Session 106 WS, Controls Effectiveness and Process Optimization

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Session 106: Controls Effectiveness and Process Optimization
October 25, 2016
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Ashwini Vaidya, FSA, MAAA
Session 106:
Controls Effectiveness and Process Optimization
October 25, 2016
Introduction
What is a Control

• “Process, effected by an entity’s board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in effectiveness and efficiency of operations, reliability of financial reporting, and compliance with applicable laws and regulations.” (SOX - COSO)

• “Control activities are the policies and procedures that help ensure that management and the Appointed Actuary's directives are carried out.” (AuG 43)
Internal Control

Internal control is the coordination of the activities, plans, attitudes, policies, and efforts of the people of an organization working together to provide reasonable comfort that the organization will achieve its objectives and mission.

Adapted from: http://www.osc.state.ny.us/agencies/ictf/docs/intcontrol_stds.pdf
Risk vs. Controls

• What could go wrong?
  • Assess risks
  • Determine appropriate controls
    • Risk coverage
    • Fit to process and environment

• Compensating Controls
## Types of Internal Controls

<table>
<thead>
<tr>
<th>Level of Reliability (Effective)</th>
<th>Automated</th>
<th>Automated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detective</td>
<td>Manual</td>
<td>PREVENTIVE</td>
</tr>
<tr>
<td>PREVENTIVE</td>
<td>Manual</td>
<td>PREVENTIVE</td>
</tr>
</tbody>
</table>

Level of Economic Value (Efficient)
Objective of Internal Controls

• Completeness
• Accuracy
• Validity
• Restrictiveness
Controls! Why?!?

• To mitigate the risks that would keep an organization from achieving its goals
  • Makes business sense
  • Professional responsibility
Controls Effectiveness for Actuarial Valuation

Amit Palicha, FSA, MAAA
Deloitte Consulting LLP, August 2016
Contents

Scope and the Why 3
Advantages of Effective Controls 10
Typical Issues Faced in Implementing Effective Controls 12
How to Fix - an Illustrative Approach 14
Appendix – Bio Information 19
Scope and the Why
End-to-end Actuarial Valuation Process Flow and importance of having Effective Controls
Illustrative Process Flow

Effective controls impact how the overall process of a close-cycle in the Actuarial Valuation area is being worked with, how risks are being identified and mitigated, and how analysis and results are being documented/communicated.
The Need for effective controls

A variety of specific factors are increasing the requirements for effective actuarial controls. These factors don’t just include the current regulatory requirements, but also include several reasons for why effective controls are essential in the actuarial valuation area. Below are a few examples.

- Increasing Regulatory requirements
- Faster deliverables for reports and analysis
- Increasing Transparency and Oversight
- Defined Roles/Responsibilities and limiting key-person risk
- Effective Change management process
- Improved Communication and Documentation

Demand for Effective Controls has been on the rise
Stakeholders and the Need for having Effective controls

Below are some of the possible requirements, wants and circumstances of specific stakeholders groups that want companies to have Effective Controls.

**Regulators**
- Mitigation of material misstatements
- Want company to meet the solvency requirements
- Clear communication and documentation that supports results

**Senior Management**
- Faster deliverables for reports and analysis
- Effective change management process
- Increasing transparency and oversight
- Effective communication, defined roles & responsibilities and limiting key-person risk

**Analyst**
- Visibility into company operations/management for earnings predictability
- Overall growth of the company
- Higher profits

**Shareholders**
- Overall growth of the company
- Sustainability of the company
- Strong and predictable performance

**Policyholders**
- Fulfilment of intended benefits/payments
- Company solvency
- Flexible benefits

Effective Controls help increase Stakeholder satisfaction!
# Actuarial Processes

An effective control framework should cover many of the processes involving actuaries.

<table>
<thead>
<tr>
<th>Pricing and Product Development</th>
<th>Valuations and Projections</th>
<th>Experience Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidelines</td>
<td>Applies to:</td>
<td>• Methodology</td>
</tr>
<tr>
<td>Targets</td>
<td>– GAAP</td>
<td>• Production / Execution</td>
</tr>
<tr>
<td>Design and price product</td>
<td>– Statutory / Tax</td>
<td>• Analysis / Validation</td>
</tr>
<tr>
<td>Accept product and pricing</td>
<td>– Financial Plan</td>
<td></td>
</tr>
<tr>
<td>results</td>
<td>– Regulatory Projections</td>
<td></td>
</tr>
<tr>
<td>Compliance</td>
<td>• Methodology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Production / Execution</td>
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<tr>
<td></td>
<td>• Analysis / Validation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assumption Management</th>
<th>Model Management</th>
<th>Data Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodology</td>
<td>• Model governance</td>
<td>• Maintain / Store / Provide</td>
</tr>
<tr>
<td>Propose economic assumptions</td>
<td>• Model architecture</td>
<td>• Data quality validation execution</td>
</tr>
<tr>
<td>Propose policyholder assumptions</td>
<td>• Development and change</td>
<td>• Signoff</td>
</tr>
<tr>
<td>Propose expense assumptions</td>
<td>management of the model</td>
<td></td>
</tr>
<tr>
<td>Accept and set assumptions</td>
<td></td>
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</tbody>
</table>

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Over the years, there have been a number of regulations and guidance put in place to provide companies with guidance on Controls.
COSO high-level background on Internal Controls

- On May 2013, the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") issued its updated 2013 Internal Control-Integrated Framework ("2013 Framework"). The 2013 Framework retained the core definition of internal control and the five components of internal control, while updating to include enhancements and clarifications intended to ease use and application, including a breakout of the five components into 17 principles.

- The implications from COSO extend to Actuarial-related SOX controls.

### Control Components and Principles

<table>
<thead>
<tr>
<th>Control Environment</th>
<th>Risk Assessment</th>
<th>Control Activities</th>
<th>Information and Communication</th>
<th>Monitoring Activities</th>
</tr>
</thead>
</table>
| • Demonstrates commitment to integrity and ethical values | • Specifies suitable objectives  
• Identifies and analyses risk  
• Assesses fraud risk  
• Identifies and analyses significant change. | • Selects and develops control activities  
• Selects and develops general controls over technology  
• Deploys through policies and procedures | • Uses relevant information  
• Communicates internally  
• Communicates externally | • Conducts ongoing and/or separate evaluations  
• Evaluates and communicates deficiencies |
| • Exercises oversight responsibility  
• Establishes structure, authority, and responsibility  
• Demonstrates commitment to competence  
• Enforces accountability | | | | |

Source: [http://www.coso.org/ic.htm](http://www.coso.org/ic.htm)
Advantages of Effective Controls
Demonstrated Benefits
Specific Benefits to having Effective Controls

There can be numerous potential benefits for having effective internal controls, some of which are highlighted below. These benefits help lead to satisfied stakeholders!

- **Thresholds**
  - More effective and meaningful

- **Risk Identification**
  - Could expose specific risks
  - Alignment with controls

- **Spreadsheet/Database Risk Management**
  - Better management
  - Improve Change Management process

- **Control Performance**
  - Better risk mitigation
  - Increased focus on preventive (vs detective)

- **Better Documentation**
  - Increased Consistency between business lines (risk matrices, flowcharts & narratives)
  - Reduce key-person risk
  - Communication

- **Increased Control Automation**
  - Better handling of process changes
  - Increased confidence in results
  - More analysis time
  - More effective Change Management
Typical issues faced by companies

Common obstacles in implementing effective controls
Typical Issues faced
Specific reasons companies face in their current state of controls:

- **Cumbersome process**
  Perhaps due to multiple spreadsheets / access databases to update, data manipulation, bad data, etc.

- **Multiple modelling and valuation systems**
  Lack of uniformity in treatment of control design/testing

- **Lack of effective communication and data ownership issues**
  Between actuarial and data-providers (IT, Accounting, Investments, etc.)

- **Documentation not robust**
  Ineffective flowcharts, narratives, risk matrices

- **Lack of time**
  Priorities and keeping up with current state

- **How controls were initially set up**
  No focus on consistency, thresholds, lack of automation or effective change management

- **Downstream controls**
  Too much focus on detective controls

- **Lack of understanding of controls**
  Relationship with accounting team and lack of general understanding of controls

A careful review of current state controls is the first step to effective remediation
How to Fix

Illustrative Approach
Illustrative Approach
Below is an example of a sample approach used to improve controls effectiveness and also identify and optimize processes.

1. Existing Control & Documentation Evaluation
   - Scoping: Financial Statements to understand keys risk/focus areas
   - Shadowing: Valuation team members to interview and document actual steps taken
   - Documenting: New or modified flowcharts, narratives, and other risk documentation
   - Identifying: Risks on control documentation, categorize risk rankings and identify gaps

2. Control Design & Implementation
   - Finalizing: Control design to mitigate risks identified
   - Implementation: New controls or modification of existing controls (within spreadsheets, access databases, etc.)
   - Testing: Modified/new controls and updating of documentation
   - Scoping: Process improvement opportunities

3. Process Optimization
   - Finalizing: Process improvement opportunities (by specific lines of business and specific balances)
   - Implementing: Process improvement for sections identified
   - Testing: New process to determine accuracy to ensure new process is working as intended

Illustrative Project Flow

- Shadowing
- Risk and Current State Documentation
- Risk Identification and Initial Control Design
- Finalize Control Design
- Controls Enhancements
- Testing of Controls
- Scoping Out Process Improvement Opportunities
- Implement Process Improvement
- New Processes Testing
Potential Process Optimization Categories

With an in-depth review of current controls in place, processes and the effectiveness of those controls for underlying risks may result in identification of specific areas that require process improvement. Below are a few examples.

- Consolidate Controls
  - Too many duplicative controls across processes for same risk
  -Limited focus on detective controls

- Materiality
  - Processes that feed a 0 or an immaterial ledger balance

- Reduce Data Manipulation
  - More manual data manipulation can lead to more risks
  - Number of people touching the same excel or access database file(s) (and/or at various points in the close cycle)

- Consolidate Models
  - Multiple software platforms and/or stand-alone models
  - Overall Governance complications and Change management

- Consistency & Document Quality
  - Inconsistent and/or sub-standard documentation between lines of businesses
  - Heavy reliance on key-person(s)
Sample Deliverables

- **Process Documentation (Flowchart)**

- **Risk/Control Templates**

- **SOX Controls**

- **Risk Matrix**

- **Spreadsheet Inventory**

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## Illustrative Risk Assessment Results

<table>
<thead>
<tr>
<th>Valuation Process</th>
<th>Products Reviewed&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Specific Risks Identified&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Mitigated&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Control Gaps&lt;sup&gt;4&lt;/sup&gt;</th>
<th>Specific Observations&lt;sup&gt;5&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Life Valuation</td>
<td>2</td>
<td>40</td>
<td>36</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Universal Life Valuation</td>
<td>4</td>
<td>60</td>
<td>58</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Deferred Annuity Valuation</td>
<td>3</td>
<td>50</td>
<td>43</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>Payout Annuity Valuation</td>
<td>2</td>
<td>40</td>
<td>40</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>190</strong></td>
<td><strong>177</strong></td>
<td><strong>13</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

1 – Corresponds to the number of products included within the respective valuation process
2 – Represents the number of specific underlying risks identified within the respective valuation process
3 – Represents the number of risks that are currently mitigated by existing controls
4 – Represents the number of material risks not currently mitigated by existing control procedures
5 – Represents the number of risks for which one or more elements of control design could be improved for effectiveness in order to better mitigate specific material underlying financial statement risks
Appendix
Speaker bios
Amit is a Manager in Deloitte’s Actuarial, Risk and Analytics practice and is based in New York. He has over 12 years of actuarial experience in the financial services industry at large insurance companies. Prior to joining Deloitte, Amit was in the industry where he was worked in the annuity product development area to integrate and improve specific business processes between the Actuarial and the IT department. At Deloitte, Amit has effectively managed major audit accounts for US and International blocks of businesses covering both Life and Annuity insurance products. Amit has been recruited on consulting engagements in insurance companies over the past few years for his experience in process improvement, controls effectiveness and financial reporting for GAAP and STAT. Amit has helped multiple clients in identifying underlying risks in the actuarial valuation area and designing controls to help mitigate those risks. He works closely with accounting and IT practitioners to help clients improve the overall process.
Controls Effectiveness and Process Optimization: Example

#106WS - Society of Actuaries Annual Meeting
Sandra To, VP and Deputy Chief Reserving Actuary
October 2016
Multiple Platforms, Processes & Production Runs

Platform 1
- Development process
- Model for Stat
- Production Runs

Platform 2
- Development process
- Model for IFRS/US GAAP/SII
- Production Runs

Platform 3
- Development process
- Master model
- Production Runs

Local Office 1
- Admin Platform 1

Local Office 2
- Admin Platform 2
- Admin Platform 3
- Admin Platform 4
- Admin Platform 5, etc.

Platforms 1, 2, 3:
- IFRS Excess Retro 1
- IFRS Assumed 1
- Statutory Excess Retro 1
- Statutory Assumed 1

Platforms 2, 3, 4:
- IFRS Excess Retro 2
- IFRS Assumed 2
- Statutory Excess Retro 2
- Statutory Assumed 2

Platforms 3, 4, 5:
- US GAAP
- MCEV/SII
- TPA
- Companies Act IFRS for Offshore
Vision: One Platform

• Consolidate administrative and reserving processes of all US business on common platform to achieve:
  • More controlled and automated processes
  • Modeling consistency
  • Timely, reliable financial & management reporting from single, high-quality data source
  • Greater transparency and oversight for improved audit/regulatory controls
  • Reduced IT support costs and retire aging administration systems
  • Front-end to back-end system with documents connected to applications
Considerations

- Spanning multiple departments and functions
  - Data
  - IT
  - Valuations
  - Modeling
  - Sales
  - Operations
  - Legal
  - Pricing
  - Experience Studies
  - Finance

- Increasing regulatory requirements
  - PBR
  - Solvency II
  - AG48
  - IFRS4

- Accelerated valuation close schedules
Challenges

• Tight timelines
• Limited resources
• Scope-creep
• Multiple processes and software tools - and their champions in multiple locations
• Prioritizing gaps from gap analysis with multiple stakeholders
• Unknowns found during business acceptance testing
• Historical processes with limited/outdated documentation
• Change management
Lessons Learned & Hurdles Cleared

• Not for the faint of heart
  • 24,000 man-days involving 140 resources over two years
  • 23 legacy systems converted to one administrative platform
  • 398 client files associated with 108 companies transformed
  • 16M cessions and 1.1B rows of data migrated
• End-to-end reinsurance system had to be integrated with parent company’s back office system
• Data feeds and processes from one office had to be migrated into the processes of the other office
• Company changed financial ledger systems in the middle of the project
• Communicate often – to team, to stakeholders outside team, to senior leaders, to corporate office, to general employee population
Achievements

• Ability to show appropriate levels of granularity
• Automated/eliminated manual adjustments
• Reduced actuarial model run time
  • Limiting input and/or output variables required
  • Reviewing complexity of coding through model – avoid nested structures or complex formulas
  • Allowing multiple basis with different sets of assumptions to be produced in one run
• Improved data quality, including data cleansing and warehousing
  • Providing metrics for business management and decision making
Q&A