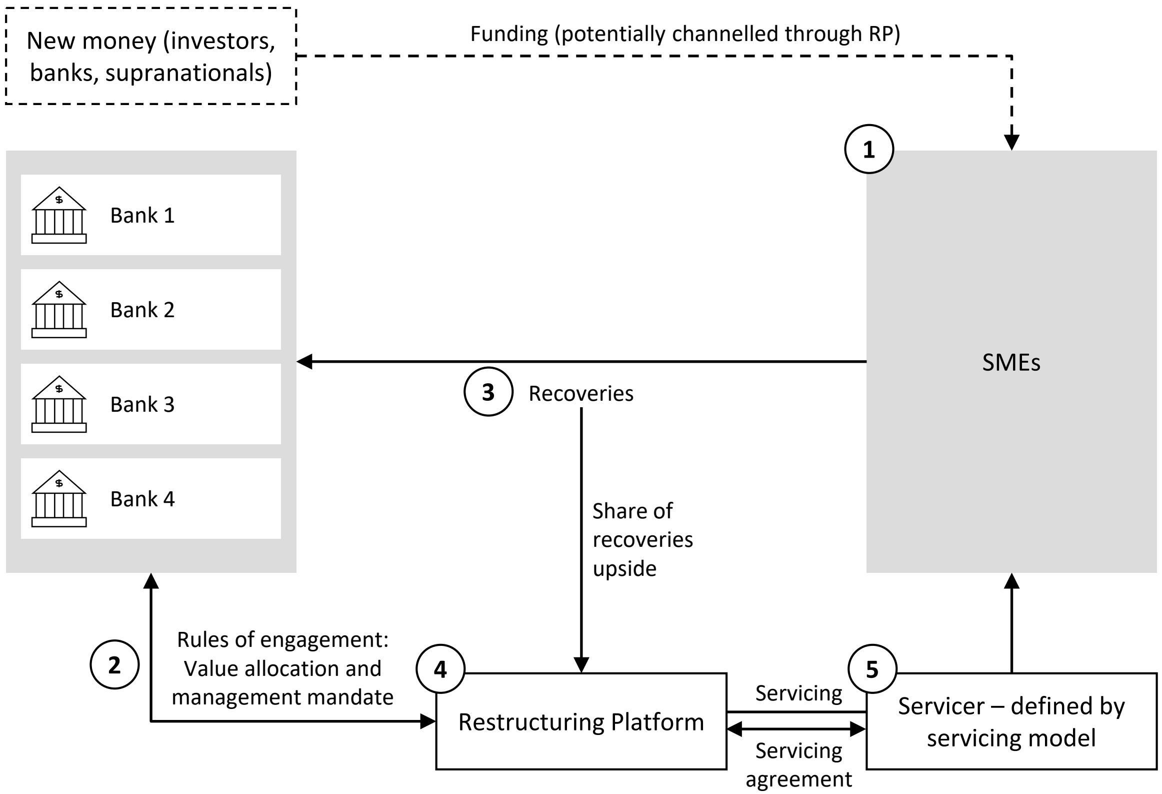
Outright sale easy to achieve

Would not require a structured solution, but only feasible if sufficiently provisioned

ALTERNATIVES TO AMCS INCLUDE CROSS-BANK COLLABORATION SCHEMES ON NPL MANAGEMENT

Example: Restructuring platform – *Creating a collaboration framework solves many of the "artificial" barriers that banks and SMEs faced during a restructuring negotiation*

Simplified structure



Structural remarks and key design choices

1. **Assets:** Initial pilot with common exposures to SMEs
2. **Rules of engagement:** Clear decision-making rules and monitoring mechanism
3. **Target recoveries:** Fair value allocation mechanism (no banks "worse off" principle) with upside sharing rules
4. **Strategy:** Clearly defined recovery strategies to maximize value and sustainability of SMEs – avoids differentiated and conflicting recovery strategies per debtor
5. **Servicing:** Professional servicer hired through exhaustive procurement process, ensuring best in class methodology and independent implementation of policies

RECOMMENDATIONS FOCUSED ON PREPARING AND FACILITATING OFFLOADING OF NPLS WHILE ENSURING WORKOUT AND RECOVERY TAKE PLACE

Recommendations

Measure		Actions required
01	**Enable and facilitate transfer and securitization of NPL portfolios to allow for offloading of NPLs from bank balance sheets**	• Require banks to prepare and produce comprehensive loan and portfolio documentation • Enact regulation allow and facilitate transfer/securitization of NPL portfolios, if required, including relevant tax and accounting aspects • Promote collection of foreclosure data to enhance transparency, limiting uncertainty of investors forecasting recoveries of portfolio • Ensure supervisory guidance on significant risk transfer is sufficient for banks to have clarity on the impact of a securitization on their capital requirements
02	**Assess and implement systemic NPL management solutions if required**	• Promote cross-bank collaboration in transfer of NPL portfolio, acting as a coordination agent and potentially absorbing part of the risk • Develop an asset management companies (AMCs) (i.e. “bad banks”) as it will facilitate NPL transfer, by increasing accuracy and credibility in prices of the assets and ensuring loan workout process receives full attention • Define transfer price to limit day-one loss for banks while balancing state exposure to AMC – the losses banks need to absorb upon transfer limit the volume they can offload given capital constraints • Define strategies advisable by asset type depending on goals, financial consequences and the operational implications - AMC can be more flexible in debtor negotiations thank banks

TEAM DETAILS

RESPONSIBLE TEAM

Oliver Wuensch
Senior Advisor, Zurich
oliver.wuensch@oliverwyman.com

Maria Fernandes
Principal, London
maria.fernandes@oliverwyman.com

Leticia Rubira
Associate, Madrid
leticia.rubira@oliverwyman.com

REGIONAL EXPERTS

Nuno Monteiro
Partner, Sao Paolo
nuno.monteiro@oliverwyman.com

Anacarla Abrao
Partner, Sao Paolo
anacarla.abrao@oliverwyman.com

Michael Wagner
Partner, Sao Paolo
michael.wagner@oliverwyman.com

Pablo Haberer
Partner, Mexico DF
pablo.haberer@oliverwyman.com

Til Schuermann
Partner, US
Til. Schuermann@oliverwyman.com

Pablo Campos
Partner, Madrid
pablo.campos@oliverwyman.com

OLIVER WYMAN