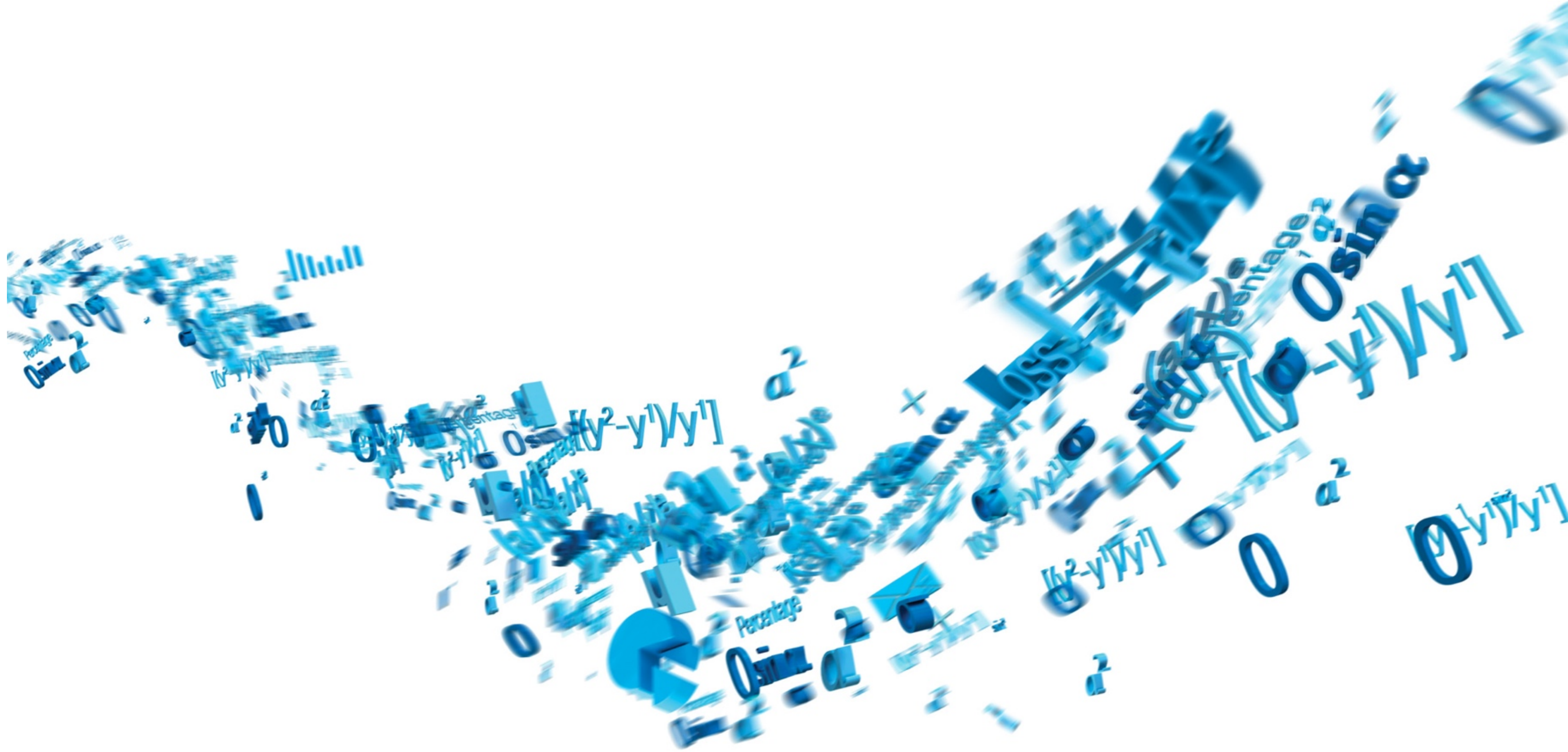

COVID-19: implications for non-financial risk management

Looking beyond the initial response

June 2020

AON
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Introduction

2020 has been dominated by unprecedented uncertainty as the spread of COVID-19 gathered momentum, endangering millions of lives, aggravating geopolitical instability and crashing down on the global economy. For many business leaders, COVID-19 will be the most disruptive, world-changing event in living memory.

Aon's recently published decision making framework – [Decision Making In Complex & Volatile Times: Keys to Managing COVID-19]() – describes three distinct timeframes to an organisation's response to a crisis: react and respond; recover; and reshape. After the initial response to COVID-19, during which many financial institutions focused on remaining operational, most have moved through the *recover* stage (which relates to stabilising the business and looking at shifting to new operating models), and on to the *reshape* phase which acknowledges the world will not be the same as it was before COVID-19, with a need for leaders "to rebuild their vision, strategy and priorities for the future." The rise of the pandemic and ensuing scramble for recovery will create new issues for banks.

A 2008 study by Lloyds of London into Pandemic – Potential Impacts, defines a pandemic as "*an epidemic (a sudden outbreak) that becomes very widespread and affects a whole region, a continent, or the world.*"

The short-term consequences of COVID-19 on banks is unprecedented. Many borrowers are experiencing liquidity stress, including limited access to credit. Private debt, including corporate and household, has reached record levels. These impacts have triggered initial responses across the world, with extensive government and central bank action including, at USD 2 trillion[1], the largest ever peacetime stimulus packages in the US and a pledge by the UK government[2] "*to do whatever it takes*", providing a GBP 350 billion stimulus package in loan guarantees plus additional support to avoid mass furloughs and layoffs. Similar packages have been made in other affected countries. As the situation develops and global businesses move towards *recovery*, more action may be required by central banks, regulators, and governments, which would necessitate quick coordination at the national and international levels. The financial consequences of these measures will be felt for a long time to come.

Goldman Sachs[3] expects a contraction of Euro area real GDP of 4% in Q1 and 11.4% in Q2, and a recovery thereafter. The Q2 contraction in Euro area growth is anticipated to be more than three times bigger than that seen at the depth of the Global Financial Crisis in 2009, Q1 – pushing the full-year 2020 growth rate to minus 9% year-on-year. In the UK, sharp declines in Q1 and Q2 are also anticipated, resulting in full-year 2020 growth at minus 7.5%. The US is expected to contract by -3.8% year-on-year.

[1] *https://www.bloomberg.com/news/articles/2020-03-27/trump-signs-2-trillion-virus-bill-largest-ever-u-s-stimulus*

[2] *https://www.bloomberg.com/news/articles/2020-03-26/u-k-s-sunak-pledges-coronavirus-support-for-self-employed*

[3] *SARS-Coronavirus-2 / COVID-19: An Update on Developments in Europe, March 26, 2020 Goldman Sachs Global Investment Research, Consumer and Investment Management Division Investment Strategy Group*

Region		2019	2020		2021	
			Pre-virus	Latest	Pre-virus	Latest
Euro area		1.2	1.0	-9.0	1.3	7.8
	Germany	0.6	0.9	-8.9	1.4	8.5
	France	1.3	1.1	-7.4	1.4	6.4
	Italy	0.2	0.2	-11.6	0.7	7.9
	Spain	2.0	1.8	-9.7	1.7	8.5
UK		1.4	1.0	-7.5	2.1	7.3
US		2.3	2.3	-3.8	2.4	5.3

Meanwhile, banking and capital markets firms around the world continue to reshape by taking steps to minimize COVID-19's effects on day-to-day operations. Firms are extending loans to hard-hit borrowers and renegotiating credit terms. Meanwhile regulators have eased certain capital and reporting requirements to help firms focus on current priorities.

In periods of disruption, risks typically materialize into problems in both the short and medium terms. Beyond the immediate actions already underway, firms should actively consider the longer-term financial, risk and regulatory compliance implications that will ensue. From a non-financial risk perspective, Deloitte[4] suggests conduct risk/culture, third party risk and cyber risk may become more pressing. Other operational risks are also likely to increase in both frequency and severity, which firms need to understand and manage, including fraud (traditional and cyber), execution and workplace safety.

This paper considers the regulatory environment that may emerge once immediate priorities in responding to COVID-19 diminish. It then investigates key operational and non-financial risks likely to emerge as FIs *reshape* and their implications for risk quantification. The research undertaken explores the relationship between operational/non-financial risk losses and financial crises. Using OpBase[5] loss data, spanning a period of more than 30-years, a clear correlation can be identified between movements in equity indices, caused by economic shocks, and losses in fraud, conduct and execution risks. Finally, the valuable role insurance can play in mitigating loss volatility and tail risks associated with key non-financial risks is discussed, as well as latest market developments.

[4] *COVID-19 potential implications for the banking and capital markets sector - maintaining business and operational resilience, 16 March 2020, Deloitte*

[5] *OpBase is Aon's proprietary operational risk loss event database containing quantitative and qualitative information on more than 25,000 losses and incidents suffered by over 3,000 financial institutions globally*

React and respond: regulatory priorities

Regulators and central banks' immediate priorities in the wake of COVID-19 are well documented.

Initial reactions and responses include:

- "*The Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, the Federal Reserve, and the Swiss National Bank are today announcing a coordinated action to enhance the provision of liquidity via the standing US dollar liquidity swap line arrangements. These central banks have agreed to lower the pricing on the standing US dollar liquidity swap arrangements by 25 basis points, …*", Board of Governors of the Federal Reserve System[6], 15 March 2020

- "*The Federal Reserve is prepared to use its full range of tools to support the flow of credit to households and businesses and thereby promote its maximum employment and price stability goals*" Board of Governors of the Federal Reserve System[7], 15 March 2020

- "*The Bank's three policy committees announced a comprehensive and timely package of measures to help UK businesses and households bridge across the economic disruption that is likely to be associated with Covid-19*", Bank of England[8], 11 March 2020

- "*The European Central Bank today announced a number of measures to ensure that its directly supervised banks can continue to fulfil their role in funding the real economy as the economic effects of the coronavirus (COVID-19) become apparent.*", European Central Bank[9], 12 March 2020

- "*As part of a coordinated effort by federal agencies, OSFI has taken a number of actions that build resilience of federally regulated financial institutions and improve the stability of the Canadian financial system and economy in response to challenges posed by COVID-19 and current market conditions*", Office of the Superintendent of Financial Institutions[10], 13 March 2020

- "*As Australia's financial system adjusts to the coronavirus (COVID-19), financial regulators and the Australian Government are working closely together to help ensure that Australia's financial markets continue to operate effectively and that credit is available to households and businesses*", Council of Financial Regulators[11], 16 March 2020

In recovery: how are regulatory pressures reshaping business models?

Longer-term, after the initial focus on ensuring the banking system can support the real economy through the immediate economic effects of COVID-19 have passed, supervisors will likely: (i) look to learn lessons from the crisis and put in place mechanisms designed to ensure financial stability as well as the safety and soundness of all regulated banks; and (ii) continue to work on priority areas identified prior the emergence of COVID-19.

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[6] https://www.federalreserve.gov/newsevents/pressreleases/monetary20200315c.htm

[7] https://www.federalreserve.gov/newsevents/pressreleases/monetary20200315a.htm

[8] https://www.bankofengland.co.uk/news/2020/march/boe-measures-to-respond-to-the-economic-shock-from-covid-19

[9] https://wwww.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200312~45417d8643.en.html

[10] https://www.osfi-bsif.gc.ca/Eng/osfi-bsif/med/Pages/nr_20200313.aspx

[11] https://www.cfr.gov.au/news/2020/mr-20-01.html

In 2019 and Q1, 2020, regulators around the world published details of their policy and supervisory priorities over the mid-term. Regulatory attention can be seen to be focussed on seven key areas, from an operational and non-financial risk perspective, as summarised in Table 1. The question to be asked is what impact will COVID-19 have on this? While there is likely to be a short-term distraction, over the medium-term, the priorities listed will likely be considered more important than ever. This is evidenced by the 2020/21 business plans published by both the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA) in the UK, both of which were published in April after the UK had gone into lockdown.

Table 1: Summary of regulatory priorities related to non-financial risk and governance

Priority	**Europe** *EBA & ECB*	**UK** *PRA & FCA*	**Australia** *APRA*	**Canada** *OSFI*
Operational resilience	✓	✓	✓	✓
Cyber and technology	✓	✓	✓	✓
Climate change	✓	✓	✓	✓
Conduct	✓	✓	✓	✓
Financial crime	✓	✓	✓	✓
Governance & reporting	✓	✓	✓	✓
Capital	✓	✓	✓	✓

In all the statements reported by supervisors, there was considerable emphasis on operational resilience. Whilst initially focussed on cyber, climate and other risks are also considered. This is evidenced by the UK Prudential Regulation Authority's (PRA) consultation paper (CP29/19), issued in December, entitled "Operational resilience: impact tolerances for important business services".

Exhibit 1: Operational Resilience - CP29/19 PRA consultation

The PRA makes clear its expectation for firms to deliver improvements in:

- **Prioritising the things that matter**, namely those activities that, if disrupted, would pose a risk to the stability of the UK financial sector, and to identify the 'Important Business Services (Services)' crucial to ensuring a firm's safety and soundness
- **Setting clear standards for operational resilience**, setting maximum impact tolerances, including time limits within which the delivery of Services will resume following severe but plausible disruptions
- **Investing to build resilience**, so that firms have contingency arrangements in place to enable them to resume the delivery of services; and take-action in advance to ensure services can remain within impact tolerances in severe but plausible scenarios

Impact tolerances assume a risk has crystallised, rather than focusing on the likelihood and impact of it occurring. They need to be set in relation to the potential impact on disruption to financial stability, the firm's safety and soundness - setting an impact tolerance for each service and quantifying the maximum acceptable level of disruption.

To improve the likelihood of firms remaining within impact tolerances, specific activities will be required: **mapping**, to understand the resources necessary to deliver services and decide how to manage them to support delivery in the event of disruption; **testing using robust scenario analysis** to provide evidence planned arrangements for disruption are likely to be effective in enabling the firm to remain within its impact tolerances.

Boards and senior management will need to take action to improve resilience where the firm is not able to remain within set tolerance for a service in a severe but plausible scenario. As such a board must have sufficient knowledge, skills and experience to meet its responsibilities to ensure it can challenge senior management constructively.

Feedback from the consultation will inform a policy statement[12] to be published in 2020/21.

CP29/19[13] defines operational resilience as "the ability of firms and the financial sector as a whole to prevent, adapt, respond to, recover, and learn from operational disruptions". This shows a clear requirement to consider operational disruptions in their broadest sense, whether caused by cyber, climate or pandemic risks. This consultation paper, summarised in Exhibit 1, provides some insight on future expectations for operational resilience.

The European Banking Authority[14] (**EBA**) identifies better integrating EU-wide **stress testing** into supervisory processes and making **anti-money laundering** a real priority for the EU.

The European Central Bank[15] (**ECB**) identifies **IT and cyber risks** facing banks as a key focus for the Supervisory Review and Evaluation Process (SREP); and improvements needed in banks' **governance frameworks to strengthen future resilience**.

To address deficiencies identified by Royal Commission and Prudential enquiries, the Australian Prudential Regulation Authority[16] (**APRA**) is looking to **strengthen** the prudential framework for **governance, accountability and non-financial risk**. Financial **system resilience** is another area of focus for: **outsourcing and business continuity**; risk data aggregation and reporting; strengthening resilience against information security incidents; stress testing and **climate change**. The UK PRA's supervisory statement for climate change (SS3/19), summarised in Exhibit 2, provides some insight on likely future expectations.

Exhibit 2: Climate Change - SS3/19 PRA supervisory statement

SS3/19 sets out PRA requirements for the management of financial risks due to climate change – physical and transitional. It expects firms' responses to be proportionate to the nature, scale, and complexity of their business with the ICAAP being a useful framework within which to consider the financial risks.

Governance, risk identification and quantification, monitoring, management and mitigation requirements are set out, which include:

- Ensuring the board understands the financial risks from climate change and defines roles and responsibilities for its management
- Understanding the firm's financial risks from climate change and how they will affect its business model
- Using natural catastrophe models to support quantification as well as scenario analysis and stress testing to understand short and long-term financial risks to the business model
- Using the ICAAP to consider and report on the financial risks of climate

In April, shortly after national lockdown in the UK, the FCA published its business plan for 2020/21 stating that whilst reacting to the COVID-19 emergency, its **underlying priorities remain focused on ensuring markets function well; the most vulnerable are protected; the impact of firm failure is minimised; scams are tackled; and that consumers and small firms are treated fairly**. Its expectations around conduct and governance, summarised in Exhibit 3, provides an insight to future supervisory expectations.

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12 *https://www.bankofengland.co.uk/prudential-regulation/publication/2020/pra-business-plan-2020-21*
13 *https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/consultation-paper/2019/cp2919.pdf*
14 *The EBA 2020 Work Programme, European Banking Authority*
15 *bankingsupervision.europa.eu/banking/priorities, 7 October 2019*
16 *apra.gov.au/news-and-publications/apra-sets-out-policy-and-supervision-priorities-for-2020*

On 9 April, the PRA also published its business plan[17]. Sam Woods (CEO) states "*the world is changing and there are a number of new and emerging risks that we need to make room for in our activities. Climate change is one, and operational resilience another – work on these will continue even if the scheduling has to flex a bit in response to COVID-19 pressures*". Strategic goals identified include: having in place robust prudential standards by focussing supervision on what matters most; ensuring firms are adequately capitalised with sufficient liquidity; and to develop its supervision of operational resilience to mitigate the risk of disruption to the provision of Important Business Services.

Exhibit 3: UK FCA business plan 2020/21[18]

"W*e want all firms to take the end outcomes for consumers and markets into greater account when they design and deliver services*".

Over the next one-to-three years, the FCA aims to ensure consumers: can make effective investment decisions and not be exposed to risks or poor value products; don't get into unaffordable debt and are treated well if they do; can rely on safe and accessible payments; and are offered fair value products in the digital age.

The FCA sees significant risk of harm in pension and retail investment markets, with consumers being exposed to significant market volatility caused by COVID-19. It will seek to ensure firms and individuals operate under high regulatory standards and act in consumers best interests.

Demand for borrowing is strongly linked to economic factors. Consumers who need to borrow to meet essential living expenses typically pay more for credit and have little chance of repaying debts. The FCA's goals are for: consumers to find products that meet their needs; consumers not to become over-indebted through credit they cannot afford; and for firms to identify consumers at risk at an early stage and give them suitable forbearance.

The FCA wants to ensure consumers and small-medium-sized-enterprises (SMEs) can safely access a variety of payment services; and is concerned that COVID-19 will impact payment firms' financial strength and consumers' ability to access cash and payment services. Firms systems and controls will be scrutinised more to minimise the incidents of accounts being used for fraud, money laundering or other financial crime

The FCA will seek to ensure firms: use data and algorithms ethically and prevent undue bias or discrimination; and do not target vulnerable consumers with poor value products and services.

The FCA will play an important role in shaping the future regulatory framework, acknowledging the current one is too focussed on rules and process; and not enough on principles and outcomes.

"We must learn the lessons from the current emergency, our own experiments with data and the forthcoming reviews of past regulation, then embed them deeply into the way the FCA operates. And we must actively meet the challenges from market developments, EU withdrawal, new technology and consumers' changing needs. We will need to shape our future approach to regulation to meet the needs of the unprecedented times we are operating in".

The Office of the Superintendent of Financial Institutions[19] (**OSFI**) in Canada has documented a number of priorities to focus on in the period 2019 ~ 2022, including: improving firms' **preparedness and resilience to financial risks in normal conditions and in the next financial stress**; and ensuring firms are better prepared to identify and develop resilience to non-financial risks before they negatively affect their financial condition.

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[17] https://www.bankofengland.co.uk/prudential-regulation/publication/2020/pra-business-plan-2020-21
[18] https://www.fca.org.uk/publications/corporate-documents/our-business-plan-2020-21
[19] https://www.osfi-bsif.gc.ca/Eng/Docs/strpln1920.pdf

As events unfold, it is becoming clear that COVID-19 has changed firms business models both for the short-and-longer-term. There is an expectation that firms risk profiles will change and the likely emergence of losses, some of which could be material in areas such as cyber, financial crime including fraud (internal and external), conduct and execution risks.

Regulators will want to ensure firms understand their exposures to real and potential risks, ensure they are operationally resilient, have stressed their ability to withstand tail risks and have sufficient capital to withstand the unexpected.

Do financial crises impact operational risk exposures?

Academic literature contains a number of attempts that aim to correlate historical economic and market downturns with financial loss frequencies and severities, leading to convincing evidence that these correlations exist. The outcomes of these investigations have not only shed light on the causes and consequences of these downturns and crises, but they have also led to useful quantification techniques, which enable forecasts of the potential risks posed by current and future crises. Results of such works can then be used by firms as they try to anticipate, manage and mitigate risks. One of the objectives of this paper is to do just that - derive a model to forecast the potential effects of the COVID-19 pandemic on certain aspects of operational risk.

The data to be used here is captured in OpBase, a proprietary operational risk loss event database, containing information derived from two sources – publicly known matters and historical insurance claims data. Table 2 provides some statistics on OpBase data, derived from historical claims data relevant to banks, for four risks – conduct[20], execution[21], external fraud and internal fraud. Systems (BDSF[22]) related losses have not been included in this analysis due to insufficient data being available.

Table 2: Statistics on claims data above a USD 100,000 single loss threshold for four event types

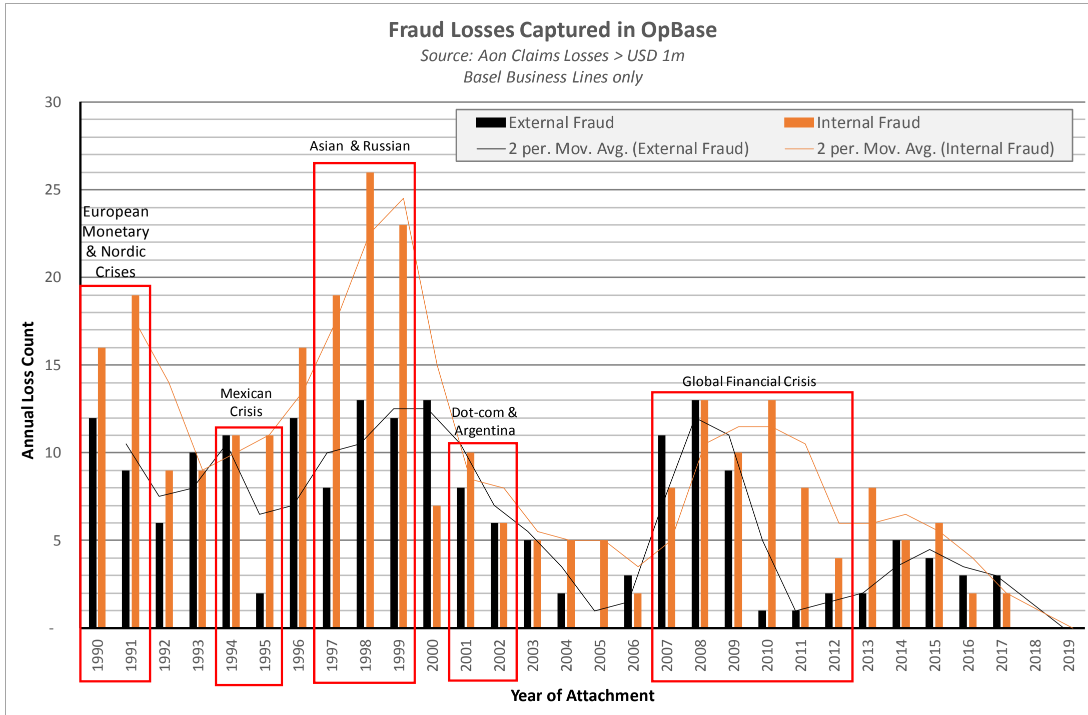
Event Type	Loss Count	Average Loss (USD m)	Sum of Losses (USD m)
Conduct	26%	18.3	9,504
Execution	9%	4.4	819
External Fraud	33%	3.0	1,991
Internal Fraud	32%	12.7	8,160

Region	Loss Count
US	30%
UK	16%
Europe	15%
South America	11%
Australia	9%
Middle East	6%
Americas	6%
Asia	4%
Other	3%

Chart 1 (fraud) and Chart 2 (conduct and execution) show the annual count of losses above a USD 1 million threshold, based on date of loss attachment overlaid by key financial crises. With regard to the variations in loss frequencies within the time frame covered, during which a number of major financial crises and economic downturns, as highlighted, are known to have happened, both charts demonstrate evidence of a correlation between losses, in terms of increases in magnitudes of spikes in loss frequency and the financial crises.

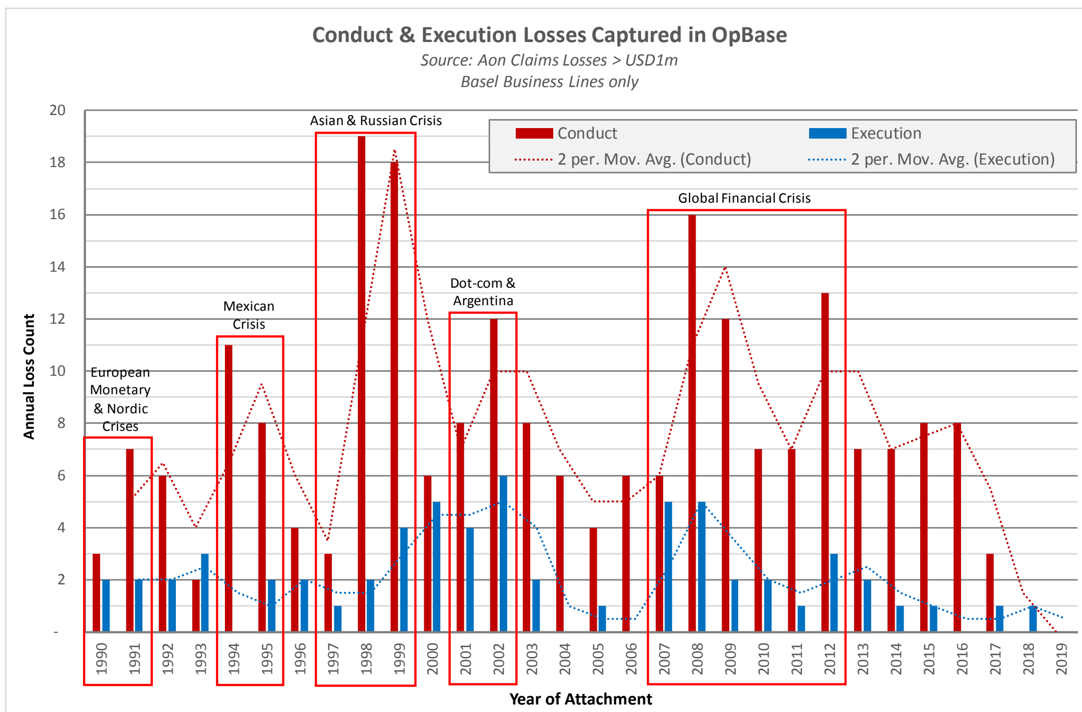
20 Clients, Products and Business Practices
21 Execution, Delivery and Process Management
22 Business Disruption and Systems Failure

Chart 1: annual count of recorded fraud losses > USD 1 million



In Chart 1, aside from this apparent correlation, we also observe a declining trend in the frequency of fraud loss occurrence over the past thirty years, albeit with blips when financial crises hit. Chart 2 shows a similar relationship, with a slight delay, which appears to be more pronounced for conduct but less so for execution risks.

Chart 2: annual count of recorded conduct and execution losses > USD 1 million



In both charts, a spike around the Asian & Russian crises (1997 ~ 1999) is apparent, which seems larger in annual loss count than that experienced during the global financial crisis (2007 ~ 2012). For conduct and execution, this potentially reflects a bias that exists in the data-set referenced, which is possibly influenced by the fact that more banks were buying professional indemnity contracts in the late 1990's than from 2005 onwards. In the late 1990's there was a significant increase in banks buying broad form professional indemnity contracts which resulted in a number of large claims in the early 2000s. The market appetite reduced after this which meant that going into the financial crisis fewer large banks were buying professional indemnity.

Concerning the limited number of losses captured or reported for 2017 onwards, analysis found a market shock to loss discovery is almost immediate. However, the time to resolution is two-years for conduct, but insignificant for execution and frauds. This aligns with the findings of a BIS paper[23] published in 2020, which used ORX[24] data and found the average time lag between loss occurrence and discovery for a conduct loss is 566 days (1.6 years), execution is 254 days (0.7 years), internal fraud is 299 days (0.8 years) and external fraud is 117 days (0.3 years).

23 https://www.bis.org/publ/work840.htm

24 *The Operational Risk data eXchange is an operational risk data consortium comprising approximately 100 of the world's largest financial institutions*

Risk quantification and capital

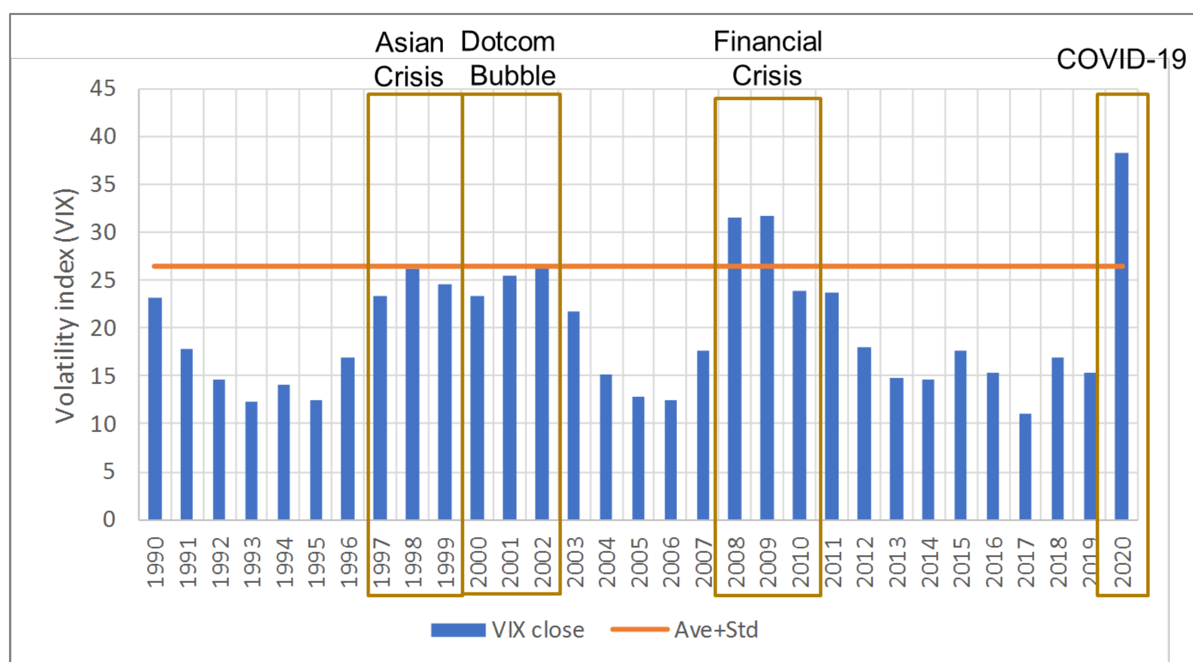
Analysis suggests COVID-19 and regulatory priorities will have an impact on the quantification of risk and assessment of capital requirements for both operational/non-financial risks and operational resilience.

Operational and non-financial risk

Objective quantification[25] of operational risk, which is highly dependent on the use of historical data, is most commonly practiced through two methods, one being the loss distribution approach (LDA) and the other regression. While the LDA is considered most suitable for capital analysis, regression methods are found to be more useful for deriving general relationships between loss severities or frequencies and macroeconomic variables (i.e. interest rates, GDP, unemployment rates, etc.) and market variables (i.e. stock indices).

Given that one of the main concerns today is the potential consequences of COVID-19 on various risks affecting the economy, we aim to provide here an example of how one can quantify its impact on operational risk. We proceed by relying on regression to demonstrate the existence of relationships between operational loss frequencies and, in particular, the Volatility Index[26] (VIX), to enable forecasting the potential impacts of the COVID-19.

Chart 3: The quarterly averaged VIX from the beginning 0f 1990 to end of Q1 2020, highlighting its correlation with several global crises



The specific focus on the VIX stems from the rapid reaction that equity markets generally display towards major crises, as can be noted from the immediate and highly correlated drops in all the global

[25] *Subjective approaches to quantification might include scenario analysis and the implementation of business environment and internal control factors.*

[26] *The VIX index was introduced by Whaley (1993) and the methodology was further revised by CBOE (Chicago Board Options Exchange) in 2003. This index measures the market's implied view of future volatility of the equity S&P 500 index, given by the current S&P 500 stock index option prices. When constructing the VIX, the put and call options are near and next-term, usually in the first and second S&P 500 contract months.*

indices, namely Dow Jones, S&P500, FTSE, DAX, CAC, Nikkei, etc. that tend to occur during downturns. The near-instantaneous response of equity market price movements to a major crisis provides solid evidence of the applicability of any of these indices to capture, with almost immediate effect, the negative impact of the crisis on the world markets. With the VIX being a mean-reverting measure of the implied uncertainty within the S&P500 index - a major and highly liquid global equity market - it can thus serve as a definitive and credible variable for the regression analyses that is developed hereafter.

In Chart 3, the average of VIX over the year is provided from the beginning of 1990 to the end of Q1 2020[27], the latter date coinciding with the outset of the COVID-19 impact on the world economy. Besides the bars that are displayed, the chart also spotlights the occurrence of several major crises that have impacted the world economy. The severity of these impacts on the VIX are noted by how far they breach the line demarcating the historical average plus one standard deviation.

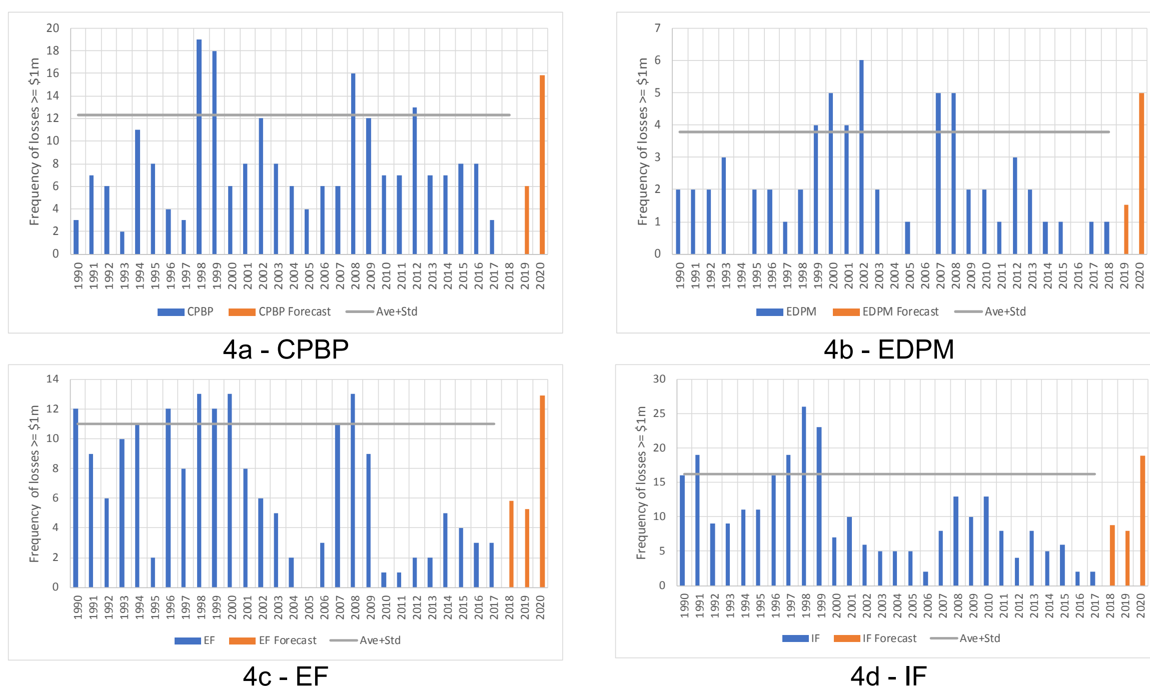
A noteworthy observation in Chart 3 is that the crises are correlated date wise with those shown in Charts 1 and 2. This apparent correlation deems the regression equation below appropriate for investigating the impact of COVID-19 on operational loss data within the OpBase claims database:

$$Claims\ frequency \geq \$1m\ (t) = \alpha + \beta * VIX(t) + \varepsilon(t) \qquad (1)$$

where α and β are regression constants and $\varepsilon(t)$ the error term.

Application of Equation 1 to the OpBase claims loss history displayed in Charts 2 and 3 could thus lead to forecasts of the virus impacts, as shown in Charts 4a-d, followed by the statistical significance test results summarized in Table 3.

Chart 4 – Annual Aon Claims frequencies of losses ≥ $1m for the time period beginning 1990 to the end of Q1 2020



[27] *2020 value for VIX presented in Chart 4 is the annualised average of monthly values from Jan 2020 to Mar 2020*

The solid horizontal line in all the figures of Chart 4 marks the historical average + 1 standard deviation to help expose the outliers that breach it. These outliers coincide, in all the cases, with the major crises that have impacted the VIX over the same time-period. The impact of COVID-19 in 2020 is especially evident, placing it in a similar category as any of the major crises that have happened within the same time-period.

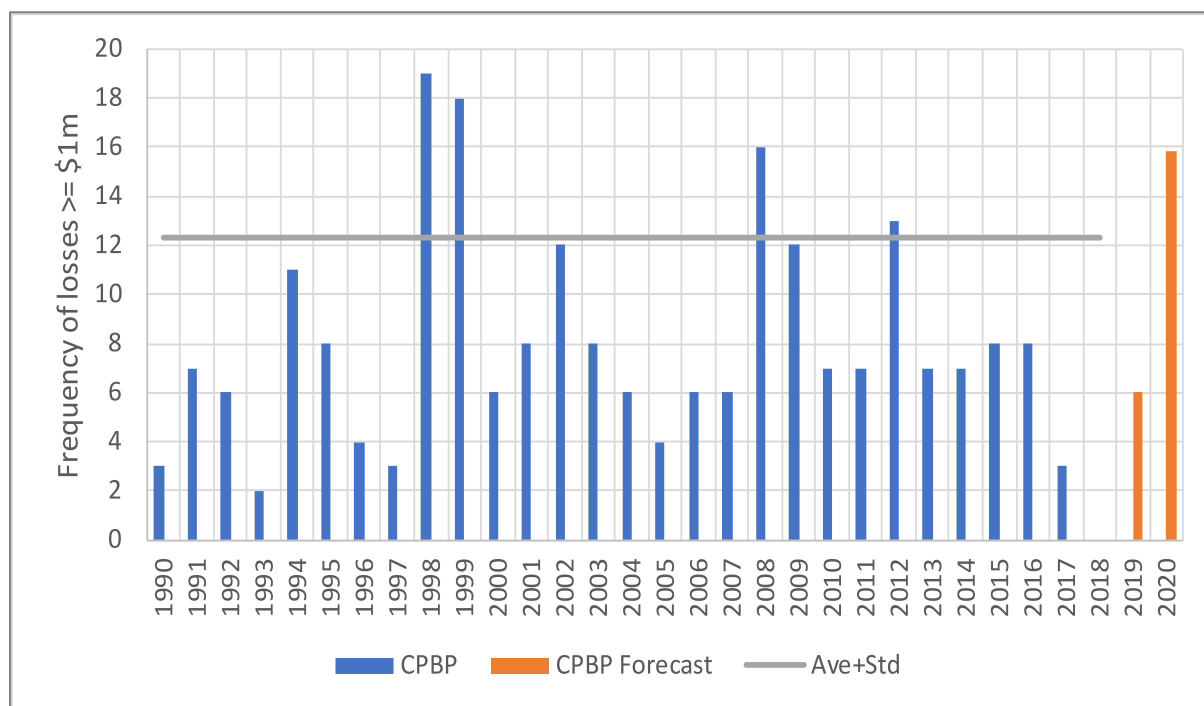
Table 3: Regression coefficients and their statistical significance[28]

	Intercept	Slope	R^2
CPBP	**-0.46**	**0.43**	0.30
t-test	-0.18	3.40	
P-Value	85.7%	0.2%	
EDPM	**-0.68**	**0.15**	0.28
t-test	-0.72	3.18	
P-Value	47.8%	0.4%	
EF	**0.20**	**0.33**	0.20
t-test	0.08	2.58	
P-Value	93.9%	1.6%	
IF	**0.73**	**0.47**	0.20
t-test	0.20	2.57	
P-Value	84.7%	1.6%	

The results illustrated in Charts 4a-d lend support to an impact of COVID-19 on CPBP, EDPM, EF and IF operational loss frequencies with magnitudes comparable to those brought on by the previous major financial crises. The statistical tests representing the significance of the coefficients in the underlying Equation 1, further point to robustness of confidence levels associated with all the slopes or β coefficients.

[28] *Regressions of Aon Claims losses ≥ $100k against VIX were also conducted but led to overall weak significance results. Hence, they have not been included here*

Chart 5: Forecasting CPBP losses in 2020 based on OpBase claims data



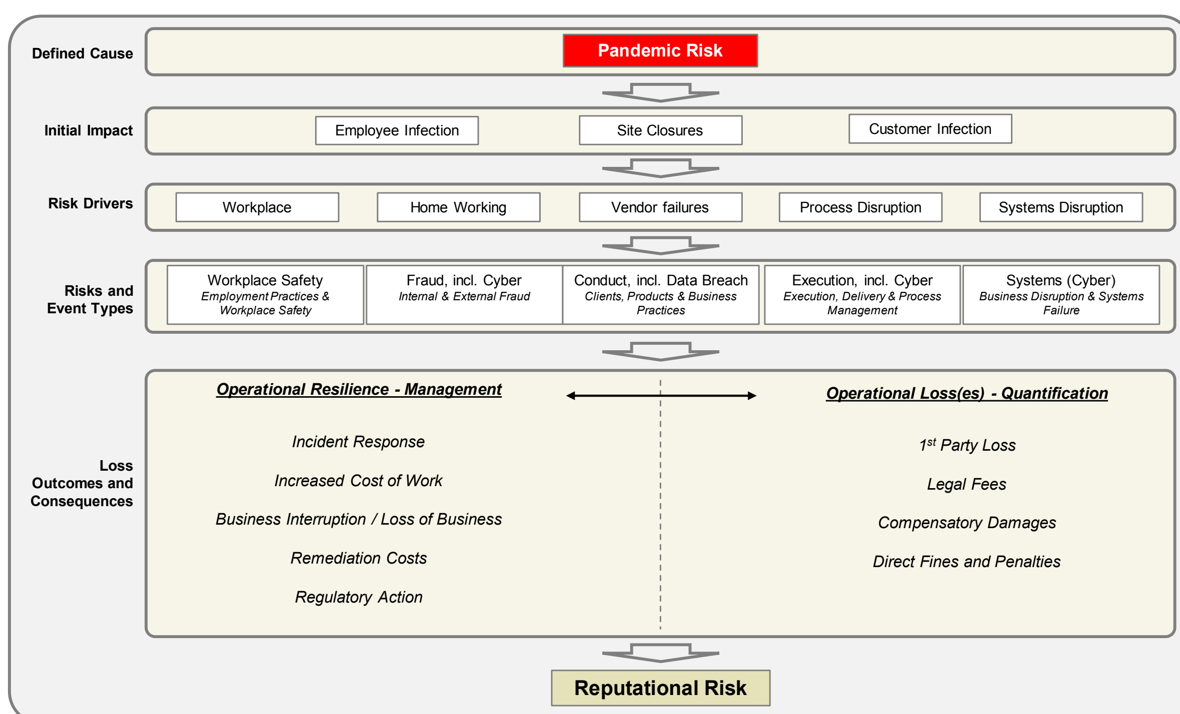
On the other hand, the insignificance of the intercepts or α coefficients in all 4 cases suggests that α can equate to zero, which implies that, in a perfectly certain and, thus, riskless market (i.e. in the limit VIX = 0), where everything is fully predictable going forward, there will be no operational risk. This aligns well with intuition, whereby in an environment devoid of any uncertainty going forward to infinity, all risks, including operational, should simply disappear.

The results presented in Table 3 point clearly towards a COVID-19 impact on operational risk with severity matching any of the major global financial disasters experienced since 1990. The overall consequences could, therefore, have significant effects on bank capital requirements together with insurance premiums and policies, as well as regulatory and internal policies going forward. This is illustrated in Chart 5 for the CPBP (or Conduct) event type (which is Chart 4a magnified)– suggesting a circa 170% increase in annual frequency in 2020 versus 2019, which represents the anticipated frequency had COVID-19 not hit. It also indicates that an estimation of exposure can be forecast for stress-testing and capital calculation purposes. Testing of banks' own loss experience derives similar results.

Operational resilience

The significance of having in place a robust framework to support operational resilience lies in the fact that a lack of it represents a threat to each of the supervisory authorities' objectives, as well as to their shared goal of maintaining financial stability. Although there is a well-established association between resilience and traditional operational risk management and quantification, as indicated in Chart 6, the concept does extend further as it focuses also on preserving continuity in the running of day-to-day business activities.

Chart 6: Mapping pandemic risk through initial impact to loss outcomes



Operational resilience should not only be considered as an integral part of any firm's overall strategy (in a way that the firm is expected to have plans in place to deliver critical services, no matter what the cause of the disruption), it must also be used to mitigate any imaginable man-made threats. These threats, for example, could span a wide spectrum of risks, ranging from IT issues and outages, to physical and cyber-attacks, third-party supplier failure, as well as natural hazards and catastrophes including fire, flood, severe weather and pandemics.

The Bank of England's discussion paper on resilience, published by the PRA, mentions several important underlying factors and mitigation strategies: identifying and mapping Important Business Services; setting impact tolerances; and scenario testing. As such, an emphasis on developing and maintaining a robust framework for operational resilience is crucial to every firm and, thus, it must be tightly embedded within every firm's risk management plans, strategies and policies.

Chart 6 identifies systems disruption as a risk driver emanating from a pandemic risk. This is evident in COVID-19, where the reliance of firms and employees on remote access and new ways of working may well lead to systems-type losses resulting from system disruptions or failures caused by inadequate systems that are unable to meet demand from customers and/or other users.

Risk transfer

Insurance has a long history of providing protection to banks for losses suffered due to operational risk events. Although insurance does not cover all non-financial risks, there are several areas where cover is available. Examples include fraud (both internal and external), where a firm has suffered direct financial loss, and losses resulting from liabilities to third parties such as mis-selling. The key to understanding coverage is having a clear picture of the underlying risk profile and those risks that are insurable.

Table 4: The insurability of key risk perils

	Direct Financial Loss Sustained	Compensatory Damages to 3rd Parties	External Legal Fees	Regulatory Fines and Action	Remediation Costs *Hiring consultants, additional staff cost, …*	Losses Due to Business Interruption	Incident Response Support
Cyber	✓	✓	✓	*Regulatory fines potentially covered under cyber and D&O for natural persons, but not under PI/E&O Regulatory action covered under D&O and potentially under PI, where the regulator is acting on behalf of customers*	✓	✓	✓
Conduct	N/A	✓	✓		X	X	X
Fraud	✓	✓	✓		✓	X	X
Execution	X	✓	✓		X	X	X
Outsourcing	X	✓	✓		X	X	X

Table 4 shows loss components where insurance may potentially provide cover for each risk identified. Ultimately, insurance coverage will be determined by the details contained in the insurance policy contract, such as: contractual conditions – exclusions, limitations, notification requirements, etc.; and policy limits, retentions and term. The most relevant coverages are Crime, Civil Liability, Cyber and Property.

Crime

Crime insurance, including electronic crime, commonly in the form of the Bankers Blanket Bond, provides cover for losses arising from employee and third-party theft and fraud:

- Dishonest or fraudulent acts - these include forgery or fraudulent alteration of securities and other financial instruments, forgery or fraudulent alteration of transaction instructions, and computer fraud
- Protection of physical assets – protects the insured against the loss of, damage to, or disappearance of, securities or other valuable financial instruments or financial assets, whether owned by the insured, held by the insured in any capacity, or for which the insured is legally liable to a third party

Civil Liability

Civil liability insurance indemnifies the insured company against liability incurred (by reason of judgments against them, settlements, or costs of legal defence) through actual or alleged errors or omissions committed during the provision of (or failure to provide) professional services, by the insured or another party acting on its behalf, to customers or clients.

Cyber

Cyber insurance covers both first party loss (expenses) and third-party liability (damages and defence costs) incurred by an insured as a result of a security breach or system failure. Exhibit 4 demonstrates how cyber insurance can be used to mitigate business interruption costs resulting from a systems failure.

Directors and Officers (D&O)

Directors and Officers (D&O) is excluded from consideration in the above table reflecting the unique nature of its coverage. D&O provides cover for claims made against directors and officers for "Wrongful Acts" in their capacity as such for the company. Where the firm is permitted by law to indemnify such individuals, the policy will reimburse the company for such amounts, subject to a retention amount. Where the insured company is not permitted to indemnify, the policy will pay such amounts directly on behalf of the individual directors and officers with no retention amount applied. The policy can also be extended to provide cover for claims made against the company itself, although this is usually limited to claims alleging a violation of securities laws. In terms of linkage to operational risk losses/events, it should be noted that any event type could give rise to a loss that acts as a trigger to a D&O claim. Thus, its use as a direct operational risk mitigant should be considered with caution.

Exhibit 4: Cyber insurance coverage of business interruption costs

"In April 2018, a bank's customers faced service disruptions caused by technical glitches that occurred following upgrades to its online banking platform. Several months later, the bank announced, in its half-year results, that the incident had cost the bank a total of more than GBP 176.4 million in remediation costs, customer compensation and waiver of overdraft fees and interest charges[29]." The event also resulted in thousands of customers leaving the bank and publicly reported financial results attribute a 24% decrease in income to the incident.

The bank claim under its Professional Indemnity[30] (PI) policy for mitigation costs associated with the outage; and its Cyber policy for loss of profit and increased costs of working due to business interruption (BI).

The bank submitted detailed proof of BI loss, which was constructed with the aid of insurers and external vendors, containing granular data evidencing the profit that the bank associated with each; retail customer, business customer and corporate customer. This was used to demonstrate a calculable loss that insurers were able to accept as proof of loss. The claim was settled, and a significant insurance recovery made.

Market update

The potential impact of insurance losses suffered by banks due to COVID-19 is impossible to quantify at this stage. The initial sense from the rating agencies is that overall the industry is sufficiently capitalised and the impact can be sustained through earnings. Certain governments have already stepped in with guarantees for the trade credit sectors. Germany has guaranteed payments of up to

29 Source: OpBase
30 PI provides similar insurance coverage to civil liability

EUR 30 billion[31] to cover the business of their domestic insurers and France has done the same to the tune of EUR 10 billion[32]. Other countries are likely to follow.

The uncertainty caused by the crisis and fear of the unknown is understandably making the insurance market nervous about providing insurance cover to banks. Particularly in the areas of trade credit, D&O, workers compensation and business interruption. This is having a knock-on effect on other product lines such as crime and liability.

Crime and Civil Liability

It is a widely held belief that banks will be experiencing higher exposures in both the crime and liability areas. As our earlier analysis (see charts 1 – 5) demonstrate there is a strong correlation in an upsurge in crime, conduct and execution (civil liability) losses in the years following a recession. Since 2014, there has been an abundance of capacity and premiums have remained very competitive for both crime and civil liability. These trends have meant that there has been minimal internal challenge in terms of budget approval for these products. Now the situation has changed.

Insurers are reducing their capacity and increasing premiums significantly - for the better risk managed banks in “less risky” territories. For many firms, crime and civil liability coverage on the existing basis will not be available. This means that banks are having to work harder to justify the benefit and relevance of these key coverages. Since risks insured by both crime and civil liability coverages are key drivers of non-financial risk exposures at banks (often referred to as internal/external fraud, conduct and execution) and can be used for Pillar 2 capital off-set purposes. Insurance buying departments have the opportunity to align these coverages to their under-lying risk exposure to help their organisations realise this value. This means that they can justify the cost according to their impact on risk appetite and capital. The evidence of this analysis also supports the negotiation of terms with insurers by providing more confidence in the risk management framework and understanding of risks in the bank.

D&O

In recent years, there has been a wave of event-driven D&O claims arising from the likes of #MeToo, cyber incidents and high-profile accidents. Given this, it is quite feasible that a global pandemic and a firm’s perceived mismanagement could lead to significant increases in in D&O claims. It is also probably only a matter of time before climate change triggers such a claim too.

Social media sources have already reported a number of US securities claims relating to public statements made by companies in relation to COVID-19. Clearly investors (and plaintiff law firms) will be watching closely as companies and their directors make announcements about the effect of COVID-19 on their businesses – it is what is said about the likely impact of the virus and measures being taken to mitigate it that may give rise to a brush with securities laws. There is also the potential for mismanagement related claims against directors in failing to adequately address the risks and steer the company through the crisis with the least possible damage.

As governments across the world begin the process to encourage all firms to return to work, the onus is on the company to provide a safe and secure environment for staff. This is not a guarantee, but they must be able to demonstrate “reasonable” efforts. Failure to do so will potentially lead to a raft of D&O claims particularly in the event there is a spike in COVID-19 cases or worse still more infectious and dangerous second and third waves in the forthcoming months.

[31] https://www.insurancejournal.com/news/international/2020/04/02/563116.htm
[32] https://www.insurancejournal.com/news/international/2020/04/01/562978.htm

The insurance market is nervous about this exposure and already we are seeing contractions in limits available and significant premium increases.

Captives

As banks increase their focus on identifying their tail non-financial and operational resilience risks, there could be circumstances where the commercial insurance market does not have the appetite to deliver the breadth of cover required at a fair price. In these circumstances, well capitalised captives are an excellent source of risk finance. Provided it is sufficiently capitalised, a captive can provide broader contracts for key “tail exposures”, such as conduct, litigation, fraud or insurable components of business interruption exposures. By setting these up now, firms will benefit from the protection immediately, generate an “experience” account and can consider obtaining reinsurance from the commercial markets as appetite changes and external pricing improves.

This strategy has proven to be effective for “horizon” risks that the commercial insurance market finds difficult to price in a distressed environment.

Reshaping: thoughts for the future

In the *reshape* stage, leaders will need to rebuild their vision, strategy and priorities for the future. That will involve redefining company goals and how to meet them — including adjustments to operational models, business pivots for products and services and continuously refreshing talent strategies and working models. Additionally, as leaders grapple with a constantly changing landscape, they will need to respond to regulatory shifts and commit to financial stability and resilience for the future.

Moving beyond the financial consequences of COVID-19, an outcome we are already seeing is a heightened focus on exposures to high severity low frequency risks. A CEO of a leading Domestically Important Bank (D-SIB) recently indicated that they see considerably more attention on "*tail risks*". This provides an excellent opportunity for the banking and insurance industries to work together to better quantify their key non-financial risks in a transparent manner, to enable better confidence in designing and pricing coverages according to a firm's risk profile as determined using appropriate modelling methodologies. We are already seeing this trend in fraud and expect other risk areas to follow.

Since the regulatory pressure coming from Basel II & III, banks have much better data and understanding of their risks than ever before. When combined with latest and more robust modelling techniques, this will enable more sustainable products for the insurance market to respond to.

A consequence of COVID-19 is that - if they did not already - banks are now recognising the absolute necessity of sound risk quantification and management. This means that their approach to accessing commercial insurance, and use of captives, will be under greater scrutiny than before. This will help the buying teams at banks have better support internally and externally from their advisors as to appropriateness of limits, retentions and premiums. This approach lends itself to embedding the use of insurance within a bank's risk appetite framework and ultimately provide long term capital savings. It also supports the direction of traffic from the regulatory community and political pressures on banks. COVID-19 is likely to accelerate the journey already started around operational resilience for firms to focus on doing the right thing, namely putting stakeholders ahead of shareholders and demonstrating sound operational resilience.

Forward-looking banks have the opportunity to leverage sound operational resilience and non-financial risk frameworks with their risk transfer strategy in accessing robust programmes to cover their key exposures in areas such as conduct, fraud, business interruption and credit exposures resulting from physical damage due to climate change and other natural catastrophe risks.

Aon's team has built over forty operational and non-financial risk capital models. By conducting scenario analysis and using external data, whether it be OpBase or consortia data, our experts support stakeholder engagement to build robust assessments of unexpected loss.

For banks (including G-SIBs), insurers, critical infrastructure providers and investment firms, Aon's experts are able to inform business decision-making around risk strategy, investment and financing, as well as supporting financial institutions to build operational and non-financial risk frameworks meeting regulatory expectations for pillar 2 (and pillar 1) capital and stress-testing purposes.

If you would like to discuss any of the issues raised in this paper, please contact a member of our specialist team.

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