Capital requirements for health insurers

An international perspective.

Carolina Cristina Castro
Eduardo Mellinsky
Kevin Manning
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Agenda

• Introduction
• Case Study 1: Capital requirements and the role of the actuary in four South American countries
• Case Study 2: Capital requirements in the European Union
• Concluding remarks
Introduction
Introductions

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Kevin is a Principal and Consulting Actuary at Milliman, based in Dublin. He is currently Head of Actuarial Function for an International Private Medical Insurer and is a Board member of the IAAHS.
Health risk capital and risk management project team

IAAHS Project Teams

- Comparative Health Systems
- Health Risk Capital and Risk Management
- Risk Adjustment
- Digital Solutions for Health
- Medical Expenses
- Covid-19
Case Study 1: South America

Role of actuaries in private health insurance: general frameworks and some examples in a sample of countries: Argentina, Brazil, Chile and Colombia.
Argentina

Source: International Health Care Funding Report 2020
Argentina

Supervisory Authority

Superintendencia de Servicios de Salud (SSS)
(https://www.argentina.gob.ar/sssalud)

Capital and solvency requirements

Technical liabilities and minimum capital requirements are not determined by regulation. Different types of corporation have different minimum capital requirements, but not related to health insurance.
Argentina

Restrictions on premium level

Percentual increases on premium level are specified by supervisory authority.

19% of the population has this type of health coverage, in several cases, combined with another such as Trade Union OS.

<table>
<thead>
<tr>
<th>Component</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor cost</td>
<td>54,50%</td>
</tr>
<tr>
<td>Medical supplies</td>
<td>22,70%</td>
</tr>
<tr>
<td>Non medical supplies</td>
<td>10,90%</td>
</tr>
<tr>
<td>Utilities</td>
<td>5,29%</td>
</tr>
<tr>
<td>Investment</td>
<td>6,61%</td>
</tr>
</tbody>
</table>

Total cost components nov-20. Source: SSSalud – “Informe de aumento de costos”

% increments in premium level vs. Inflation. Source: CA.DI.ME. report - June 2021
Brazil

Supervisory Authority

Agência Nacional de Saúde Suplementar (ANS)


Capital and solvency requirements

The higher between base capital and solvency margin (based on premiums and losses). As of January 2023: the greater between base capital and a risk-based capital (subscription, credit, market, legal, operational).
Brazil

Technical Liabilities
Provisão de Prêmios Não Ganhos, Provisão de Insuficiência de Prêmios,
Provisão de Eventos/Sinistros a Liquidar, Provisão de Eventos Ocorridos e Não
Avisados.

Risk management requirements
Specified, should be monitored and reported periodically to ANS.
Brazil

Passivo

Companhia de Assistência à Saúde da Vale (CasaVale)

23 - PASSIVO IMÓVEL
R$28.497.763,53

24 - PASSIVO CONTINGENTE
R$1.685.923,16

25 - PASSIVO DE OPERAÇÕES DE OPERAÇÕES DE ASSISTÊNCIA À SAÚDE
R$3.383.783,68

26 - PASSIVO DE OUTRAS ATIVIDADES DE ASSISTÊNCIA À SAÚDE
R$2.034.073,10
Chile

Source: International Health Care Funding Report 2020
Chile

Supervisory Authority
Superintendencia de Salud
(http://www.supersalud.gob.cl/)

Risk management requirements
There are guidelines regarding risk management process and its supervision, which includes: operational risk, technical risk (includes subscription risk), group risk, financial risk (credit, market, liquidity).
Chile

Capital and solvency requirements

There is a minimum capital to enter or remain in the market. During the life of the ISAPRE, it should equal to 30% of liabilities, or minimum capital, the greatest.

Liabilities

Warranty fund constituted by technical provisions (prestaciones por pagar, prestaciones en proceso de liquidación, prestaciones ocurridas y no reportadas, prestaciones en litigio, excedentes de cotizaciones, prestaciones ocurridas, reportadas y no valorizadas).

50% of it should be backed by certain assets specified by regulation. There are regulations about concentration of assets by its issuer.
<table>
<thead>
<tr>
<th>Cuentas</th>
<th>Colmena Golden Cross</th>
<th>Cruz Blanca</th>
<th>Vida Tres</th>
<th>Nueva Masviva</th>
<th>Banmédica</th>
<th>Consalud</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotización Legal (7%)</td>
<td>451.238.249</td>
<td>594.215.947</td>
<td>94.409.095</td>
<td>213.450.539</td>
<td>402.507.427</td>
<td>396.706.744</td>
<td>2.152.528.001</td>
</tr>
<tr>
<td>Cotización Adicional Voluntaria</td>
<td>227.558.728</td>
<td>91.701.416</td>
<td>86.705.030</td>
<td>67.050.803</td>
<td>223.519.518</td>
<td>191.948.926</td>
<td>888.484.421</td>
</tr>
<tr>
<td>Ingresos por Fondo de Compensación</td>
<td>0</td>
<td>0</td>
<td>1.052.890</td>
<td>0</td>
<td>1.212.446</td>
<td>259.213</td>
<td>2.524.549</td>
</tr>
<tr>
<td>Otros</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total ingresos de actividades ordinarias</strong></td>
<td>678.969.540</td>
<td>686.450.685</td>
<td>182.179.565</td>
<td>284.526.890</td>
<td>627.667.990</td>
<td>589.850.539</td>
<td>3.049.645.209</td>
</tr>
<tr>
<td>Costos por Prestaciones de Salud</td>
<td>384.920.631</td>
<td>403.469.442</td>
<td>115.369.738</td>
<td>144.218.785</td>
<td>362.168.887</td>
<td>349.776.631</td>
<td>1.759.924.114</td>
</tr>
<tr>
<td>Prestaciones en Litigio</td>
<td>432.348</td>
<td>459.790</td>
<td>119.342</td>
<td>308.299</td>
<td>837.713</td>
<td>2.813.058</td>
<td>4.970.550</td>
</tr>
<tr>
<td>Egresos por Fondo de Compensación</td>
<td>554.038</td>
<td>559.330</td>
<td>0</td>
<td>1.310.698</td>
<td>0</td>
<td>0</td>
<td>2.424.066</td>
</tr>
<tr>
<td>Otros Costos de Operación</td>
<td>-1.645.423</td>
<td>2.864.550</td>
<td>172.302</td>
<td>0</td>
<td>543.144</td>
<td>0</td>
<td>1.934.573</td>
</tr>
<tr>
<td><strong>Total costo de ventas</strong></td>
<td>562.883.465</td>
<td>608.820.442</td>
<td>145.412.100</td>
<td>229.394.251</td>
<td>536.270.315</td>
<td>520.057.181</td>
<td>2.602.837.754</td>
</tr>
<tr>
<td>Gastos de administración y otros gastos por función</td>
<td>1.185.735</td>
<td>1.280.335</td>
<td>368.262</td>
<td>66.720</td>
<td>1.412.066</td>
<td>1.140.534</td>
<td>5.453.652</td>
</tr>
<tr>
<td>Publicidad</td>
<td>1.080.699</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.702.841</td>
<td>2.783.340</td>
<td>42.144</td>
</tr>
<tr>
<td>Deterioro por Deudores de Cotizaciones</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>42.144</td>
</tr>
<tr>
<td>Otros</td>
<td>80.382.027</td>
<td>80.286.103</td>
<td>16.951.585</td>
<td>40.052.883</td>
<td>73.206.723</td>
<td>68.048.984</td>
<td>358.928.305</td>
</tr>
</tbody>
</table>

Fuente: Superintendencia de Salud, Ficha Económica Financiera de Isapres al 31/12/2020
Colombia's health system is made up of a social security sector and a private sector. The backbone of the system is the General Social Security Health System, which has two plans, contributory and subsidized; workers from certain institutions (5.4%) are covered by a third plan.

*at 12/31/2019, 12.5% of Salary - 8.5% Employer, 4.0% Employee

Source: International Health Care Funding Report 2020
Colombia

Supervisory Authority
Superintendencia Nacional de Salud
(https://www.supersalud.gov.co/es-co/)

Risk management requirements
There are guidelines regarding risk management process and its supervision, which includes health, actuarial, credit, liquidity, market, operational, health market failures, group, reputational and money laundering risks.
Colombia

Technical liabilities, capital and solvency requirements

HPI: Minimum capital and additional capital depending on the regime or plan. Technical net worth (8% of operational income of last 12 months), proportional to the relationship between health expenditure and reinsurance. Or risk based capital (actuarial, credit and market risk). Technical liabilities: known obligations liability, unknown obligations liability, among others (Chain Ladder, minimum three years)

PHI: Minimum capital depending on the number of users. Legal reserve as a percentage of capital.
Role of actuaries

- Regulations differ (in some points, vastly) among countries. In some, actuarial function is clearly defined.

- Similarities: actuarial role is mainly focused on premium calculations, fulfillment of risk management requirements, technical liabilities and solvency requirements.

- Some of this countries have a clearly defined role of the actuary in supervision of the private health system, while others do not. This is an opportunity for improvement.
Case Study 2: European Union

A review of the capital requirements under Solvency II
Introduction to Solvency II

Framework for prudential supervision of insurance

- Enforced from 1 January 2016
- EU-wide
- Some changes since introduction and more changes to come

Solvency II regulations cover entire insurance industry

- Life & non-life
- Direct writers & reinsurers (including captives)
- Some exclusions
Objectives of Solvency II

European Commission’s original stated aims for Solvency II

- A framework for insurance supervision
- Risk-based and not solely on ‘quantitative’ aspects
- Incentivise good risk management
- Provide supervisors with appropriate tools to assess overall solvency position
- Promote harmonisation across the EU
- Better supervision of groups
- More adaptable to future changes
- Consistent with emerging international developments
Three pillar approach

- **PILLAR I**: Measurement of Assets, Liabilities and Capital
  - Eligible capital
  - Technical provisions
  - Capital requirements
  - Asset & liability valuation

- **PILLAR II**: Supervisory Review Process
  - Corporate governance
  - Internal control
  - Risk management
  - ORSA

- **PILLAR III**: Market Discipline
  - Public disclosure
  - Supervisory reporting

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Capital Requirements for health insurers - 29 June 2021
### Solvency II Balance Sheet

**Total Assets**
- At market value

**Other Liabilities**
- Risk Margin
- Best Estimate Liability
- Other Liabilities

**Free Capital**
- Minimum Capital Requirement
- SCR

**Solvency Capital Requirement**
- Confidence level of 99.5% over 1 year

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**Capital Requirements for health insurers - 29 June 2021**
Minimum Capital Requirement (MCR)

• Below this level policyholders exposed to unacceptable level of risk
  – Ultimate supervisory action triggered

• Calculated quarterly and reported
  – Subject to a corridor of 25-45% of the SCR
  – Subject to a minimum floor of €1.2m to €3.7m depending on business written – Typically €2.5m for health insurers

• 3 months to restore MCR if breached
Solvency Capital Requirement (SCR)

- The SCR is calculated by applying a set of instantaneous shocks to the balance sheet:
  - The SCR is the sum of the impacts of each shock to the balance sheet
  - With an allowance for diversification

- May derive SCR from a standard formula approach, or use an internal model or partial internal model

- 6 months to restore SCR if breached
Pillar 1
SCR – Standard Formula – Modular design

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Pillar 1
SCR – zooming in on the health components
Pillar 1
SCR – SLT health Very high level summary.

- Mortality shock: +15% mortality rates
- Longevity shock: -20% mortality rates
- Disability / morbidity: Medical expenses ±5% and ±1 percentage point in inflation rate.
- Income Protection: shocks to morbidity rates and recovery rates
- 10% increase in expenses and 1 percentage point increase in expense inflation
- Lapse scenario is the biggest impact from a 50% increase or decrease in lapse rates or a 40% mass lapse.
Pillar 1
SCR – Non-SLT health Very high level summary.

**Premium Reserve**
- Factor x Volume Measure approach
- Volume measure for reserves is broadly the outstanding claims provision
- Factor for reserves is c. 17.1%
- Volume measure for premiums: higher of the Earned Premiums in the last year and expected in the next year (plus allowance for future premiums beyond that date if relevant)
- Factor is broadly 15%, but some reduction for diversification.

**Lapse**
- Loss in own funds where 40% of “profitable” policies lapse
Health Catastrophe Risk - SCR

• For most health insurers (ignoring workers compensation) there are two components:
  – Mass Accident
  – Pandemic

• Mass Accident component
  – Uses pre-defined country by country factors to estimate a Loss in each country arising from a mass accident event

• Pandemic component
  – Differentiates between costs of hospitalisation and costs of medical consultation
  – Pre-defined assumed proportions of population requiring each

• Aggregated into overall health CAT component.
Additional comments – health underwriting risk SCR

• Reinsurance:
  – Quota share reinsurance reduces the volume measure, hence the SCR

• Undertaking Specific Parameters
  – Possible, with regulatory approval, to use your own factors for premium and / or reserve risk

• Risk Equalisation
  – Capital requirements reduce if there is a risk equalisation scheme in place that meets a number of conditions (**TL/DR – you need to be Dutch**)
# Health Underwriting SCR in numbers

<table>
<thead>
<tr>
<th>Insurer</th>
<th>Country</th>
<th>SCR as % of Earned Premiums</th>
<th>Health SCR % of Earned Premiums</th>
<th>Health SCR as % of Total SCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHI</td>
<td>Ireland</td>
<td>23%</td>
<td>19%</td>
<td>82%</td>
</tr>
<tr>
<td>Bupa Insurance</td>
<td>UK</td>
<td>12%</td>
<td>8%</td>
<td>67%</td>
</tr>
<tr>
<td>Menzis Zorgverzekeraar</td>
<td>Netherlands</td>
<td>15%</td>
<td>11%</td>
<td>74%</td>
</tr>
<tr>
<td>Mutuelle MGEN</td>
<td>France</td>
<td>41%</td>
<td>26%</td>
<td>64%</td>
</tr>
</tbody>
</table>

Source: Analysis of end 2020 Solvency and Financial Condition Reports published on company websites
Concluding remarks
Health Risk Capital and Risk Management

Ambition:

• Expand our coverage
• Deepen our understanding
• Provide actuaries with insights and practical supports
• Identify value adds:
  – Role of the actuary in health risk capital and risk management
  – Emerging risks for health insurers
  – ORSA, Risk Management Frameworks, Risk Appetite

Requirement:

• Volunteers to get involved: kevinv.manning@milliman.com or juan.laverde@actuaries.org
Appendix
Sources and additional information

• ANS: Resolução Normativa Nº 443 de 25 de janeiro de 2019. Available at: http://www.ans.gov.br/component/legislacao/?view=legislacao&task=TextoLei&format=raw&id=MzY3MQ==
• ANS: Resolução Normativa Nº 451 de 06 de março de 2020. Available at: http://www.ans.gov.br/component/legislacao/?view=legislacao&task=TextoLei&format=raw&id=Mzg2MA==
• ANS: Painel Contábil da Saúde Suplementar: https://app.powerbi.com/view?r=eyJrIjoiNTcxYTQwNDEtOWM3Ny00YmI2LWE4NTktODJhYzZhN2NlYzMiIiwidCI6IjlkYmE0ODBjLTRmYTctNDJmNC1iYmEzLTBmYjEzZTQzYWZmYzMiJ9
• Chile: Decreto con Fuerza de Ley 1 de 2005. Available at: https://www.supersalud.gob.cl/normativa/668/articles-2621_recurso_1.pdf
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- Superintendencia de Salud (Chile): Estadísticas financieras de las ISAPRES a marzo de 2021. Available at: https://www.supersalud.gob.cl/documentacion/666/w3-article-20185.html
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• Superintendencia Nacional de Salud: Circular Externa 013 de 2020. Available at:
  https://docs.supersalud.gov.co/PortalWeb/Juridica/CircularesExterna/CIRCULAR%20EXTERNA%20013%20DE%202020.pdf

• Superintendencia Nacional de Salud: financial information. Available at:

Sources and additional information

- Solvency II rulebook available at: https://www.eiopa.europa.eu/rulebook_en


Thank you