

The Risk Our Models Don't See

Presenter;

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Agenda

1. **Introduction**
2. **Financial Crisis across the Continent**
3. **Identify the Risk**
4. **Measuring the Risk**
5. **Relevance to the Financial Industry**





The Big Short

The crisis wasn't hidden

- Mortgage defaults were already happening
- Lending standards were deteriorating

Why did almost everyone miss it?

- Economists
- Bankers
- Analysts
- Regulators
- Rating agencies



What is a financial crisis?

1. CORE DEFINITION

Asset & Liquidity Shock

- Assets drop sharply in value across the economy.
- Businesses and customers struggle to pay obligations.
- Market liquidity rapidly dries up.

2. SYSTEMIC VULNERABILITY

Unchecked Risk & Greed

- Chasing investments that appear highly profitable.
- Regulatory controls and guardrails are bypassed.
- Capital flows into assets "too good to be true".

3. CASCADE COLLAPSE

Interconnected Systems

- Financial systems are deeply interconnected.
- Unexpected events or ignored risks act as triggers.
- Local failure rapidly spreads into wider collapse.



A financial crisis usually follows 4 stages

Trigger event

A problem begins due to weak regulation, poor oversight, greed, speculation, or someone exploiting the system.

Spread of failure

Other systems that depend on the affected system start to fail.

Financial impact

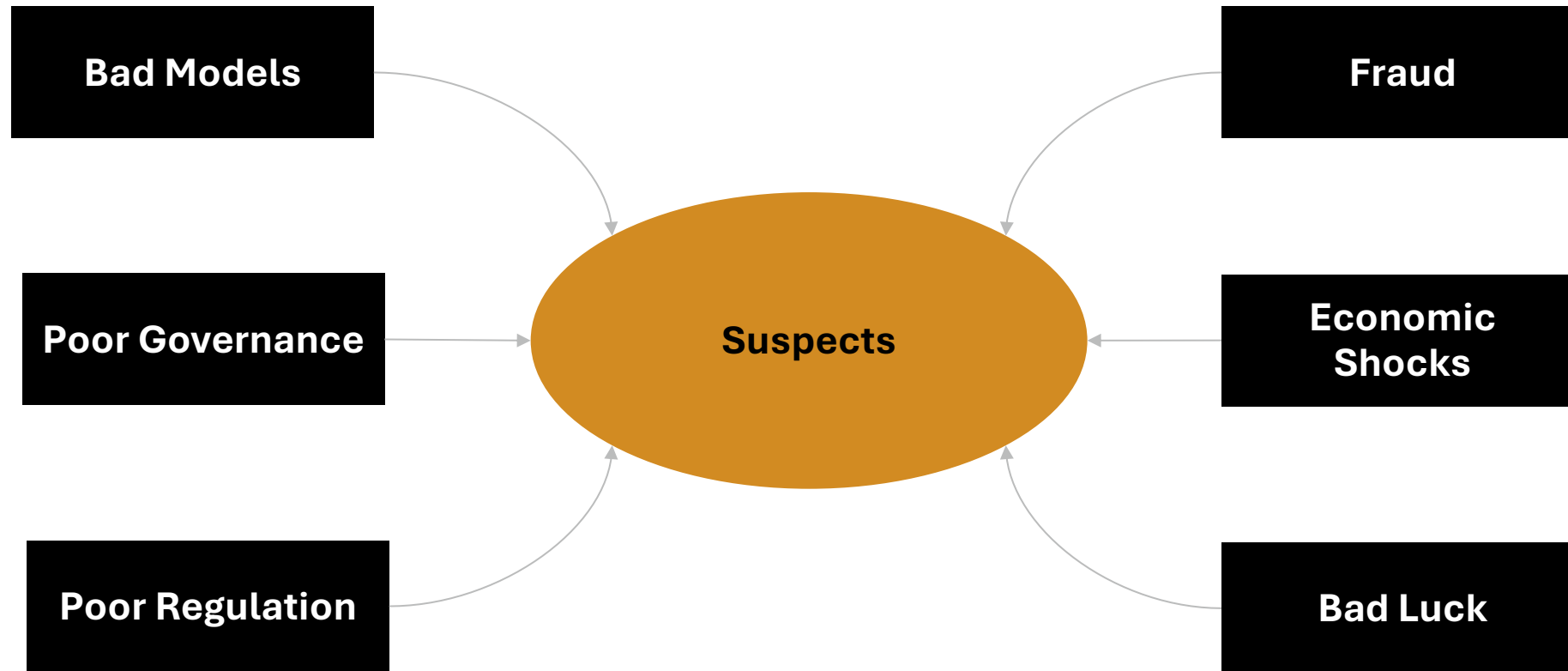
Organizations cannot meet their obligations, asset values fall sharply, and debt rises.

Outcome

The crisis either spreads to the wider economy, is contained by a strong economy, or is managed through government intervention and bailouts.



A financial institution has collapsed



Historical examples

Sector	Motives	Behaviour	Outcomes
2008 Global Financial Crisis	Bonuses and fees from mortgage backed securities	Excessive risk-taking and leverage	Systemic financial crisis
2009 Nigeria Banking Crisis	Aggressive lending and return targets	Risk concentration and weak lending discipline	NGN 620 Billion regulatory bailout
2017 Ghana Banking Crisis	Rapid asset and balance sheet growth	Expansion outpaced capital and controls	Over 100 financial institutions closed & GHS 21 billion bailout
2020 Zambia Debt Default	Short-term fiscal and political objectives	Continued borrowing despite rising debt	Sovereign default
2015 Kenya Banking Distress	Growth and profitability pressure	Weak governance, insider lending and aggressive expansion	Collapse of 3 banks
Insurance Persistency	Commission at sale of new business	Acquisition rewarded	Persistency rates below 50%
Digital Lending in Kenyan finance	Customer growth and fast loan approvals	Multiple borrowing and borrower overextension	Over 4 million defaulters by 2023

The Prime Suspect: Incentive Misalignment

The invisible force shaping visible outcomes

Every number in our database exists because someone made a decision



Somebody approved a loan



Somebody priced a product



Somebody delayed recognising a loss



Somebody pursued a sales target



The risks we measure vs. the forces that drive them

What We Model

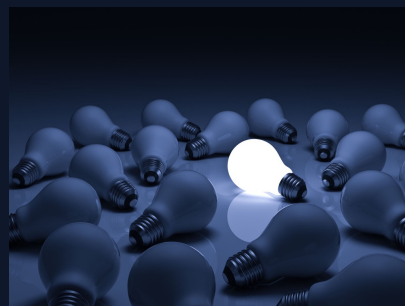
Mortality

Claims

Credit Risk

Inflation

Market Volatility



The Core Question

"What if the greatest source of risk is not a financial variable, but the incentives driving it?"

What Drives Them

Growth targets

Compensation structures

Competitive pressure

Management decisions

Political Objectives

Behavioural drivers

Quantifying Incentive Risk

What if incentive risk had a number, a trend, and a place in the model?

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Incentive Risk Score

An Incentive Risk Score (IRS) assesses the extent to which an organisation's reward structure may encourage **short-term behaviour that creates longer-term risk**.

We ask questions like:

- How are executives rewarded?
- How are sales teams compensated?
- Does governance challenge excessive growth?
- Are customer outcomes part of performance measurement?
- How concentrated is decision-making authority?
- How much political influence affects financial decisions?
- Does the reward reflect quality and long-term outcomes, not just volume?



Scoring Methodology

Each factor is scored on a 1 to 5 scale, where:

Score	Description
1 (Very Low Risk)	Majority of pay linked to long-term performance (3+ years), risk-adjusted metrics, customer outcomes, and clawback provisions.
2 (Low Risk)	Strong long-term incentives with some short-term bonuses, but safeguards remain robust.
3 (Moderate Risk)	Balanced mix of short-term and long-term incentives. Financial growth is important, but non-financial measures are also considered.
4 (High Risk)	Large annual cash bonuses tied mainly to revenue, profit, growth, or share price. Limited consideration of risk management or customer outcomes.
5 (Very High Risk)	Executive rewards depend almost entirely on short-term financial results, with minimal oversight, no deferral, and no penalty for adverse future outcomes.

Example 1

Suppose a CEO's compensation consists of:

- 70% annual bonus
- Bonus based mainly on profit growth and premium growth
- No customer satisfaction measure
- Limited deferred compensation
- No clawback provisions for performance based compensation

This would likely be scored **4** because the structure strongly encourages growth and short-term results, while providing insufficient incentives for managing future risks.

Example 2

Suppose executives receive:

- 40% fixed salary
- 30% annual bonus
- 30% long-term incentive vesting over 5 years
- Measures include profitability, customer outcomes, compliance, and risk management
- Bonuses can be clawed back if misconduct or losses emerge later

This would likely score **1 or 2** because rewards are aligned with sustainable performance rather than immediate results.



Assessment Dimensions and Weightings

Dimension	Weight
Executive remuneration structure	20%
Sales and business development incentives	20%
Governance and challenge mechanisms	15%
Customer outcome measures	15%
Decision-making concentration	10%
Political or external influence	10%
Long-term versus volume-based performance measures	10%
Total	100%



Assessment Dimensions and Weightings

Dimension	Score	Weight	Weighted Score
Executive remuneration structure	4	20%	0.80
Sales and business development incentives	5	20%	1.00
Governance and challenge mechanisms	3	15%	0.45
Customer outcome measures	2	15%	0.30
Decision-making concentration	4	10%	0.40
Political or external influence	3	10%	0.30
Long-term versus volume-based performance measures	4	10%	0.40
Total IRS			3.65

The organisation should consider:

1. Increasing the proportion of long-term incentives

- Defer a larger portion of executive and senior management compensation.
- Link rewards to multi-year performance outcomes.

2. Balancing financial and non-financial metrics

- Include customer outcomes, compliance performance, risk management, and operational quality in performance assessments.
- Reduce excessive reliance on revenue or growth targets.

3. Strengthening governance oversight

- Ensure remuneration committees regularly review incentive structures.
- Challenge business strategies that prioritise aggressive growth at the expense of sustainability.

4. Introducing risk-adjusted performance measures

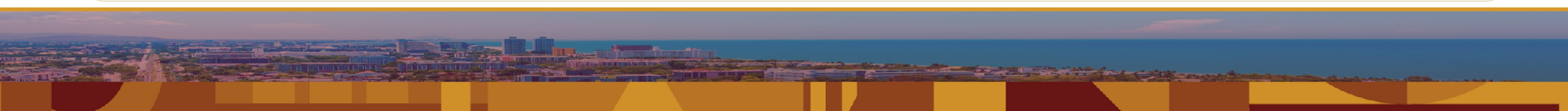
- Reward performance that accounts for the level of risk taken to achieve results.
- Discourage excessive risk-taking solely to meet targets.

5. Enhancing accountability mechanisms

- Implement clawback and malus provisions where appropriate.
- Hold decision-makers accountable for adverse outcomes that emerge after rewards have been paid.

6. Reducing concentration of decision-making

- Strengthen independent review and challenge processes for significant business decisions.



Where the incentive risk index can be used

Sector	Key incentive drivers	Potential outcomes
Banking	- Aggressive growth targets - Volume-based lending incentives - Short-term profitability pressures	- Relaxed underwriting standards - Increased concentrations of risk - Higher NPLs and capital strain
Insurance	- New business commissions - Premium growth targets - Product sales incentives	- Poor policyholder selection - Reduced persistency - Lower long-term profitability
Digital lending	- Approval speed targets - Customer acquisition incentives - Portfolio growth expectations	- Reduced affordability assessments - Higher default rates - Increased Expected Credit Losses
Sovereign finance	- Political cycles - Public spending commitments - Short-term economic objectives	- Excessive borrowing - Fiscal sustainability concerns - Increased sovereign risk

Bayesian Causal Modelling

- The relationships between incentives and financial outcomes are rarely linear.
- How does one decision influence another.
- Bayesian Causal Modelling provides a structured way to understand how one decision influences another:
 - ❖ Growth pressure influences underwriting.
 - ❖ Underwriting influences portfolio quality.
 - ❖ Portfolio quality influences capital.
 - ❖ Capital influences solvency.

Incentives do not directly cause losses.

- Incentives influence behaviour.
- Behaviour drives outcomes.
- Outcomes determine overall risk.



The Causal Pathway

1. Incentive Pressure

- Executive Incentives
- Sales Incentives
- Political Influence

2. Behavioral Pressure

- Aggressive growth
- Excessive risk-taking
- Reduced challenge
- Short-term decision-making

3. Outcomes

- Customer harm
- Conduct failures
- Governance weaknesses
- Financial losses



Stress Testing the Incentive

- Then we stress test those incentives.
- We stress scenarios like:
 - ❖ What happens if executive bonuses depend solely on annual premium growth?
 - ❖ What happens if branch managers are rewarded only for new business?
 - ❖ What happens if political incentives favour borrowing over sustainability?



Stress Testing the Incentive



Stress Testing Framework

Identify Affected Risk Drivers

Translate behaviors into measurable risks.

- ❖ Default rates
- ❖ Claim frequency
- ❖ Lapse rates

Assess Behavioral Response

Determine how decision making may change.

- ❖ Higher risk taking
- ❖ Reduced underwriting discipline

Incentive Misalignment Scenario

Specify the change being tested and recalculate IRI eg; Aggressive growth targets



Quantify Parameter Changes

Adjust model assumptions.

- ❖ PD +15%
- ❖ Lapse Rate +10%

Simulate Financial Impact

Run stressed assumptions through models.

- ❖ ECL
- ❖ Reserve adequacy

Evaluate Resilience

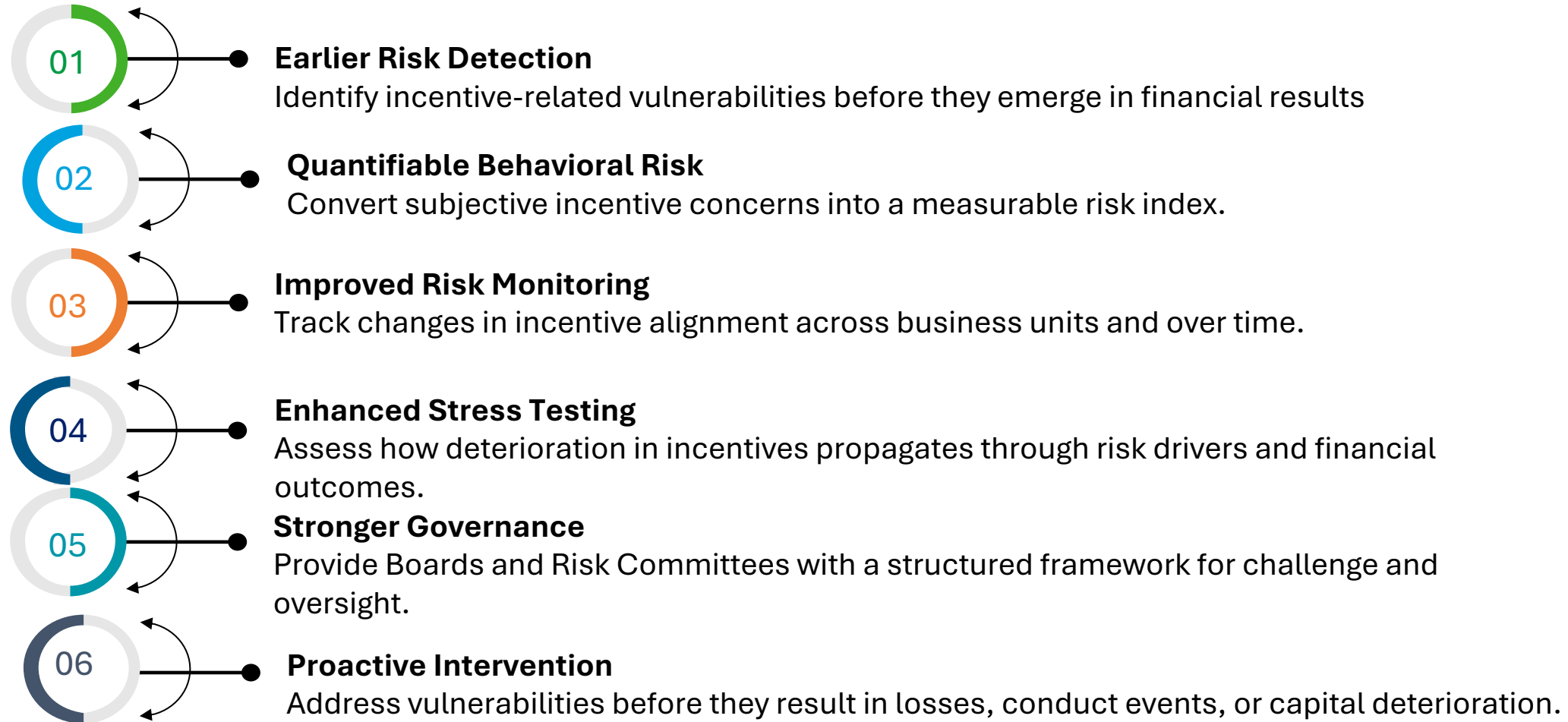
Can the shock be absorbed? Assess exposure to incentive deterioration.

Restore Incentive Alignment

Address vulnerabilities revealed by the stress

- ❖ Adjust incentive structures
- ❖ Enhance control frameworks

Practicality of the Framework



Why It Matters

- Africa's financial system is changing rapidly.
 - ❖ Digital finance.
 - ❖ Artificial intelligence.
 - ❖ Embedded insurance.
 - ❖ Mobile money.
 - ❖ Cross-border investment.
- As systems become more connected, incentives become more important. Because incentives spread through networks much faster than regulations.
- The next systemic crisis may not begin with a bad model.
- It may begin with a perfectly rational incentive.



Thank You.

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