TransRe
We value risk.

TransReView

U.S. Public Directors & Officers

Liability Insurance Market Analysis

October 2018

New Losses, No New Premium

It should come as no surprise to followers of the US Public D&O liability market that our recent proprietary analysis reveals price inadequacy – the level of compensation in the market is not commensurate with the risks being taken.

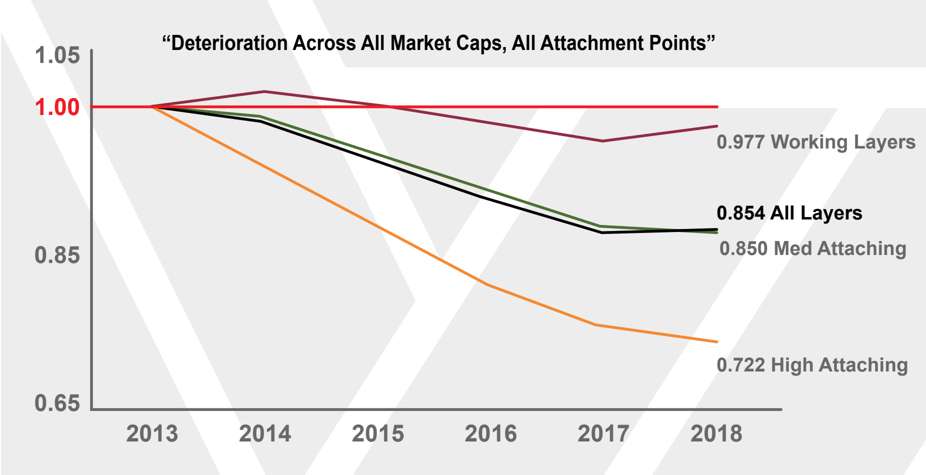
Key Findings

Widespread price pressure driven by abundant capacity ▶ Same # publicly traded companies + more SCAs = higher frequency ▶ Increasing severity of derivative actions ▶ Claim cost inflation

Broader and expanding coverage terms, but no multi-year policies nor extreme limit usage (yet) ▶ Follow-on suits from regulatory actions ▶ Continuous innovation by plaintiffs' bar ▶ Inadequate compensation for risks assumed

- Overall pricing down 15% since 2013
- The higher the attachment point, the greater the price erosion
- 2018 YTD data suggests a flattening price environment

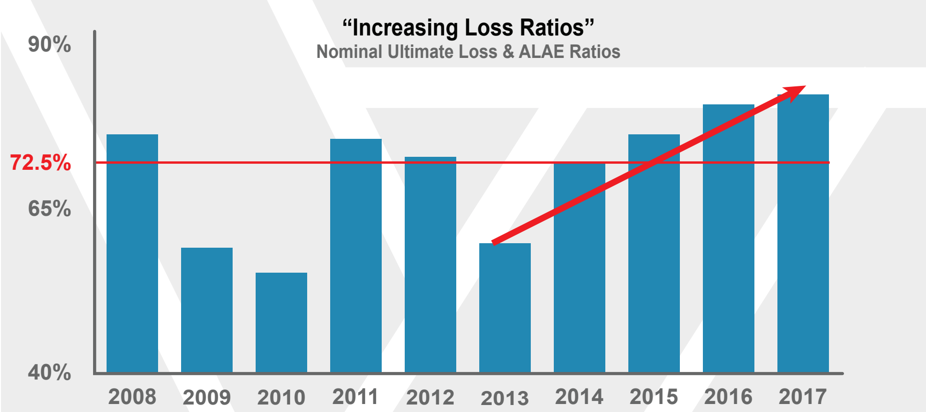
TransRe Public D&O Price Index



Source: TransRe EDA Engine

- Since 2013 - increased frequency and rate deterioration = developed est. Loss & ALAE ratios estimated to rise ~19 pts
- Post financial crisis lull (2009/2010) followed by spike (2011/2012) = now back on (rising) trend
- Nominal figures – doesn't account for loss trend and rate erosion = further deterioration of returns

TransRe Commercial Public D&O and FI D&O/E&O Loss Ratio Analysis



Sources: Various industry sources, TransRe

100.0%	Combined Ratio
- 15.0%	Acquisition Costs
- 12.5%	Internal Expenses
72.5%	**Breakeven Loss Ratio**

We don't see that today - do you?

Quantifying The Trends

Since 1984 TransRe has written over $8 billion of management liability reinsurance (treaty and facultative), and has paid the associated losses and loss expenses. Over that period, we've accumulated significant experience, data and insight.

This report quantifies the data points that support the expressed opinions. The data set utilized includes publicly available information, licensed third party data from FactSet, Stanford Securities Litigation Analytics and SNL, as well as our proprietary TransRe Entity Data Analytics (EDA) Engine (Appendix A).

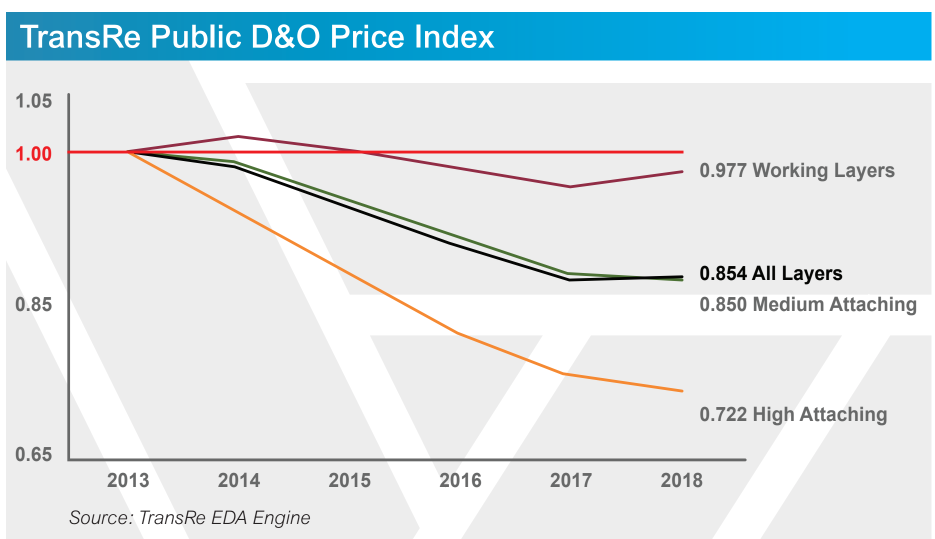
TransRe Public D&O Price Index

To generate observable insights, we first segmented our EDA databased by size of company and by attachment point bands. Each of the following price index charts use these definitions:

	Market Capitalization	Attachment Bands		
		High	Medium	Working
Large Cap	>$10B	≥ $100m	>$20 to <100m	Up to $20m
Mid Cap	>$1B up to 10B	≥ $50m	>$10 to <50m	Up to $10m
Small Cap	Up to $1B	≥ $25m	>$0 to <25m	0

We mapped prices for all layers for all company sizes to generate our overall price index:

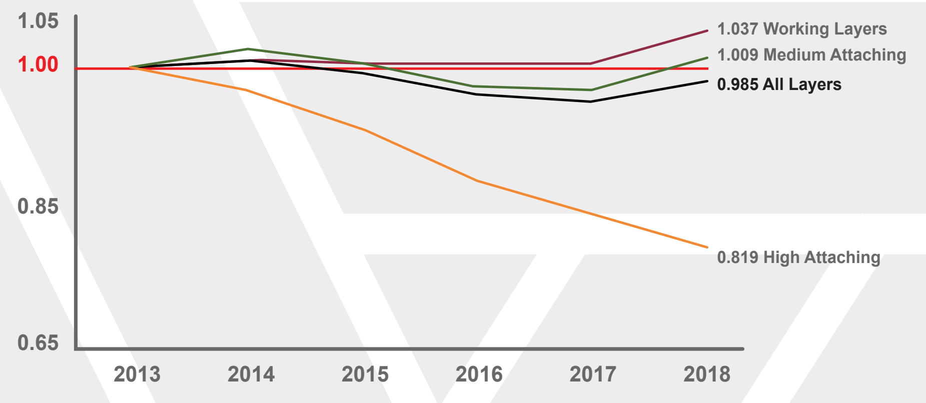
- Overall - prices for all market caps down 15% since 2013.
- Primary pricing has held up best with a nominal bounce-back recently.
- High attaching policies remain under the greatest price pressure, for all company sizes during the time period observed - down 28% overall.



We then further split the data out between small cap, mid cap, and large cap companies to generate more granular observations:

- Has achieved some positive price recently on Working Layers and Medium Attaching layers
- High Attaching layers continue to give back price

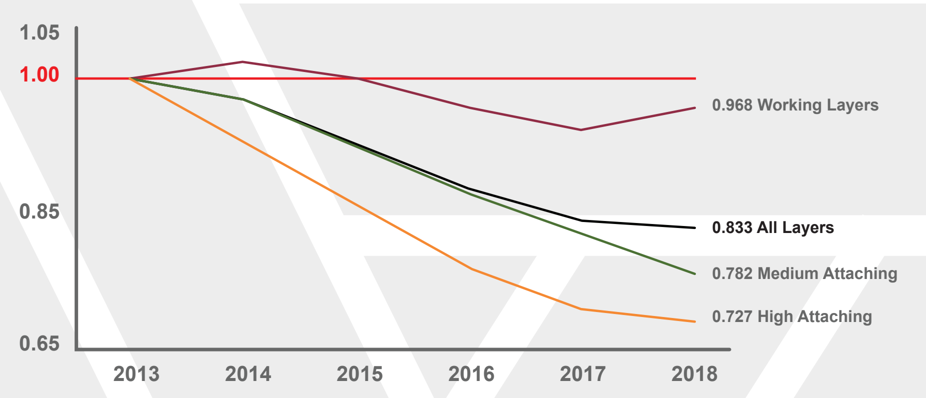
TransRe Public Small Cap D&O Price Index



Source: TransRe EDA Engine

- Working layer prices down 3%
- All layers down 17%
- High XS layers down 28%

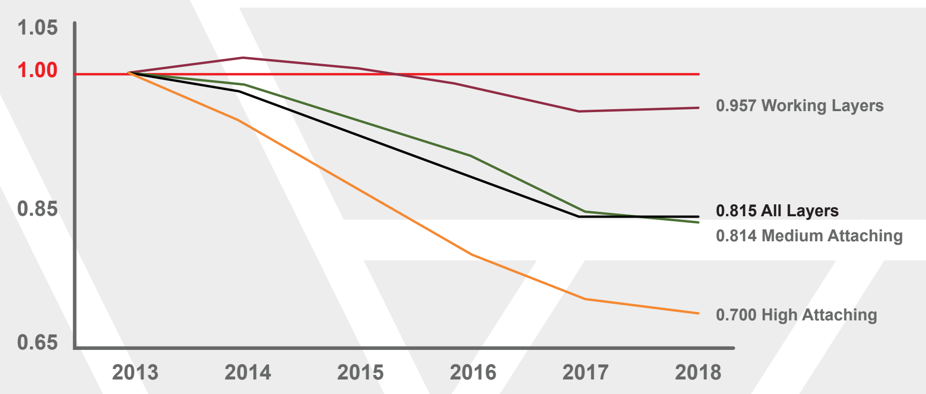
TransRe Public Mid Cap D&O Price Index



Source: TransRe EDA Engine

- Working layer prices down 4%
- All layers down 18%
- High XS layers down 30%

TransRe Public Large Cap D&O Price Index



Source: TransRe EDA Engine

The price index blends new and renewing business. When we split these out using EDA, we see the worst premium deterioration in new business as carriers ‘buy’ accounts from one another – a classic soft market ‘tell’.

TransRe Loss View
Public D&O

TransRe analyzes industry experience by segment and in total based on proprietary data. Each study covers more business than is assumed by TransRe, and is more representative of actual underwriting results than is publicly available, because it correctly matches losses and ALAE with the associated premiums. The latest study covers 2008-2017.

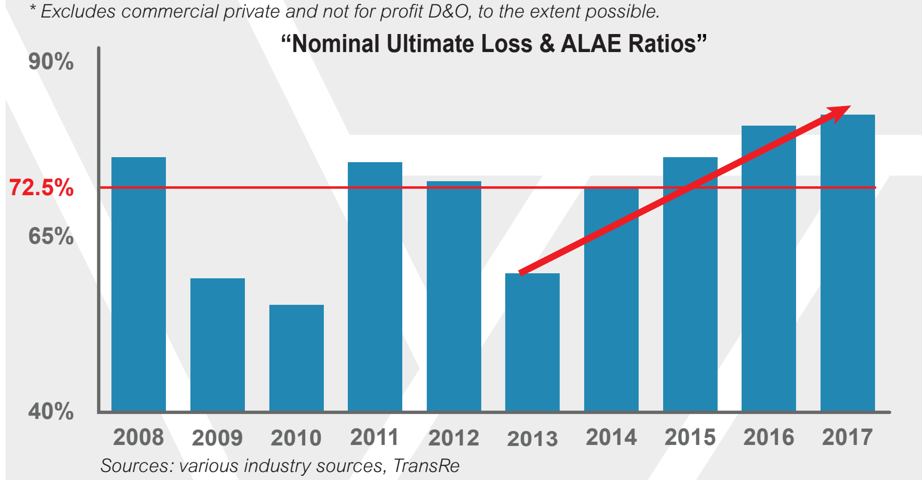
With the increased level of securities class action filings in recent years, we have supplemented the total chart with details of commercial public D&O.

Each chart shows nominal ultimate loss and ALAE ratio projections. These provide an estimate of the historic industry loss and ALAE ratio over time. Both charts include Global Financial Crisis losses.

- No recent financial CATS but forecast losses and loss expenses back to financial crisis levels
- Impact of loss trends + softening prices = projected 19 pt deterioration in past 5 years

Commercial Public D&O and FI D&O/E&O Predominating* Loss Analysis

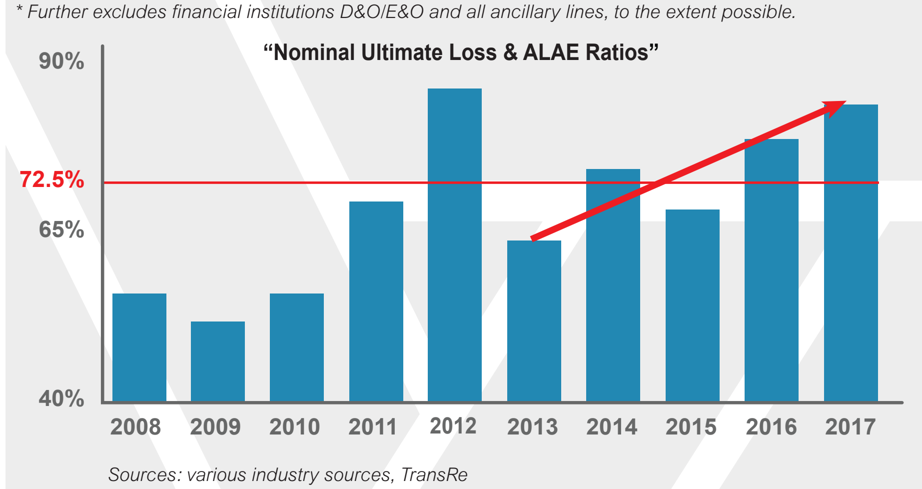
** Excludes commercial private and not for profit D&O, to the extent possible.*



- Significant frequency trend, ongoing severity trend and price softening has driven projected deterioration (20 pts in past 5 years)
- As expected, results have proven to be volatile given the underlying business and size of limits purchased

Industry Commercial Public D&O Predominating* Loss Analysis

** Further excludes financial institutions D&O/E&O and all ancillary lines, to the extent possible.*



Results have clearly deteriorated – driven by the impact of price and trend. In total the deterioration has been an estimated 23 loss ratio points since 2010. For commercial public D&O that deterioration has been an estimated 30 loss ratio points over the same period.

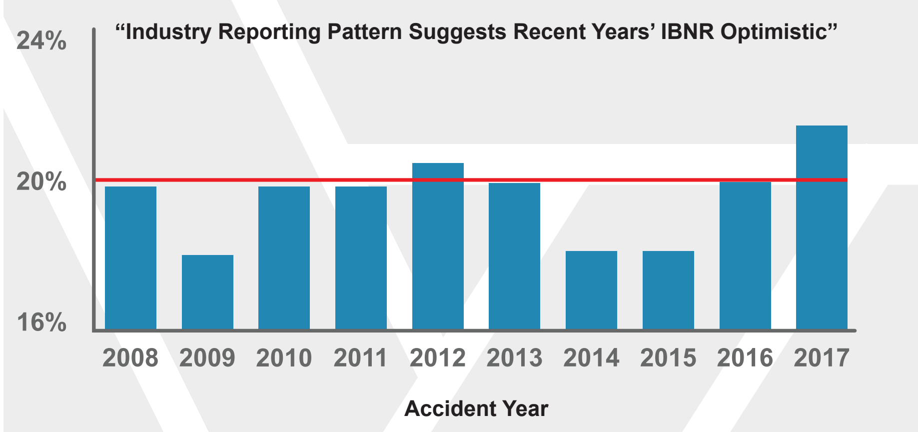
TransRe Loss View

In addition to the Price Index, and the Loss Ratio Analysis, TransRe also analyzes publicly available industry data for further insight - Schedule P (Other Liability Claims Made) and the D&O Supplement. In Schedule P, loss adjustment expenses are split between defense & cost containment expenses (DCCE) and Adjusting and Other Payments. While imperfect, we follow industry practice when we use DCCE as a proxy for allocated loss adjustment expenses (ALAE).

As a measure of reserve adequacy – we look at the 1st year reported as a percentage of current ultimate. This reveals an industry reporting pattern that suggests IBNR for recent years is optimistic:

- 2017 reported loss & DCCE at 12 months as % of current ultimate loss & DCCE is at a 10 year high
- Should historic patterns hold, 2017 year IBNR may well prove inadequate

Accident Year Nominal Reported Loss & DCCE as % of Current Ultimate

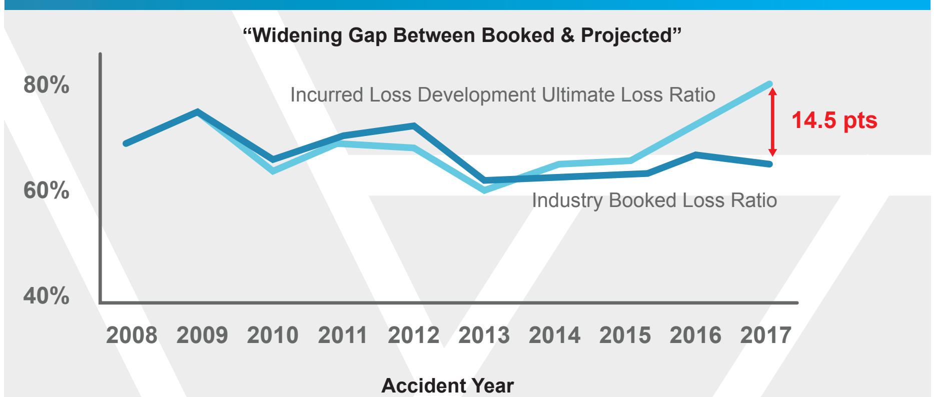


Source: SNL Industry OLCM Sch P Net Reported Loss & DCCE, at 12 months, relative to current booked Ultimate Loss & DCCE, TransRe

For an alternative view, we looked at the industry's booked loss ratios and then applied mechanical Loss Development Factors derived from Schedule P.

- Using Schedule P Net Development Data, 2017's industry booked loss & DCCE ratio appears optimistic
- Ultimate loss & DCCE ratio may prove to be greater than booked

Accident Year Booked vs Projected Net Loss & DCCE Ratios

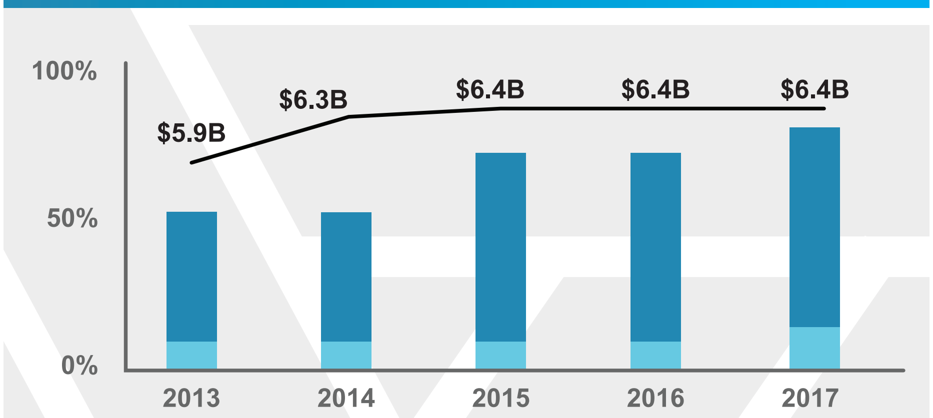


Source: SNL Industry OLCM Sch P Net Ultimate Loss & DCCE , TransRe

The final publicly available view is taken from the D&O supplement, which (as noted) includes public, private and not-for-profit experience. The supplement is more focused on directors & officers liability than Schedule P, but does not match losses & DCCE with the associated premium by year.

- Premiums flat for past 4 years
- Loss ratio up over 12 pts in the past 5 years
- DCCE ratio up over 6 pts in past 5 years - cost of defending claims steadily rising
- Loss + DCCE ratio over 77% in 2017

Industry D&O Supplement – Incurred Loss and DCCE Ratio To Earned Premiums



Source: SNL

Schedule P and the D&O Supplement both support TransRe's D&O Loss Analysis – results are deteriorating.

Closing Thoughts

The pricing crisis of 1997/2001 was described at the time as a ‘perfect storm’. In fact, it was a self-inflicted wound and marked the soft market trough. Most of the same conditions and drivers are in place today, together with some new ones:

- Widespread price pressure driven by abundant capacity
- Fewer publicly traded companies + more SCA’s = higher frequency
- Increasing severity of derivative actions
- Claim cost inflation
- Follow-on regulatory actions
- Continuous innovation by plaintiffs’ bar
- Broader and expanding coverage terms – but not yet multi-year policies nor extreme limits

Does the decline in premium signal a benign claim environment?

No.

We see an inexorable rise in losses and associated loss expenses. We see sources of claims continue to emerge while old ones evolve:

- Cultural EPLI issues
- Aggressive sales practices
- Misguided management of data breaches, and
- Proliferation of easier plead Section 11 IPO cases

Claim frequency is up across all business sectors and for all market capitalizations (see Appendix B).

Prices are not keeping pace with loss costs. Interest rates are of no help. If the recent spike in frequency is the ‘new normal’ and stock-markets retreat from their current highs, then we will expect more settlements, for larger amounts.

While we are encouraged by ongoing efforts to change course, underwriters must be vigilant to improve the profitability of their book. Management must heavily scrutinize new business assumptions.

The cycle will turn, but when and at what cumulative cost? When you are priced for perfection, you have no margin for error.

Contributors

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Analytic Science	Otakar Hubschmann, Scott Fuller
Claims	Seth Goldberg

Legal

Questions?
Comments?
Feedback?

We intend to update this report periodically, and to delve deeper into the quantification of the identified trends. To discuss how our Entity Data Analytics can help you and your business, please call:

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Appendix A:

Entity Data Analytics (EDA)

At the core of any data analytics initiative lies the foundation of data cleaning, standardization and aggregation. We have built a proprietary engine we call EDA (Entity Data Analytics) that allows us to run in-depth risk analysis and trend reporting on aggregated, normalized data down to the individual policy level.

Our management liability (D&O and E&O) database included almost 190,000 policies that have almost $1 trillion of aggregate policy limit, which we sorted by industry, market capitalization, 52 week high/low and attachment levels. This data set is supplemented by several additional third party inputs. Together the data provides a collective mosaic of information from which we can extract further insights.

Originally built for us to manage our internal aggregates, EDA has become a powerful tool to help us analyze portfolio metrics. One such metric is our price monitor where we track pricing at the policy level over time, even if there has been a change of insurer. This enables us to do "like to like" policy comparisons for insureds who have the same coverage, limit and attachment points – we have matched an annual average of 2,500 such like to like policies.

EDA is a big data project, and the data inputs are not perfectly consistent. We have taken measures to normalize across all data without affecting (lowering) the signal to noise ratio. This has allowed us to identify material trends.

The data reflects our empirical evidence of the market. Not all insurers purchase reinsurance, and this TransReView does not include their data
What can we do for you? Contact us to discuss:

- How we can provide you with empirical views of your pricing and exposures comparing results to both the data base and your own strategy. We can also custom-tailor reports for you on request.
- We can produce quarterly reports comparing your pricing to our Engine Price Index or the "like to like" Matched Policy Index. These pricing reports provide you insight into your market pricing by coverage, market cap, attachment band and Industry class.

Appendix B:

Securities Class Action Frequency

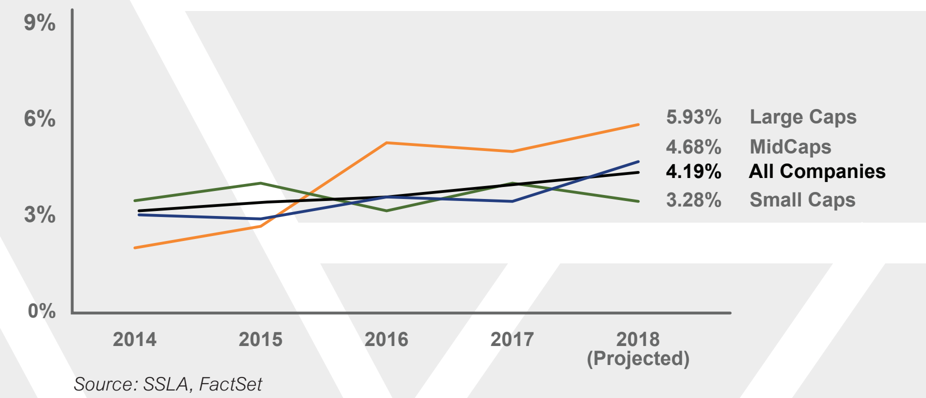
Data on filed Securities Class Actions is widely available, and we agree with much of the analysis. We look at an additional view – the relationship (frequency) of filed cases to publicly traded companies by industry sector and by market capitalization.

We have excluded M&A allegations from this analysis – other reports have noted the move from State to Federal jurisdictions. Such cases have become a cottage industry, and a cost transfer vehicle – for as long as courts entertain them, participants at the deal table will use them to transfer the costs of business transactions.

Both charts are based on prior year end count of public companies. 2018 is projected by doubling the case count at mid-year.

- Small Caps – least likely to receive a traditional SCA when merger objection claims are excluded
- Mid Caps – rising exposure to claims
- Large Caps – from lowest to highest. Likely a return to normalcy as we routinely saw these frequency levels for the S&P 500 in 2000-2010. Possibly attributable to the much discussed rise of "Event Driven Litigation", which is typically against Large Cap companies.

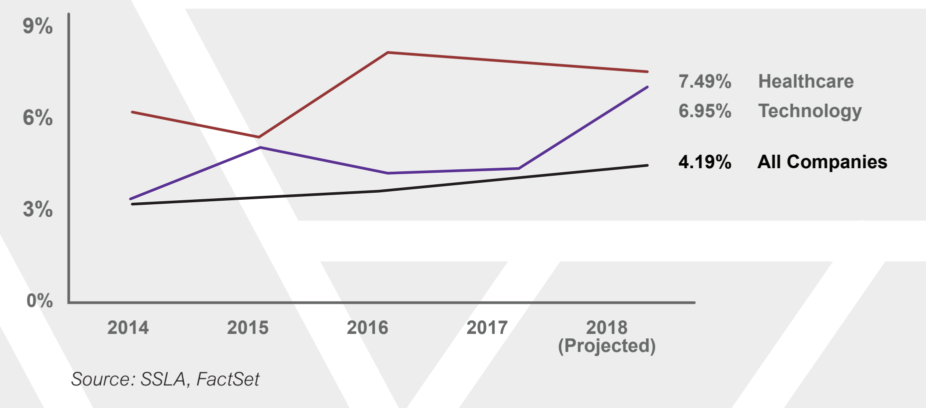
Annual Frequency By Market Cap



Source: SSLA, FactSet

- By industry sector, healthcare and technology remain the most high risk classes.
- Overall frequency up significantly

Annual Frequency by Industry Sector



Source: SSLA, FactSet

"Unprofitable Firms Are Outperforming Other Growth Stocks" - Wall Street Journal 9/19/18

Growth stocks continue to outperform value stocks as investors chase returns – are the equity markets compounding the D&O underwriter's frequency dilemma?

Appendix C:

Significant Settlements by filing year, 2009-2017

Note: Significant = settlements in excess of $25m
Note: Derivative cases in bold

2009

Bank of America
Bank of America
Barnes & Noble.
Beazer Homes USA
CVS Caremark
EnergySolutions
General Electric
Huron Consulting
Idearc
MGM Resorts
Pfizer
Popular
Psychiatric Solutions
R.H. Donnelley
Satyam Computer Svs
Sequenom
Sprint Nextel
State Street
STEC
Toll Brothers
Tronox
Wachovia

2010

Amedisys
BancorpSouth
Baxter International
BP
Diebold
FX Real Estate
Heckmann
Massey Energy
Pfizer
PG&E
Regions Financial
St. Jude Medical
Toyota Motor
Wilmington Trust

2011

Avon Products
Bank of America
Community Health Systems.
Computer Sciences
Dendreon
Diamond Foods
El Paso Pipeline Partners LP
Google
Green Mountain Coffee
HCA Holdings
Hewlett-Packard
Hospira
Jiangbo Pharmaceuticals
MF Global
News Corp
The Bank of New York Mellon
Turkcell Iletisim Hizmet
Weatherford International
Wells Fargo & Company

2012

Big Lots
Career Education
Chinacast Education
Clear Channel
Duke Energy
Duke Energy
Facebook
Google
Hewlett-Packard
J.P. Morgan Chase
Kinross Gold
Overseas Shipholding
Prudential Financial
Questcor Pharmaceuticals
SandRidge Energy
St. Jude Medical
Walter Energy
Weatherford International

2013

Activision Blizzard
Bank Leumi Le-Israel Ltd
Barrick Gold
DFC Global Corp
J.C. Penney
Lumber Liquidators Holdings
Medtronic
Sanchez Energy

2014

Advanced Micro Devices
Altisource Portfolio Solutions SA
Cliffs Natural Resources
General Motors
Genworth Financial
GT Advanced Technologies
Intercept Pharmaceuticals
L-3 Communications
Magnachip Semiconductor
Microsoft
NII Holdings
Nu Skin Enterprises
Ocwen Financial
Petrobas
Ply Gem Holdings
Rayonier Inc
RCS Capital
Salix Pharmaceuticals
Valeant Pharmaceutical

2015

3D Systems
AAC Holdings
Clovis Oncology
Dole Food
Marvell Technology

2016

Brixmor Property
Cnova N.V.
comScore
Fitbit
LendingClub
Third Avenue Trust
Wells Fargo & Company

2017

Twenty-First Century Fox.
Yahoo!

Source: Stanford Securities Litigation Analytics

Appendix D: Notable D&O Suits

January

Insured	Nature	State	Allegations	Class Period
Acuity Brands Inc.	SV	GA	Building supplier concealed known negative sales trends, lacked reasonable basis for positive current/future business prospects	6/29/16-4/3/17
Intel Corporations	SV	CA	Chip maker CEO sold shares before revelation that chip design flaw created hacking vulnerability, fix slowed down chips (see AMD)	7/27/17-1/4/18
AMC Entertainment Holdings, Inc.	SV	NY	Share issue included inaccurate revenue growth projections for newly acquired subsidiary and international business	12/20/16-8/1/17
Advanced Micro Devices, Inc.	SV	CA	Chip maker covered up chip design flaw that renders them susceptible to hacking (see Intel)	2/21/17-1/11/18
Yelp Inc.	SV	CA	CEO sold shares before customer retention rates and new customer growth figures were revealed	2/10/17-5/9/17

FEBRUARY

Insured	Nature	State	Allegations	Class Period
MetLife, Inc.	SV	NY	Inadequate annuity and pension reserving practices caused “material weakness” in financial reporting/increased reserves	2/27/13-1/29/18
Johnson & Johnson	SV	NJ	Knew of cancer risk for decades before publicity caused stock price drop	2/22/13-2/7/18
Wells Fargo	SV	NY	High pressure auto insurance sales caused delinquencies and repossessions. Failure to warn of increased regulatory oversight/ enforcement cause materially false/misleading financial statements	1/13/17-7/27/17
General Electric Company	SV	NY	Inadequate actuarial reserves led to unreported impairment charges. Company value overstated until true details emerged	2/26/13-1/24/18
Wynn Resorts Limited	SV	NV	Failure to disclose alleged sexual misconduct caused shares to trade artificially high prices until true details emerged	2/28/14-1/25/18

MARCH

Insured	Nature	State	Allegations	Class Period
Henry Schein, Inc.	SV	NY	Antitrust violations to protect profitability in a consolidating health care industry (case follows FTC complaint) (see Patterson)	3/7/13-2/12/18
WageWorks, Inc.	SV	CA	Failure of internal controls led to improperly recognized revenue inflation (delayed filing 10-K)	5/6/16-3/1/18
Credit Suisse Group AG	SV	NY	Manipulation of Inverse VIX Short ETNs protected bank but caused losses to investors	1/29/18-2/5/18
Facebook, Inc.	SV	CA	Violation of own data privacy policies. Failure to warn of increased regulatory oversight/enforcement cause materially false/misleading financial statements	2/3/17-3/19/18
Patterson Companies, Inc.	SV	MN	Failed to disclose price-fixing conspiracy that inflated revenue and earnings (see Henry Schein above)	2/3/17-3/19/18

MAY

Insured	Nature	State	Allegations	Class Period
LendingClub Corporation	SV	CA	Failed to disclose falsely promised consumers would received “no hidden fees” resulting in hunderds or even thousands of dollars deducted from consumers	
Symantec Corporation	SV	CA	Materially weak and deficient financial reporting controls. The later release of of certain Non-GAAP measures including those that impact executive compensation programs	

JUNE

Insured	Nature	State	Allegations	Class Period
PG&E Corporation	SV	CA	Failure to maintain electricity transmission and distribution networks in compliance with safety requirements and regulations resulting in numerous wildfires in California	
Akers Biosciences, Inc.	SV	NJ	Improperly recongized revenue for the fiscal year and downplayed weakness in its internal controls over financial reporting, while failing to disclose true extent of those weaknesses	

TransRe
We value risk.

TransRe is a leading international reinsurance organization with a global reach and local decision making.

Our relationships are based on years of trust and experience. We have a flat organization structure that carries our A+ capital rated ability with our proven willingness to pay claims.

We proudly take a hands-on approach and write every product in every jurisdiction with a promise not to compete with our customers. The decision to partner with TransRe is an **EASIE** one.

TransRe offers all management and professional liability reinsurance, both on a treaty and facultative basis, for D&O, E&O, Healthcare, Cyber and Transactional liability.

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TransRe™

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