



## Solvency II: A Field of Missed Opportunities?

Moody's Analytics 2013 Solvency II Practitioner Survey



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## 1. Executive Summary

With the Solvency II deadline approaching – full introduction of the regime is expected on 1 January 2016 and interim measures proposed by the European Insurance and Occupational Pensions Authority (EIOPA) are likely to be enforced one year earlier (i.e., in 2015) – we believe this is a timely moment to assess the progress made by industry participants toward achieving compliance and to analyze the approaches adopted by the industry to address the regulation.

Despite good progress by some sections of the industry, our research indicates that some insurers still have substantial work to do in order to attain compliance. In particular, our survey identifies three main potential pitfalls that will need to be addressed, namely: regulatory reporting processes, insurers' ability to meet Own Risk and Solvency Assessment (ORSA) requirements, and data quality management. Our survey indicates that in addition to these challenges, embedding Solvency II into insurance practices is likely to become a major undertaking for many insurers.

Whilst it is widely accepted that the industry has had to invest substantially in order to address the regulation, we note that the size of an insurer is a key determinant in relation to the level of effort and investment, and in relation to the approach taken to address the regulation. At one end of the spectrum, large firms have embraced Solvency II as an opportunity to enhance their capabilities and infrastructure. These insurers have developed automated and streamlined solutions that address the regulation efficiently, and at the same time, provide insight that can be used by senior management of the enterprise.

At the other end of the spectrum, we find firms that are addressing the requirements as a rather superficial regulatory “tick-box” exercise. Hence, these firms are not seizing the opportunity to step beyond compliance in order to build the infrastructure that can help them make better risk and capital informed decisions.

Understandably, delays to the initial implementation date of Solvency II have had an impact on the preparation efforts across the industry, irrespective of the insurer's geographical location and size. Our survey finds that 60% of the sample have put projects on hold or are progressing at slower pace in the wake of the deferral announcement – at the end of 2012– to implement Solvency II in 2016. However, we believe that the recent consultation guidelines released by EIOPA in March 2013 will require insurers to accelerate preparation efforts.

Our survey found that Solvency II has the potential to yield benefits to the industry, particularly in terms of risk management. Moreover, 42% of our survey sample (primarily the largest firms) indicated that they already derive business-related benefits from their Solvency II investments.

Although the first priority for many firms is to attain compliance, our survey suggests that those firms that have fully embraced Solvency II and undertaken long-term strategic investments are more likely to obtain commercial and operational benefits from their investments. In our view, those adopting this approach will more likely avoid the main pitfalls of Solvency II implementation.

Our survey, which was carried out during the last quarter of 2012 and first quarter of 2013, was conducted with 45 insurers of all sizes across Europe (see *Context and Objectives* section).

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## 2. Acknowledgements

Moody's Analytics would like to thank all insurance companies who participated in this survey. We would also like to acknowledge the contribution of our in-house consultants, business development officers and product, sales and customer service representatives across the EMEA region for sharing their market insight, customer experience and ideas.

## 3. Context and Objectives

### 3.1 About Moody's Analytics

Moody's Analytics is a subsidiary of Moody's Corporation (NYSE: MCO). Moody's Analytics helps capital markets and risk management professionals worldwide respond to an evolving marketplace with confidence. The company offers award-winning solutions and best practices to measure and manage risk through widely recognized expertise in enterprise risk management software, credit measurement and valuation tools, economic analysis and professional services.

Moody's Analytics is a leading provider of enterprise risk, capital modeling and management solutions to Insurers.

### 3.2 Moody's Analytics 2013 Solvency II Practitioner Survey

Solvency II is a fundamental and wide-ranging review of insurance regulation in Europe, and over the past four years, addressing these requirements has been one of the most important preoccupations of the industry.

Solvency II introduces a three pillar framework similar to that of Basel in the banking sector. Each Pillar covers a different aspect of the requirements: Pillar 1 - Quantitative Requirements; Pillar 2 - Supervisory Review, and Pillar 3 - Market Discipline. The Solvency II Directive also requests insurance companies to demonstrate that the aforementioned requirements are embedded into their activities.

This survey was carried out by Moody's Analytics during the last quarter of 2012 and first quarter of 2013. It was conducted through one-to-one in-depth interviews, most of them face-to-face, across insurance companies of all sizes and activities in Europe.

This survey aims to provide an update of the progress made towards regulatory compliance and identifies and compares the practical approaches taken by the industry to address the regulation. It also identifies the key challenges faced by practitioners, provides valuable insight into relevant best practices and serves as a useful benchmarking tool.

This survey forms part of Moody's Analytics thought leadership series dedicated to the Insurance sector. Additional articles can be found on [moodyanalytics.com](http://moodyanalytics.com)

### 3.3 Survey Demographics

This survey was conducted with 45 insurers of all sizes across Europe. The sample included insurance groups based in the following 12 geographies: the UK, Germany, France, Italy, Spain, Denmark, Finland, Norway, Switzerland, Czech Republic, Slovenia and Malta.

Our sample was composed of seven tier 1 insurers (defined as gross written premiums over €10 billion), eight tier 2 insurers (gross written premiums between €3 billion and €10 billion), 14 tier 3 insurers (gross written premiums between €700 million and €3 billion), nine tier 4 insurers (gross written premiums between €100 million and €700 million), and seven tier 5 insurers (gross written premiums below €100 million).

Exhibit 1. Representation of sample by size (Gross Written Premium, % of sample)

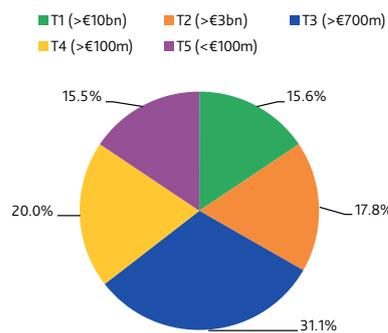
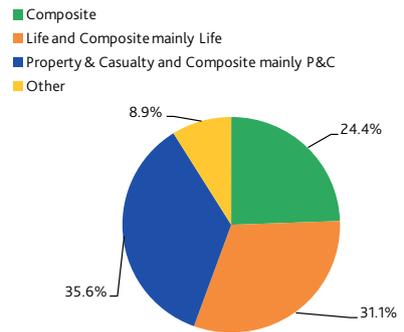


Exhibit 2. Representation of sample by activities (% of sample)

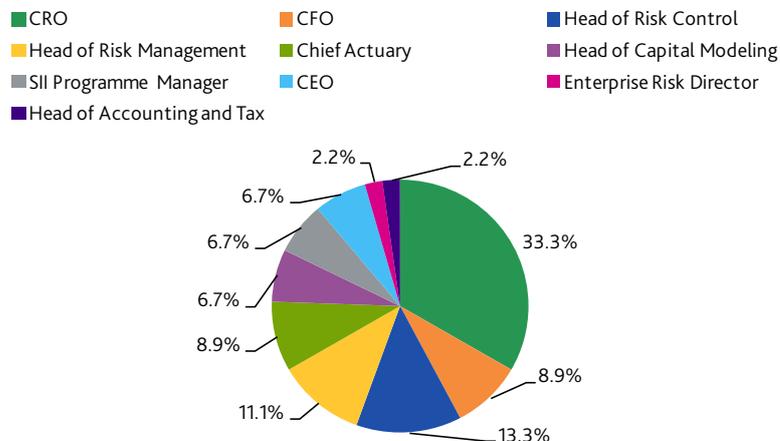


Source: Moody's Analytics

In terms of activities, our survey sample included a balanced representation of composite<sup>1</sup> (24%), life (31%), property and casualty (36%) and other types of insurance activities (health insurance, reinsurance, run-off, 9%).

Our research was conducted with a variety of departments and functions at insurance companies, all of them involved in Solvency II. Chief Risk Officers (CRO) accounted for 33% of the sample. Other functions include: Head of Risk Control (13%), Head of Risk Management (11%), Chief Financial Officers (9%), Chief Actuary (9%), Head of Capital Modeling (7%) and Solvency II Program Manager (7%).

Exhibit 3. Representation of sample by function (% of sample)



Source: Moody's Analytics

<sup>1</sup> Composite insurer category includes insurers operating in the Life and P&C sectors

## 4. Progress Made Towards Solvency II Compliance

### 4.1 The Standard Formula Has Been Favored By Most Insurers

The majority of insurers in our survey sample have opted for the Standard Formula to address Pillar 1 requirements (58%), 22% of our sample opted for a partial internal model approach, and 20% had applied a full internal model. Large firms (categorized under tier 1 in the tables below) have generally opted for a partial or full internal model, reflecting their more sophisticated approach and capital optimization needs.

Exhibit 4. Type of approach for Pillar 1 (% of sample)

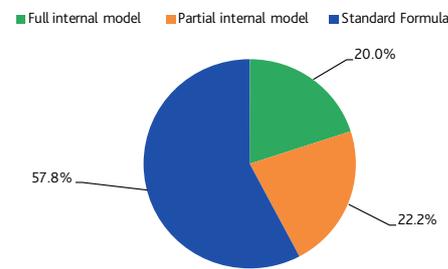
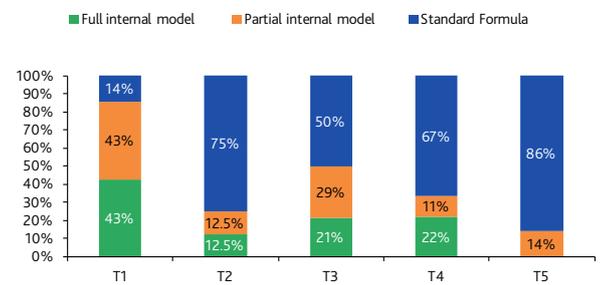


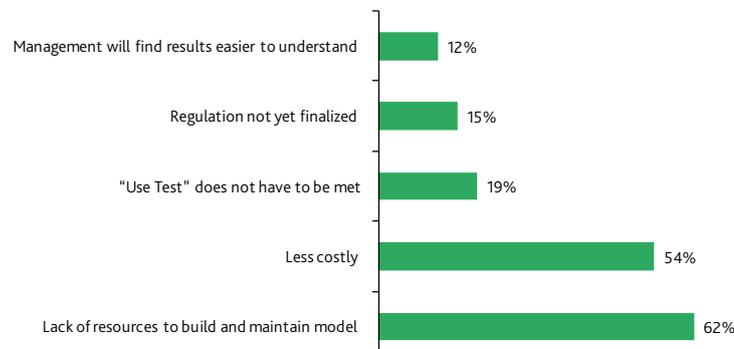
Exhibit 5. Pillar 1 approach by tier (% of sample)



Source: Moody's Analytics

Most insurers (62%) cited lack of resources to build and maintain internal models as the key determinant in their selection of the Standard Formula. In addition, the majority of companies (54%) said they opted for the Standard Formula as a way to curb costs. Of the sample, 19% cited the "Use Test" requirement as a barrier to more insurers choosing the internal models, and 12% said their choice was determined by management's ability to interpret the reported figures. Of our sample, 15% said they chose the Standard Formula due to the uncertainty surrounding the final regulatory requirements.

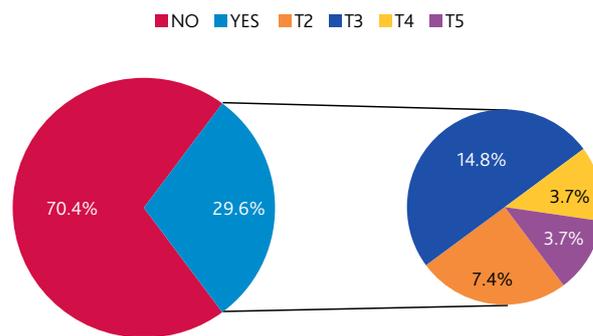
Exhibit 6. Reason for choosing Standard Formula (% of sample)



Source: Moody's Analytics

Our survey shows that a portion of the sample is planning to upgrade to a partial or full internal model in the near future. This strategy is primarily explained by the fact that the Standard Formula does not fully reflect the specific risk profile of these insurers and, as a result, will potentially entail higher capital requirements. In fact, just under 30% of the sample indicate that they are planning to apply for a partial or full internal model in the next 2 to 3 years, and 75% of these firms are composed of tier 2 and tier 3 insurers, and some smaller specialized mono-line insurers (tier 4 and tier 5).

Exhibit 7. Firms planning to apply for a partial or full internal model



Source: Moody's Analytics

#### 4.2 Progress Towards Compliance: A Status Update

This section offers an overview of the progress to date, which includes comparisons across the 45 firms and the 12 countries included in our survey sample.

Exhibit 8 below details the framework applied to assess the progress that the survey participants have made to comply with Solvency II. Our framework is composed of five stages of progress to compliance. Each survey participant has been classified into one of these five stages and assigned the corresponding score of progress (between zero and 20) for each of the regulatory requirements (Pillar 1, Pillar 2, Pillar 3 and data quality requirements).

Exhibit 8. Framework to assess progress towards compliance as at May 2013

Stage of progress	Description	Score of progress	Corresponding status level
1. Not started	» Not yet started on Solvency II project	0	Late
2. Project started	» Solvency II project in place » Key work streams, responsibilities, timelines and milestones defined	2	
3. Framework and tools in place	» Solvency II project in place » Key work streams, responsibilities, timelines and milestones defined » Solvency II approach and methodologies defined » Solutions have been selected but are not yet operational	5	Developing
4. Process and tools in place and operational	» Solvency II project in place » Key work streams, responsibilities, timelines and milestones defined » Solvency II approach and methodologies defined » Solutions have been selected and are in production	10	Ready
5. Compliant	» Solvency II project in place » Key work streams, responsibilities, timelines and milestones defined » Solvency II approach and methodologies defined » Solutions have been selected and are operational » "Use Test" satisfied » Full or partial Internal model approved by regulator	20	Compliant

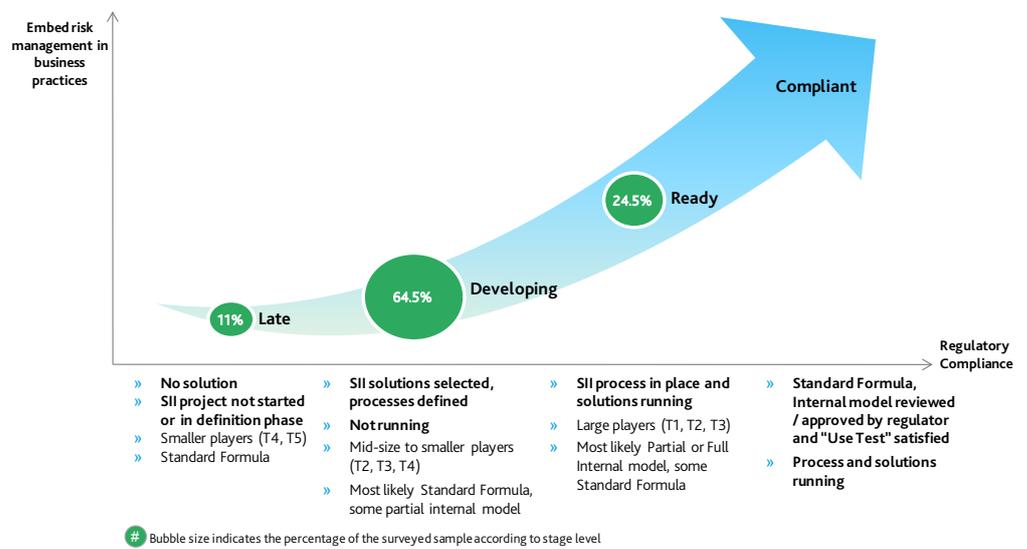
Source: Moody's Analytics

Using this framework we have categorized the level of Solvency II compliance in the following four status levels: **Late, Developing, Ready and Compliant** as illustrated in Exhibit 9.

- » The **Late** category is composed of those insurers that are still in an early stage of development of Solvency II capabilities. These firms have defined the building blocks of their Solvency II programs including: key work streams, responsibilities, timelines and milestones but the tools are not yet in place. This category accounts for 11% of our survey sample; these are primarily smaller insurers that are adopting the Standard Formula (tier 4 and tier 5 account for 80% of the firms in the category).
- » The **Developing** category comprises insurers that have defined a framework and decided which solutions they will build, but these solutions are not yet in full production. This category accounts for 64.5% of our survey participants. These include large to mid-sized insurers (tier 2: 24%, tier 3: 31%, tier 4: 24%). The Standard Formula is being adopted by 70% of insurers in this category, and the remaining 30% are applying for internal models.

- » The **Ready** category comprises firms that are more advanced, with processes and solutions already running. This category accounts for 24.5% firms in our sample. These include large firms (tier 1, tier 2 and some tier 3). Approval for application of the internal model is being sought by 91% of insurers in this category and the remainder are applying the Standard Formula.
- » Insurers are deemed **Compliant** if their Standard Formula, partial or full internal models have been reviewed and approved by the regulator. To date, none from our sample is in the Compliant category.

Exhibit 9. Status levels observed in the market sample

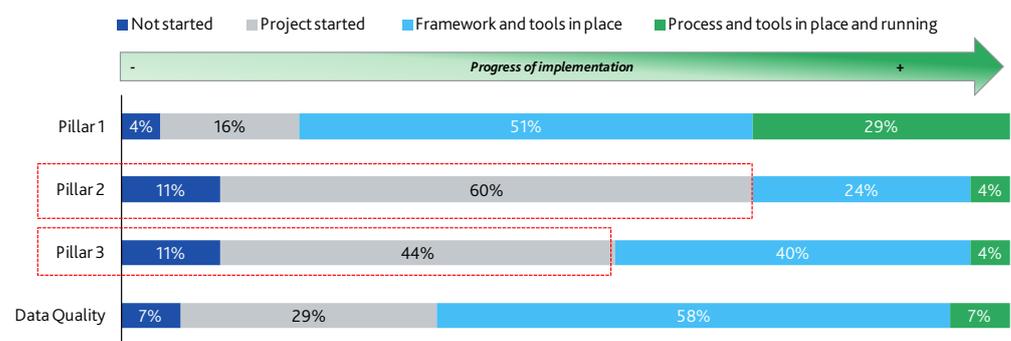


Source: Moody's Analytics

Our analysis indicates that, despite good progress, insurers still have substantial work to do, particularly in addressing the Pillar 2 and Pillar 3 requirements.

As illustrated in exhibit 10 below, 20% of survey participants still need to build tools needed to address Pillar 1; 71% of the survey participants are currently developing frameworks and tools to address Pillar 2; and 55% have not yet developed the tools to address Pillar 3. In addition, 36% of the survey participants need to build capabilities in order to address data quality requirements.

Exhibit 10. Solvency II – Assessment of progress based on the requirements of each Pillar (% of sample)



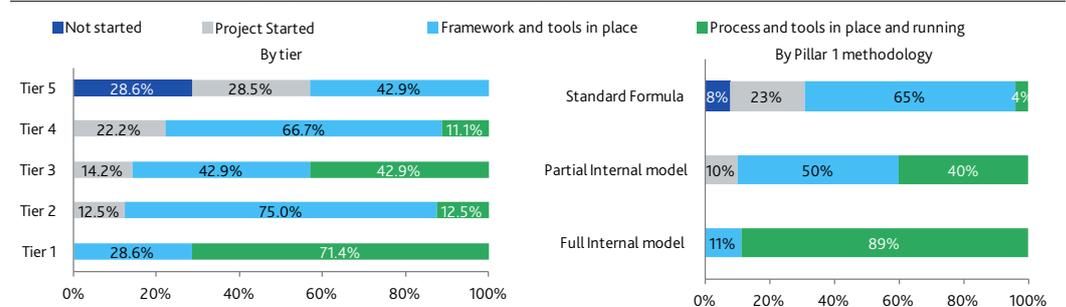
Source: Moody's Analytics

### Pillar 1 is on track at most insurers

Our survey finds that while the final Solvency II requirements have yet to be finalized and approved by the supervisors, much of the preparation efforts to date have been dedicated to Pillar 1.

Indeed, 80% of the insurers interviewed indicated that their processes, models and calculation engines are already in place, and 29% of the survey participants are already able to produce results (under the existing requirements). Overall, those in tier 4 or tier 5, namely insurers with gross written premiums below €700 million, appear to lag behind the larger firms in their Pillar 1 preparation. Our survey sample indicates that insurers seeking to apply for a partial or full internal model are at a more advanced stage of implementation compared to those insurers adopting the Standard Formula. As we will see later in this report, a similar pattern is observed in terms of their level of effort and strategies chosen to address the regulation (resources allocated, investments made and sophistication of solutions).

Exhibit 11. Assessment of progress on Pillar 1 (% of sample)

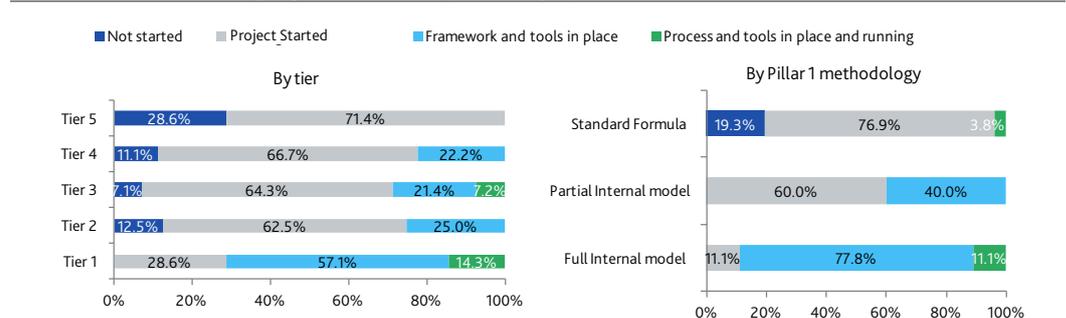


Source: Moody's Analytics

### Pillar 2 is the current area of focus for most insurers

Most survey participants are currently building their Pillar 2 capabilities and, most notably, their Own Risk and Solvency Assessment (ORSA). Many firms have already addressed the qualitative requirements of Pillar 2, including risk policy, governance and processes. However, there is still substantial work to do in order to address the quantitative aspects of the Pillar 2 requirements including the overall quantitative measurement of insurers' capital needs, their balance sheet projections and defining their planning scenarios. Indeed, only 24% of the insurers interviewed indicated that they have their processes, methodologies and models in place to fulfil Pillar 2 requirements.

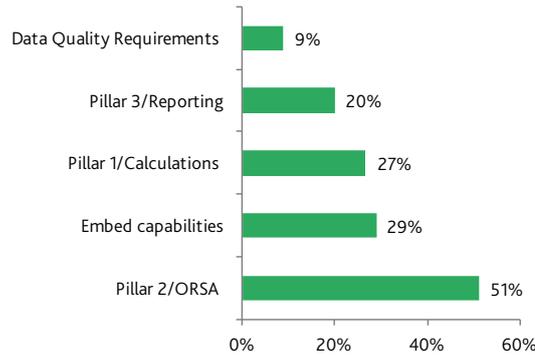
Exhibit 12. Assessment of progress on Pillar 2 (% of sample)



Source: Moody's Analytics

More than half of the survey sample cited ORSA as their top priority for 2013. Nearly one third of survey participants said that other key priorities include embedding the risk management capabilities and models they have built into their organization, and 27% of survey participants cited finalizing Pillar 1 as other key priorities.

Exhibit 13. Key priorities for 2013 (% of sample)



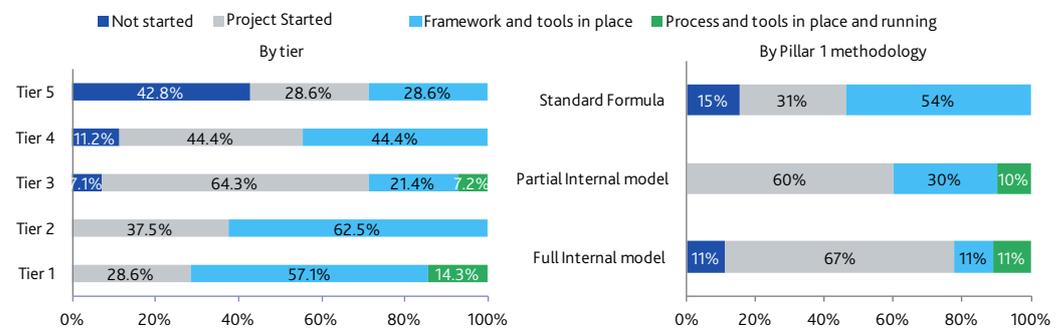
Source: Moody's Analytics

Effective implementation of Pillar 2 requires that the insurer's risk management framework is used to inform business decisions and is embedded in the corporate governance structure. Therefore, key business decision-makers need to have access to risk management information and will have to be able to interpret the results of risk quantification approaches defined in the context of the regulation. As a result, we can expect the Pillar 2 implementation to have major impacts on the organization and governance framework of the insurer.

**Pillar 3: The de-prioritized pillar?**

Our survey finds that many insurers have focused their attention and efforts on the quantitative measurement of capital under Pillar 1 and risk management requirements of Pillar 2, and have deferred the implementation of Pillar 3 disclosures. Indeed, 56% of firms in our survey sample have not fully addressed the disclosure and transparency requirements under Pillar 3.

Exhibit 14. Assessment of progress on Pillar 3 (% of sample)



Source: Moody's Analytics

*“We haven't done much in Pillar 3. This area is on hold now, we will pick it up when necessary”:  
Head of capital modeling,  
tier 3 insurer*

Many insurers appear to be implementing Pillar 3 in the final stage of their Solvency II projects rather than adopting a more comprehensive approach that encompasses the planning and implementation of all the three Pillars simultaneously. Yet, in our opinion, the work required to satisfy the quantitative and qualitative aspects of Pillar 3 should not be underestimated; in particular, we believe that the short timeframes and comprehensive level of data that is required to be disclosed will pose significant operational challenges to many insurers. The need to address both Solvency II and financial reporting requirements will put additional pressure on timescales. Moreover, market disclosure is likely to have a major impact on how the marketplace forms an opinion about the insurer's present and future business performance, risk and capital profile.

**Data Quality Management: the hidden pillar?**

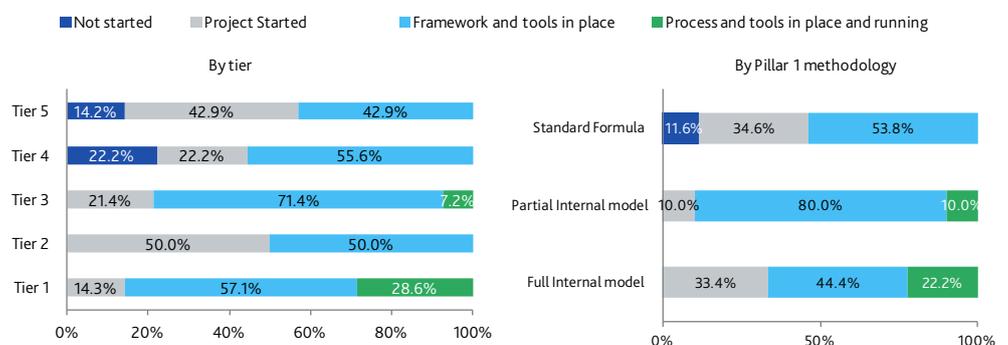
Solvency II introduces strict requirements for data quality and management. According to our findings, 40% of the survey participants recognized that they still have to work on this key work stream to build robust data quality management solutions. However, this requirement is not at the top of their agendas – as shown on Exhibit 13. The relative low priority that many insurers currently put on data quality management projects might be explained by their reluctance to embark on large and complex infrastructure projects.

Our survey shows that larger firms and companies seeking to apply for an internal model are at a more advanced stage of implementation than those firms adopting the Standard Formula. This observation may be explained by the fact that insurance firms seeking internal model approval face strict model validation tests, and data quality assurance is a key part of this validation. These firms will have to demonstrate data quality controls and show the validity not only for input data used in the calculations, but also the underlying data that is used to support the statistical analysis on which the model is based.

*“We need a better data management and audit solution but this will be tackled within 2 to 3 years from now”, Solvency II  
Project manager,  
Tier 2 insurer*

Some insurers adopting the Standard Formula have taken a rather short-term tactical approach to address the data quality requirements. They have chosen to introduce manual or semi-manual controls and ex-post remediation processes for the correction of data issues, often handled in multiple Excel spreadsheets. These approaches are ad-hoc, fragmented, time-consuming and costly due to the presence of organizational silos at most insurance companies as well as many legacy systems. Our research suggests that those insurers adopting this approach are not seizing the opportunity to step beyond compliance to build the infrastructure that can help them make better informed decisions.

Exhibit 15. Assessment of progress on Data Quality Requirements (% of sample)



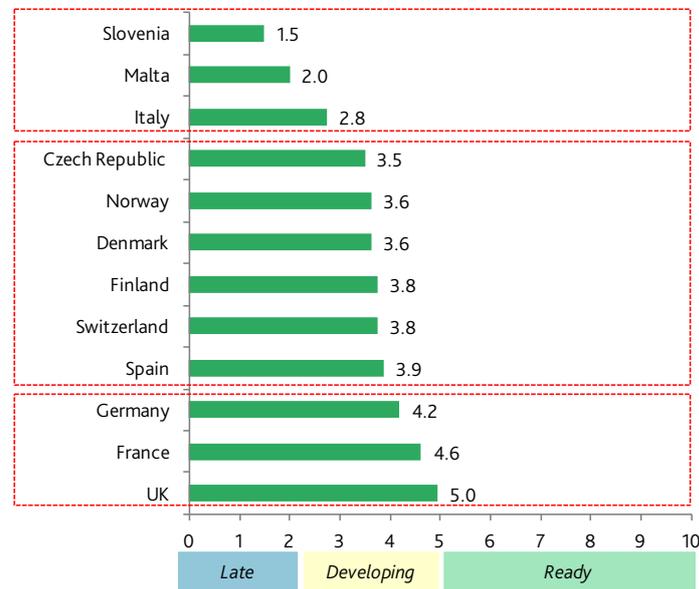
Source: Moody's Analytics

## Geographical differences

Our survey also analyses and compares the progress made by country. We have used the scoring framework and the five stages of progress – as per exhibit 8 – to calculate an average score of progress per country.

We find that, on average, the UK, France and Germany are at more advanced stages of implementation, followed by countries in an intermediate stage such as: Spain and the Nordics. Italy and Central European countries have lagged behind in implementation of Solvency II. However, the subsidiaries of multinationals in these regions track the development and pace of progress of their parent companies.

Exhibit 16. Overall Solvency II Progress by country (average score by country)



Source: Moody's Analytics

## Greater differences appear according to specific pillars

The level of progress made towards compliance differs by Pillars. French companies and some in the Nordics have taken a rather comprehensive approach and appear relatively more advanced across all three Pillars.

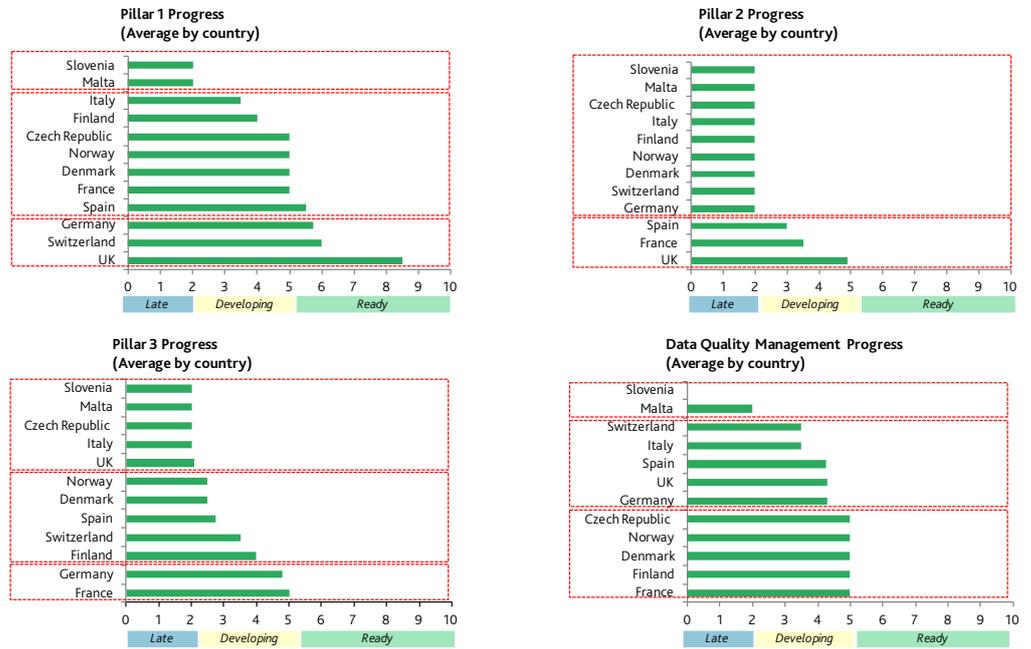
Firms in the UK appear to have focused their efforts on Pillar 1 and Pillar 2; their relative advancement in these Pillars is explained by the work conducted by the industry to meet the requirements for UK FSA's Individual Capital Adequacy Standards (ICAS) regime. However, UK insurers appear to have made relatively less progress on Pillar 3, which still requires substantial work, as is the case in many other markets.

Equally, the relative advancement of Swiss firms in our sample to comply with Solvency II requirements in the EU may be explained by the work undertaken by these firms to meet the Swiss Solvency Test (SST).

Our survey also suggests that many firms in our sample are still half way through their Solvency II implementation programs.

Exhibit 17. Overall Solvency II Progress by country per Pillar (average score by country)

*“The delay has impacted our budgets [allocated to Solvency II], which have decreased substantially”, CRO, Tier 1 insurer*



Legend:  
 0- Not started; 2- Project started; 5- Framework and tools in place; 10- Process and tools in place and running; 20- Compliant

N.B. To date, none from our sample is in the Compliant category; scores in the 10-20 range in average by country have not yet been achieved

Source: Moody's Analytics

*“The announcement of the delay and interim measures haven't changed our timetable, we continue to progress towards full compliance”, CRO Tier 3 insurer*

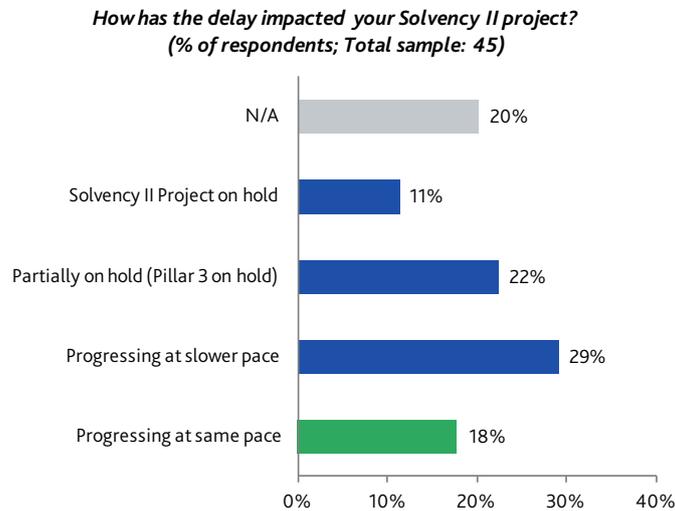
### 4.3 Impact of the Latest Solvency II Delay

The EIOPA's deferral of the initial Solvency II implementation date to January 2016 appears to have had an impact on the preparation efforts across firms of all sizes and countries, particularly regarding Pillar 3. Exhibit 18 below illustrates the impact of delay on Solvency II projects.

Of the 45 survey participants, 29% indicated a slower pace of Solvency II implementation since the deferral announcement. Moreover, many insurers in our survey sample indicated that they face progress constraints because Solvency II-related budgets have been frozen due to the uncertainty about the final regulation and timetable.

Our survey shows that 22% of the sample have temporarily suspended the Pillar 3 phase of their projects. A few survey participants (11% of the sample) have stopped working on Solvency II and are awaiting details of final requirements from EIOPA. By contrast, 18% of the sample has continued working towards their original project timelines as they believe a slower pace may result in higher overall costs.

Exhibit 18. Impact of delay on Solvency II projects (% of sample)



Source: Moody's Analytics

In our opinion, the revised consultation guidelines released by EIOPA on March 27, 2013 will trigger a renewed focus on the implementation of Solvency II. The consultation defines proposals for the implementation of interim solvency measures in advance of the full implementation of the Solvency II regime, expected on 1 January 2016. The scope of the proposed guidelines indicates that EIOPA expects a significant part of the Pillar 2 and Pillar 3 requirements to be adopted in 2015, which will require insurers to accelerate their compliance efforts.

Exhibit 19. Overview of impact of EIOPA consultation guidelines (published on March 27 2013)

Pillar	Impact of EIOPA Guidelines for Insurers	Proposed Timelines	
		Incorporated into national framework (regulators)	Submissions expected by (insurers)
Pillar 1	Accelerate preparations to enter internal model pre- application process: » Documentation and validation » Data reviews » "Use Test"	1/ 1/2014	2015
Pillar 2	» Refine system of governance and demonstrate that risk is embedded at Board and Management levels » Develop/Finalize forward-looking assessments and quantify the insurer's own risks	1/ 1/2014	2015
Pillar 3	Accelerate/complete implementation of reporting tools to deliver subset of reporting templates to national regulator*	1/ 1/2014	2015

\* The subset of the reporting templates proposed by EIOPA includes balance sheet, assets, technical provisions, own funds, SCR, MCR and the scope of the group (where applicable). Source: EIOPA (03/27/13)

Source: Moody's Analytics

Moreover, the final outcome of the Long-Term Guarantees Assessment, conducted by EIOPA between January and March 2013, and the subsequent steps will be key to finalizing the Solvency II requirements.

## 5. Solvency II: Practical Approaches Taken By The Industry, And The Implications Of These Choices

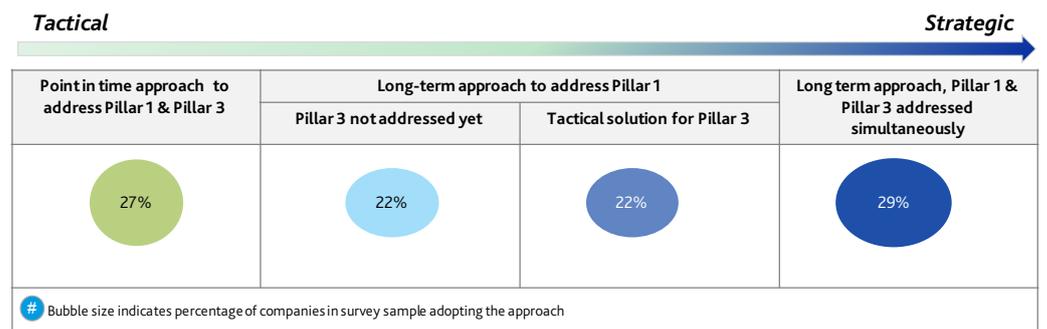
Another objective of our research was to identify the approaches that insurance companies have taken to address Solvency II, the implications of such choices –notably in terms of advantages – and challenges faced.

Our survey has identified three main approaches taken by the insurance industry to address Solvency II:

- » Insurers that have adopted a rather superficial “tick-box” approach to address Pillar 1 and Pillar 3: 27% of the survey sample have taken this path.
- » Insurers that have embarked on heavy Pillar 1 investments thereby de-prioritizing Pillar 3: 44% of the participants are in this category. Half of the firms in this category (22% of survey participants) have chosen short term tactical solutions to addressing Pillar 3, and the other half in this category have not yet built a Pillar 3 solution.
- » Insurers that have adopted a long-term strategic approach and address Pillar 1 and Pillar 3 simultaneously: 29% of the survey participants have adopted this approach.

These approaches are illustrated in the exhibit below.

Exhibit 20. Approaches adopted by the industry to address Solvency II (% of sample)



Source: Moody's Analytics

The following section analyses these approaches and the consequences of these choices.

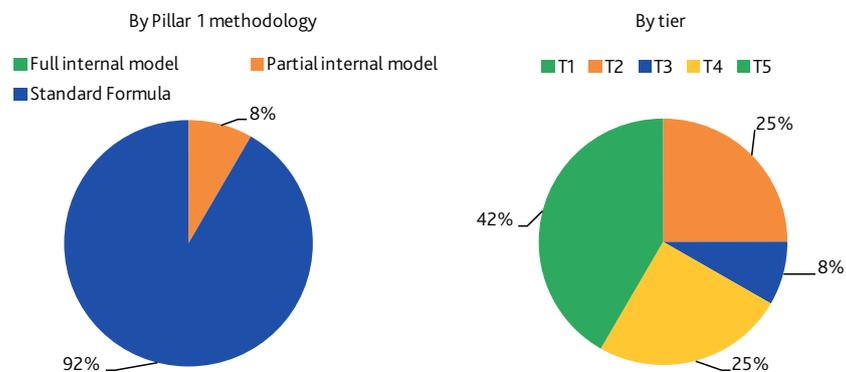
## 5.1 Short-Term Tactical Solutions Applied by Some of the Survey Sample in Addressing Pillar 1 and Pillar 3

Our survey finds that 27% of the participants are addressing Solvency II as a somewhat superficial regulatory “tick-box” exercise, rather than as a fundamental review of their capital and risk management processes and tools.

Our analysis indicates that these insurers are building “quick fix” reporting tools to satisfy the deadline rather than seizing this opportunity to step beyond compliance and build solutions that can deliver real benefits for the business (e.g. good data to inform risk appetite, capital measures to efficiently deploy capital). Moreover, some of the tools built require substantial administration costs which raises questions about the ability of these firms to prepare, check and submit results in a matter of weeks after each quarter-end once the regulation is formally adopted (as stipulated in the guidelines). The reconciliation of Solvency II disclosure with financial reporting is likely to create further pressure due to concurrent and short timelines.

Those insurers adopting this strategy tend to be small to medium-sized institutions (of those firms adopting this approach, tier 4 and tier 5 firms account for 67% of the sample). However, of those firms adopting this approach, tier 2 firms account for 25% of the sample. The majority of the firms in this category (92%) are applying the Standard Formula for their Pillar 1 calculations (the remainder are applying for partial internal models).

Exhibit 21. Characteristics of those insurers adopting a superficial regulatory “tick-box” approach



Source: Moody's Analytics

Specific challenges faced by firms adopting a superficial regulatory “tick-box” approach are detailed below:

### Data quality, systems, governance and organizational demands of Pillar 3 not addressed

Our survey shows that those insurers following this approach have carried out a minimal amount of preparatory work to assess if existing data and systems can address Solvency II requirements or if further developments are required. In our opinion, these firms are likely to face significant data quality management risks which will affect the production of Solvency II results and the operational effectiveness of the enterprise.

*“We have chosen a ‘tactical’ solution, we are aware of the consolidation issues we will face. We are planning to automate the SCR calculation and consolidation processes in the medium term”.  
CRO, Tier 2 insurer*

**Labor-intensive and time-consuming calculation and reporting processes**

The lack of automation featured in the superficial regulatory “tick-box” approach typically leads to manual business processes that necessitate significant re-working, requiring higher staffing levels and higher costs. For example, manual data processing and limited automated interfaces will require multiple time-consuming reconciliations and labor-intensive processes which are unlikely to cope with regulatory demands when Solvency II is formally adopted.

**Risks related to control processes and reliability of results**

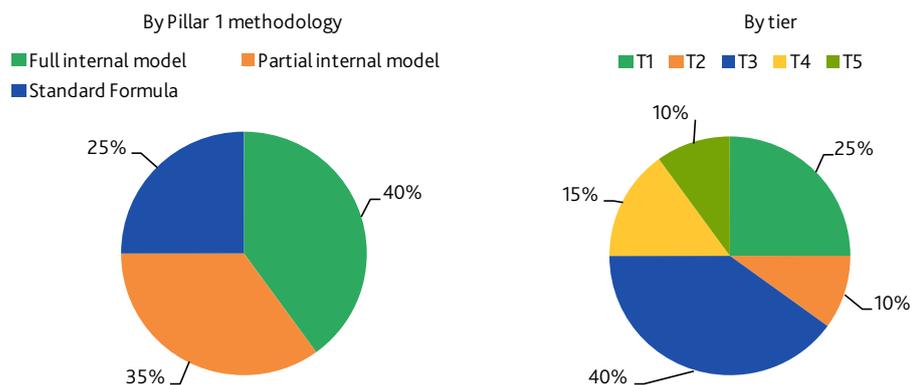
Errors could be overlooked by those pursuing a partial manual handling of calculations, regulatory reporting and control processes. Full Solvency II disclosure will require additional administrative tasks to review the results, rendering the process less efficient. Moreover, given the potential for human error, insurers might face the risk of disclosing contradictory numbers to the market when Solvency II is formally adopted.

**5.2 Heavy Investments in Pillar 1 at the Expense of De-prioritizing Pillar 3**

Of the survey participants, 44% have focused their efforts on Pillar 1, thereby de-prioritizing Pillar 3. Most insurers adopting this approach embraced Solvency II as an opportunity to enhance their risk and capital models with the aim of obtaining long-term capital savings after the implementation. However, these firms have not taken a comprehensive approach that encompasses the planning and implementation of all three Pillars simultaneously; indeed half of the firms adopting this strategy have not yet fully addressed Pillar 3.

Insurers in this category tend to be large to medium-sized institutions (those adopting this approach are tier 1, tier 2 and tier 3 firms which account for 75% of the sample) and the majority of these firms (75%) are seeking to apply a full or partial internal model.

Exhibit 22. Characteristics of insurers focused on Pillar 1 at the expense of de-prioritizing Pillar 3



Source: Moody's Analytics

*"We planned to do the projection of the balance sheet but we are facing important efficiency issues as running the model takes too much time", Solvency II Program Manager, Tier 1 insurer*

We believe these firms in this category will encounter specific challenges described below:

### **Challenges to embed capabilities in business decisions**

Actuarial models, key inputs into internal models, tend to be perceived as a "black box" and are difficult to understand by the business and senior management. To meet the regulation, insurance firms will have to develop an organizational understanding of their internal models and to demonstrate that they have embedded wider risk management practices into their business decision making. Our survey indicates that substantial organization silos will have to be broken up in order to surmount this challenge.

### **Issues related to models efficiency and performance**

The complexity of the risk and capital models has grown enormously in recent years, posing significant challenges in handling vast computational requirements. Evidence from our research indicates that insurers are realizing that a more flexible framework is required in order to respond to the various modeling questions in a timely manner.

### **Some firms will need to accelerate efforts to address Pillar 3**

As their focus has been on Pillar 1, many insurers adopting this strategy have not fully addressed Pillar 3. Indeed our survey finds that half of the insurers in this category (or 22% of our survey sample) have not yet developed a regulatory reporting tool, and they will need to accelerate their preparation efforts in order to meet the requirements.

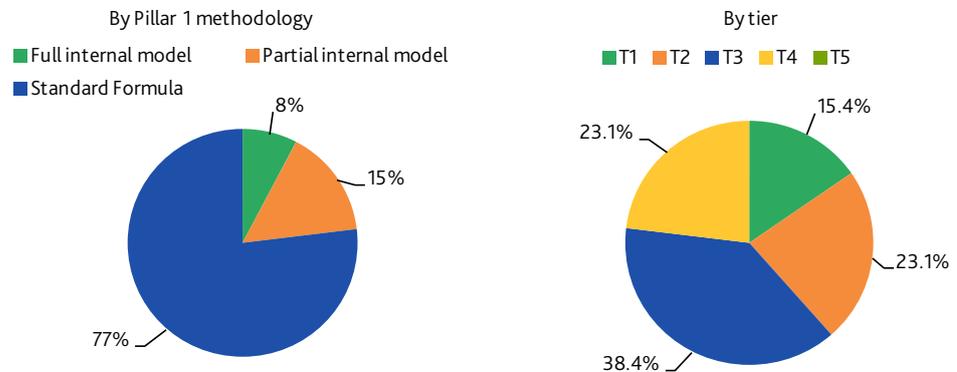
## **5.3 Pillar 1 And Pillar 3 Addressed Simultaneously**

Our survey shows that 29% of the participants have chosen a more comprehensive approach to address Pillar 1 and Pillar 3 simultaneously. This strategy involves providing the right tools and information (models, systems and information upgrades) to address the regulation efficiently and, at the same time, develop enhanced risk management tools and insight to be used by management.

We believe that this comprehensive approach to jointly addressing Pillar 1 and Pillar 3 will put these insurers at an advantage as regards delivering the Pillar 1 calculation inside a framework capable of being embedded within the decision-making cycle (Pillar 2) with comprehensive disclosure of results (Pillar 3).

Those insurers adopting this strategy tend to be large to medium-sized institutions (those firms adopting this approach – mainly tier 1, tier 2 and tier 3 firms – accounted for 77% of our sample) and the majority of them (also 77%) are applying the Standard Formula for their Pillar 1 calculations which illustrates that an end-to-end approach to address the requirements has not only been adopted by the very sophisticated tier 1 insurers.

Exhibit 23. Characteristics of those insurers addressing Pillar 1 and Pillar 3 simultaneously



Source: Moody's Analytics

These firms encounter specific challenges summarized below:

#### Complex implementation processes

Addressing the Pillars 1 and 3 simultaneously requires a comprehensive and complex planning of requirements, process changes and technology across the different functions and departments as well as vigilant management of dependencies.

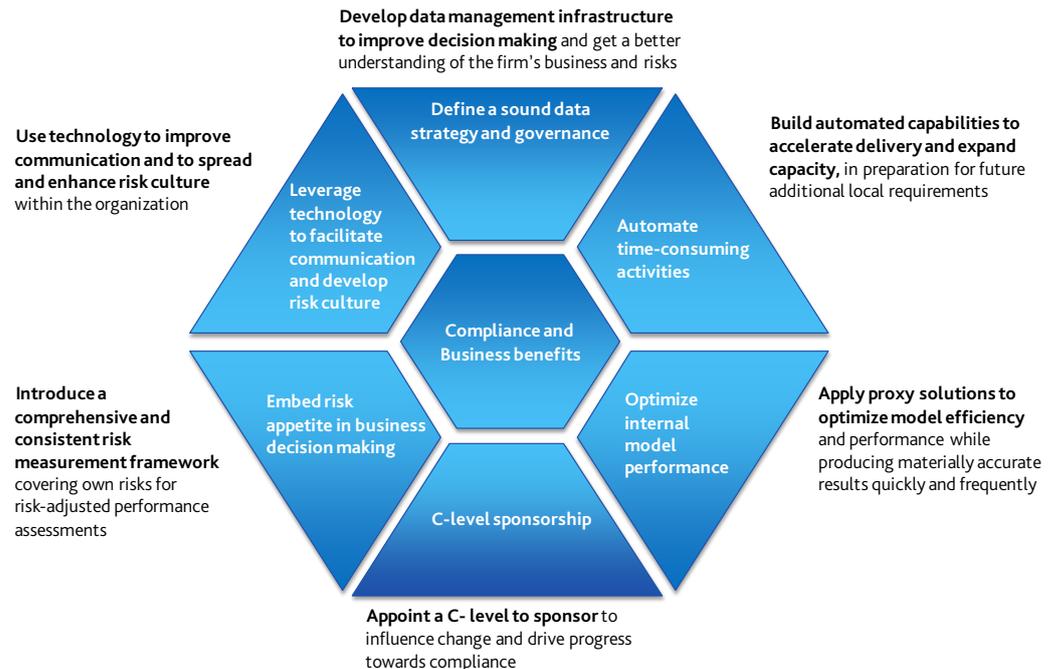
#### Breaking down silos

Jointly addressing Pillar 1 and Pillar 3 requires breaking down silos that may exist within the organization. Moreover, a broad range of stakeholder expectations will need to be managed, coupled with an understanding of the broader issues that may not have been visible when each requirement is addressed individually.

## 6. Best Practices Observed in Our Survey

We have observed that some strategies adopted by the industry have led to a number of challenges for insurance companies in their efforts to implement Solvency II. In this section, Moody's Analytics highlights a set of best practices identified that may support successful implementation of Solvency II.

Exhibit 24. Best Practices identified in our survey sample



Source: Moody's Analytics

### 6.1 Define A Sound Data Strategy And Governance

In common with implementation of the Basel framework in the banking sector, data management is critical for the successful execution of such projects. Solvency II introduces an even greater emphasis on the management and quality of the data used.

Our survey finds that those insurers that have leveraged the regulation to define a data strategy have already started to yield benefits for their business, beyond regulatory compliance. Thanks to a sound data strategy these insurers have significantly improved:

- (1) the quality and timeliness of decision-making, and
- (2) the understanding of the business and the risks affecting the firm.

Moreover, the more advanced insurers have adopted a centralized approach to data quality management. This approach leverages technology to automate processes, and confers the advantages of complete, accurate, and transparent data for greater operational effectiveness and stronger risk-based decision making. This approach also provides a centralized analytical repository where the data is made available to the enterprise.

Key advantages of a central data warehouse include consistent single source of information, easier reconciliation, enhanced data security, reduction of errors, and more efficient and more comprehensive data audit capabilities.

These practices show that if addressed comprehensively, Solvency II represents a unique opportunity for insurers to go beyond compliance requirements and address technology and infrastructure deficiencies, areas that may need improvements and have not been addressed for a long time. We believe that those insurers who fail to maximize the opportunities conferred by the Solvency II framework will be placed at a notable disadvantage in their ability to demonstrate greater industry accountability.

## 6.2 Adopting Solutions To Automate Time-Consuming Activities

Our survey reveals that many insurers are still using highly manual processes. However, those insurers at the more advanced stage of Solvency II implementation have embraced automation as a key catalyst to meeting ongoing reporting requirements and concurrently running the business.

Increased automation enables these firms to perform calculations more frequently and reduce errors as a result of minimizing manual intervention. Insurers that have adopted automated solutions benefit from a robust production environment that sets the foundations for an enterprise risk management system and a central data warehouse. Evidence from our survey shows that automation is less resource-intensive and therefore beneficial to companies of all sizes, but particularly to those with limited human resources.

## 6.3 Optimizing Model Performance

Solvency II has introduced an even greater complexity to insurance risk and capital models. As a result, insurance companies have started to experience production-related challenges associated with running internal actuarial models on a regular basis in shorter timeframes as stipulated in the Solvency II guidelines.

To overcome this challenge, some tier 1 insurers have started to adopt alternative approaches in order to produce accurate results quickly and frequently without fully re-running their complex models. In particular, some of the more advanced firms are using high-performance computing grids or applying proxy solutions to optimize model performance while producing materially accurate results quickly and frequently.

One of these proxy solutions used by some of the more advanced firms is Least Square Monte Carlo modeling. This technique uses a proxy model to replace the revaluation of liabilities under thousands of 'real world' scenarios. This method requires less manual intervention than some of the alternatives (e.g., curve fitting techniques) and provides valuable economic insights about the interdependence of different risk drivers.

## 6.4 Influential Project Sponsor

Key changes introduced by Solvency II include the new governance rules and ultimate accountability by the board.

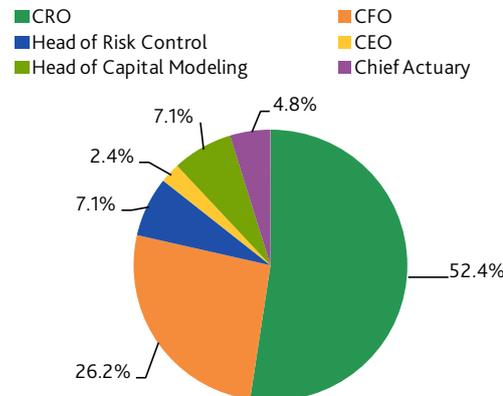
Our survey finds that those insurers at the more advanced stages of Solvency II implementation have appointed an effective project sponsor who has influenced the change and driven the organization's progress towards compliance. We believe that developing a similar approach would be particularly relevant for firms with a relatively underdeveloped risk management culture.

Moreover, the nature of the Solvency II project sponsorship greatly influences the strategy adopted to meet the regulatory requirements. Most of the participants in our survey (80%) indicated that their Solvency II projects were sponsored by a C-level executive. Despite that, some firms in our sample (20%) have not yet appointed a C-level manager to sponsor their Solvency II Program, and this may undermine their capacity to progress towards compliance.

Of our survey participants, 26% have appointed a CFO as Program sponsor. This sponsor has traditionally favored the combined Pillar 1 and Pillar 3 approach, with focus on disclosure and reporting.

More than half of the project sponsors in our survey sample were CROs (52%). However, the relative less progress on Pillar 2 may cast doubts about the influence of the CRO at insurance firms. Indeed, our survey finds that risk management is a relatively new function at many insurers (see exhibit 29). Therefore, our observations indicate that CROs have a key role to play in engaging with other senior managers and board members in order to strengthen the risk management within the organization.

Exhibit 25. Functions sponsoring the Solvency II Program (% of sample)



Source: Moody's Analytics

## 6.5 Embed Risk Appetite in Business Decision Making and Leverage Technology to Facilitate Communication and Develop Risk Culture

One of the key objectives of the Solvency II regime is to enhance and embed a risk management culture within insurance firms.

In our opinion those insurers that have chosen a rather superficial "tick-box" approach to address the requirements could fail to take advantage of this unique opportunity to embed enhanced risk management into their business practices.

In contrast, the largest insurers in our sample have embarked on organizational and cultural changes to facilitate the transition from the Solvency II program into "business as usual". Our survey has identified some actions taken by these firms in this direction – as described below:

1. They have adapted their organizational structure and governance to enhance transparency and flexibility, thereby supporting the use of model outputs in decision making.
2. They have defined training programs to make sure that their actuarial models and risk management capabilities are understood by the rest of the organization, and particularly by the Board.
3. They have created incentives to encourage teams to embed risk management systems across the organization.
4. They have adopted an effective communication strategy, making available to the enterprise constant and consistent information of their their risk strategy and practices.

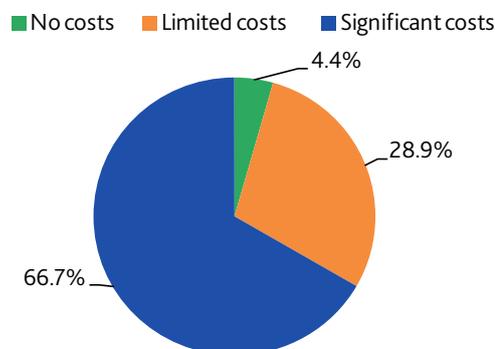
Moreover, our survey finds that those insurers at the more advanced stage of Solvency II implementation are using technology as a key catalyst to strengthen the firm's risk culture within the organization. These firms are building comprehensive risk management systems to provide senior management of the enterprise with real-time risk and capital evaluations. This information is already being used by these firms to make decisions on the level of their risk appetite, to analyze how the firm's risk and capital positions will behave under different scenarios, and to manage external parties' expectations, including regulators and the rating agencies.

## 7. Investment Made by the Industry is Starting to Yield Benefits

### Some tier 1 firms have already spent over €350 million on Solvency II compliance

It is already well known within the industry that Solvency II requires substantial investment for most insurers from both a financial cost and a human capital perspective. Indeed, when asked about the costs incurred, just over two thirds of the survey participants indicated that they have incurred significant costs, 29% of participants said they have incurred limited costs, and 4% have not yet incurred additional costs related to regulatory compliance.

Exhibit 26. Solvency II-related costs (% of sample)



Source: Moody's Analytics

The level of the investment carried out by insurers varies widely, depending on their size and also their approach to Pillar 1. Those reporting the highest investment expenditure include firms that have, to date, incurred preparatory costs of around €350 million. Our research suggests that the building of risk and capital models accounts for the bulk of these investments. Those reporting the lowest investment expenditure include smaller firms that have adopted a “tick-box” approach, thus without fully addressing data, modeling or infrastructure issues.

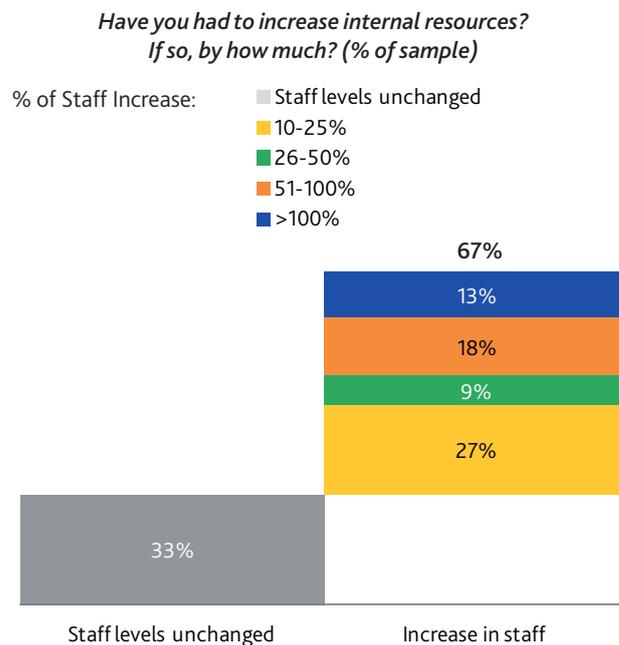
We note that investment levels vary by country: for example, overall companies in the UK and France in our sample have generally invested considerably more than those in Germany.

### Solvency II is a highly resource-intensive project for insurance companies

According to our findings, most insurers have had to hire additional permanent staff as well as contractors, and have worked with consultants or external experts to address their Solvency II requirements.

Our survey indicates that 67% of participants had to increase staff by at least 10% in order to address the Solvency II requirements, 27% of the survey sample reported a 10%-15% increase in staff levels. Of the total, 13% in our sample have doubled the size of their teams (primarily actuarial, capital modeling and risk management) as illustrated below.

Exhibit 27. Increase of internal resources due to Solvency II (% of sample)



Source: Moody's Analytics

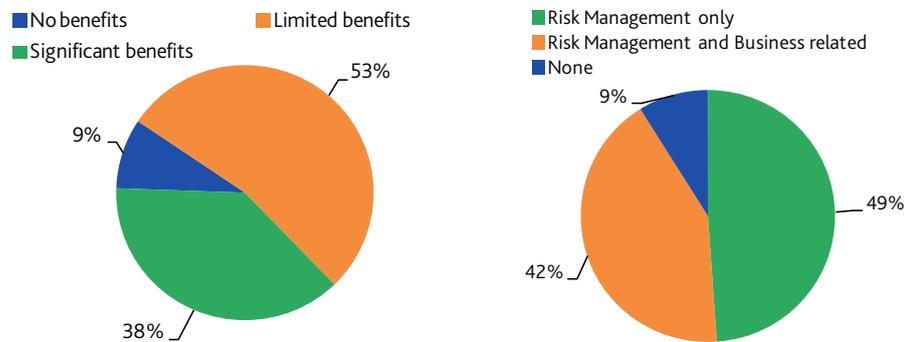
Two main factors behind this increase in permanent staff are (1) the shortage of resources across functions (risk management, accounting, actuarial, IT); and (2) the lack of skilled capabilities, particularly actuarial skills.

### The industry recognizes benefits of Solvency II

Our survey finds that Solvency II has brought benefits to the industry. We note that 38% of the survey participants indicated that they have already derived significant benefits; 53% indicated that, to date, they have derived only limited benefits, and 9% of the sample indicated they have not yet perceived any benefits.

Among those in our sample that have already realized benefits, 49% indicated that these benefits are risk-management related, while 42% of this sample indicated that they perceived both risk management and business benefits.

Exhibit 28. Perceived benefits from Solvency II (% of sample)

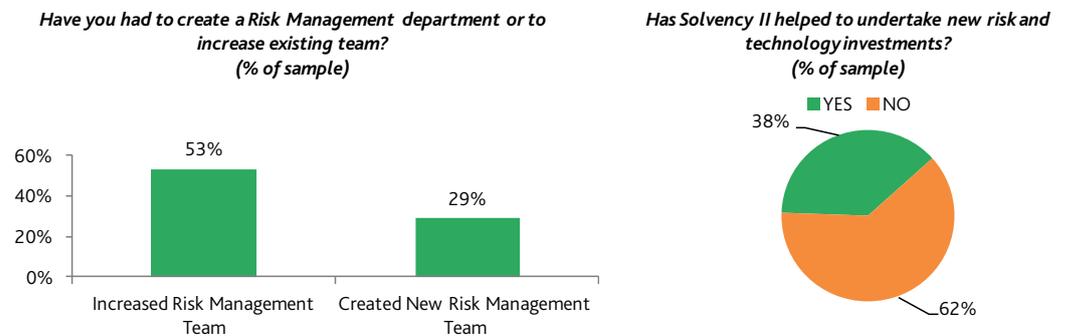


Source: Moody's Analytics

Our research suggests that the Solvency II project has enabled insurers to strengthen their risk organizations by enhancing risk management practices with additional resources, processes and tools. According to our survey, 53% of participants increased their risk management teams, and 29% established a new risk management department. Among a reduced survey sample of 30 companies, 24% of them hired a CRO.

Moreover, 38% of the total survey participants indicated that Solvency II was a key factor in helping to undertake new risk management and technology-related investments that would not otherwise be made.

Exhibit 29. Strengthening risk management capabilities (% of sample)



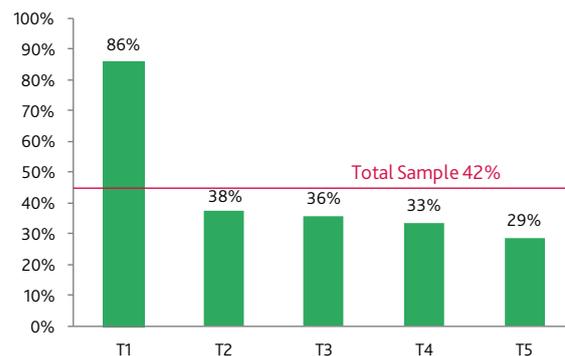
Source: Moody's Analytics

### Benefits are unevenly distributed among industry participants

Our survey indicates that the perceived business benefits from Solvency II is greater for tier 1 firms than those in lower tiers. As indicated above, the largest insurers in our sample are also at an advanced stage (in terms of processes and solutions) and have embarked on comparatively larger strategic investment programs. Consequently, our survey suggests that the tier 1 insurers are already reaping some benefits from their investments.

Notwithstanding the January 2016 compliance deadline, we believe that other tiers still have time to adapt their strategies in order to obtain commercial and operational benefits from their investments. Although the main priority for many firms is to meet the short-time deadline, in our opinion insurers will need to build solutions that are sufficiently flexible and scalable to address current and future requirements (both regulatory and business related). We believe that the wider benefits conferred by the Solvency II projects will be determined by insurers' ability to "future-proof" their enterprise risk management frameworks.

Exhibit 30. Percentage of survey sample that derives business benefits from Solvency II by tier



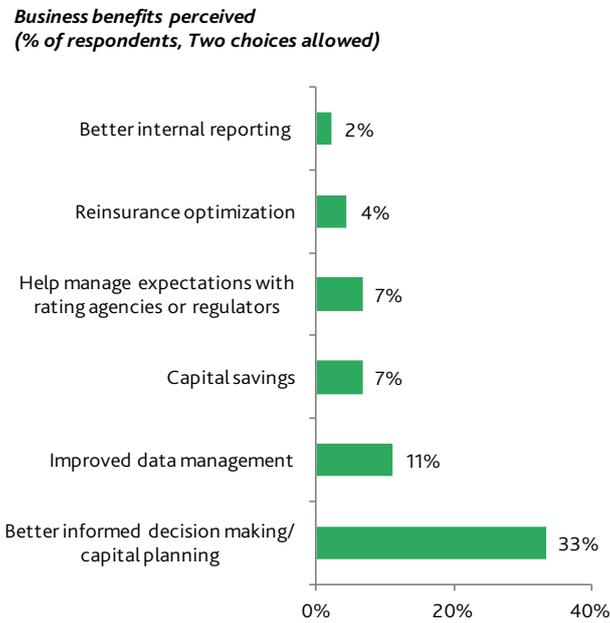
Source: Moody's Analytics

As indicated above, beyond risk-management-related gains, insurers recognize other business benefits of Solvency II – as summarized in the exhibit below. One third of the survey sample cited better informed decision making and capital planning as the main benefit. Other stated benefits include improvements in terms of: (1) data management (11% of survey participants); (2) capital savings (7% of survey participants); (3) managing expectations with third parties<sup>2</sup> (7% of survey participants); (4) reinsurance optimization (4% of survey participants); and (5) internal reporting (2% of survey participants).

As mentioned above, those firms that have adopted a long-term strategic approach and reviewed their processes, models and infrastructure, currently cite the benefits derived from timely and better quality information and insight that is used by senior management of the enterprise in their decision making.

<sup>2</sup> such as rating agencies and regulators

Exhibit 31. Perceived business benefits from Solvency II (% of sample)

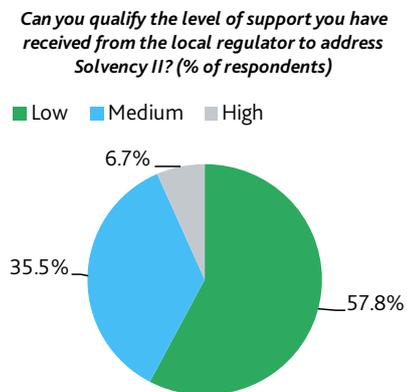


Source: Moody's Analytics

## 8. Half Of Survey Sample Claim Low Support Received From Local Regulators

According to our survey sample, local regulators have not been sufficiently supportive of insurers' efforts to implement Solvency II. Of the total survey sample, 57.8% qualified the level of support as "low", whilst 35.5% qualified it as "medium". Only 6.7% of the sample qualified the level of support received as "high".

Exhibit 32. Support received from the regulator (% of sample)



Source: Moody's Analytics

Most survey participants indicate that they have established a good dialogue with their local regulators. However, they would have desired more support in the following areas:

1. More help to understand the guidelines provided by EIOPA, which are perceived as "too vague"
2. More constructive feedback on their specific areas of improvement
3. Less complex and "less onerous" internal model approval process

According to the survey sample, the regulators appear to be facing a key challenge due to the limited skilled resources at their disposal to assist insurers in their Solvency II implementation projects. In fact 35% of our sample indicated that local regulators in their respective jurisdictions face issues to attract and retain skilled staff.

## 9. Conclusion

In our opinion, Solvency II offers insurers an opportunity to improve risk management, embed it within the culture of the organization and achieve a competitive advantage thanks to enhanced transparency and an integrated view of the firm's risk, capital and performance.

By jointly addressing the requirements, firms may go beyond regulatory compliance and enhance processes, models and infrastructure, thereby bringing business benefits to the enterprise. This approach entails embarking on investments aimed at addressing regulatory demands in an efficient manner and, at the same time, providing the information and insight that can be used by senior management of the enterprise. However, our survey finds that, to date, less than a third of the firms in our sample have taken this approach.

In contrast, 44% of our insurers in our survey have focused their efforts on Pillar 1 thereby de-prioritizing Pillar 3 (half of them have not yet fully addressed Pillar 3 requirements); and the remainder (27% of insurers in our sample) are addressing Solvency II as a rather superficial regulatory "tick-box" exercise, rather than as a fundamental review of the insurer risk management practices. These insurers have developed "quick fix" short-term tactical solutions in an effort to minimize their short-term costs.

Despite the tight deadline, we believe that these firms still have time to adapt their strategy and embrace Solvency II not as a mere compliance exercise, but as a catalyst that can confer tangible value to the business.

In our opinion, the industry will face sustained regulatory pressure and insurers will come under greater scrutiny due to the increased desire for financial stability in global markets. In this context, efficient risk management and disclosure will be key to maintain market and investor confidence.

Evidence drawn from our survey indicates that the industry has been challenged in its compliance efforts. Moreover, any failure to fully address these challenges could limit the future opportunities conferred by improved risk management capabilities and the value derived for the business.

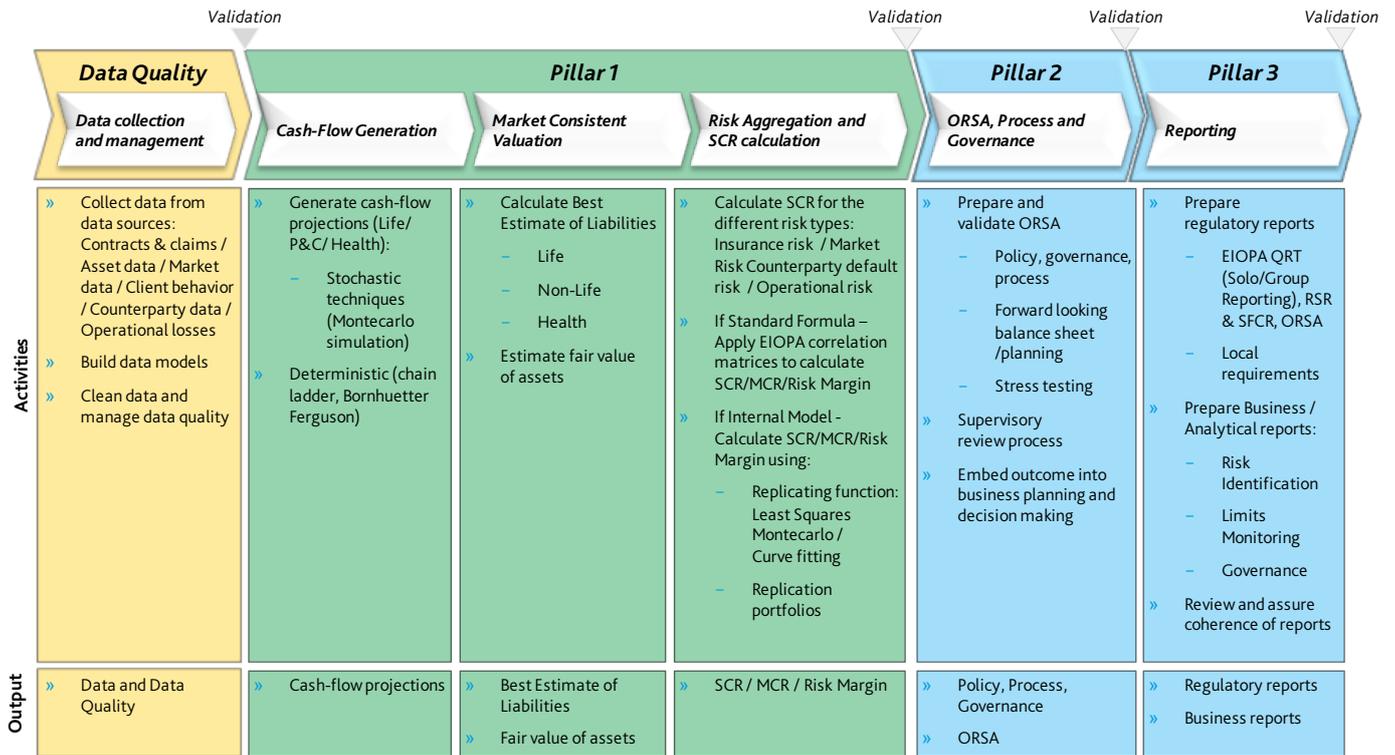
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## 10. Other Moody's Analytics publications

- » July 2013 - Analytical Data: How Insurers Can Improve Quality
- » May 24, 2013 - [ORSA and Multi-year Capital Projection](#)
- » April 25, 2013 - [Data governance best practice: smoothing the way for Solvency II](#)
- » April 10, 2013 - [Validation of risk factor modelling in 1-year VaR capital assessments](#)
- » February 2013 - [ORSA: Prospective Solvency Assessment and Capital Projection Modelling](#)
- » November 17, 2011 - [Meeting The Data Quality Management Challenges of Solvency II](#)
- » August 1, 2011 - [More Detailed, More Frequent and More Transparent Reporting – Implementing the Pillar 3 Requirements of Solvency II](#)

# 11. Appendix

Exhibit 33. Solvency II value chain



Source: Moody's Analytics







## Contact Us

Please contact us at [solvency2@moodys.com](mailto:solvency2@moodys.com) or directly at the contact details below. Alternatively, visit our website [www.moodysanalytics.com](http://www.moodysanalytics.com)

**Maria Cañamero**

Lead Strategist, Market Strategy  
[maria.canamero@moodys.com](mailto:maria.canamero@moodys.com)

**Brian Heale**

Senior Director, Business Development  
[brian.heale@moodys.com](mailto:brian.heale@moodys.com)

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