

SAFEGUARDING CRITICAL FUNCTIONS OF THE FINANCIAL SYSTEM

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EXECUTIVE SUMMARY (1/2)

Shortlist of critical functions

- The financial sector will play a major role in navigating the Covid-19 crisis, not only as a contributor to GDP but also as an enabler of economic activity
- This report, prepared in collaboration with ASBA, shortlists critical functions provided by the financial sector, based on a top-down **assessment of demand and supply under stress**:
 - Defined **scenarios with escalating level of stress**:
 - Scenario A: Severe economic impact during two quarters, followed by “U” recovery, with backbone of economy staying intact
 - Scenario B: Deep economic recession, followed by “L” recovery, with severe disruptions due to Covid-19 impact
 - Assessed **demand for critical functions** considering:
 - **Inherent demand**, which is a factor of market characteristics (e.g. prevalence of cash as means of payment) and business model (e.g. reliance on long term debt to fund operations)
 - **Vulnerability of a sector to economic stress**, which is a factor of the expected decrease in revenue and the cost structure of each sector
 - Analysed **supply** of critical functions based on substitutability:
 - **Substitutability across entities**, which considers the number of alternatives in the market providing the function and the ease to change between them
 - **Substitutability across functions**, which assesses whether the economic benefit of a specific function can be provided by another function (e.g. credit card payments instead of cash)
- In a stressed scenario, we expect an **increase in demand** of functions related to **continuity of day-to-day activities**, and increase in vulnerability of supply of functions with **low substitutability**
- **Most relevant critical functions in Latin America are cash services, retail payment services, remittances, and short term business lending**
- Critical functions provided by the financial sector to banks and other financial entities, such as **securities clearing & settlement** and **wholesale payments**, also considered relevant as they enable functioning on the financial sector

EXECUTIVE SUMMARY (2/2)

Policy recommendations to safeguard the provision of critical functions

- Objectives of short term policy actions to preserve the provision of critical functions include:
 - **Cash services:** Continue to meet elevated demand for cash, ensuring uninterrupted access and distribution
 - **Payment services:** Ensure uninterrupted functioning of e-payment services, reduce hurdles to access, and establish alternative to cash for redundancy and efficiency considerations
 - **Remittances:** Safeguard flow of funds to the underbanked
 - **Short term business lending:** Safeguard availability of short-term credit in the economy, support implementation of government support programs and proactively manage credit risk
 - **Securities clearing & settlement:** Ensure adequacy of contingency plans and sufficient liquidity in the system
 - **Wholesale payments:** Ensure adequacy of contingency plans and fulfilment of critical operations
- In addition to defining short term actions to safeguard financial stability, supervisors must engage in **tactical actions** for immediate contingency planning and crisis response:
 - Set-up coordinated **emergency response**
 - Prepare for **crisis management**, monitoring areas of vulnerability to prioritise supervisory attention
 - Plan & support **post-crisis economic recovery**
- In the **medium term**, regulatory intervention associated to the Covid crisis provides an opportunity to **promote resilience of the financial system, inclusion and innovation**, by taking strategic actions to:
 - Improve access to electronic payment systems and banking service
 - Provide access to lending facilities
 - Address rising credit risk
 - Promote digitalization at the client-facing front end and within the financial system's backbone

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Approach

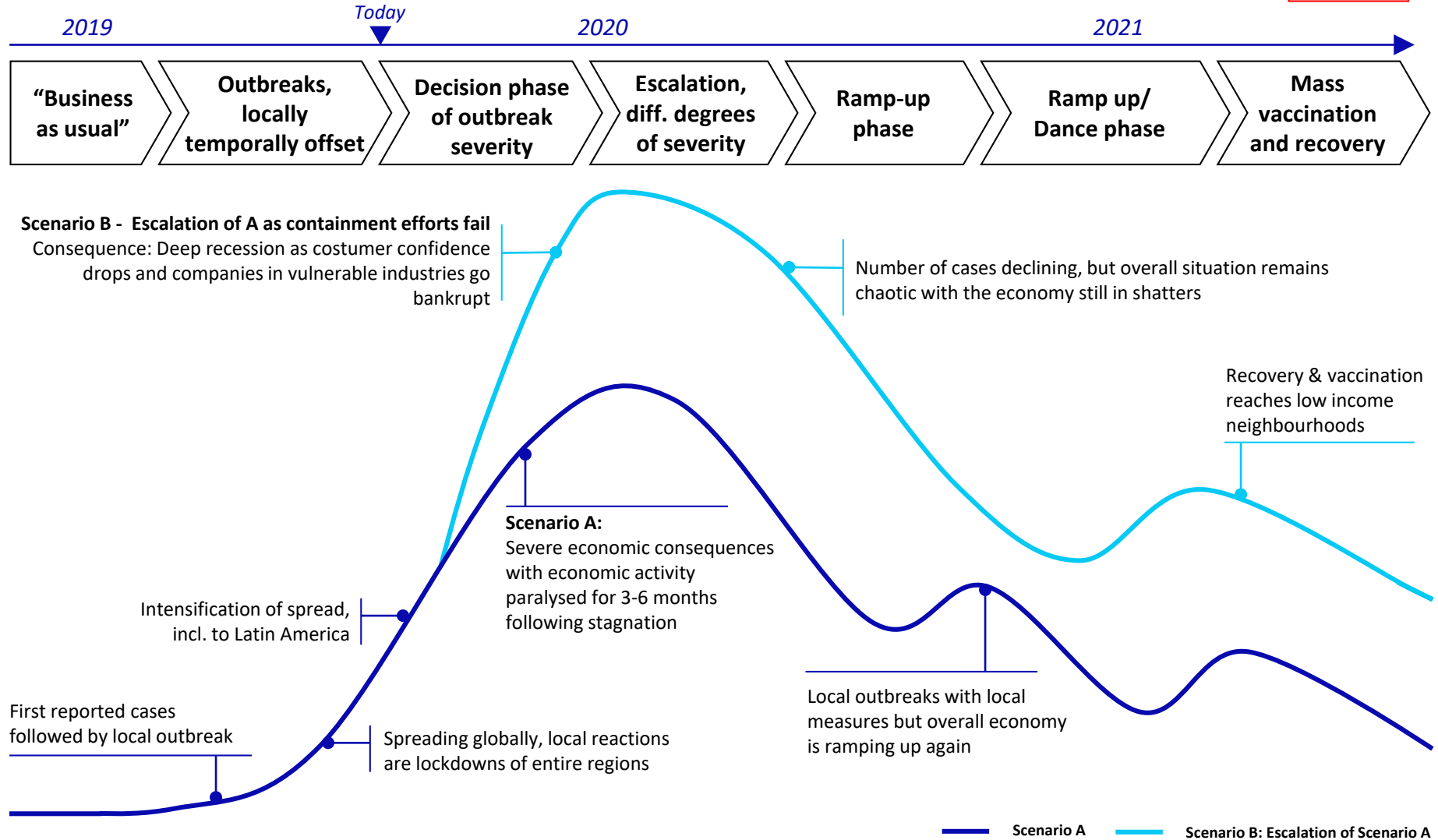
| Section | Approach |
|--|--|
| 01 Scenario definition | <ul style="list-style-type: none">• Defined scenarios with escalating stress<ul style="list-style-type: none">• Scenario A: Severe economic impact• Scenario B: Deep recession with severe disruptions |
| 02 Demand for critical functions/services | <ul style="list-style-type: none">• Assessed inherent demand for functions/ services of financial sector in business as usual conditions• Identified vulnerability of households, businesses and public sector to stressed scenarios• Determined “demand under stress” per critical function |
| 03 Supply of critical functions/services | <ul style="list-style-type: none">• Assessed conditions that shape supply of critical functions, including impact of stress• Combined vulnerability of supply with demand under stress to provide a shortlist of critical functions |
| 04 Short term recommendations for selected critical functions | <ul style="list-style-type: none">• Defined recommendations to ensure continuity of critical functions, including supervisory crisis management actions• Provided an overview of conditions required to ensure financial sector can supply critical functions identified, including non-financial services associated |

01

SCENARIO DEFINITION

SCENARIOS DEFINED TO ACCOUNT FOR ESCALATING STRESS, INTRODUCING DEEP RECESSION IN SCENARIO B

Illustrative



SCENARIO A: SEVERE DISRUPTIONS OF PUBLIC LIFE AND THE ECONOMY, BUT CRITICAL INFRASTRUCTURE REMAINS LARGELY INTACT

Situation: COVID-19 is spreading rapidly, infecting thousands of residents all over the country/region and of all social classes. The measures in place to contain the pace and intensity of the spread have severe consequences on public life and the economy, fostered by consequences of COVID-19 globally. The financial situation is tense.



Public Authorities

- Quickly closing all educational institutions, non-critical businesses and public events
- Managing situation with help of Law Enforcement agencies
- Offering tailored responses, e.g. to address situation in poor neighbourhoods and informal settlements
- Establishing temporary safety networks: Support packages & free health care
- Adjustments of regulations regarding, e.g., insolvency, payments, credits and rent
- Austerity measures: Reductions in government expenditures



Economy

- Slowdown of most industries, leading to short-time work and releases; contraction of both formal and informal sectors (loss of jobs, restrictions to hire etc.)
- Severe shortages/bottlenecks in financial sector



Health Care System

- At its limits but copes due to apt measures, ensuring staff remains safe
- Help of industry with production of medical & other entities (e.g. military) increasing number of hospital beds



Residents

- Stay home since they are properly informed and benefit from gov. relief programs



Critical Infrastructure

- Remains largely intact
- Enables efficient response to crisis

Despite thousands of infections and a severe slowdown of the economy, the situation is de-escalated within a few months. Recovery is a long and arduous process but due to apt measures possible within about 2 years

SCENARIO B: CONTAINING MEASURES FAIL LEADING TO A DEEP ECONOMIC RECESSION

Situation: COVID-19 is spreading rapidly and containment efforts fail. The health care system is quickly overburdened and incapable of dealing with new infections, especially as medical staff and equipment are limited. The economy collapses including critical infrastructure



Public Authorities

- Responses delayed and/or not monitored stringently
- Public officials get infected or are not willing or incapable of introducing adequate measures to – at least partially – absorb the negative externalities on its residents and the economy
- No or insufficient adjustments of regulations regarding payment, rent, insolvency etc. benefitting less well-off residents
- Government policies (economic as well as fiscal policies) besides other policy measures might be insufficient to foster quick economic recovery leading to prolonged phase of stress



Residents

- **Distress:** Residents unable to pay for loans and obligations; reacting by plundering (food/med. equipment), attacks on gov. and financial institutions



Economy

- Contraction of both formal and informal sector
- Goods at black markets only accessible to those financially better-off
- Solvency of financial sector under strain



Health Care System

- Incapable of coping with number of infections, hospitals overcrowded with insufficient medical equipment
- Staff is partly infected
- Support from public authorities and industry is limited



Critical Infrastructure

- **Bankruptcy** of companies in vulnerable sectors (e.g. utilities, providers of basic services like logistics, etc.)

Structural damage as a result of corporate bankruptcies, Sovereign default risk affecting ability to inject further stimulus in 2021

02

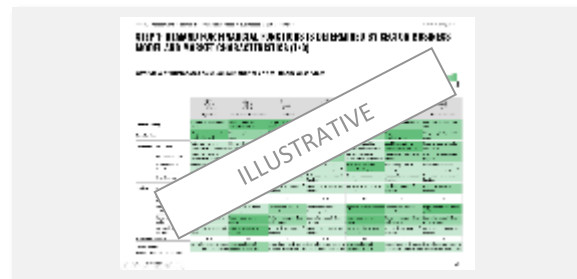
DEMAND FOR CRITICAL FUNCTIONS AND SERVICES

DEMAND FOR CRITICAL FUNCTIONS UNDER STRESSED SCENARIOS WAS ASSESSED TOP-DOWN, CONSIDERING INHERENT DEMAND AND SECTOR VULNERABILITY

Approach followed

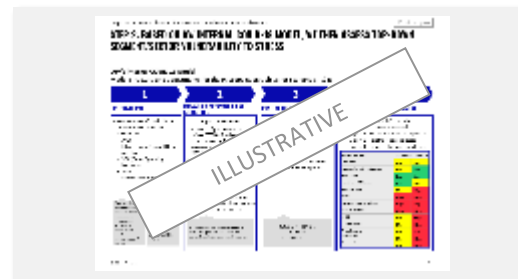
1 Assess “inherent” demand

- Define **long-list of critical functions** provided by financial sector for the analysis (detail in appendix)
- Define **aggregated customer segments** served by financial sector for the analysis (detail in appendix)
- Assess **inherent demand** of critical functions under “business as usual” (“BAU”) circumstances, **considering structural factors** (e.g. households will have stronger demand for deposits; heavy industries for project finance)



2 Assess vulnerability to stress scenarios

- Assess **impact of COVID-19 stress per customer segment, per scenario**, as follows:
 - For **businesses**, used internal OW COVID-19 vulnerability model structure to assess delta on profit margin % at sector level
 - For **households, government and financial sector**, used expert judgement based on scenario narrative
- **Impact is classified as high/medium/low** per customer segment



3 Conclude on level of demand “under stress”

- **Combined level of inherent demand** per critical function (step 1) **with impact of stress scenario** per customer segment (step 2)
- Applied rules and expert judgement, considering input from steps 1 and 2, and whether the functions is long-, or short- term
- **Classified demand under stress** as an “increase”, “decrease” or “no change”, both at segment and aggregate level





ASSESSED LEVEL OF INHERENT DEMAND BY CUSTOMER SEGMENT OF A GIVEN CRITICAL FUNCTION

Assumed **total** inherent demand per critical function & customer segment

Applied in both scenarios



1. Businesses

| Critical Functions and Services | 1. Businesses | | | | | | | | | | 2. Households | 3. Government | Inherent demand level in BAU | |
|---------------------------------|--|-----------------------|-------------|---------------------|-----------------|--------|-------------------|-----------------------|--------|----------------|---------------|---------------|------------------------------|------|
| | Agriculture | Construction & Infra. | Food Retail | Healthcare & Pharma | Manu- facturing | Retail | Tourism & Leisure | Transport & Logistics | Energy | Other Services | | | | |
| Deposit-Taking | Mid | High | High | High | Low | Mid | Mid | High | High | High | Mid | High | High | |
| Cash Services | High | Mid | High | Low | Mid | High | Mid | Mid | Low | Low | High | Mid | High | |
| Payments | Cash vouchers | Low | Low | High | Low | Low | High | Mid | Low | High | Mid | High | Low | High |
| | Credit/ debit card | Low | Low | Mid | Mid | Low | Mid | Mid | Low | Low | Mid | Mid | Low | Mid |
| | E-payments & transfers | Low | High | Low | Low | High | Low | Low | High | Mid | Mid | Low | Mid | Mid |
| | Remittances | Mid | Low | Low | Low | Low | Mid | Mid | Low | Low | Low | Mid | n.a. | Low |
| Lending | Mortgage loans | Mid | Low | Low | Low | Low | Mid | Mid | Low | Low | Low | Mid | n.a. | Mid |
| | Credit card lending & Consumer finance | Low | Low | Low | Low | Low | Mid | Mid | Low | Low | Low | Mid | n.a. | Mid |
| | Short-term business debt & Trade finance | Low | Mid | Mid | Low | High | Mid | High | Low | Mid | High | n.a. | Mid | High |
| | Long-term business debt | Low | High | Mid | Low | High | Mid | Mid | Low | High | Mid | n.a. | Mid | High |
| | Project & Infrastruct. finance | Low | High | Low | Low | Mid | Low | Low | Low | High | Low | n.a. | Mid | Mid |
| Capital markets | Low | Mid | Low | Low | Mid | Low | Low | Low | Mid | Low | Low | Mid | Low | |
| Clearing and settlement | Low | Low | Low | Low | Mid | Low | Low | Low | High | Low | Low | Mid | Mid | |

Source: Oliver Wyman Analysis

ASSESSED THE IMPACT OF STRESS SCENARIOS YIELDING AN ESTIMATE ON THE LEVEL OF VULNERABILITY PER SECTOR

Illustration of approach (OW's simplified COVID-19 Model)

Assumed total impact of stress per sector

A Pre-COVID P&L by business sector

| Sector | Revenue | COGS ¹ | Labour | OOX ² | Rent | Utilities | D&A | Net Income |
|---------------|---------|-------------------|--------|------------------|------|-----------|-----|------------|
| Manufacturing | 100% | 53% | 17% | 13% | 6% | 1% | 1% | 9% |

Impact of decrease on revenue differs depending of variability of P&L item

B Impact on revenues & cost structure

| Sector | Decrease in Revenue | Revenue | COGS ¹ | Labour | OOX ² | Rent | Utilities | D&A |
|---------------|---------------------|---------|-------------------|--------|------------------|------|-----------|-----|
| Manufacturing | -50% | 100% | 50% | 100% | 20% | 0% | 20% | 0% |

C Post-COVID P&L

| Sector | Revenue | COGS ¹ | Labour | OOX ² | Rent | Utilities | D&A | Net Income |
|---------------|---------|-------------------|--------|------------------|------|-----------|-----|------------|
| Manufacturing | 100% | 80% | 17% | 23% | 12% | 1% | 3% | -36% |

D Sector vulnerability assessment

| Sector | Delta % of Pre-COVID Net Income | Pre-COVID Profit margin | Loss-to-profit margin ratio |
|---------------|---------------------------------|-------------------------|-----------------------------|
| Manufacturing | -18% | 9% | -2.0 |

Ratio between 1 and 3 so classified as "Medium" (~2 years to recoup losses)

Source: Oliver Wyman Analysis

1. Cost of goods sold; 2. Other operating expenses

D

Results of vulnerability assessment

Per customer segment/sector

| Segments/Sectors | Scenario A | Scenario B |
|-------------------------------|------------|------------|
| 1. Businesses | | |
| Agriculture | Medium | Medium |
| Construction & Infrastructure | Medium | High |
| Food Retail | Low | Low |
| Healthcare & Pharma | Low | Medium |
| Manufacturing | Medium | High |
| Retail | High | High |
| Transportation & Logistics | High | High |
| Tourism & Leisure | High | High |
| Utilities | Medium | High |
| Other Services | Medium | High |
| 2. Households | | |
| | Medium | High |
| 3. Government | | |
| | Medium | High |

High: ~3 years of profits to recover losses, Mid: ~1-3 years of profits to recover losses, Low: <1 year to recover losses



COMBINED INHERENT DEMAND WITH VULNERABILITY TO STRESSED SCENARIO TO CONCLUDE ON A LEVEL OF “DEMAND UNDER STRESS” PER FUNCTION – SCENARIO A

Assumed final demand “under stress” per critical function

Estimation based on (1) sectors’ inherent demand for financial functions and services and (2) the sectors’ degree of vulnerability to stress

■ Decrease in demand
 ■ No significant change in demand
 ■ Increase in demand

| Critical Functions and Services | Businesses | | | | | | | | | | 2. Households | 3. Government | Change in demand scenario A |
|--|-------------|-----------------------|-------------|---------------------|-----------------|--------|-------------------|-----------------------|-----------|----------------|---------------|---------------|-----------------------------|
| | Agriculture | Construction & Infra. | Food Retail | Healthcare & Pharma | Manu- facturing | Retail | Tourism & Leisure | Transport & Logistics | Utilities | Other Services | | | |
| Deposit-Taking | | | | | | | | | | | | | |
| Cash Services | | | | | | | | | | | | | |
| Payments Cash Vouchers | | | | | | | | | | | | | |
| Credit/ debit card | | | | | | | | | | | | | |
| E-payments | | | | | | | | | | | | | |
| Remittances | | | | | | | | | | | | <i>n.a.</i> | |
| Lending Mortgage loans | | | | | | | | | | | | <i>n.a.</i> | |
| Credit card lending & Consumer finance | | | | | | | | | | | | <i>n.a.</i> | |
| Short-term business debt & Trade finance | | | | | | | | | | | | <i>n.a.</i> | |
| Long-term business debt | | | | | | | | | | | | <i>n.a.</i> | |
| Project finance & Infrastructure finance | | | | | | | | | | | | <i>n.a.</i> | |
| Capital markets | | | | | | | | | | | | | |
| Clearing and settlement | | | | | | | | | | | | | |



COMBINED INHERENT DEMAND WITH VULNERABILITY TO STRESSED SCENARIO TO CONCLUDE ON A LEVEL OF “DEMAND UNDER STRESS” PER FUNCTION – SCENARIO B

Assumed final demand “under stress” per critical function

Estimation based on (1) sectors’ inherent demand for financial functions and services and (2) the sectors’ degree of vulnerability to stress

■ Decrease in demand
 ■ No significant change in demand
 ■ Increase in demand

| Critical Functions and Services | Businesses | | | | | | | | | | 2. Households | 3. Government | Change in demand scenario B |
|--|-------------|-----------------------|-------------|---------------------|-----------------|--------|-------------------|-----------------------|-----------|----------------|---------------|---------------|-----------------------------|
| | Agriculture | Construction & Infra. | Food Retail | Healthcare & Pharma | Manu- facturing | Retail | Tourism & Leisure | Transport & Logistics | Utilities | Other Services | | | |
| Deposit-Taking | | | | | | | | | | | | | |
| Cash Services | | | | | | | | | | | | | |
| Payments Cash Vouchers | | | | | | | | | | | | | |
| Credit/ debit card | | | | | | | | | | | | | |
| E-payments | | | | | | | | | | | | | |
| Remittances | | | | | | | | | | | | <i>n.a.</i> | |
| Lending Mortgage loans | | | | | | | | | | | | <i>n.a.</i> | |
| Credit card lending & Consumer finance | | | | | | | | | | | | <i>n.a.</i> | |
| Short-term business debt & Trade finance | | | | | | | | | | | | <i>n.a.</i> | |
| Long-term business debt | | | | | | | | | | | | <i>n.a.</i> | |
| Project finance & Infrastructure finance | | | | | | | | | | | | <i>n.a.</i> | |
| Capital markets | | | | | | | | | | | | | |
| Clearing and settlement | | | | | | | | | | | | | |

03

SUPPLY OF CRITICAL FUNCTIONS/SERVICES

SUPPLY FOR THE MOST RELEVANT CRITICAL FUNCTIONS WAS ASSESSED TOP-DOWN FOR THE 2 STRESS SCENARIOS

Approach followed

Done jointly

1 Assess the conditions for supply of critical functions

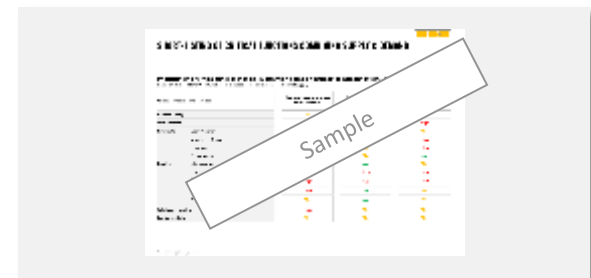
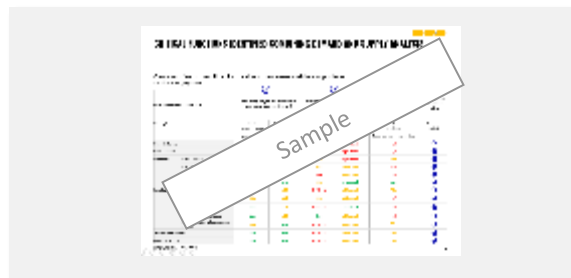
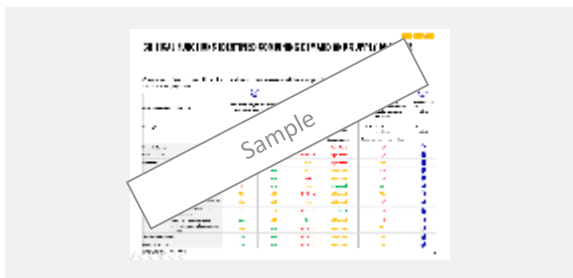
- Assessed **conditions that shape supply of critical functions**, along 3 main questions:
 - “How many players are available in the system to take on the provision of the critical function?”
 - “How easy is it to separate / transfer provision of the critical function across financial institutions in the system”?
 - “How substitutable are critical functions / products between themselves in the eyes of customers?”
- Classified “High” “Medium” “Low” based on **expert judgement**, considering high heterogeneity between regions

2 Assess implications of stress on supply of critical functions

- Assessed **possible changes on conditions around supply under stress** scenarios A & B, based on expert judgement – focused essentially on answering:
 - “Would the assessment in step 1 change if we were under one of the stress scenarios”?
- Concluded on **overall “vulnerability of supply” under stress** per critical function

3 Short-list critical functions combining demand & supply analysis

- Combined results from demand analysis (previous section) and supply analysis (this section) to **conclude on overall prioritization along critical functions** for **policy attention**, to proceed for deep-dive and recommendations in next section





ASSESSING THE CONDITIONS FOR SUPPLY OF CRITICAL FUNCTIONS AND IMPACT OF STRESS SCENARIOS, WE CONCLUDE ON THE OVERALL “VULNERABILITY OF SUPPLY”

Assumed vulnerability of supply of critical functions across entities and products

Based on SRB & FSB guidance and expert judgement, adjusted to geographical context and scope of project

| | | Ⓐ | | Ⓑ | | Ⓒ | Ⓓ | |
|--------------------------------|--|--|---|---|--------------------------|---|--|------------|
| | | How many players are available to take the critical function on? (Substitutability across entities) | | How easy is it to separate/ transfer provision? (Substitutability across entities) | | How substitutable are functions/ products between themselves? (Substitutability across products) | Vulnerability of supply to Covid-19 stress | |
| | | Based on presence of competitors | Based on availability of non-bank solutions | Based on process automation | Based on standardization | | Scenario A | Scenario B |
| Deposit-Taking | | Mid | Low | High | High | Low | | |
| Cash Services | | Mid | Low | Mid | High | Low | | |
| Payments | Cash Vouchers | Low | High | Mid | Mid | High | | |
| | Credit/ debit card | Mid | Low | Mid | Mid | High | | |
| | E-payments | High | Mid | High | Mid | High | | |
| | Remittances | Mid | High | Mid | High | Mid | | |
| Lending | Mortgage loans | Mid | Low | Low | High | Mid | | |
| | Credit card lending & Consumer finance | Mid | Mid | Mid | High | Low | | |
| | Short-term business debt & Trade finance | Mid | Mid | Low | High | Low | | |
| | Long-term business debt | Mid | Low | Low | Mid | Low | | |
| | Project & Infrastructure finance | Low | Low | Low | Low | Mid | | |
| Capital markets | | Mid | Low | Mid | Mid | Low | | |
| Clearing and settlement | | Low | Low | High | High | Low | | |



CRITICAL FUNCTIONS SHORTLISTED BASED ON THE COMBINATION OF DEMAND AND SUPPLY ANALYSIS

Prioritisation of critical functions for policy attention based on aggregated assessment of supply & demand

| Critical Functions and Services | Change in demand under stress | | Vulnerability of supply under stress scenario | | Prioritization for policy attention (and for deep-dives in next section) |
|---------------------------------|---|------------|---|------------|--|
| | Scenario A | Scenario B | Scenario A | Scenario B | |
| Deposit-Taking | No change | Decrease | | | Low |
| Cash Services | Increase | Increase | | | High |
| Retail payments | Cash Vouchers | Increase | | | High |
| | Credit/ debit card | Increase | | | High |
| | E-payments | No change | Increase | | Mid |
| | Remittances | Increase | Increase | | High |
| Lending | Mortgage loans | No change | | | Low |
| | Credit card lending & Consumer finance | No change | | | Mid |
| | Short-term business debt & Trade finance | Increase | Increase | | High |
| | Long-term business debt | No change | Decrease | | Low |
| | Project & Infrastructure finance | No change | Decrease | | Low |
| Capital markets | No change | No change | | | Mid |
| Clearing and settlement | No change | No change | | | Mid ¹ |
| Wholesale funding | <i>Financial sector specific functions excluded from demand and supply assessment – prioritization based on expert judgment</i> | | | | Mid |
| Wholesale payments | | | | | High |

1. Included as a deep dive in line with ASBA working group considerations

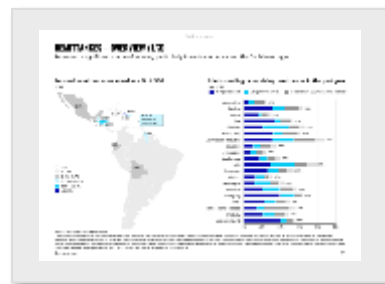
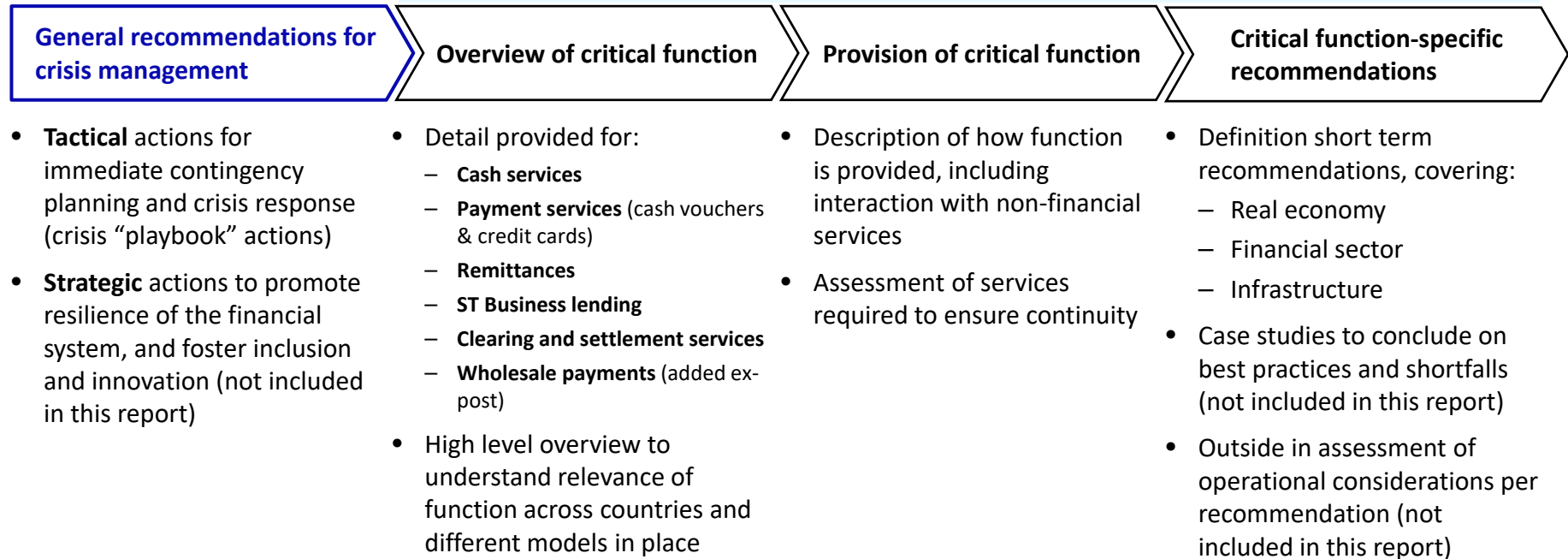
04

SHORT TERM RECOMMENDATIONS FOR SELECTED CRITICAL FUNCTIONS

RECOMMENDATIONS PUT FORWARD SERVE AS GUIDELINES IN STRESS SITUATIONS

Approach followed for recommendations

Deep dive per critical function – summarized version provided in report



TACTICAL RECOMMENDATIONS (SHORT-TERM)

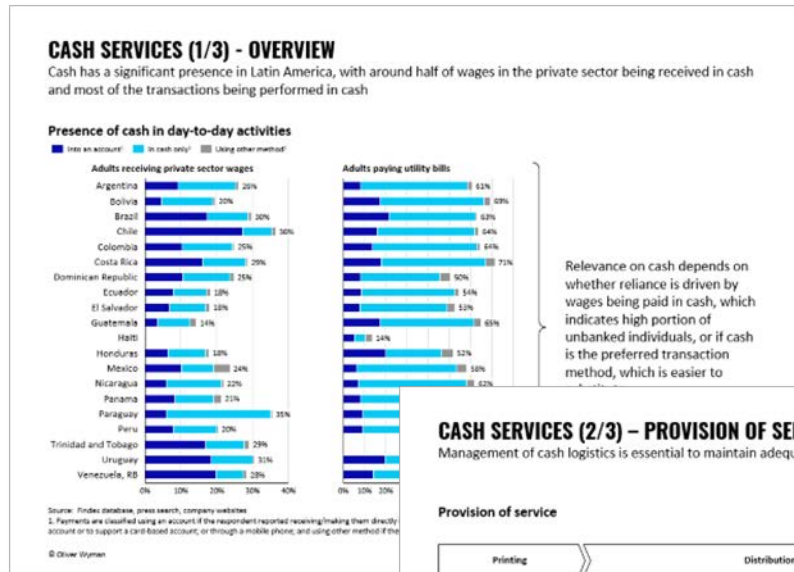
Supervisors should engage in actions to ensure they are ready to safeguard critical functions without compromising stability

Overview of recommendations provided

| Measure | Actions required |
|--|--|
| 01 Set-up a coordinated emergency response | <ul style="list-style-type: none"> • Gear internal governance and staff to “crisis mode”, instating business continuity plans where existing (e.g. establish “control room”, suspend on-site activity, and reallocate capacity) • Issue internal guidance on remote work, reallocation of capacity/tasks • Ensure cyber security • Evaluate critical services disruption for quick fixes (e.g. reserves mgmt.) • Clarify operational relief (e.g. dead-lines, remediation scrutiny) and behavioral issues (e.g. ban on dividends, share repurchases) • Convene international coordination groups for best practice sharing (e.g. ASBA WGs) |
| 02 Crisis management to prioritise supervisory attention | <ul style="list-style-type: none"> • Conduct top-down scenario analysis / stress-testing to identify areas of vulnerability • Perform vulnerability and/or resolvability assessment for critical institutions as required • Assess broad systemic and financial risks (e.g. assess possible crisis transmission mechanisms from non-bank sector, FMIs, debt overhang and NPLs build-up) • Where sensical, run “fire-drill” or simulation exercises for high-risk areas) • Define practical rules to manage impact (e.g. prudential treatment, conduct, NFR) • Set-up "crisis reporting" to monitor implementation and evolution of crisis including systematically documenting “lessons learned” |
| 03 Post-crisis stabilizing and reshaping the sector | <ul style="list-style-type: none"> • Refine top-down planning scenarios and assess unintended consequences of policy action (e.g. distributional income across sectors, over indebtedness, NPL build-up, “zombie” companies) • Enhance AQR / ST toolkits to plan for full scale recovery (e.g. adjusting macro scenario & methodology) • Support implementation of government measures as required (e.g. credit risk criteria for SME lending schemes, aggregate information on measures’ implementation across banks) |

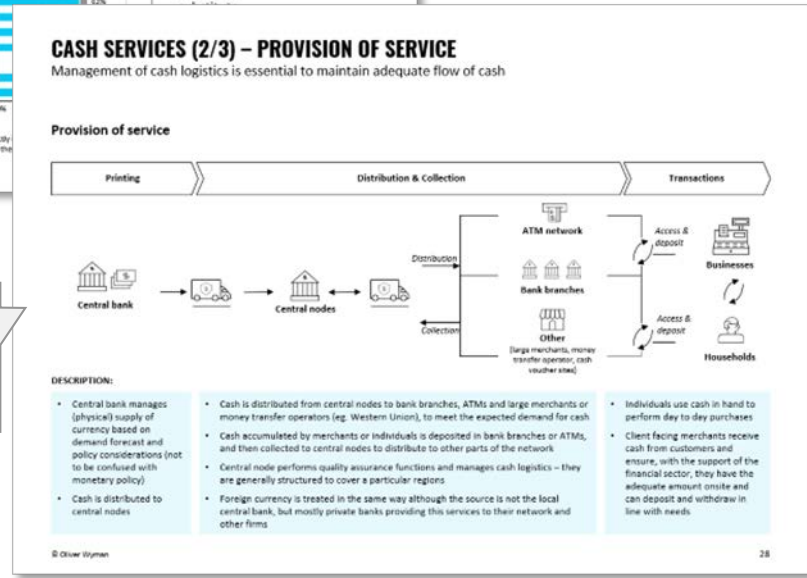
CASH SERVICES – OBJECTIVE IS CONTINUE MEETING THE ELEVATED DEMAND FOR CASH, ENSURING UNINTERRUPTED ACCESS AND DISTRIBUTION

Key takeaways



- Cash has a significant presence in Latin America
 - ~50% of wages in the private sector are received in cash
 - Most of the transactions are performed in cash
- Reliance varies if demand is driven by wages or if it is the preferred transaction method, which is easier to

Relevance on cash depends on whether reliance is driven by wages being paid in cash, which indicates high portion of unbanked individuals, or if cash is the preferred transaction method, which is easier to



Management of cash logistics is essential to maintain adequate inventory levels

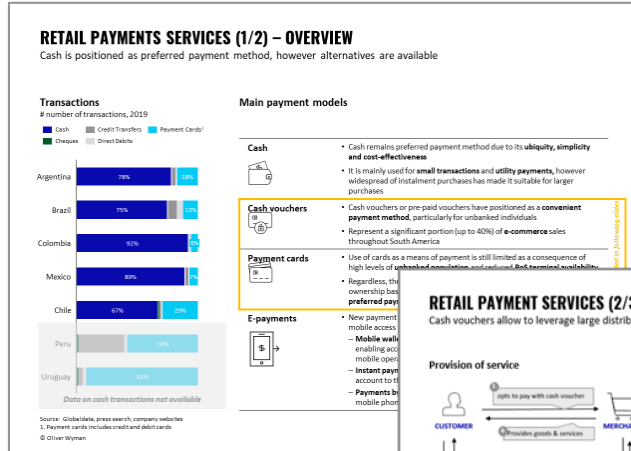
Short term recommendations

Summarized

- 01** Reduce incentives to stock cash reassuring depositors of the availability and preventing accumulation of inventory outside banking system
- 02** Ensure sufficient inventory of cash in central bank and within the banking system
- 03** Limit demand on cash by safeguarding alternative payment methods
- 04** Maintain capillarity of bank branches and ATMs to ensure access to cash
- 05** Provide continuity of services and security within cash logistics chain

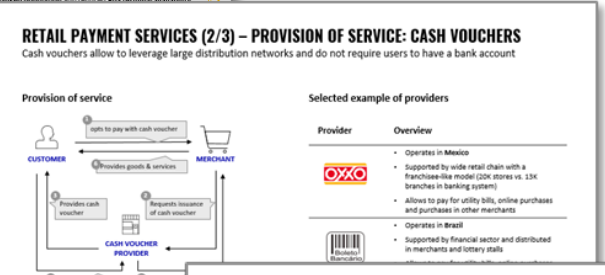
RETAIL PAYMENT SERVICES – OBJECTIVE IS TO REDUCE HURDLES TO ACCESS, ENSURE UNINTERRUPTED FUNCTIONING AND POSITION AS AN ALTERNATIVE TO CASH

Key takeaways



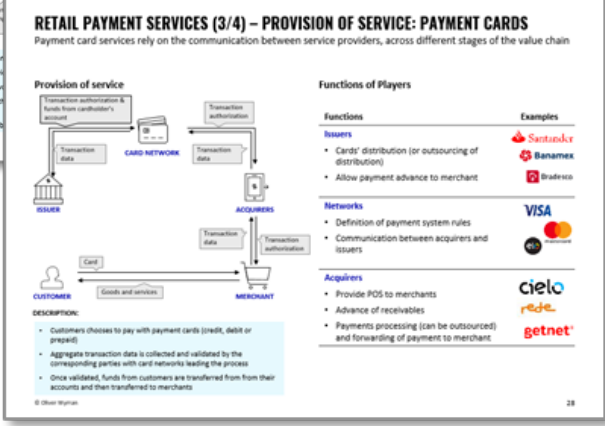
Cash is positioned as preferred payment method, however alternatives are available

- Cash vouchers are a popular means of method for online sales (~ 40% total online transactions), especially for the unbanked
- The use of payment cards is still limited



Cash vouchers allow to leverage large distribution networks without requiring users to own bank accounts

Payment card services rely on the communication between service providers, across different stages of the value chain

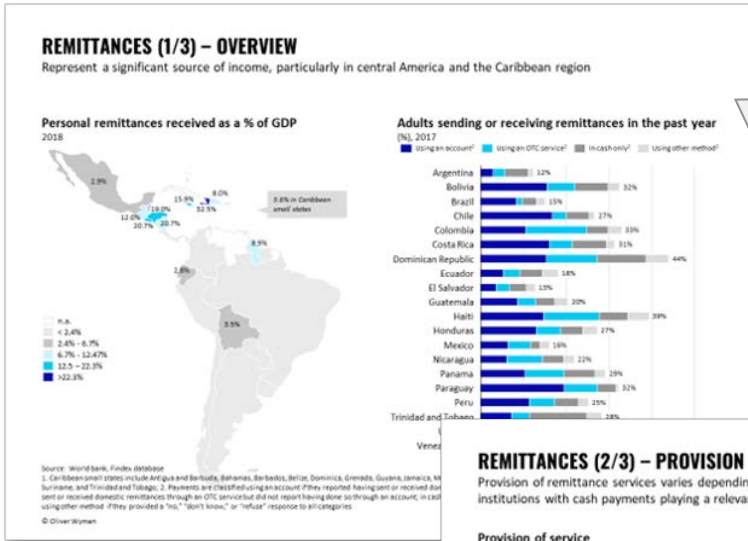


Short term recommendations Summarized

- 01 Increase **reach and attractiveness** of non-cash payment methods
- 02 Safeguard continuity of **retail payment backbone** requiring larger acquirers and issuers as well as shared services providers to prepare contingency plans and identify interdependencies
- 03 Safeguard continuity of **infrastructure services**

REMITTANCES – OBJECTIVE IS TO SAFEGUARD FLOW OF FUNDS TO THE UNDERBANKED

Key takeaways



• Remittances represent a significant source of income, particularly in central America and the Caribbean region:
– ~45% of adults in the Dominican Republic have received/sent remittances in the past year

Short term recommendations

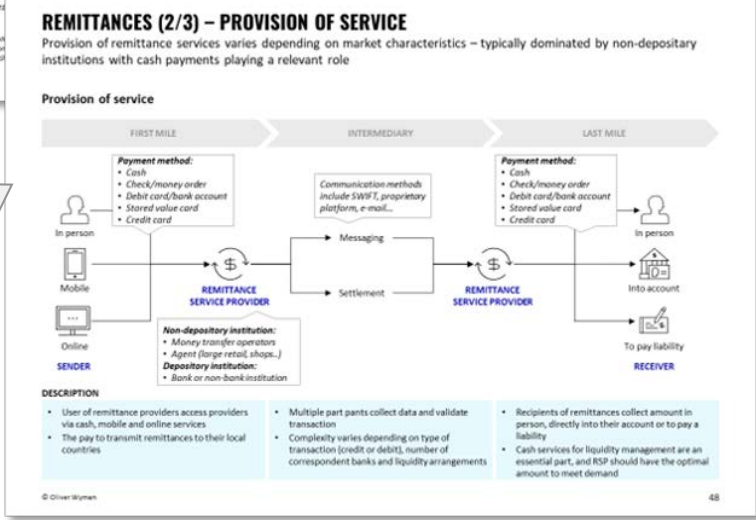
Summarized

01 Maintain network of remittance service providers safeguarding access to cash services and wholesale payments

02 Encourage remittance flows providing incentives to foreign remitters and implementing regulation to foster decrease in fees

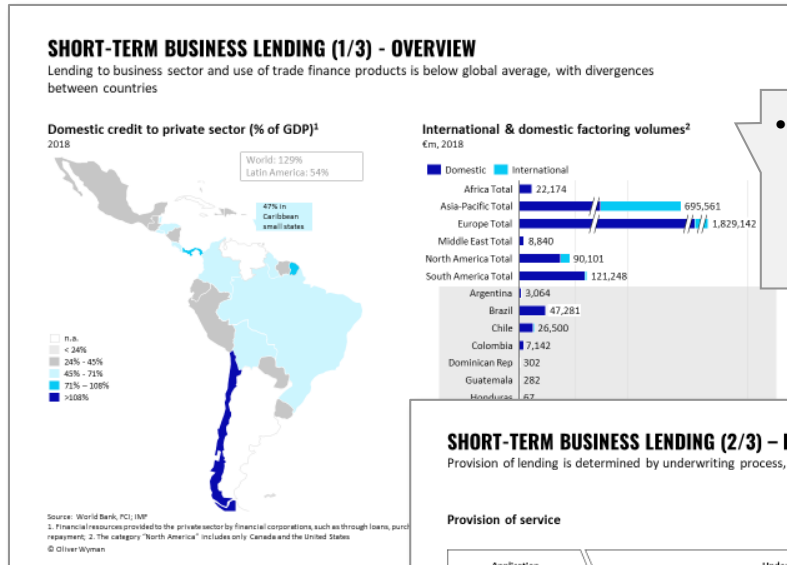
03 Substitute lost income for remittance receivers including reliant segments government support schemes

Provision of remittance services varies depending on market characteristics – typically dominated by non-depository institutions with cash payments playing a relevant role



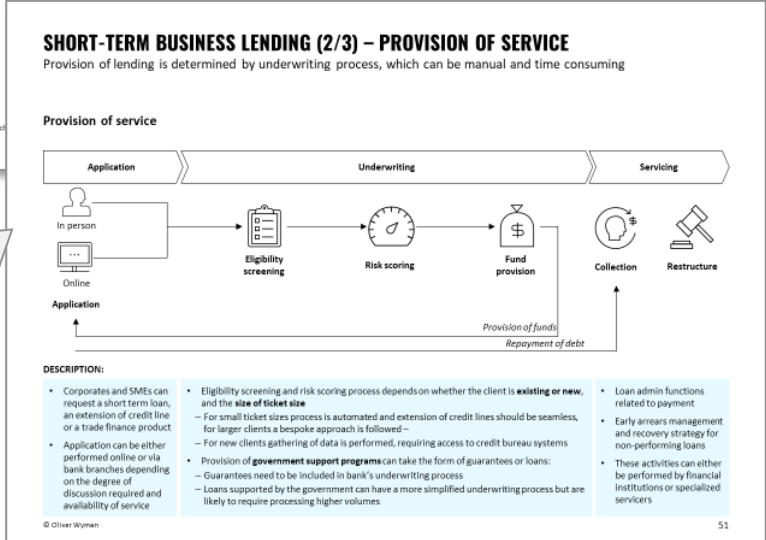
SHORT-TERM BUSINESS LENDING - OBJECTIVE IS TO SAFEGUARD CREDIT AVAILABILITY, SUPPORT GOVERNMENT PROGRAMS AND MANAGE CREDIT RISK

Key takeaways



Lending to business sector and use of trade finance products is below global average, with significant divergences within the region

- Provision of lending is determined by underwriting process, which includes risk scoring
- Collection efforts become particularly relevant in the case of NPLs

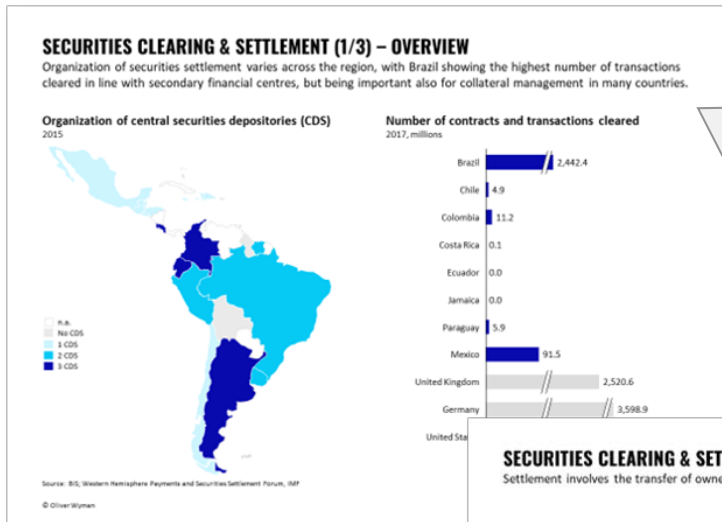


Short term recommendations Summarized

- 01** Monitor **financial situation** of businesses and households to assess funding demands and risks
- 02** Review **credit underwriting policy** between authorities and banks to avoid credit crunch
- 03** Perform **active credit risk management** preventing forbearance on unhealthy exposures
- 04** Review **capital requirements** rules to account for temporary increase NPLs and to provide liquidity
- 05** Develop **government support-schemes** and guarantees to lessen the burden on financial entities

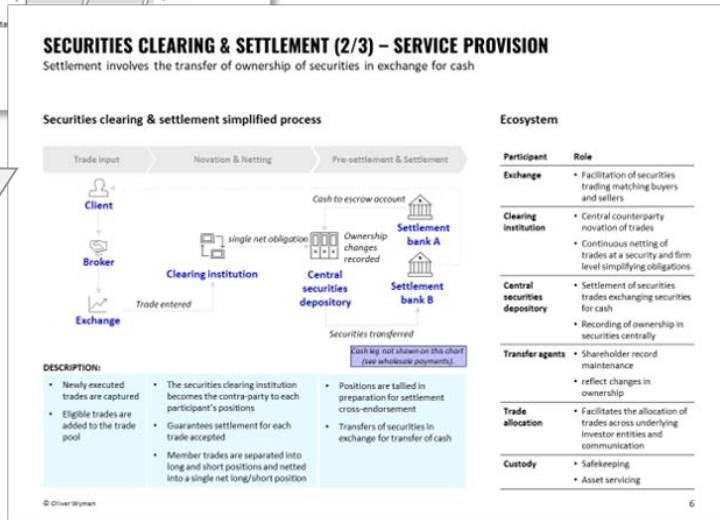
SECURITIES CLEARING & SETTLEMENT – OBJECTIVE IS TO ENSURE ADEQUACY OF CONTINGENCY PLANS AND SUFFICIENT LIQUIDITY IN THE SYSTEM

Key takeaways



- Organization of securities settlement varies across the region:
 - Brazil shows the highest number of transactions cleared in line with secondary financial centres
 - Brazil is also important for collateral management in many countries

- Settlement involves the transfer of ownership of securities in exchange for cash



Short term recommendations Summarized

- 01** Ensure **contingency plan** is tailored to Covid circumstances
- 02** Forecast **liquidity needs** and ensure sufficiency of **buffer**
- 03** Adjust **pre-funding** and **exposure limits**
- 04** Raise **additional liquidity** if required
- 05** Enhance **cyber resilience**

WHOLESALE PAYMENTS – OBJECTIVE IS ENSURING ADEQUACY OF CONTINGENCY PLANS AND FULFILMENT OF CRITICAL OPERATIONS

Key takeaways

Short term recommendations Summarized

WHOLESALE PAYMENTS (1/3) – OVERVIEW

Wholesale payments are an enabler of economic activity, with volume of transactions being indicative of maturity of financial sector

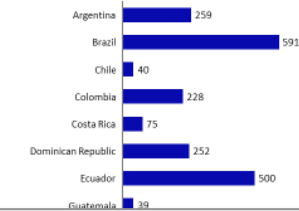
Payments processed by interbank funds transfer systems

2017, tn USD, over GDP



Participation in selected interbank funds transfer systems

2017, number of direct participants



Wholesale payments are an enabler of economic activity, with volume of transactions being indicative of maturity of financial sector

Source: BIS; Western Hemisphere Payments and Securities Settlement Forum

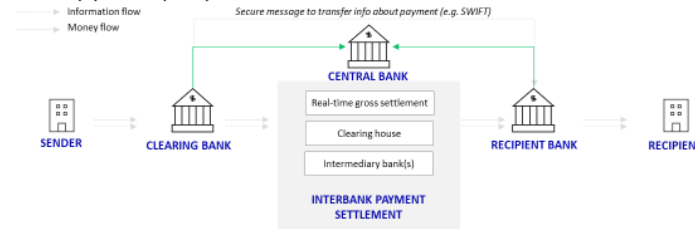
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Wholesale payments deal with inter-bank, inter-country large value, large volume real-time payments

WHOLESALE PAYMENTS (2/3) – SERVICE PROVISION

Deals with inter-bank, inter-country large value, large volume real-time payments

Wholesale payments simplified process



DESCRIPTION:

- Payment order is transferred electronically to clearing bank
- Clearing house nets obligations between participants - funds are transferred to settle obligations at the end of the settlement period
- Real-time gross settlement systems allow for almost immediate transfer of funds (usually through accounts of a country's central bank, also acting as funding provider if needed)
- Recipient bank receives notification that payment order has been accepted
- Funds are received once payment obligation is settled within the ecosystem

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01

Ensure **contingency plan** is tailored to Covid circumstances

02

Safeguard systemic providers with adequate contingency plans and allowing for controlled degradation of service

03

Ensure **adequate funding** in the system

TEAM DETAILS

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We leveraged our global expert network with experience in public policy and resolution engagements in the US and EU, including Paul Cantwell, Stefan Schwengler and Lisa Quest

APPENDIX

GLOSSARY

| Abbreviation | Definition |
|--------------|---|
| ASBA | Association of Supervisors of Banks of the Americas |
| BAU | Business as Usual |
| CF | Critical Function |
| FSB | Financial Stability Board |
| IMF | International Monetary Fund |
| MFI | Monetary Financial Institutions |
| SRB | Single Resolution Board |

DEFINED LONG-LIST OF CRITICAL FUNCTIONS & CUSTOMER SEGMENTS FOR THE ANALYSIS (1/2)

Short-list of critical functions for the analysis

Based on SRB & FSB guidance, adjusted to geographical context and scope of project














| Critical function | Description |
|--------------------------------|--|
| Deposit taking | <ul style="list-style-type: none"> • Acceptance of deposits from non-financial institutions, including households, businesses and public institutions • Current accounts / overnight deposits, deposits with agreed maturity and deposits redeemable at notice |
| Cash services | <ul style="list-style-type: none"> • Withdrawals at ATMs and at branch counters and other cash services (like cash-in-transit services for mass retailers) |
| Retail Payments | Cash Vouchers <ul style="list-style-type: none"> • Payments made using cash vouchers, which allow deferring payment and centralizing it in network of cash voucher distributors |
| | Credit/ debit card <ul style="list-style-type: none"> • Payment cards that allow to deduct money directly from current accounts and/or to borrow funds to pay for a purchase |
| | E-payments <ul style="list-style-type: none"> • Payments performed using electronic devices, such as computers, smartphones or tablets |
| | Remittances <ul style="list-style-type: none"> • Primarily refer to methods for sending money to a migrant's home country |
| Lending | Mortgage loans <ul style="list-style-type: none"> • Lending to households for the purpose of investing in houses for own use and rental, including building and refurbishments, as well as lending for small businesses (business mortgages) |
| | Credit card lending & Consumer finance <ul style="list-style-type: none"> • Lending to households or business owners for the purpose of purchases of products and services, including credit card lending, consumer finance at point of sale and consumer loans |
| | Short-term business debt & Trade finance <ul style="list-style-type: none"> • Lending to businesses as a short-term solutions for cash management and funding of operations. Includes working capital, lines of credit, factoring and other short-term loans |
| | Long-term business debt <ul style="list-style-type: none"> • Lending to businesses as medium- and long term solutions for investment and funding of operations |
| | Project finance & Infrastructure finance <ul style="list-style-type: none"> • Financing long-term infrastructure, industrial projects, and public services, whereby the debt and equity used to finance the projects are paid back from the cash flows generated by the projects |
| Capital markets | <ul style="list-style-type: none"> • Issuance and trading of securities, related services such as prime brokerage and market making and related advisory services |
| Clearing and settlement | <ul style="list-style-type: none"> • Services offered to clients for confirmation, clearing and settlement of securities transactions • Safekeeping and administration of financial instruments for clients and services related to custodianship |
| Wholesale Funding | <ul style="list-style-type: none"> • Operations between financial counterparties on lending and borrowing, taking place in interbank markets |
| Wholesale Payments | <ul style="list-style-type: none"> • Payment services offered to Monetary Financial Institutions, includes payments related to correspondent banking services |

Financial sector specific functions excluded from demand and supply assessment – prioritization based on expert judgment

DEFINED LONG-LIST OF CRITICAL FUNCTIONS & CUSTOMER SEGMENTS FOR THE ANALYSIS (2/2)

Customer segments for the analysis – applied in both scenarios

Based on OW's COVID-19 sector vulnerability model and expert judgement, adjusted geographical context and scope of project

| Segment/ Sector | Definition |
|--|--|
|  Agriculture | <ul style="list-style-type: none"> Activities related to growing crops, raising animals, and harvesting fish and other animals either on forests/farms/ their natural habitats |
|  Construction & Infrastructure | <ul style="list-style-type: none"> Activities related to construction and infrastructure businesses such as commercial building construction companies, wireless telecommunication carriers, and information & communication technology companies |
|  Food Retail | <ul style="list-style-type: none"> Comprises grocery businesses (all other retail activities are part of retail sector) |
|  Healthcare & Pharma | <ul style="list-style-type: none"> Comprises human health & social work activities as well as supply of medical equipment |
|  Manufacturing | <ul style="list-style-type: none"> Includes the manufacturing of apparel, electric appliances, automotive manufacturing etc. |
|  Retail | <ul style="list-style-type: none"> All wholesale & retail trade activities for the general public e.g. clothing, automotive, home appliances, etc. |
|  Transportation & Logistics | <ul style="list-style-type: none"> Comprises bus & tramway operations as well as air transport Also incorporates cargo operations including road, rail, and air freight |
|  Tourism & Leisure | <ul style="list-style-type: none"> Includes arts & entertainment, sports facilities, hotel services as well as companies providing leisure activities, incl. television programming, gambling etc. |
|  Energy | <ul style="list-style-type: none"> Electricity and gas supply, water supply, crude petroleum, as well as waste and wastewater management etc. |
|  Other Services | <ul style="list-style-type: none"> Includes other sectors not provided for above, e.g., education, technical consultancy, other service-led businesses. |
|  2. Households | <ul style="list-style-type: none"> Refers to entire consuming population, hence, individual consumption |
|  3. Government | <ul style="list-style-type: none"> Includes all public authorities on national, state, and local level |
|  4. Financial sector | <ul style="list-style-type: none"> Comprises banks, regulated entities, and institutions that provide financial services to corporate and retail customers, including financial market infrastructures |

Financial sector excluded from demand analysis

READ OUR LATEST INSIGHTS ABOUT COVID-19 AND ITS GLOBAL IMPACT ONLINE

Oliver Wyman and our parent company Marsh & McLennan (MMC) have been monitoring the latest events and are putting forth our perspectives to support you clients and the industries you serve around the world. The Coronavirus Hub will be updated daily as the situation evolves.



[Visit our dedicated COVID-19 website](#)



