COVID-19 Impact on the New Current Expected Credit Loss (CECL) Reporting Standard

DUFF & PHELPS

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Selected Bios

Jonathan Jacobs, CPA, ABV

Managing Director, Global Financial Services Leader, Valuation Advisory Services

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Jonathan Jacobs is a managing director in the New York and Miami offices and part of the Valuation Advisory Services business unit. Jon is the Global Financial Services Industry Practice Leader at Duff & Phelps.

Jon specializes in the financial services industry with an extensive level of experience in business and asset valuations, for banking, traditional and alternative asset management, capital markets/brokerage, consumer and specialty finance. Health, P&C and other insurance (e.g., workers compensation, life, warranty, etc.), leasing, transaction and payment processing, clearing and transfer agent and financial technology industries. Other industry experience include healthcare providers, third party administrators, claim processing, and healthcare insurance software. In addition, Jon has determined values for business enterprises, intangible, financial assets and liabilities (including performing and impaired loans, as well as intercompany loan arrangements and other illiquid and complex securities) and tangible assets. The purposes of the engagements range from financial, tax and regulatory reporting purposes, mergers and acquisitions, litigation support, strategic and internal planning (including debt capacity, synthetic debt rating analyses and determination of arm's length interest rates), bankruptcies and reorganizations and the establishment of employee stock ownership plans or grants of stock options/restricted stock units.

Jon has serviced a vast number of global clients in various sectors of the financial services industry in the United States, Europe, Latin America and Asia. Financial institutions range from in size from privately owned community banks and financial institutions to global financial institutions. His engagement highlights include performing asset valuations in connection with the largest U.S. banking transaction, as well as the largest banking transactions in Japan, Mexico, Korea, Chile and Taiwan, and other leading transactions in the credit, debit and prepaid cards, consumer finance, retail brokerage, asset management and insurance industries. Further, Jon has significant experience in consulting his clients in terms of valuation, financial, tax and regulatory reporting requirements relating to banking transaction including those resulting from regulations issued by governmental authorities and agencies given the recent financial crisis.

Jon joined Duff & Phelps in conjunction with the merger of Standard & Poor's Corporate Value Consulting (CVC) with Duff & Phelps. Prior to the acquisition of CVC by Standard & Poor's, Jon has had a diverse background at PricewaterhouseCoopers LLP. In total, Jon has over 30 years experience in consulting and auditing on valuation, litigation, corporate finance/strategy, financial and regulatory reporting and bankruptcy and reorganization related issues.

Jon received his B.S. in accounting from Brooklyn College and he is a Certified Public Accountant licensed in New York, as well as Accredited in Business Valuation. Further, Jon has passed the CEIV examinations and is in the process of receiving his CEIV credentials. He is a member of the American Institute of Certified Public Accountants, the New York State Society of Certified Public Accountants and the Florida Chapter of the American Society of Appraisers. Jonathan is also a candidate for the American Society of Appraisers.

Jon is a frequent speaker on topics relating to financial services at the AICPA Banking Conference and various Financial Executive International – Financial Reporting Conferences. Over his career, Jon provided expert testimony and related consultative services on various valuation matters including accounting, tax and compensation matters.

Jennifer Press

Managing Director, Alternative Asset Advisory

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Jennifer Press is a Managing Director in the New York office and part of the Alternative Asset Advisory practice. She brings over 19 years of experience in pricing, trading, structuring and analyzing complex financial instruments.

Jennifer is responsible for service capabilities in structured credit and whole loans. She brings with her fixed-income and capital markets experience over which time she has focused on valuation, trading, structuring, hedging, and risk management activities across all of structured credit. Jennifer is adept at identifying and applying risk and valuation approaches that are appropriate to a spectrum of underlying product areas, developing a particular strength in valuation of esoteric products like residuals, re-securitizations, and performing and nonperforming whole loan pools.

Previously, Jennifer was the Portfolio Manager / Senior Mortgage Trader for Tower Research Capital's Distressed Mortgage / ABS Fund. There she implemented strategies to capitalize on relative value discrepancies focusing on Non-Agency Mortgage Backed Securities (RMBS). Additionally, she played a vital role in the construction of the team and informed current and potential investors about investment strategies as well as market conditions.

Prior to that she was a Senior ABS Analyst at Marathon Asset Management where she sourced, analyzed, and traded ABS Securities as well as portfolios for both their Structured Finance fund as well as their Distressed Mortgage Fund. Additionally, she helped create internal analytics used both for investing as well as portfolio management.

Prior to Marathon, Jennifer was a Senior ABS Analyst at Dynamic Credit Partners. Jennifer started her career at JP Morgan where she worked in various areas including Interest Rate Derivatives, Credit and the Asset Backed Securities Proprietary Trading group.

Jennifer received a Masters in Computational Finance from Carnegie Mellon University's Tepper School of Business, Bachelor of Science in Economics with concentrations in Finance, Accounting, and Information Systems from The University of Pennsylvania's Wharton School, and a Bachelor of Science in Engineering in Systems Engineering from the University of Pennsylvania's Engineering School.

John Schrader

Global Leader, Financial Instruments and Technology Group

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John Schrader is D&P's Global Leader for its Financial Instruments and Technology Group in the New York office and part of the Alternative Asset Advisory service line. He has over 28 years of fixed-income, capital markets and investment banking experience.

John is responsible for service capabilities in the application of technology processes, automation, and tools to valuation advisory and financial consulting. He brings with him over 28 years of fixed-income, capital markets, and investment banking experience over which time he has focused on helping ABS, CDO, MBS, CMBS and proprietary traders in their trading, structuring, hedging, and risk management activities. In addition to managing market risk functions at major global investment banks, John also generated income through capital structure arbitrage.

John is adept at identifying and applying risk and valuation approaches that are appropriate to a spectrum of underlying product areas, developing a particular strength in valuation of esoteric products like mortgage residuals, re-securitizations, and performing and nonperforming whole loan pools. This requires the use of rating agency analyses, collateral cash flow modeling, loan-level prepayment and loss modeling and OAS methodologies. Other engagement highlights include designing position and analytics platforms that bring together analytical modeling capabilities with various trading tools and building and designing scenario applications to measure credit loss sensitivity for residential, commercial, and SME portfolios in various counties across the globe (including UK, Spain, France, Germany, Italy, and Japan). John has extensive experience evaluating loan servicing platforms and loan originators in both the US and Europe.

Prior to Duff & Phelps, John was Head of Global Risk Management for the Securitized Products Group of Morgan Stanley, responsible for measuring and monitoring all risk taking activities of trading desks across the spectrum of residential, consumer and commercial debt. Prior to joining Morgan Stanley, John was a senior managing director at Bear Stearns in charge of Market Risk for Global Mortgage Trading. John also spent time at other financial institutions including CSFB, Lehman Brothers and American Express.

John received his M.B.A. in finance from New York University's Stern School of Business and his B.S. in business administration, concentration in finance, from Bryant College.

Section II

About Duff & Phelps

ABOUT DUFF & PHELPS

As the leading global advisor, Duff & Phelps protects, restores and maximizes value for clients in the areas of valuation, corporate finance, investigations, disputes, cyber security, compliance and regulatory matters, and other governance-related issues. We work with clients across diverse sectors, mitigating risk to assets, operations and people.

3,500+
TOTAL PROFESSIONALS GLOBALLY IN 28 COUNTRIES

MORE THAN
15,000
ENGAGEMENTS PERFORMED IN 2018

7,500
CLIENTS INCLUDING NEARLY 50% OF THE S&P 500

THE AMERICAS
2,000+
PROFESSIONALS

EUROPE AND MIDDLE EAST
1,000+
PROFESSIONALS

ASIA PACIFIC
500+
PROFESSIONALS

ENHANCING VALUE ACROSS AND RANGE OF EXPERTISE

VALUATION ADVISORY

Valuation and consulting for financial reporting, tax, investment and risk management purposes

- Valuation Services
- Alternative Asset Advisory
- Real Estate Advisory
- Tax Services
- Transfer Pricing
- Fixed Asset Management and Insurance Solutions

CORPORATE FINANCE

Objective guidance to management teams and stakeholders throughout restructuring, financing and M&A transactions, including independent fairness and solvency opinions

- M&A Advisory
- Fairness Opinions
- Solvency Opinions
- Transaction Advisory
- ESOP and ERISA Advisory
- Commercially Reasonable Debt Opinions
- Distressed M&A and Special Situations

GOVERNANCE, RISK, INVESTIGATIONS AND DISPUTES

Combined Duff & Phelps and Kroll risk management and mitigation, disputes and other advisory services

- Business Intelligence and Investigations
- Disputes
- Cross-Border Restructuring
- Cyber Risk
- Legal Management Consulting
- Security Risk Management
- Compliance Risk and Diligence
- Compliance and Regulatory Consulting

Section III

Introduction to “CECL”
(Current Expected Credit Loss)

What is CECL?

- Considerable losses suffered during the 2008 financial crisis led the Financial Accounting Standards Board ("FASB") to change its outlook on accounting for credit losses. Regulators and other market participants perceived that loan loss reserves recognized under then current GAAP were "too little, too late."

- In response, the FASB created a new method for recognizing credit losses in June of 2016 entitled Current Expected Credit Loss ("CECL") or Accounting Standards Codifications ("ASC") 326.

- CECL consolidates guidance from various areas into one method that requires the estimation and immediate recognition of all losses expected over the life of a financial instrument or asset upon origination/recognition or purchase of the instrument.

Distinctions between CECL and Incurred Loss Model

- CECL requires the recognition of all losses expected over the life of a financial instrument upon origination, recognition or purchase of the instrument (or companies may elect the Fair Value Option)
  - FASB believes that this better matches anticipated losses
  - Incurred Loss Models look at historic and current periods to estimate losses

- Under the new CECL guidance, loss estimation or measurement is based on, but not limited to:
  - Availability and quality of data
  - Current market conditions
  - Reasonable supportable forecasts over the lifetime of the financial instrument
  - Subjective factor adjustments that may be qualitative, to reflect changes to the relevant information, as appropriate
    - » This may take the form of scenarios and sensitivities to consider the short-term, intermediate and long-term effects
  - Segmentation and granularity of financial instruments that share similar risk characteristics
    - Examples of shared risk characteristics include payment statuses, credit score (internal or external), risk classification, asset type, collateral type, size, effective interest rate, term, geography, borrower industry and vintage, among others.

How is Credit Loss Measured Under GAAP?

- Under prior GAAP, loss reserves are recognized when it is probable that a loss has already been incurred

- This methodology does not incorporate forward-looking economic forecasts, consideration of industry cycles, the impact and potential adjustments related to the creditworthiness of borrowers, or unique one-time events

- As a result, the prior GAAP methodology resulted in reserves that did not always reflect total expected future losses

Examples of Methods and Models under FASB

- There is no one method or model that is prescribed by the FASB within the ASU, however the following models and methodologies are currently contemplated:
  - Loss-rate,
  - Discounted cash flow (DCF),
  - Vintage Analysis,
  - Probability of Defaults (PD) / Loss Given Default (LGD),
  - Provision matrix, and
  - Regression

Who Will Be Impacted?

- Most public companies that file with the SEC are required to implement CECL beginning in their Q1 2020 filings, regardless of whether they are financial institutions or non-financial institutions.

- Before COVID-19, the estimated increases to allowance of loan and lease loss reserves ranged from $50 billion to $100 billion (30 to 50 percent) for approximately $10 trillion of applicable loans, for the financial services industry alone.

Entities Affected by CECL (Financial & Non-Financial)	Common Asset Types Affected by CECL	
» Any Institutions holding Financial Instruments, Investment Leases, and Receivables » Banks, Credit Unions, and Insurers » Credit and Private Equity Funds » Loan Originators » Specialty Finance Companies » Large Asset Managers » Large Corporations	» Financial instruments carried at amortized cost, including: • Trade receivables; • Loans Held for Investment; • Held-to-maturity (HTM) debt securities; • Receivables that relate to repurchase agreements and securities lending agreements; and • Reinsurance receivables	» Lease and Rental Receivables » Certain on-balance-sheet receivables » Off-balance-sheet credit exposures not accounted for as insurance or as derivatives, including: • Loan commitments; • Standby letters of credit; and • Financial guarantees

CECL Implementation Requirement Timeline

- Large public companies that file with the SEC have an effective date for their fiscal year beginning after December 15, 2019
  - These entities should have their CECL methodology and documentation in place for their Q1 2020 filings.

- All other public business entities, including smaller reporting companies and other non-public entities, are permitted to wait until their first fiscal year beginning after December 15, 2022
  - We have observed that other smaller public and private companies are in varying stages of readiness with many private financial institutions either already running shadow processes or preparing to do so

Section IV

COVID-19 Pandemic — Impact on CECL

COVID-19 Impact on the General Economic Environment

- S&P 500 and the Dow Jones realized steepest daily declines since 1987.
  - S&P 500 volatility of 4% or more in either direction for a record eight consecutive sessions since March 9, 2020.

- US restricted travel from mainland Europe, U.K. and Canada, which came subsequent to the travel bans from China and the rest of Asia

- The Federal Reserve cut interest rates to zero percent and announced it would purchase $700 billion in bonds and securities.
  - On March 19, 2020 the Fed established a lending facility to back up money market mutual funds

- COVID-19 payment holidays are being contemplated or already implemented across a range of asset classes globally, including but not limited to, mortgages, student loans, and other loan products

- All industries have been affected, including airline and aerospace, leisure and hospitality, including hotels and cruise lines, energy, etc.

- State and federal mandates to isolate or minimize contact and gatherings to no more than 10 people impacting restaurants, malls, conferences, offices, etc.

- While we can draw similarities to other times of market distress, there are no true comparable environments from our lifetimes.

Will COVID-19 lead to credit deterioration in the marketplace?

- Current snapshot of relevant indices – March 20, 2020

	Price / Rate	Percentage Change 1 Month	3 Month	YTD	1 Year
Index					
LCD Performing Loan Index Price[1]	78.40	-19.20%	-18.93%	-19.00%	-19.13%
Smi LPC 100 Price - US[2]	80.36	-18.42%	-18.63%	-18.59%	-17.57%
LIBOR					
Three Month LIBOR	1.20%	-29.00%	-37.76%	-36.90%	-53.71%

	Current Spread	Change in Spread 1 Month	3 Month	YTD	1 Year
Loan Spreads by Credit Rating[1]					
BBB Loans	8.80%	6.95%	6.96%	6.97%	6.56%
BB Loans	11.35%	8.53%	8.56%	8.56%	8.33%
B Loans	13.54%	8.92%	8.82%	8.83%	8.78%
CCC Loans	25.23%	11.98%	11.24%	11.29%	13.40%
Loan Spreads by Seniority[1]					
Overall Market Spreads - Smi[2]	11.35%	6.05%	5.95%	6.00%	6.16%
All Loan Spreads - LCD	13.31%	8.83%	8.68%	8.69%	8.79%
First Lien Spreads - LCD	13.01%	8.79%	8.65%	8.67%	8.71%
Second Lien Spreads - LCD	22.51%	10.04%	9.59%	9.57%	12.45%

[1] S&P Leveraged Commentary and Data
[2] Thomson Reuters Secondary Market Intelligence

How Should Preparers Consider COVID-19 Within Their CECL Reserves?

- Within the past 45 to 60 days, we've seen the economic environment change. The level of uncertainty and risk has increased, which needs to be considered and included.
- It's crucial to evaluate how COVID-19 affects your company and it's operations, understand who your customers or borrowers are, as well as assess their ability to pay utilizing observed evidence of credit deterioration through the use of credit ratings, FICO scores, etc. as applicable
  - Discussions with internal finance teams as well as executives, auditors, advisors and subsidiaries regarding expected timing for payments in relation to extensions or forbearance requests should be considered
- Factors including regulatory changes or changes to macroeconomic indicators such as gross domestic product growth, unemployment rate and housing prices along with continued monitoring of federal regulations, fiscal policy changes, and credit rating agency updates should be considered
- Subjective adjustments need to be considered such that the CECL reserves are based on what is reasonably known or knowable based on the facts and circumstances of the instrument
- In the face of uncertain business impacts, robust reporting is critical to provide full transparency. What are you doing to manage risks and what contingency plans do you have in place?

Other Questions Raised

- How can it reasonably be determined that a credit deterioration of the financial instruments has occurred?
- What factors should preparers consider when evaluating the impact of COVID-19 on their CECL reserves, in the short-term and long-term?
- How should preparers develop forecasts considering the impact of COVID-19, including the underlying economic and value assumptions utilized in measuring credit deterioration?
- Can you reasonably arrive at probabilistic weights to forecasts to appropriately consider the impact of COVID-19 on the estimated credit deterioration in determining the CECL reserve?

Concluding Remarks

- Timelines for adoption have been established. Effective dates vary by institution type and should be monitored as the FASB guidance may provide potential near-term relief.
- Responsible parties must identify the credit loss model(s)–they intend to utilize and assess the quality of historical data needed to properly implement, including benchmarking and backtesting as time passes.
- Reasonableness of all inputs and assumptions used in the models must be considered during the development and implementation phases.
- Disclosures need to properly address the effects of COVID-19 and the accounting changes.

Appendix I

About Duff & Phelps

EVOLUTION

1932

Duff & Phelps founded and evolves into diversified financial services firm

1994

Credit ratings business spun-off

2005

Acquired **Corporate Value Consulting** (CVC) from Standard & Poor's

2007

Listed on the **NYSE**

From 2007 to 2012, **acquired 14 businesses** to expand service offerings

2013

Taken private by a private equity consortium led by **The Carlyle Group** and the **Duff & Phelps management team**

2015

Acquired **American Appraisal** to expand global Valuation Advisory Services practice

Acquired **Kinetic Partners** and launched Compliance and Regulatory Consulting practice

2016

Acquired **CounselWorks** to expand Compliance and Regulatory Consulting practice

Acquired **Tregin Solutions** to expand technology solutions capability of Legal Management Consulting

2017

Acquired **Quantera Global Asia,** the leading Asia Pacific transfer pricing firm, to enhance our presence in the region

2018

Duff & Phelps is acquired by **Permira Funds**, the global private equity firm

Acquired **Kroll** and launched Governance, Risk, Investigations and Disputes practice

2019

Acquired Prime Clerk, Forest Partners and Zolfo Cooper Asia

ONE COMPANY

ACROSS 28 COUNTRIES WORLDWIDE

THE AMERICAS

Addison
Atlanta
Austin
Bogota
Boston
Buenos Aires
Cayman Islands
Chicago
Dallas
Denver
Detroit
Grenada

Houston
Libertyville
Lisle
Los Angeles
Mexico City
Miami
Milwaukee
Minneapolis
Morristown
Nashville
New York
Philadelphia

Pittsburgh
Reston
St. Louis
San Francisco
São Paulo
Seattle
Secaucus
Silicon Valley
Stamford
Toronto
Washington, DC

EUROPE AND MIDDLE EAST

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Agrate Brianza
Amsterdam
Athens
Barcelona
Berlin
Bilbao
Birmingham
Channel Islands
Dubai

Dublin
Frankfurt
Lisbon
London
Longford
Luxembourg
Madrid
Manchester
Milan
Moscow

Munich
Padua
Paris
Pesaro
Porto
Rome
Turin
Warsaw

ASIA PACIFIC

Bangalore
Beijing
Guangzhou
Hanoi
Ho Chi Minh City
Hong Kong
Hyderabad
Mumbai
New Delhi

Shanghai
Shenzhen
Singapore
Sydney
Taipei
Tokyo

ABOUT US

WE SERVE

69% of Fortune 100 companies

91% of Am Law 100 law firms

80% of the 25 largest Euro STOXX companies

72% of the 25 largest private equity firms in the PEI 300

68% of the 25 largest hedge funds in the Alpha Hedge Fund 100

WE RANK

#1 U.S. Fairness Opinion Provider[1]

#1 Global Fairness Opinion Provider[1]

#4 U.S. Middle Market M&A Advisor over the past 5 years[2]

#1 Forensic Consultant in North America[3]

#1 IP Litigation Consulting Firm in the U.S.[4]

Largest independent valuation advisory firm

WE WON

Best Cyber Security Services Provider[5, 6]

Best Litigation Dispute Advisory Services Consultant[6]

Best Corporate Investigations Provider[6]

Compliance Consulting **Team of the Year**[7]

Best Global Risk and Investigations Consultant[6]

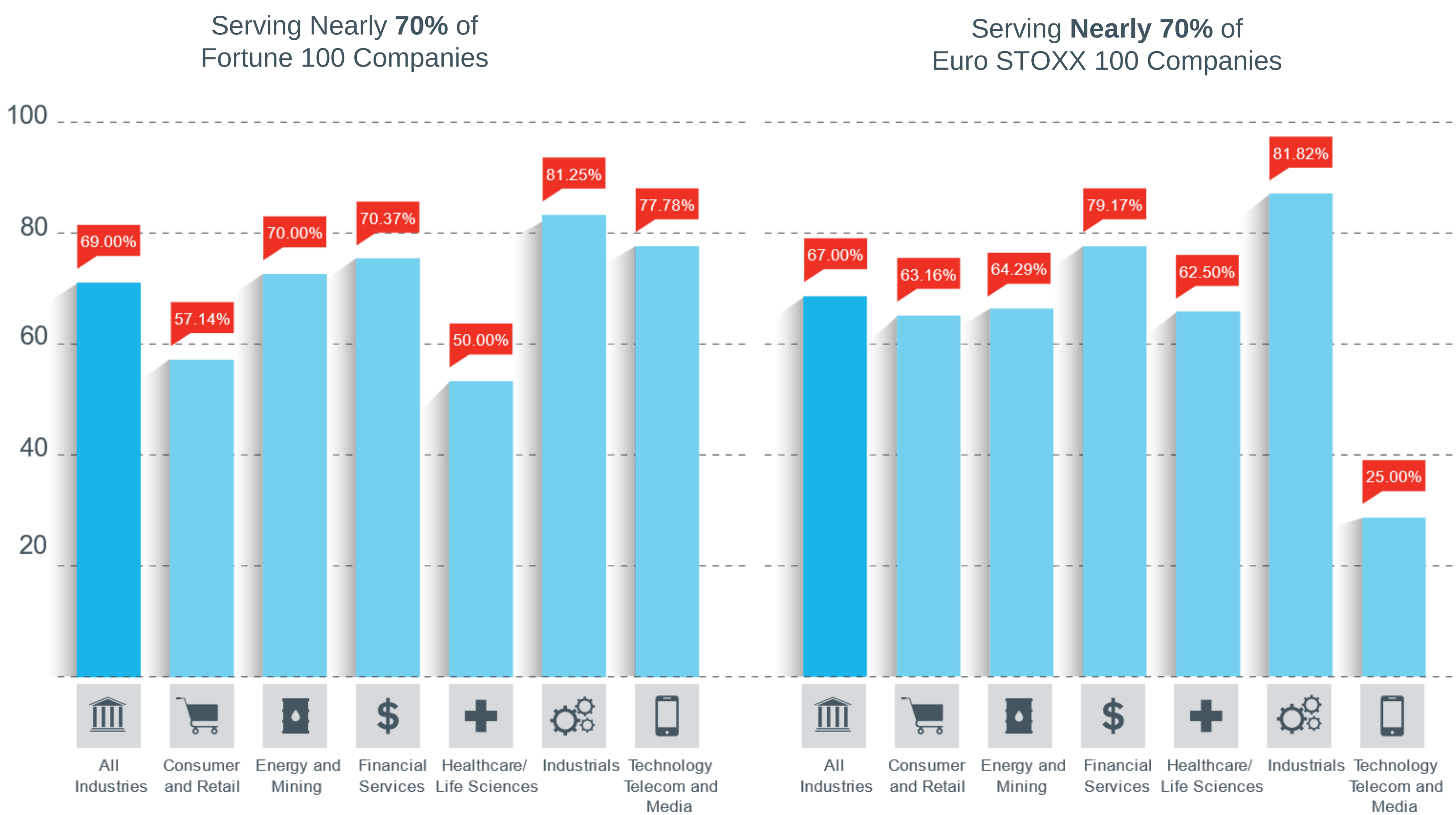
Thought Leader in Digital Forensics, Arbitration and Investigations[3]

1. Source: Published in Thomson Reuters' "Mergers & Acquisitions Review - Full Year 2018."
2. Source: Thomson Financial Securities Data (U.S. deals $50M < $150M, including deals without a disclosed value). Full years 2014 through 2018.
3. Who's Who Legal 2018: Forensic and Litigation Consulting.
4. 2018 IAM
5. HedgeWeek 2018
6. The National Law Journal 2018
7. https://www.c5-online.com/women-compliance-awards-3/2017-winners/

PROFESSIONAL AFFILIATIONS

Duff & Phelps Managing Directors provide input to regulators and standard-setters, and actively contribute to the development of valuation industry best practices.

INDUSTRY EXPERTISE



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