



**FMIS** | Financial  
Managers  
Society  
**Boston Chapter**

# ERM: What We Have Learned in the Last 10 Years, and How That Will Shape the Next 5!

January 28, 2020

## **ERM: What Have Learned in the Last 10 Years, and How That Will Shape the Next 5!**

The last ten years have seen a lot of changes in how we experience Enterprise Risk Management. From adopting the three lines of defense, to Risk Appetite Statements, to Key Risk Indicator (KRI) monitoring and reporting to the Board. Learn how similar organizations have gained value from their ERM programs over the last five years, and how the next wave of activities will keep that momentum moving forward.

**The world is changing at the slowest pace  
for the rest of our lives**



**DIGITAL DISRUPTION**



## 3 Topics for Today's Agenda



1. Accomplishments and Trends
2. Uncovering the ERM Unknown Unknowns and Next Generation ERM Techniques that will shortly be Table Stakes
3. What Industry Benchmarking Tells Us

# How Well Did You See the Trends



facebook

Uber

Google



NETFLIX







# DID YOU KNOW ?

2019



jose.esteves@ie.edu

[Click to start](#)

**The Renaissance period for Enterprise Risk Management has ended.**

**The decade of ERM Transformation is emerging!**



2010

Moderate	High	High
Low	Moderate	High
Low	Low	Moderate





2010



2010



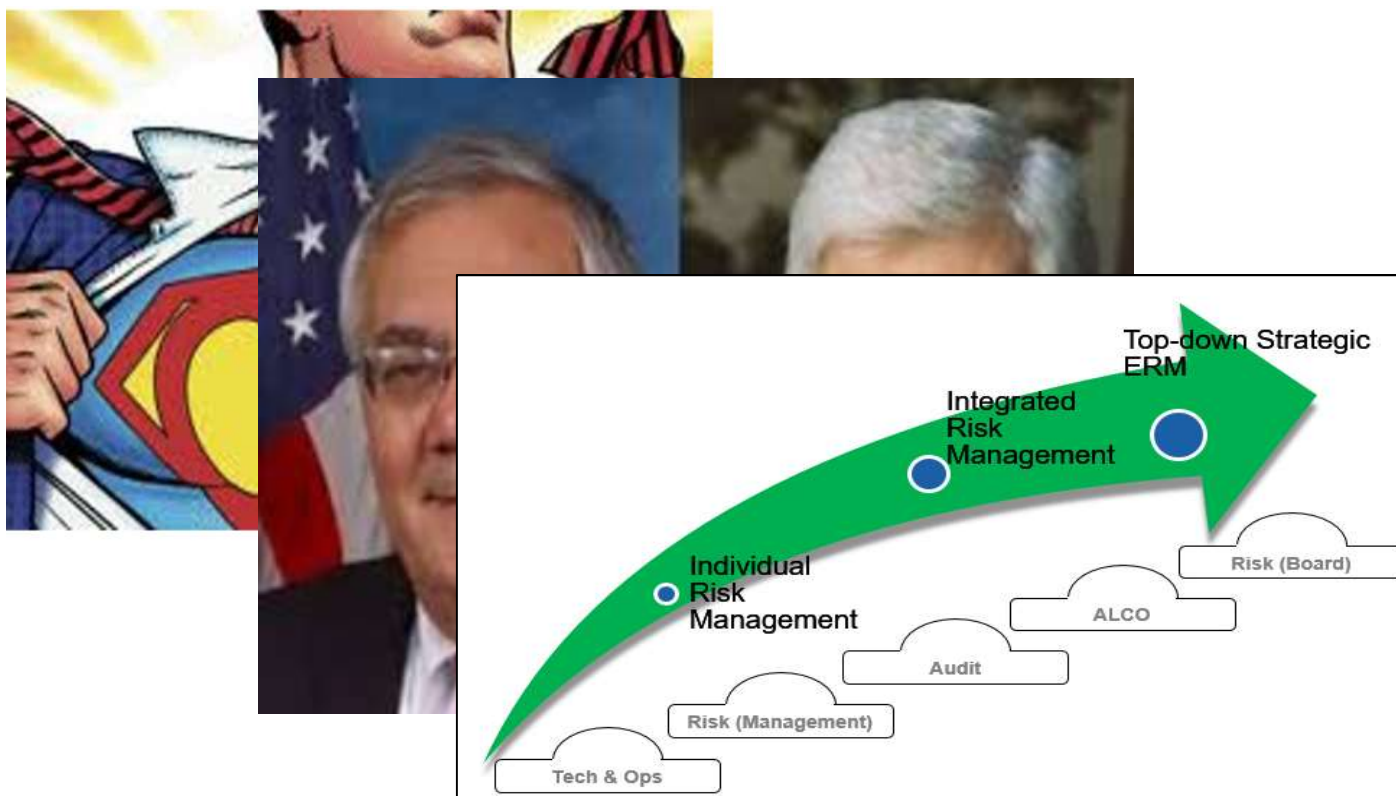
2013



2013

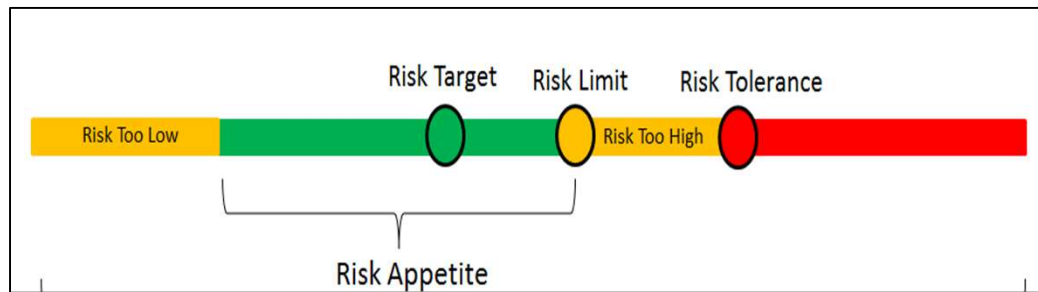


2013

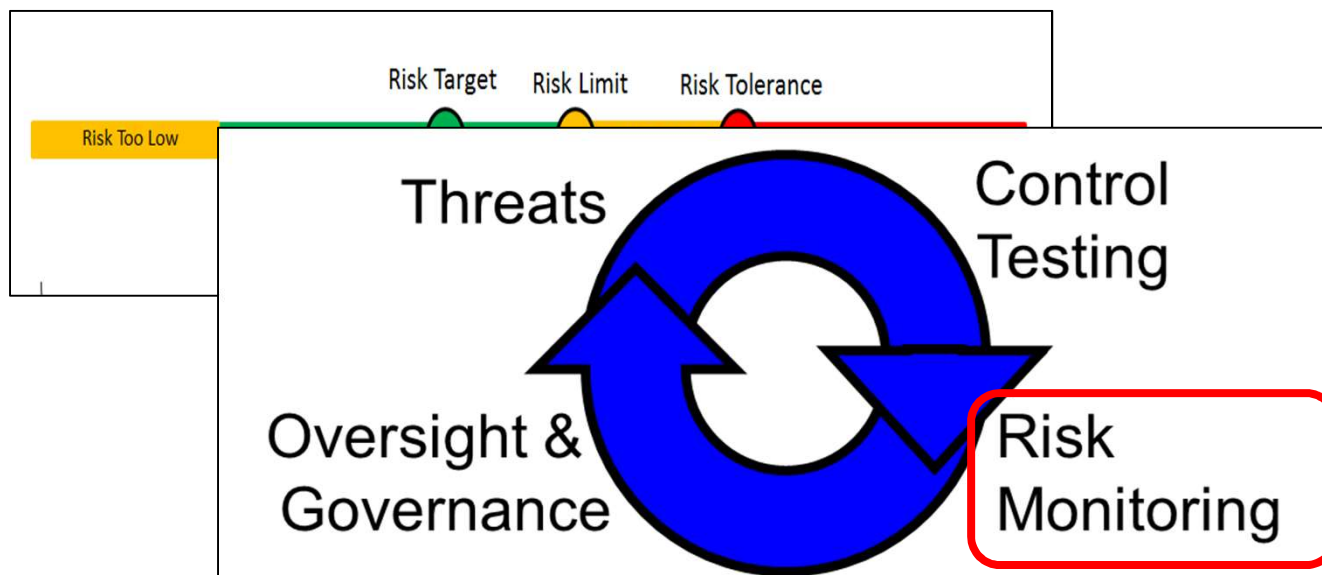




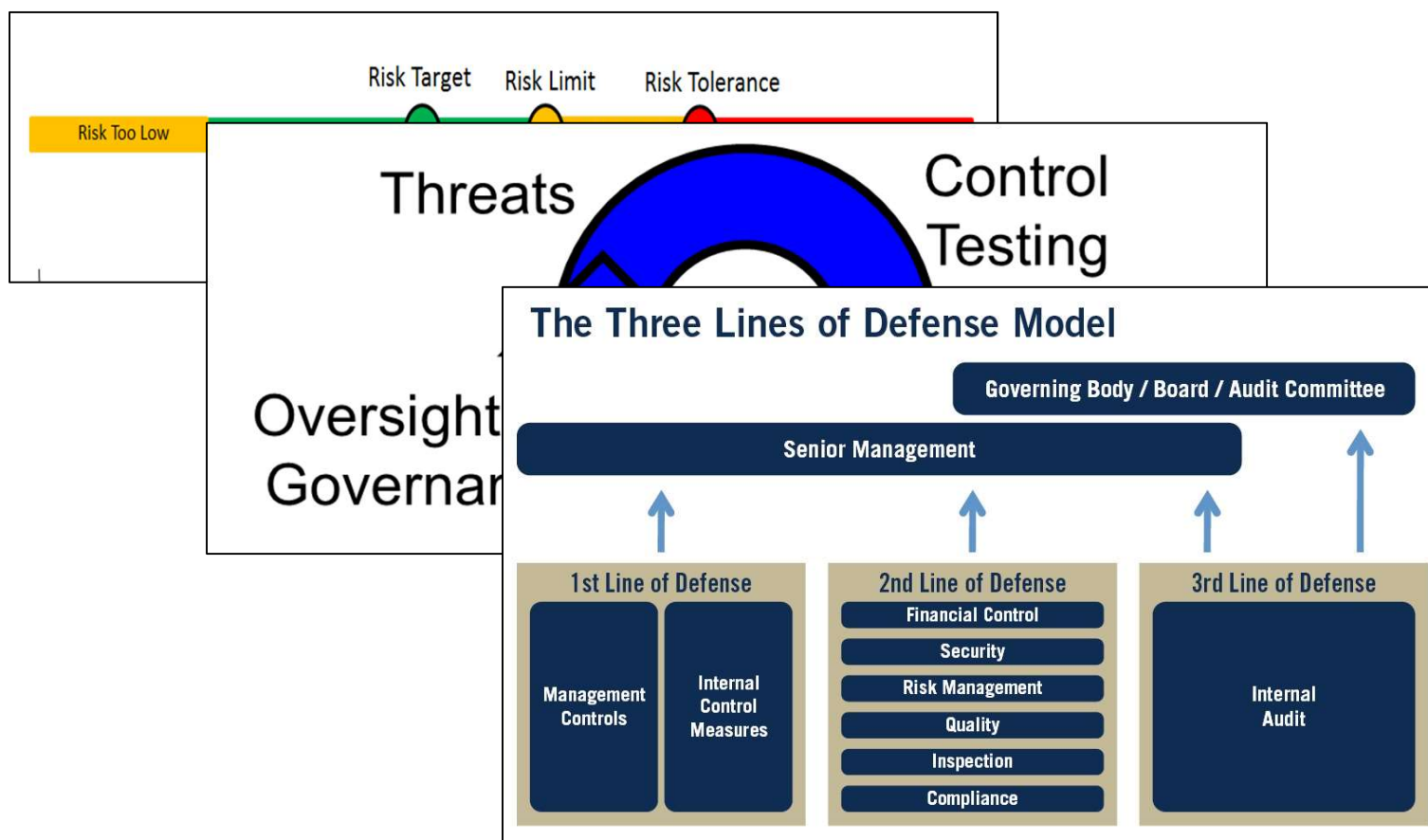
2018



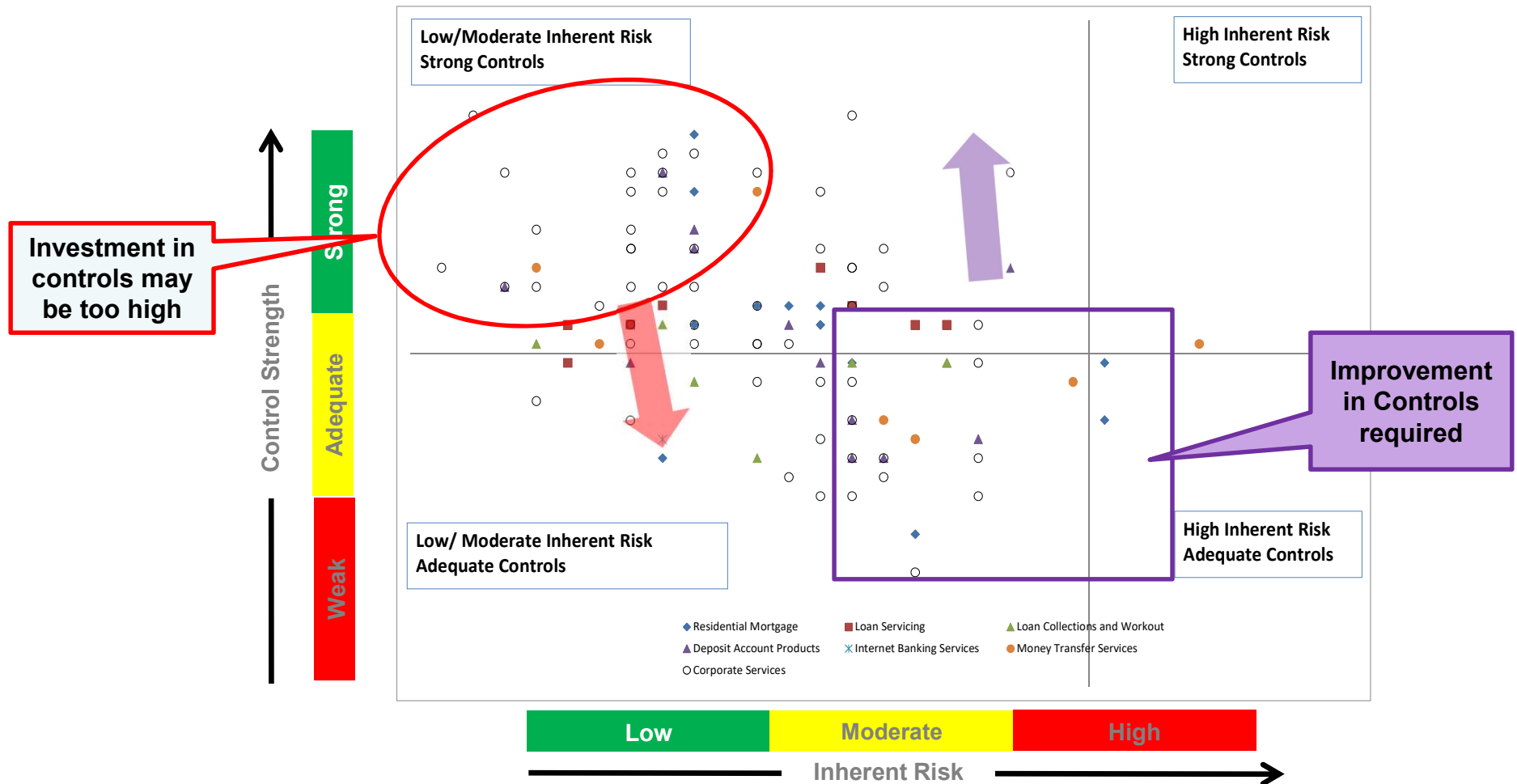
2018



2018



# 2019 Client Case Study: Misaligned Control Processes



**Bottom Line:** The threats to our business and the control processes to keep us safe remain misaligned.

# What Does a Failed ERM Program Look Like

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MARKETS

## Wells Fargo Ex-CEO Banned, to Pay \$17 Million in Fake-Account Scandal

Regulator bars John Stumpf from banking industry; other executives also charged



A regulator barred former Wells Fargo [WFC-0.89%](#) & Co. chief executive John Stumpf from the banking industry and fined him \$17.5 million over the firm's fake-accounts scandal, an extraordinary sanction for a top executive at a large bank.

Mr. Stumpf agreed to the lifetime ban in a settlement with the Office of the Comptroller of the Currency. The firm's former chief administrative officer and chief risk officer settled similar civil charges, and five other former executives, including the former consumer-bank chief, were also charged.

Former Wells Fargo Chief Executive John Stumpf PHOTO: SUSAN WALCH/ASSOCIATED PRESS

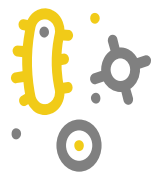
- ❑ CEO: \$17M fine, \$70M in forfeited salary, and lifetime ban.
- ❑ Consumer Bank Chief: Seeking \$25M fine on top of \$66M in forfeited salary, and lifetime ban.
- ❑ CAO and CRO: \$3.5M fine. Proceedings continue.
- ❑ GC and CAE: Proceedings continue.



# Are We at the End, or the End of the Beginning



AI Directing  
Autonomous Vehicles



Immunotherapy to  
Cure Cancer

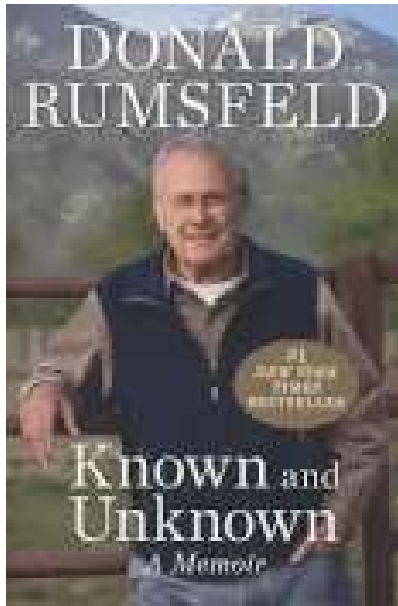


The End of the Oil  
Economy



Colonize the Planet  
Mars

# Enterprise Risk Management's Unknown Unknowns



“Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know.

We also know there are known unknowns; that is to say we know there are some things we do not know.

But there are also unknown unknowns — the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones.”

Donald Rumsfeld, Feb. 12, 2002

# 2025

## Capital Risk Assessment

Risk Area	Net Residual Loss Impact
Transaction	\$\$
Information Technology	\$\$\$
Third Party	\$\$
Regulatory Compliance	\$\$\$\$
Business Continuity	\$
Credit	\$\$\$\$\$
Liquidity	\$\$\$\$\$
Interest Rate	\$\$\$
Strategic	\$\$\$
Reputation	\$\$
Total	\$15M

The diagram illustrates the capital risk assessment process. It shows a table of risk areas and their net residual loss impacts, totaling \$15M. This total is compared against a minimum capital requirement (represented by the green bar). The difference between the total loss impact and the minimum capital requirement is the excess capital (represented by the blue bar).

# The Future is Threat-based Scenarios

Product	High Inherent Risks	Threats
Third Party Payment Processing	Information Technology	Unauthorized system access/changes
		Core System Unavailability
	Vendor	Improper Transaction execution
	Data Security and Privacy	Unauthorized information access
	Regulatory Compliance	Non compliance with BSA, E-Sign, Reg P, ID Theft, Funds Availability, and NACHA
	Reputation	Opportunity Cost of lost customer
		Cost of incident management



# Threat-based Scenarios

Product	High Inherent Risks	Threats	Net Impact to Capital
Third Party Payment Processing	Information Technology	Unauthorized system access/changes	\$750,000
		Core System Unavailability	0
	Vendor	Improper Transaction execution	90,000
	Data Security and Privacy	Unauthorized information access	166,500
	Regulatory Compliance	Non compliance with BSA, E-Sign, Reg P, ID Theft, Funds Availability, and NACHA	100,000
	Reputation	Opportunity Cost of lost customer	114,750
		Cost of incident management	33,750
			\$1,255,000



# Threat-based Scenarios

Product <i>n</i>			
Product 2			
Product	High Inherent Risks	Threats	Net Impact to Capital
Third Party Payment Processing	Information Technology	Unauthorized system access/changes	\$750,000
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# 2025

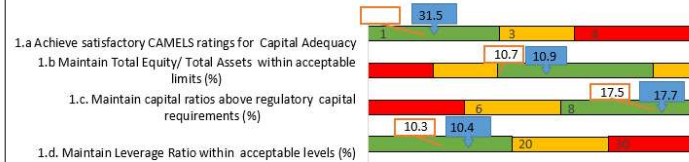
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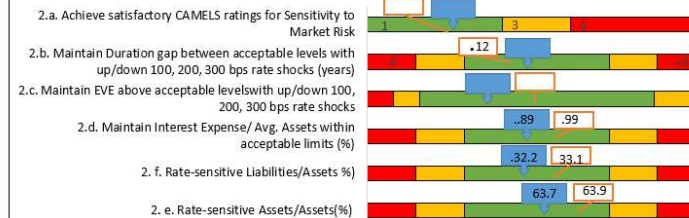
### Sample Matrices/ Data

### Key Risk Indicators

#### 1. Capital Adequacy



#### 2. Market/ Risk Earnings



Functional Risk Areas	2017 Client Case Study (\$850mm)
	<b>TOTAL</b> # of Risk Indicators
Credit risk	72
Interest Rate risk	52
Liquidity risk	38
Regulatory Compliance risk	31
Transaction risk	21
Information Technology risk	21
Reputation risk	14
Vendor risk	12
Strategic risk	6
Business Continuity risk	3
Privacy risk	3
Price risk	2
<b>TOTAL</b>	<b>275</b>

Functional Risk Areas	2017 Client Case Study (\$850mm)	August 2019 \$500mm-\$3B
	<b>TOTAL</b> # of Risk Indicators	Average # of <b>KEY</b> Risk Indicators
Credit risk	72	20
Interest Rate risk	52	9
Liquidity risk	38	8
Regulatory Compliance risk	31	3
Transaction risk	21	1
Information Technology risk	21	8
Reputation risk	14	1
Vendor risk	12	1
Strategic risk	6	8
Business Continuity risk	3	1
Privacy risk	3	1
Price risk	2	4
<b>TOTAL</b>	<b>275</b>	<b>65</b>



# KRI Benchmarking-Operational Risk Metrics



**Note: Non Call Report Metrics; sample size = 17.**

Indicator	August 2019 -- \$500mm-\$3B	
	Average Value	Highest Value
Strategic: Employees age 62 years + without documented succession plan (who need them)	1.7	5
Reputation: % of voluntary turnover to total employees	10%	20%
Technology: % of employees who failed phishing campaign	3.50%	13.75%
Vendor: # Contracts auto-renewing without prior review	5	25
Business Continuity: Instances of failed system recovery from BCP testing	6	10
Regulatory Compliance: % of Employees with at least 1 Past due training	4.25%	7.25%

**Bottom Line:** Transform the Unknowns to Knowns, and once you measure it you can improve it!



# 2025

## Capital Risk Assessment

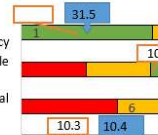
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### Sample Matrices/ Data

### Key Risk Indicators

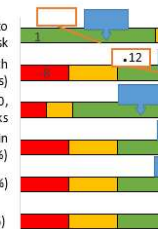
#### 1. Capital Adequacy

- 1.a Achieve satisfactory CAMELS ratings for Capital Adequacy
- 1.b Maintain Total Equity/ Total Assets within acceptable limits (%)
- 1.c. Maintain capital ratios above regulatory capital requirements (%)
- 1.d. Maintain Leverage Ratio within acceptable levels (%)



#### 2. Market/ Risk Earnings

- 2.a. Achieve satisfactory CAMELS ratings for Sensitivity to Market Risk
- 2.b. Maintain Duration gap between acceptable levels with up/down 100, 200, 300 bps rate shocks (years)
- 2.c. Maintain EVE above acceptable levels with up/down 100, 200, 300 bps rate shocks
- 2.d. Maintain Interest Expense/ Avg. Assets within acceptable limits (%)
- 2. f. Rate-sensitive Liabilities/Assets (%)
- 2. e. Rate-sensitive Assets/Assets(%)



### 4 Sources of Risk Appetite





# First Generation – Risk Appetite Statements



## **Sample: Risk Appetite Statement**

- We seek to maximize our returns and deliver consistent revenue and earnings growth while managing risks by providing sophisticated services, capabilities, and products that embody personal service and responsiveness to help our clients achieve success.
- We will focus on high net-worth individuals, middle market businesses, real estate developers and sponsors that are located primarily in our footprint for commercial lending and located nationally for our deposits, private banking, and other services.
- We will only take risks that we understand and that advance our business and objectives.
- We will strive to always do the right thing. We will maintain high ethical standards, foster a culture of risk awareness and transparency, and integrate regulatory, legal and compliance into every level of the Bank.
- We will continue to attract and retain experienced banking professionals with strong existing ties to, and knowledge of, our primary markets, clients, and product offerings.
- We will continue to utilize enhanced technology and personal service to address our clients needs as we currently do not plan to have retail branch locations.
- If any of our risk appetite statements are breached, Management will discuss the applicable matter with the Board of Directors.

## Observations:

- Qualitative
- Guiding Principles
- Enterprise Level
- Non Technical
- Easy to Understand



# Next Generation – Risk Appetite Statements



## Credit Risk Management

Considers the risk to earnings or capital arising from an obligor's failure to meet the terms of any contract with the Bank or otherwise fail to perform as agreed. The Bank will limit the types of business and industries that it will invest in as well as not invest in.

Qualitative statements	Quantitative metrics
<ul style="list-style-type: none"><li>• We will strive to offer value to our customer while maintaining a viable business-lending program in accordance with the asset/liability policy.</li><li>• We will maintain the quality of the loan portfolio and minimize the losses associated with high risk loans by establishing parameters to govern the maximum and minimum amounts of loans to be held in the Bank's loan portfolio.</li></ul>	<ul style="list-style-type: none"><li>• Total investment in corporate bonds and notes <math>\leq 10\%</math> of the Bank's assets.</li><li>• The Bank shall not permit any person or entity to borrow or guaranty, directly or indirectly, an amount(s), in the aggregate, which <math>&gt; 1\%</math> of its total assets.</li><li>• Ratio of the Non-Qualified Real Estate Loans to the net worth of the Bank <math>&lt; 125\%</math>.</li><li>• "Criticized asset" loans <math>\geq 15\%</math> of customer business loans.</li></ul>

## Observations:

- Keep Basic Preamble
- Qualitative + Quantitative
- 12 Functional Risk Sections (see Appendix)
- Guiding Principles + Measures
- BU Level

# 2025

## Capital Risk Assessment

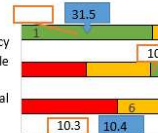
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Interest Rate	\$\$\$
Strategic	\$\$\$
Reputation	\$\$
Total	\$15M

### Sample Matrices/ Data

### Key Risk Indicators

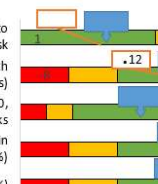
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- 2.d. Maintain Interest Expense/ Avg. Assets within acceptable limits (%)



### 4 Sources of Risk Appetite



## Cost of Risk Management

	Strategic	Reputation	Operations Risk				Customer Info.	Regulatory Compliance	Market Risk			
			Transaction	Info. Tech.	Vendor	Bus. Continuity			Interest Rate	Credit	Price	Liquidity
Average Risk Rating	3.1	3.4	3.7	3.9	4.0	3.5	3.9	3.6	4.0	3.5	3.0	4.0
Cost of Risk Management	\$45,677	\$132,852	\$404,928	\$422,611	\$65,924	\$171,094	\$91,140	\$929,799	\$61,054	\$313,268	\$17,266	\$13,355

# Case Study: Cost of Risk Management

	Strategic	Reputation	Operational Risk				Data Security and Privacy	Regulatory Compliance	Market Risk			
			Transaction	Info. Tech.	Vendor	Bus. Continuity			Interest Rate	Credit	Price	Liquidity
Average Risk Rating	3.1	3.4	3.7	3.9	4.0	3.5	3.9	3.6	4.0	3.5	3.0	4.0
Cost of Risk Management	\$45,677	\$132,852	\$404,928	\$422,611	\$65,924	\$171,094	\$91,140	\$929,799	\$61,054	\$313,268	\$17,266	\$13,355

## Key Observations:

1. Interest Rate, Price, and Liquidity control costs are low because of efficiencies
2. IT and Transaction control costs are high because the threats are decentralized AND changing
3. Compliance control costs are high due to zero risk tolerance

# Last Word - Emerging Risk Measurement



## New Jersey Bankers Association Enterprise Risk Management Committee

Thursday, May 9, 2019

### Spotting Emerging Risks

#### Team Roster:

Debra Avidon | Anil Bandari

Michael Cohn | Richard Daingerfield

#### The issue:

- Our ERM functions are well equipped to identify, measure and monitor the known risks, i.e.: Credit Risk | Market Risk | Operational Risk | Liquidity Risk | Reputational Risk | Business Risk | Systemic Risk | Moral Hazard

#### This presentation addresses:

- How can we identify the unknown risks to our business?
- Once identified, how can we measure and monitor them?



## 3 Metrics we may wish to measure regarding deposits

### 1. Changes in aggregate size of US deposit market

- ❑ \$12.6 trillion at 12/31/18

<https://www.fdic.gov/bank/statistical/stats/2018dec/industry.pdf>

### 2. Market share trends of nonbank participants

- ❑ Money market mutual funds
- ❑ FinTech

### 3. Impact of Fed's balance sheet normalization

- ❑ High of \$4.5 trillion 11/2014 | \$4.0 trillion 3/2019 | "Normal" would be <\$1 trillion
- ❑ Monitor changes in Fed's balance sheet

## 3 Metrics we may wish to measure regarding FinTech Lending

### 1. 2018 Bank Consumer, Student Loans, C&I to SME:

- \$740 billion non-revolving unsecured consumer loans
- \$12 billion private student loans
- \$37 billion C&I loans to SMEs

**Total \$789 billion**

### 2. FinTech: \$12 billion or 1.5% for same 3 categories

### 3. Should we be worried? Maybe. Watch Fintech Lenders' Compound Annual Growth Rate (CAGR).



## Operational Risk Topics:

1. Robotic Process Automation ("RPA")
2. Cyber risk
3. Vender risk
4. Change risk

# Final Thought

“Amateurs built the  
ark, professionals  
built the Titanic”

Unknown

## Bottom Line

Let's not delay in trying new approaches. We  
can't fix anything unless we are moving  
(forward).

## Thank you. Questions?



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[www.wolfandco.com](http://www.wolfandco.com)

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# Functional Risk Categories for Risk Appetite Statements



Risk Category	Description
1. Transaction Risk	The risk to earnings or capital arising from problems with service or product delivery.
2. Information Technology Risk	The risk to earnings and capital arising from dependency on certain technologies.
3. Vendor Risk	The risk to earnings and capital arising from reliance on vendor organizations.
4. Business Continuity Risk	The risk to earnings and capital arising from the ability to continue or resume service or product delivery in the event of a disaster.
5. Data Security & Privacy	The risk to earnings and capital arising from the collection, processing, storing, and destruction of non-public customer information.
6. Regulatory Compliance Risk	The risk to earnings or capital arising from violations of, or non-conformance with, laws, rules, regulations, prescribed practices, or ethical standards.
7. Strategic Risk	The risk to earnings or capital arising from adverse business decisions or improper implementation of those decisions.
8. Reputation Risk	The risk to earning or capital arising from negative public opinion. This affects the organization's ability to establish new relationships or services, or continue servicing existing relationships.
9. Interest Rate Risk	The risk to earnings or capital arising from fluctuations in interest rates.
10. Credit Risk	The risk to earnings or capital arising from an obligor's failure to meet the terms of any contract with the organization or otherwise fail to perform as agreed.
11. Price Risk	The risk to earning or capital arising from changes in the value of portfolios of financial instruments. This risk arises from market-making, dealing, and position-taking activities in interest rate, foreign exchange, equity, and commodity markets.
12. Liquidity Risk	The risk to earnings or capital arising from a bank's inability to meet its obligations when they come due, without incurring unacceptable losses.





## About Wolf & Company, P.C.



*Established in 1911, Wolf provides audit, tax and risk management services to over 450 financial institutions and financial services companies across the U.S.*

- 300+ Experienced and Highly-Trained Professionals
- 100+ Risk Management Professionals
- Experts in operations, finance, IT, compliance, and enterprise risk management matters
- 200 Financial Institutions and FinTech companies on the WolfPAC ERM platform
- Strategic Endorsements
  - ❑ New Jersey Bankers Association
  - ❑ Connecticut Bankers Association
  - ❑ New York Bankers Association
  - ❑ Virginia Bankers Association
  - ❑ Western Bankers Association

# Caring for Our Community



At Wolf & Company, the same care and commitment that we show our clients is reflected in our support of the communities in which we live and work. As a result, you will find our people participating in, leading, and financially supporting a variety of organizations and institutions.

[We look forward to providing service and support for years to come!](#)



**Mission.** Create Firm awareness of needs within our communities and increase employee involvement within the organizations that serve those needs.



**Philanthropy Committee.** Our employee-led group identifies and organizes volunteer activities for the Firm. To further support these efforts, all employees are given up to 1 day off each calendar year to volunteer their services.

[During the most recent year, 178 employees volunteered their services for over 1,801 hours.](#)



## Majority of Hours

- Be Like Brit
- Heading Home
- Paraclete Center
- VA Hospital



## Wolf Service Award Recipients

Employees achieving a tenure milestone are provided with the opportunity to direct a donation from the Wolf & Company Charitable Foundation to a charity of their choice. The amount of each donation is dependent on the number of years the employee has worked at Wolf.

[During the most recent year, \\$11,500 was donated by 22 Wolf Service Award recipients to 20 organizations.](#)



## Giving Back

In addition to volunteering time and talent, the Wolf Charitable Foundation made significant financial contributions to various organizations.

[\\$25,793 was donated to charities from the Wolf Charitable Foundation.](#)