Stress Testing in Smaller Financial Institutions

A white paper commissioned by KnowCo in association with the University of Sussex Innovation Centre

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WHITEPAPER

Abstract

Stress testing and financial modelling are indispensable to the financial sector. They enable financial institutions to develop their risk appetites and tolerances, and policymakers to assess resilience under conditions of stress, both in the short and long term. Since the financial crash of 2008, new regulations have been issued to strengthen financial institutions' holdings of both capital and liquidity via, among other measures, the creation of severe yet plausible stress scenarios modelling a wide range of stress parameters. With these developments have come new challenges, especially affecting regulatory compliance in smaller-to-medium sized financial institutions. This paper examines these challenges, and responses to them.

About this Report

Sussex Innovation is an incubation network wholly owned by the University of Sussex. The organisation is designed to support innovative businesses with high growth potential, and conducted the research behind this report on behalf of one such member company, KnowCo Ltd.

The research team conducted in-depth interviews with CROs, CFOs, CEOs and MDs of smaller-to-medium sized financial institutions, to gain insight into their roles, as well as the requirements and challenges they face. The research was designed to reveal key issues surrounding their approaches to stress testing and financial modelling, as well as the impact of regulation on these.

Introduction

Stress testing and business modelling are now embedded in the financial sector. They allow policymakers to assess financial institutions' resilience to a range of adverse shocks and ensure that they hold sufficient capital and liquidity to continue to support the real economy in stressed situations, rather than withdrawing from lending markets [1]. Regulatory expectations of stress testing and business modelling apply to all EU financial institutions, large and small, although the larger, more systemically important institutions receive more frequent and intensive scrutiny [2].

> "Stress testing as a discipline has now become an industry standard, with a very clear steer from the supervisory authorities to undertake stress tests. For the large institutions they are obliged to make the outcomes of those stress tests public... for smaller institutions that isn't a requirement, but there is the expectation of enhanced stress testing capabilities and integration into Board and management decision making."
>
> – Hasan Kazmi, Chief Risk Officer, OneSavings Bank

Meeting these standards, however, calls for the use of quantitative models, but even today those are often self-built and maintained in non-specialist spreadsheet software by one or two personnel, creating 'key person' dependency and significant operational risk. With the industry continuously looking for improvement, the move to more specialist and tailored software packages is underway, as models need to be more robust and transparent to satisfy the expectations of not only the regulators but also bank senior managers and board risk committees, all of whom now carry personal responsibilities under the Senior Managers regime, introduced in March 2016, which mandates individual duties of responsibility [2,3].

> "[In the ILAAP] firms should describe the framework and IT systems for identifying, measuring, managing and monitoring and both internal and external reporting of liquidity and funding risks, including intraday risk."
>
> – PRA Supervisory Statement SS24/15

Managing the impacts

Following the financial crash, several reforms have been implemented to strengthen and safeguard the financial sector. Some believe that these have been beneficial, while others argue that the measures have gone too far - that this additional regulation has stifled growth and reduced consumers' access to credit, as well as impacting smaller-to-medium sized financial institutions with increased costs and bureaucracy [4]. While the regulators espouse the principles of proportionality, in practice there is a floor below which no institution can survive without regulatory censure and the risk of remedial measures, both institutional and individual. What is generally agreed upon is that keeping on top of changing regulations is one of the key challenges for many CROs.

> "The strategy of the bank in the immediate term is significantly influenced by the capital constraints imposed by the regulations. So [these imperatives are] absolutely fundamental to how the bank will be able to grow."
>
> – Will German, Chief Risk Officer, Cambridge & Counties Bank

> "I think in a positive context [the regulator] has tried to put in place a consistent discipline to the entire industry, how we look at things, how we want to report things, and I think that that common denominator is constructive."
>
> – Gilbert Kohnke, Chief Risk Officer, Danske Bank

The LCR (Liquidity Coverage Ratio), is a clear example of this. It was implemented as an EU-wide standard to increase the resilience of the financial system to liquidity shocks, requiring institutions to hold a minimum quantity of HQLA (High Quality Liquid Assets) made up of assets such as cash, central bank reserves and government bonds [5]. Although clarification of the final form of LCR reporting was delayed, not only was its introduction pushed through as an EU-wide standard, but the UK PRA is now in the process of emphasising that the LCR is a relatively small part of the way banks (irrespective of size) should manage and measure liquidity resources, current and projected.

Smaller-to-medium sized financial institutions have had to adapt to these changes, complying to requirements from regulators to conduct more tests, namely stress tests and scenario tests, to ensure their resilience to abrupt change in the financial sector.

Do financial institutions need to do more?

There are two resources that are essential for effective risk management - the systems that are employed, and the people using them.

> "We have pretty much become a model-driven industry and getting qualified people will remain an ongoing challenge. The ability to develop talent, as well as to identify good talent - and find out how you benchmark yourself to best practices - is [an] area that we spend a lot of time and focus."
>
> – Gilbert Kohnke, Chief Risk Officer, Danske Bank

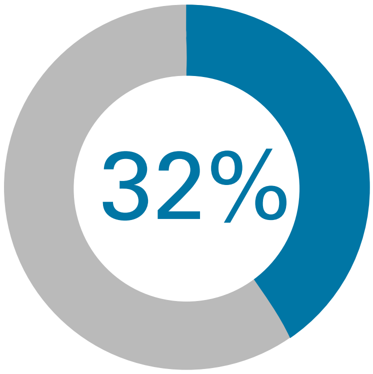
> "In terms of the mechanics of the system, we're running many of the calculations off spreadsheets still."
>
> – Will German, Chief Risk Officer, Cambridge & Counties Bank

Most smaller financial institutions still rely on Excel spreadsheets to manage their modelling and reporting, yet best practice advice from auditing industry leaders including PwC is that Excel spreadsheets are an unsustainable solution for financial institutions of all sizes going forward [6].

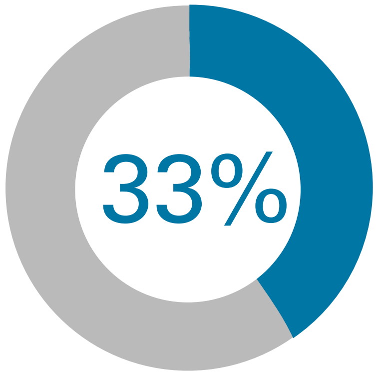
A better equipped workforce with a deeper understanding of the regulatory and reporting requirements is needed, with approximately a third of institutions noting that both their modelling, and reporting and analysis teams are inadequately resourced. However, a recurring pattern is that financial institutions generally have more confidence in the capabilities of their people, than they do in the capabilities of the technology that they have to work with.

Not only should improvement be sought both in terms of personnel and the tools they are using, but focus should also be placed on the proper use of the information gathered by financial institutions. With regulatory requirements only set to become more demanding, financial institutions will need to look to streamline their processes - improving staff training while starting to consistently use purpose-built software would seem an appropriate way to do so.

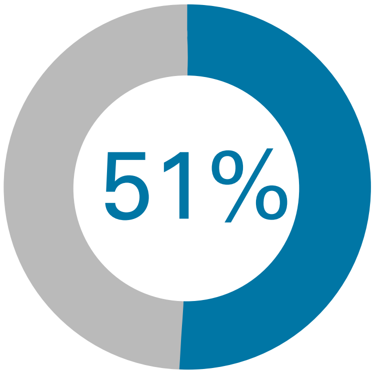
The impacts of changing regulations and legislation on smaller financial institutions



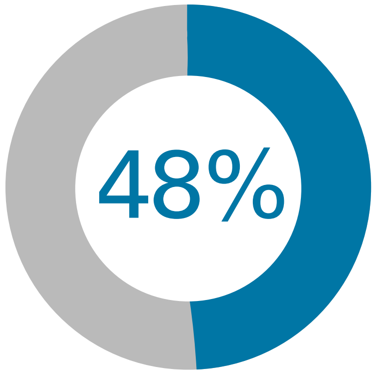
of modelling teams are inadequately resourced



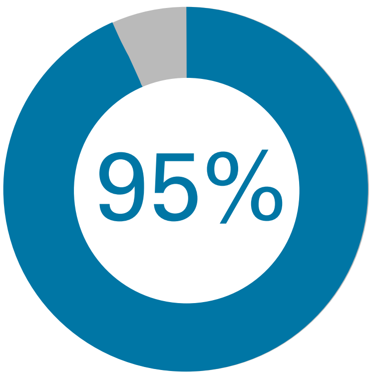
of reporting and analysis teams are inadequately resourced



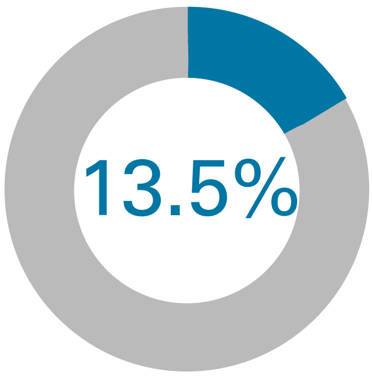
of technology for reporting and analysis is inadequate



of technology for modelling is inadequate



"very rarely or never" revise business plans in response to stress test



of all technology used by risk practitioners exhibits "serious gaps"

[7]

The issues surrounding regulatory legislation

Proportionality

Smaller-to-medium sized financial institutions are commonly cited as the institutions that suffer from regulations lacking proportionality. Many smaller financial institutions suggest that they suffer disproportionately from regulation, which drives up costs and takes up valuable senior management time. Hence, proportionality is of huge importance in the financial sector [8,9].

One-off costs - encompassing compliance systems, software procurement and regulation compliance - are a particular challenge, as these are predominantly fixed and therefore represent a larger proportional expenditure for smaller institutions. With rules becoming more and more complex and interconnected, small institutions with lower budgets and limited human resources may struggle to comply with regulation [10].

> "I think there is a tendency for regulators to fall into the trap of thinking all banks are quite similar. When it comes to the smaller banks that is not true, they all tend to have their own unique aspects."
>
> – Peter Mitchell, Banking Director, Smith & Williamson Investment Services Limited

> "[There is] a lot to be said around proportionality; that clearly the small banks gets impacted in broadly the same way as the large banks, where there really is no systemic risk. And to have us all doing the same work, right across the banking industry is certainly not the best use of our time, and I'm not sure it's of great value to the regulator either."
>
> – Graeme Hartop, Chief Risk Officer, Hampden & Co

However, regulators are generally intolerant of rule breaches, irrespective of an institution's size – even a relatively minor breach of 'the letter (or spirit) of the law' can be taken by supervisors as indicative of a deeper malaise, and attract intrusive regulatory attention. Smaller financial institutions are regularly (and publically) fined for rule breaches, but even where no public announcement is made, remedial action, including reviews by skilled persons, can be extraordinarily costly.

In this sense, the cost of getting it right is far lower than the potential cost of getting it wrong.

The issues surrounding regulatory legislation

Working in Silos

A commonly voiced concern in the financial industry is *working in silos* - that is, where financial institutions, and often even separate departments within the same institution, do not share critical information with one another. The BBA, AFB and other trade bodies have suggested that financial institutions should improve their knowledge sharing capabilities, primarily to improve their resilience and ability to react rapidly to a threat landscape that is liable to change.

Internally, a commitment to data transparency, sharing of best practices, and full visibility of stress testing systems throughout an organisation can help to make its approach more robust. Rather than becoming dependent on any one individual to maintain specific knowledge of how the system works, these responsibilities can be shared across teams.

Data sharing brings with it a number of benefits, namely comprehensive information for decision makers, and coordination and cross-fertilisation across data collectors [11]. Similarly, identifying and sharing good practice is likely to produce several benefits. Poor practices will be identified and replaced or improved. 'Reinventing the wheel' can be avoided, cutting costs through improvements in productivity and efficiency [12].

> "What's critical is to be able to leverage the visibility gained from those different models internally and have people start sharing best practices with what they are seeing. So, stop operating in silos and start working in a much more integrated environment to share their insights in a much more structured and consistent manner."
>
> – Gilbert Kohnke, Chief Risk Officer, Danske Bank

'Brexit'

The United Kingdom voted to leave the EU as a result of the referendum in June 2016, causing political and economic uncertainty in the period shortly after the vote. Several institutions in the United Kingdom saw this as a concern, not without reason. The UK is Europe's major international finance centre, holding a 17% international market share (compared to 9% for Germany and 9% for France) and 18% in hedge fund assets (compared to 1% in France).

> "Once we come out of Europe you might find that the local regulator might have to increase their resources in order to proactively, independently, regulate the UK banks."
>
> – Chris Christou, Treasury Manager, Alpha Bank

The issues surrounding regulatory legislation

Financial institutions face uncertainty in the short term, as some have based themselves in London and 'passport' to other EU countries. Now, several months or years of ambiguity may lie ahead, with thoughts of possible expenses for contingency planning and potentially, relocation. This may also hurt the UK economy as operations move abroad, reducing numbers employed in the UK financial sector.

However, some feel that a far more likely scenario is that upon actual Brexit, whether 'hard' or 'soft', the relevant UK authorities voluntarily adopt the EU Single Rulebook (the Capital Requirements Regulations or CRR), effectively in its entirety, and continue to comply with EU banking supervision policy rules (the Capital Requirements Directives or CRD), rather than to distinguish - and thereby disadvantage - London from Paris, Frankfurt, and other European financial centres. Maintenance of parity with EU banking regulation and supervision, between the UK and EU rules, will help to keep the UK and the EU on a level playing field.

Nevertheless, in the interest of avoiding any unforeseen risk, it would seem advisable for UK financial institutions large and small to adopt adaptable, scalable technology and processes. Committing to more resilient, agile systems today may be rewarded over the coming years, should circumstances require the British financial sector to behave reactively.

Conclusions

Financial institutions’ current position

We are currently experiencing a period of great upheaval in the UK financial sector, influenced by a number of internal and external factors. These range from the continuing aftereffects of the global financial crisis, to uncertainty (and an element of trepidation) surrounding Brexit.

Understandably, much of the public focus has centred on how the biggest of our financial institutions react to these circumstances and, as a result, a new regulatory environment is evolving with the aim of both safeguarding and controlling the larger financial institutions. However, much less immediate attention is being placed on how the picture is changing for smaller financial institutions, who now must make rapid changes to their working practices in order to keep up.

The overriding impression from the interviews detailed in this report is that smaller financial institutions are acutely aware of these challenges, but ready and willing to face them. This is an industry with a high level of mutual trust and expertise among its practitioners, and much emphasis was placed on the need for improved tools and resources, over and above more skilled or better trained people.

When it comes to the important business of reporting, understanding and managing risk, it is clear that smaller financial institutions are in need of a proportional solution that will support them in maintaining and interpreting data to a universally high standard. Whatever the future may hold, they must be open to that change, confident that their systems are resilient and adaptable enough to do what is required of them under any circumstances.

Barriers to addressing the challenge

So if there is widespread recognition that the technology banks rely on is not all up to standard, why is there still a seeming reluctance to change?

Firstly, it must be recognised that in many cases, teams at smaller-to-medium sized financial institutions will be under-resourced and overworked. In this environment, the potential disruption caused by implementing new software is a significant barrier. Counter intuitively, the worse shape an organisation’s data estate is in, the more resistance there may be to any new system, as the scale of the problem can seem too intimidating to even attempt fixing it.

Secondly, additional costs of any kind are bound to meet with resistance, with changing economic circumstances resulting in many budgets being stretched thinner than before. While the possibility remains for new regulatory changes, bringing with them a high likelihood of associated costs, financial institutions are likely to be wary of any unplanned expenses.

Conclusions

The argument for purpose-built software

We all cherish our spreadsheet applications, whether Excel or otherwise, and spreadsheets can be made secure and can be properly maintained and audited - but, generally, they are not! Additionally, spreadsheets have inherent potential data integrity issues, and these may be triggered at far lower tolerances, in terms of data volume, than the suppliers of such systems claim.

Use of a purpose-built stress-testing tool in a secure IT environment can significantly reduce the operational risks attached to spreadsheet use, not least the degree of manual intervention required in the loading and processing of data and the opacity of user-developed macros.

> "[Stress-testing of financial risks in smaller banks] tends to be very manual and involve a lot of spreadsheets... the dynamic capacity of stress testing variables analysed on this basis is rather limited I'm afraid, and a lot of small banks tend to be like that... The use of data - and expectation of data management - is only going to increase."
> – Peter Mitchell, Banking Director, Smith & Williamson Investment Services Limited

Almost as important is the saving in senior management time, which is made possible by automated data loading and reconciliation, and the ease of scenario creation and maintenance. Transparency is also enhanced - with the advent of the Senior Managers and similar governance regimes, which impose duties of responsibility on individuals, many ALCO chairs and Board Risk Committee members are increasingly posing the question to senior management: How do I know I can trust these numbers?

About KnowCo

Over the past six years KnowCo's management consulting business has supported many UK financial institutions with the 'heavy lifting' of compliance with evolving ICAAP, ILAAP and RRP requirements as well as a number of specialist projects around, for example, target market strategies and risk appetite formulation and expression.

In recent years KnowCo's risk solutions business has installed and supported 15 instances of its K-ALM application which offers stress testing and business planning functionality in 3 modules: Liquidity, Credit Risk Capital (Pillars 1 and 2A) and IRRBB.

Conclusions

The application is kept up to date with all relevant regulatory expectations and cost-effectively replaces spreadsheets, to which bank boards and supervisors increasingly object, and other less intuitive and less functional vendor-supplied systems.

Recent enhancements include:

- Optionality and repricing functionality in the IRRBB module (in addition to basis risk and yield curve risk forecasting and stress testing)
- Credit concentration risk stress testing and reporting in the credit risk capital module
- LCR and Forecast LCR functionality in the liquidity module

Upcoming developments include:

- ALMM
- Intraday liquidity monitoring
- K-ALM in the Cloud
- Automated pillar 3 data provision

The system database sits on clients' servers and is fed automatically, by supported code, from the institutions' data sources. The stress testing and business modelling application is installed on client user workstations which access the data and scenarios stored in the database.

- Manual intervention in data sourcing and loading is minimized
- Any scenario can be run on any dataset at any time
- Up-to-date data is always available
- Data is captured and, if required, rendered at cashflow level – the system is totally transparent and auditable
- Senior management time is spent on scenario planning and analysis, not spreadsheet maintenance
- Intuitive, visual management reports are provided, out of the box
- Customised reports can be quickly configured from rich output data

A high level functionality spec can be downloaded at **www.knowco.co.uk**

Sources

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