Webinar:
Brazil-Canada Talks
Decision-making in Uncertain Times

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SaaS Solutions

- Our pre-built SaaS solutions are developed using highly customizable microservices platform, providing coverage in the following areas:
  - Balance sheet analytics, e.g., capital management
  - Predictive customer behavior, e.g., pricing
  - Profitability analytics, e.g., performance assessment

Advisory

- We create superior value by delivering information, analyses, and automated solutions to improve revenue generation across pricing, product development, treasury and risk management, distribution, marketing, and sales management

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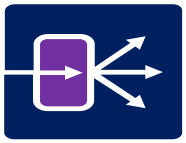
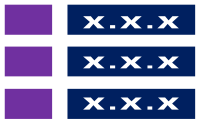
Our data-driven technology solutions at a glance

Balance Sheet Analytics	Predictive Consumer Behavior	Profitability Analytics
ScenarioFrontier™ • A powerful tool for day-to-day strategic planning and capital management	**MortgageRetainer™** • A mortgage renewal platform	**ModelTek™** • Industry leading platform designed to industrialize model risk management
ECAPLeader™ • Provides integrated view of capital for material risks, using a modelling engine attuned to the credit cycle	**CreditStream™** • Provides granular loan pricing analytics **RetailEdge™**  • Offers price optimization in retail consumer lending	**BranchScape™**  • Assesses market opportunity and recommends strategies to rationalize branch networks' operations

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Our services push the cutting edge of advanced analytics to guide transformation and boost effectiveness of strategic decision making

- Cyber Risk Assessment
- Cyber Risk Quantification

- Branch Sales Optimization
- Middle-Market Banking Optimization
- Commercial Loan Pricing
- Retail Pricing

- Asset/Liability Management (ALM)
- Credit Scoring and Portfolio Management
- Liquidity Management
- Digitization of credit process
- Revenue and PPNR Modelling
- Comprehensive Capital Management and Stress Testing

- Basel Compliance
- Implementation of Federal Reserve's Requirements
- Implementation of IFRS 9 and CECL Requirements
- Independent Models Validation

Regulatory Compliance | **Finance, Treasury & Risk Services** | **Pricing & Profitability Services** | **Cyber Risk**

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Content

1 COVID-19: Effects and Responses

2 Scenario Building and Application in Forecasting Financials

3 Scenario Outcomes And Management Action Plan

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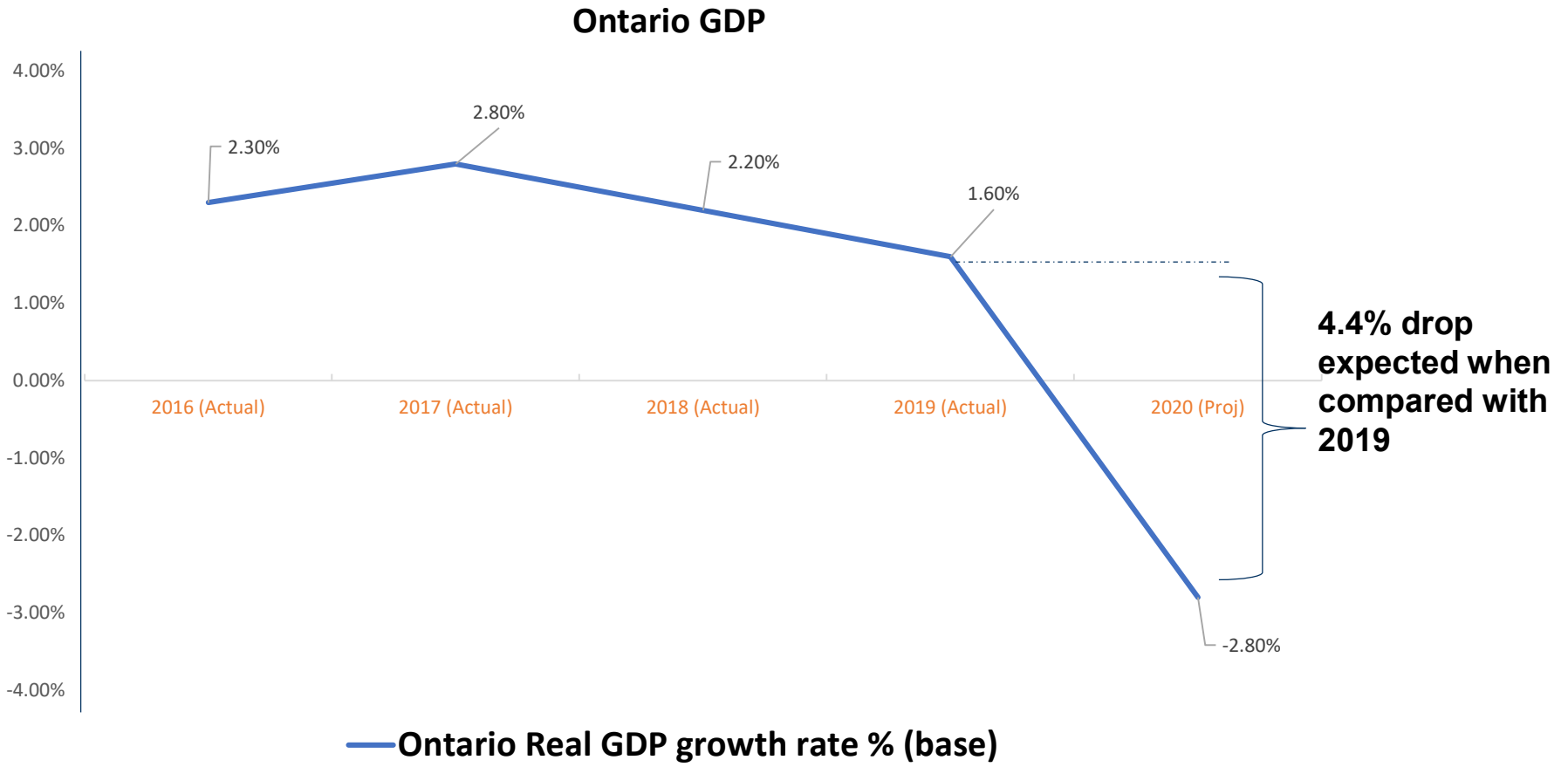
The science is indicating that we should come to a point where the disruption from Covid-19 will abate and we can approach a 'new normal'

- **The current estimated impact on global GDP growth for 2020 is around -4%, with substantial downside risks if containment policies are prolonged**



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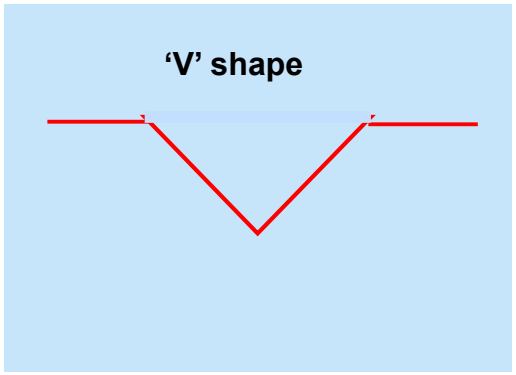
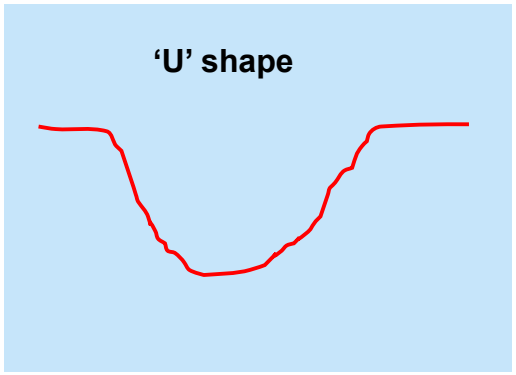
Source: Central 1

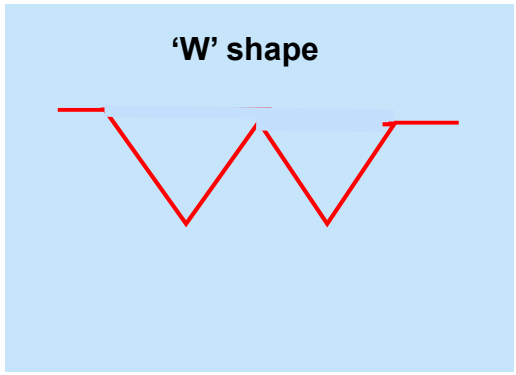
It seems clear though, that the ‘new normal’ will be very different to the normal we were used to pre-Covid-19

- Most organizations will currently be under significant stress in managing:
  - The Covid-19 crisis from workforce motivation and management; demand, supply-chain; and financial management and planning perspectives
  - Financial headroom, cash, balance sheet and financial / debt covenants
  - The forecasting of earnings, cashflows and workforce impacts over the next couple of quarters
  - 'BAU’ and business operations to try to meet customer expectations and fulfil contract obligations – be that goods and / or services

- To see how the downturn and recovery could play out, identifying three example recovery profiles – V, U and W shapes







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Why scenario-based planning

What happens if things go wrong?

What will be the loss?

Will the institution survive?

How bad things can get?

What should be done in order to limit the potential losses?

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COVID-19
What strategy changes will occur after the pandemic passes?

	Before Pandemic	After Pandemic
Expected changes	• Disruption was not considered an integral part of our strategic and risk management processes	• Structure our business and teams to increase the resilience to future disruptions
		• Maximize the performance of the core business – managing cash shortages, managing supply-chains and bottlenecks, delivering excellent customer service
	• Real estate vs. healthcare and logistics assets, including data centers and assets with low density of occupants	• Develop the post Covid-19 business structures and offerings – pricing, delivery models, logistics & sourcing solutions, new propositions and/or products, hedging and other risk transfer arrangements
		• New strategy, risk management and financial planning processes
	• Risk regarded as business hinderer • No awareness of liquidity costs	• The employee and workforce response need to consider the wider ESG responsibilities of corporates

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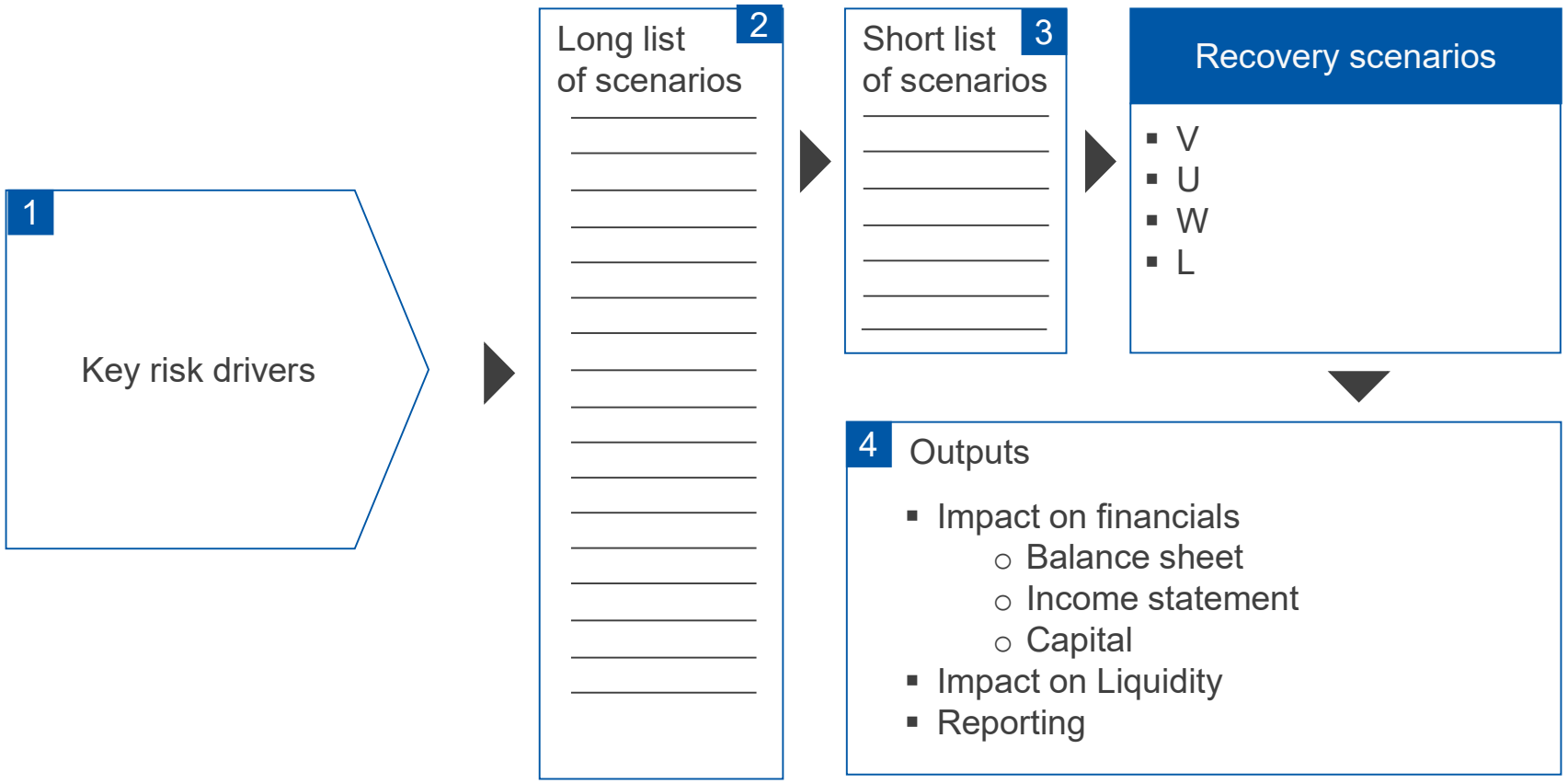
Business leaders need a decision-making compass…



- **In our experience, a short list of 5-7 scenarios is adequate and desirable**

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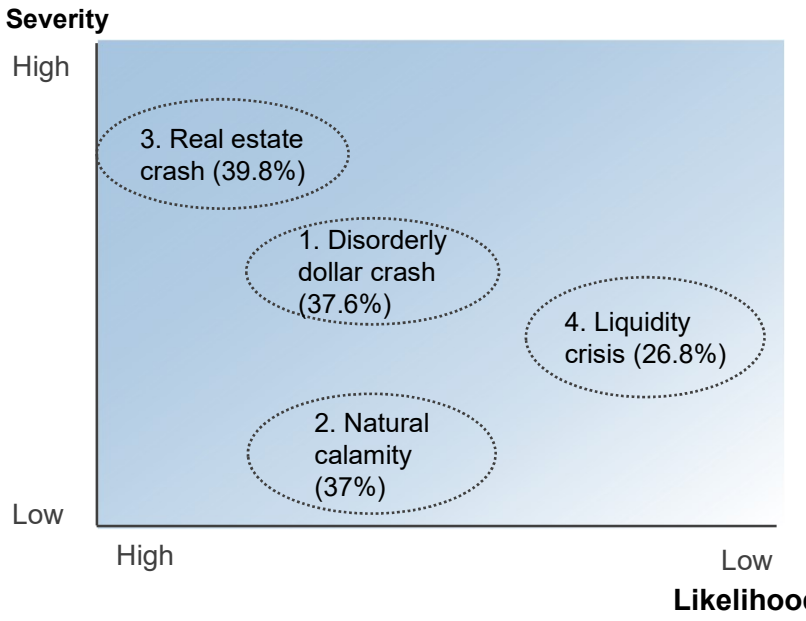
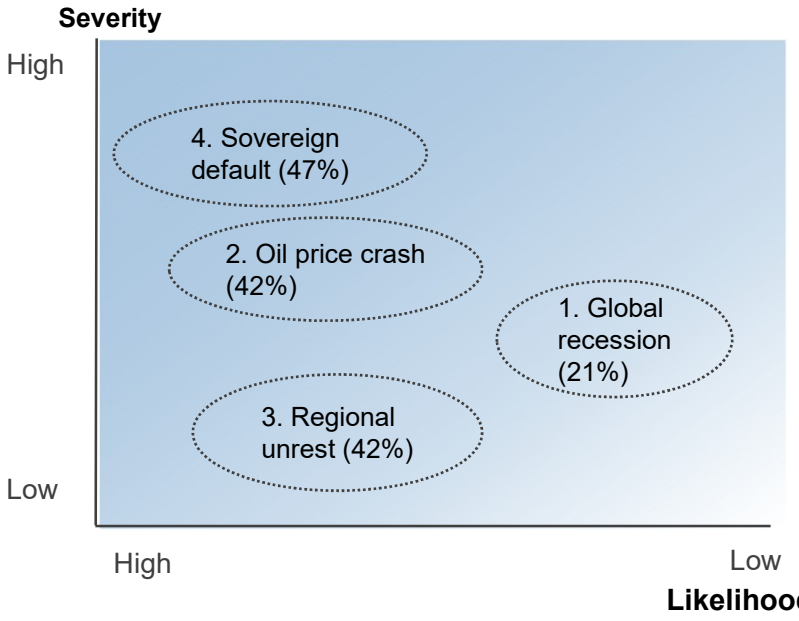
Creating a long list of scenarios

Domestic scenarios



	Scenarios	Primary risks to the organization
1	Disorderly dollar crash	Credit losses & volume slowdown
2	Natural calamity	Credit losses & volume slowdown
3	Domestic real estate crash	Credit losses & volume slowdown. Property collateral at risk
4	Liquidity crisis	Margins ↓. Valuations ↓

Globally-focused scenarios



	Scenarios	Primary risks to organization
1	Global recession	Credit losses & volume slowdown
2	Oil price crash	Credit losses for commodities exposures & resource-dependent regions
3	Regional unrest	$-denominated valuations ↓. Slowdown in volumes. FX risk
4	Sovereign default	Credit losses (from direct exposure & correlated counterparties)

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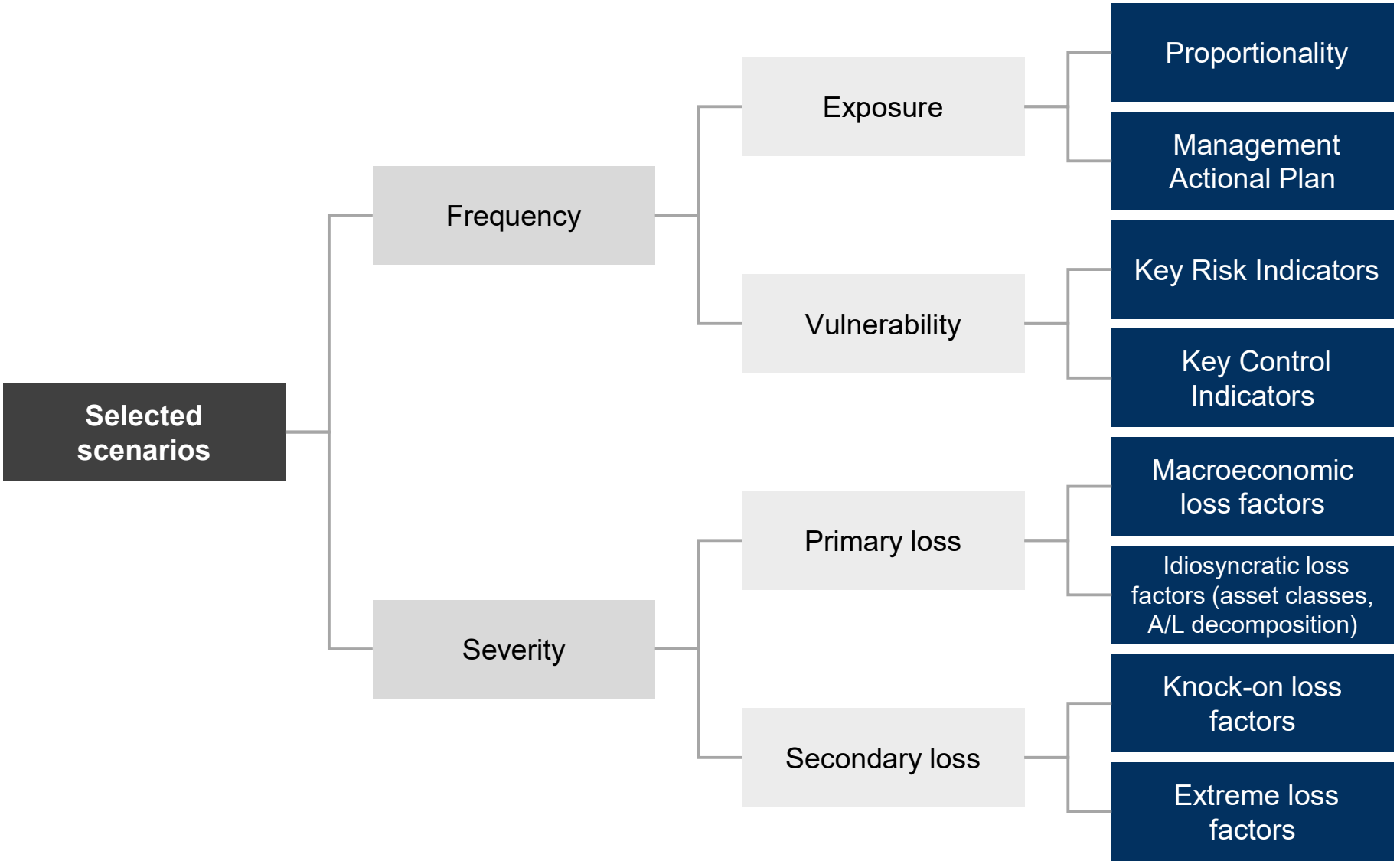
An overview of transmission-mechanism for scenarios



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Piloting scenarios

Identify risk drivers

- Equity prices
- Interest rate
- Treasury prices
- Inflation
- Private/household debt
- Unemployment
- Real GDP growth

Next step: Link drivers with theme-based scenarios

1. Story – e.g. "Real estate crash"

2. Historical relationship analysis:

Interconnect scenarios with drivers GDP, Interest rates, Unemployment, Stock market, Government actions, regulatory changes , etc.

3. Expert Overlay

Challenge historical relationships. Develop believable story. Revise quantified factors

4. Fully Parameterised Scenario

All relevant factors Detailed and quantified

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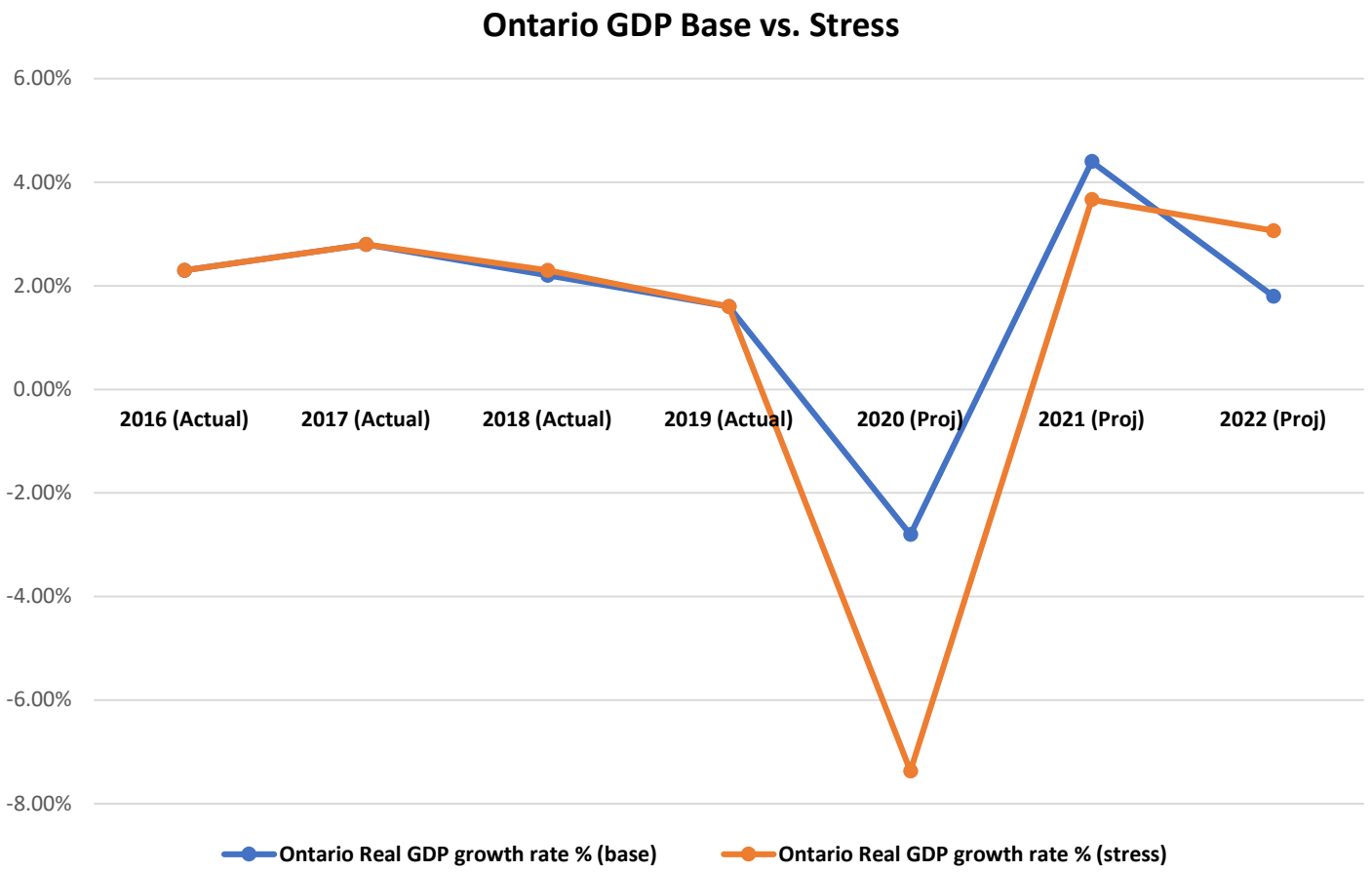
Ontario GD projected scenarios

Risk drivers

- GDP growth
- Interest rate
- Unemployment
- Inflation
- Housing starts



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Using scenario-based planning for the development of financial forecast

Capital and liquidity management in uncertain times

Base macroeconomic scenario

- Current macroeconomic conditions
- Risk analysis based on point-in-time market conditions

- Performance benchmarking on a quarterly basis
  - Ensuring that the amount of capital available is consistent with the group's current and planned levels of activity and desired level of capital adequacy
- Efficient use of capital and liquidity

Stressed macroeconomic scenario

- Systemic risk triggered by macroeconomic stress
- Scenario at the 90% confidence level, based on multiple external forecast

- Financial performance backstop
  - Creates protection for downside risks by developing adequate capital and liquidity supply
  - Develops loss absorbency buffer

Adverse stress case

- Triggered by Black Swan event
- The objective of such stress test is to enable the organizations to better integrate business and capital planning and improve their contingency planning

- Focus on vulnerabilities and resilience of business plan
  - Stress test the business plan to failure i.e. the point at which the corporate becomes unable to carry out its business
  - Design and development of early warning signals

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In response, strategies can be put in place to protect short-term business

Focus area	Selected levers	Key observations
Protect revenue base	Push cross-selling	▪ Identify and enhance the cross-selling ▪ Launch new fee products
	Strengthen collection	▪ Increase collection capacity ▪ Strictly monitory collection process
	Increase transfer pricing	
Cost optimization	Cut costs	▪ Planning for 're-entry' to cost more, requiring some FTE restructuring
	Increase overall efficiency	▪ Focus on automation ▪ Increase sales efficiency ▪ Increase (low-hanging) operational efficiency
Manage balance sheet	Decrease asset volume	▪ Cut customer limits ▪ Restrict lending policy ▪ Review loan portfolio
	Boost liquidity	▪ Sell/collateralize some securities ▪ Sell "illiquid" assets ▪ Identify and secure unencumbered assets ▪ Limit drawdowns
	Increase equity	▪ Swap investments

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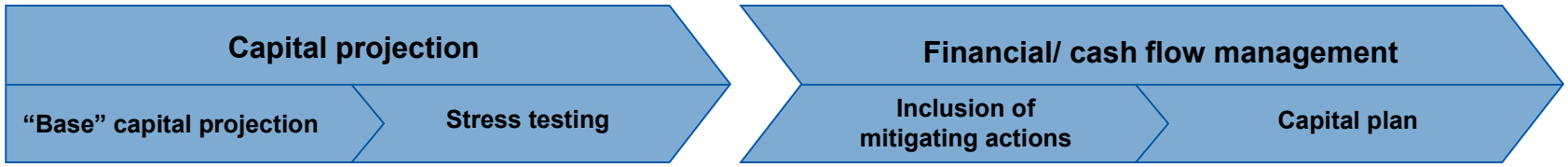
Integrating financial projections with stress testing helps develop a defendable management action plan



- Multi-year projection of risk-based capital – the base case capital plan
- Assumes a particular state of the economy over planning period

- What would the impact of a severe downturn be
  - On capital?
    - Required
    - Available
  - On earnings and costs?
- Multiple stresses required
- Stress test must be appropriately severe (not limited by historical scenarios)

- What management actions could be taken to reduce the impact of a severe downturn?
- What would be the expected impact of these actions?
- What contingency plans have been put in place?
  - Will these be available in all scenarios?

- Including the Base Capital requirement used as the basis for individual capital guidance (i.e. minimum capital levels)
- More credence given to mitigating actions if
  - Capital management embedded in core processes
  - Track record exists of acting proactively with mitigating actions in crises

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An example of management action plan

Ontario property crash

Stress scenario name: Real estate crash

Template

Scenario background

- Why can this worst-case scenario occur?
- What products and service lines can get impacted?
- What is the likelihood of this scenario's occurrence?
- How well is the organization prepared?
- What extra steps need to be taken to mitigate the impact of this scenario?

Scenario parameters

Relevant products:	Identify products: Retail loans, mortgages, etc.
Relevant processes:	Identify processes, such as: credit origination, branch, Risk
Org units / locations:	Identify locations

Model output summary

Impact on credit portfolio (illustration)

Severity:

Expected Credit Losses – $ 3.6 MM

Unexpected – $ 1.4 MM

'Worst Case' Loss:	$ 1.4 MM
Recourse based on historic recoveries:	$ 0.8 MM
Remaining Loss:	$ 0.6 MM

Assessment on other risks

Event response & mitigation

Relevant historical data

***Internal loss data**:*
Last similar incident (if occurred) and how org. reacted

***External loss data**:*
Such events' frequency, impact and mitigation

Controls and mitigants (Pre-scenario)

People	Training on collateral valuation Expert and experienced control function personnel Need extra expert staff (i.e. consultants)
Process	Timely monitoring & reporting Collateral valuations Changes in credit policy

Management response in case of event (Post-scenario)

People	Potential for under/over valuation of collateral
Process	Tightening lending on residential and commercial real estate, insurance coverage, selling down real estate exposure
Systems	Monitor for dormant or new accounts involved in new transactions

Recovery estimates

What percentage of NPA's collateralized by real estate, and recovery estimates
Role of remedial, accelerate recoveries
Sell-down exposure
CDS – credit insurance
Other (if any?)

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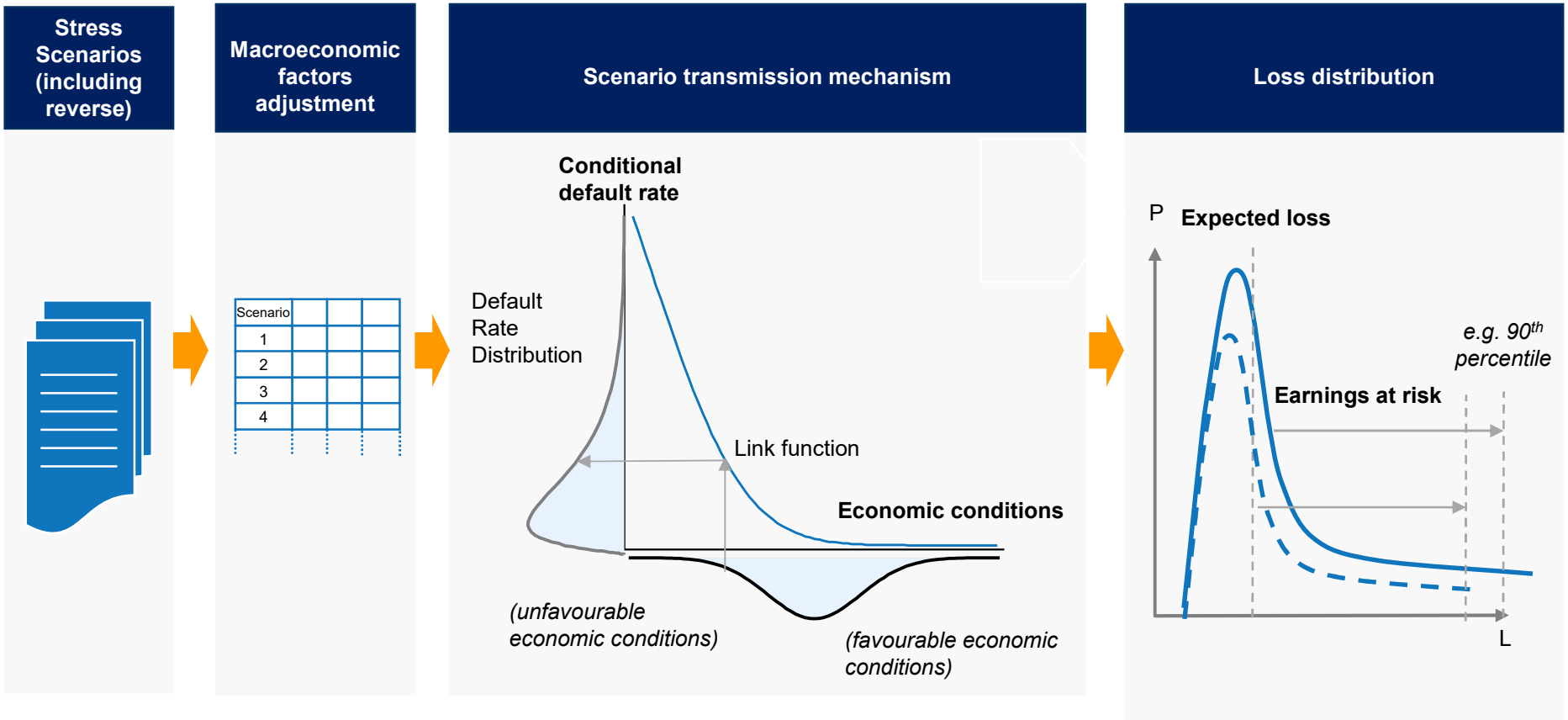
Use case Scenario Frontier

Does your medium-term planning take into account the impact of macroeconomic scenarios on capital and earnings?



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