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Treasury

Crown Asset Liability Model

RISK NZ

JLT

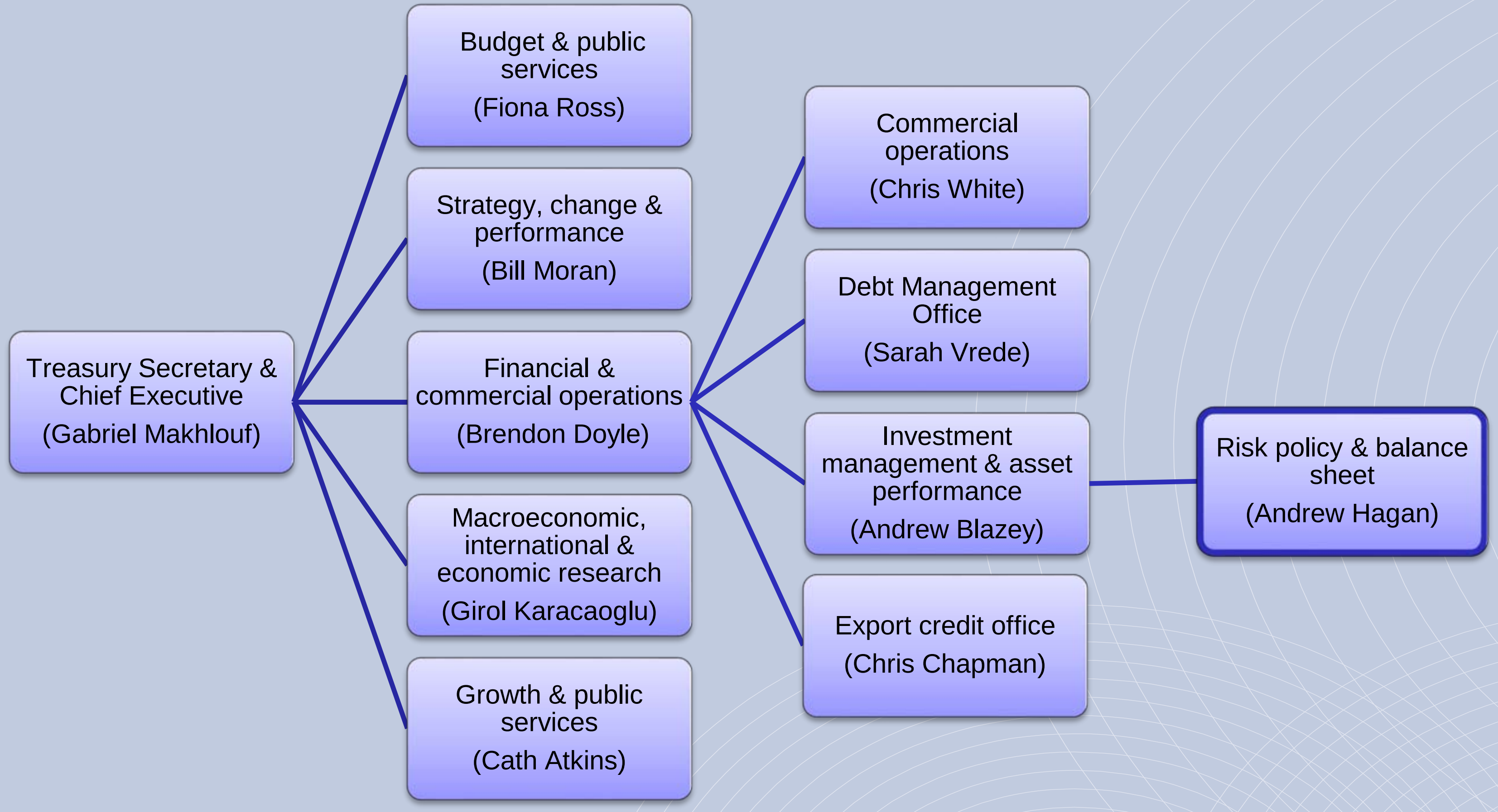
THE TREASURY

Kaitohutohu Kaupapa Rawa

Crown Asset & Liability Management

October 2015

Treasury organisation



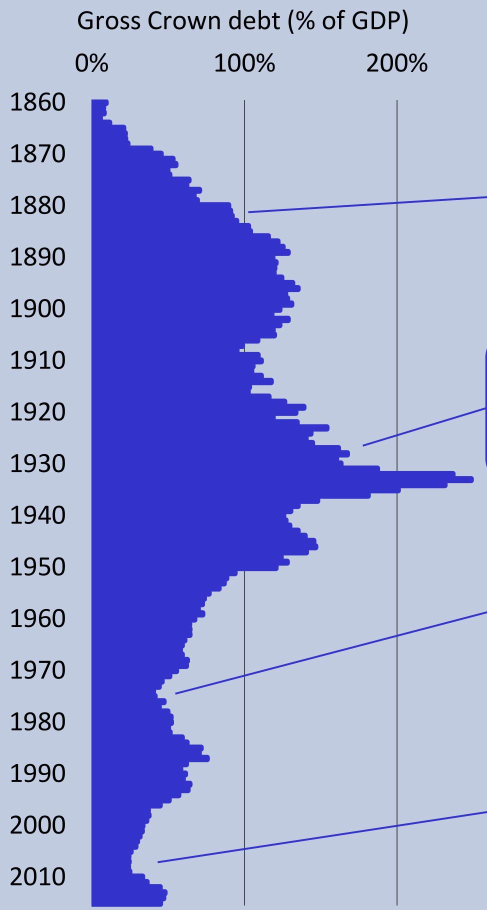
What is CALM?

Crown Asset & Liability Management (CALM) is about

- ensuring that capital and debt buffers are appropriate to the risks being borne,
- making the Government's balance sheet more resilient in the face of risk events, and
- avoiding the need for post-risk-event spending cuts or tax increases.

Why manage balance sheet risk?

Historical risk events and the Crown's capacity to finance them



In the 1870s, colonial treasurer Julius Vogel encouraged the development of the New Zealand economy by building infrastructure. Farms were opened up, financed by debt raised on the London market. In 1878, however, the City Bank of Glasgow failed, triggering a credit contraction and the **long depression of the 1880s**. Defaulting farm loans led to the first bailout of the Bank of New Zealand whilst levy income to the Crown fell. Crown debt per capita rose from £30 in 1870 to £60 in 1896.

During the boom times of the 1920s, the New Zealand Government accumulated debt, to such a point that when **the great depression of 1929 - 1934: and the Hawkes Bay earthquake of 1931 hit**, orthodox fiscal responses were limited**.** Gross debt levels rose from 168% of GDP in 1929 to 248% in 1933.

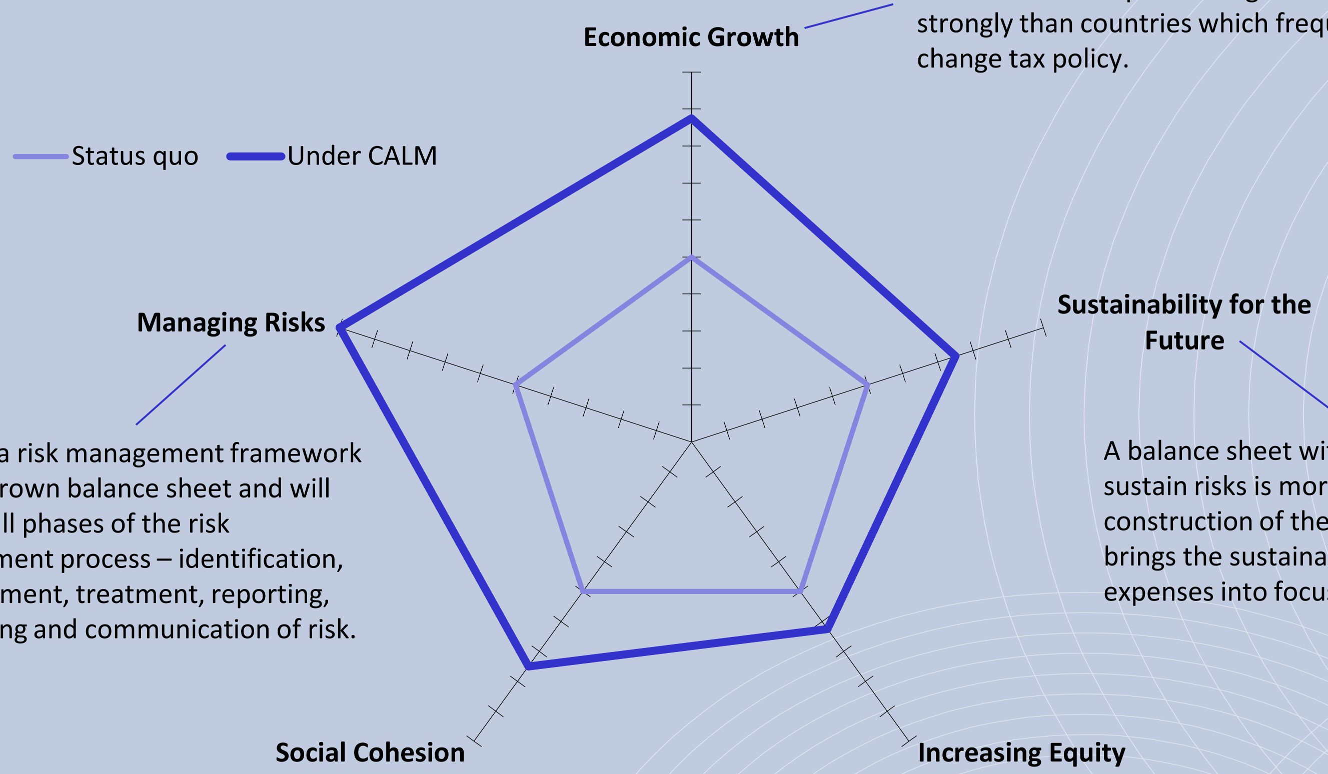
1970s Oil Crises & UK accession to EEC. The price of a barrel of oil increased from about US$3 in 1972 to US$34 following the Iranian revolution in 1979. Concurrently, the UK's share of New Zealand's exports fell from 31% in 1972 to 11% in 1984 as a consequence of the UK's 1973 accession to the European Economic Community. Crown net debt deteriorated from 5.8% of GDP in March 1972 to 38.4% of GDP in March 1985.

The Global Financial Crisis of 2008-09 & Canterbury earthquake sequence of 2010-11 led to a deterioration in net debt from 5.5% to 26.3% of GDP from 2008 to 2013. This was due to a reduced tax-take, increased welfare payments, the introduction of government guarantees and the direct costs of responding to the earthquakes.

Why manage balance sheet risk? #2

Impact on living standards

Countries with stable and optimal levels of taxation are expected to grow more strongly than countries which frequently change tax policy.



CALM is a risk management framework for the Crown balance sheet and will include all phases of the risk management process – identification, measurement, treatment, reporting, monitoring and communication of risk.

A balance sheet with sufficient capital to sustain risks is more sustainable. Also, construction of the fiscal balance sheet brings the sustainability of income and expenses into focus.

A more stable fiscal outlook promotes more predictable interactions between citizens and government, stabilising funding streams for social activities

CALM will help the government retain the fiscal capacity to help those how need it most in the wake of a risk event.

CALM Purpose & Benefits

Purpose

CALM aims to enable governments to understand and manage risks that have a material financial impact on the Crown, thereby increasing the Crown's resilience in the face of uncertainty.

The Government Reporting Unit

Core Crown
- Government departments and ministries
- CEOs report directly to ministers
- CEOs employed by SSC
- Single legal entity
- Can be directed by cabinet

Crown Financial Institutions
- Insurance companies (ACC, EQC)
- Pension funds (NZSF, GSF)
- Liquidity managers (RBNZ, DMO)
- Governed by boards
- Varying degrees of independence

State Enterprises
- Majority stakes, e.g. power companies, Air NZ
- Wholly-owned e.g. TVNZ, Radio NZ
- Governed by commercial boards
- Independent of Government

Crown Entities & Schedule 4
- Semi-autonomous, quasi-regulatory bodies
- e.g. CRIs, Tertiary Education, Fish & Game councils, trusts
- Governed by boards
- Largely independent of Government

Identifying risk & exposure

Identification

CALM will establish a register of material risks by
- Reviewing risk information in Agency risk reports and annual reports
- Taking a top-down view based on standard risk checklists

Some additional information will need to be requested from Agencies to support risk analysis, for example:
- Information about the cash flows and contingencies underlying derivative contracts.
- Valuation models used for material assets & liabilities.

We are interested in risks that may have a *material* impact on the Crown's *comprehensive net worth* (CNW). CNW allows us to capture economic and contingent risks in a consistent framework.

Exposure

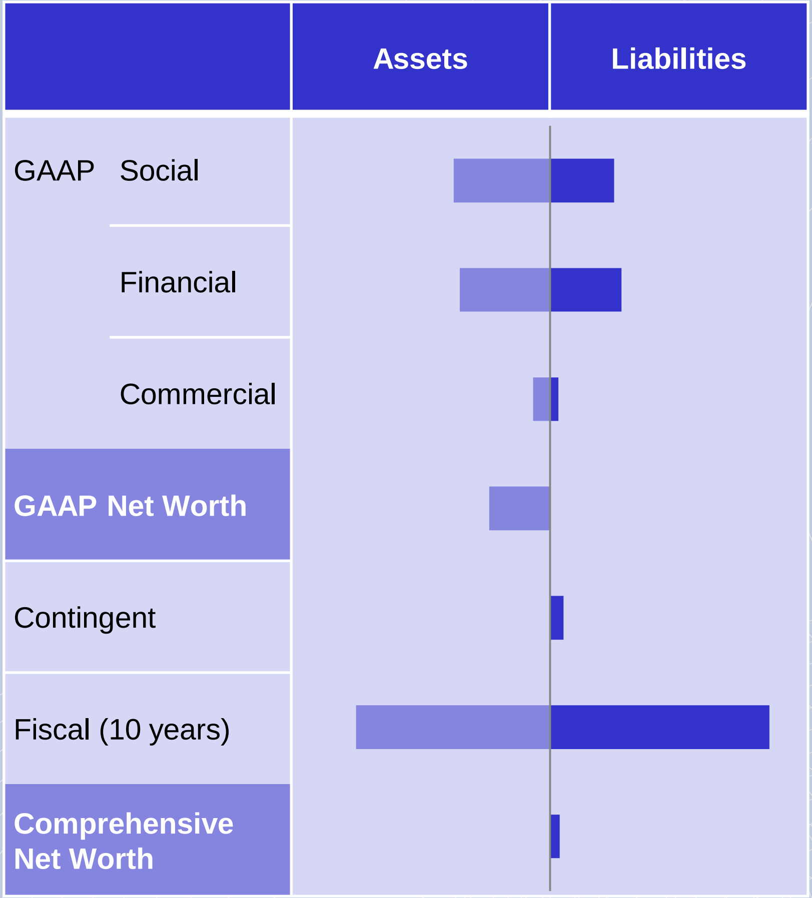
CNW is the sum of

the "**GAAP**" net worth shown in the Crown's financial statements, adjusted to economic value,

the economic value of future **contingent** & implicit cash flows, and

the surplus or deficit from future **fiscal** payments and receipts over a defined period.

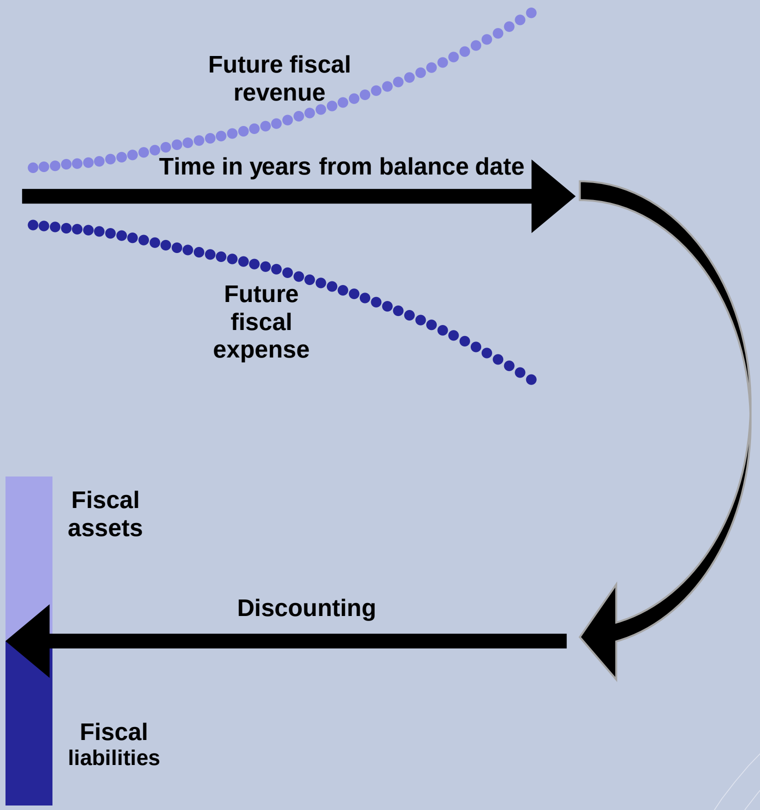
The Comprehensive Balance Sheet*



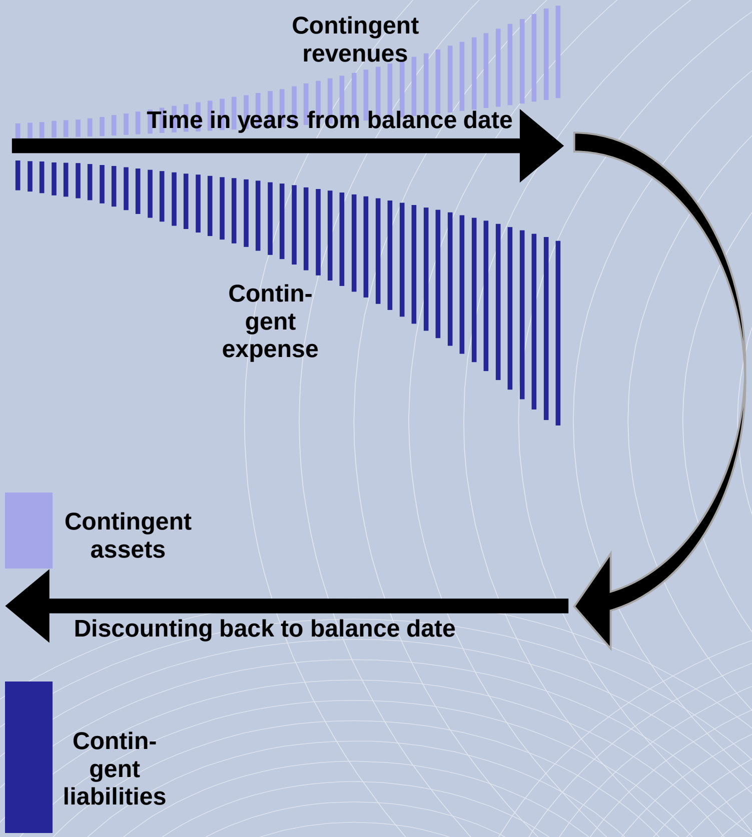
*not drawn to scale

Identifying risk & exposure #2

Building the fiscal balance sheet

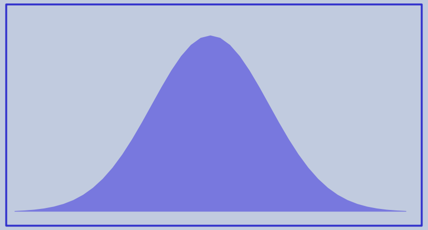


Building the contingent balance sheet

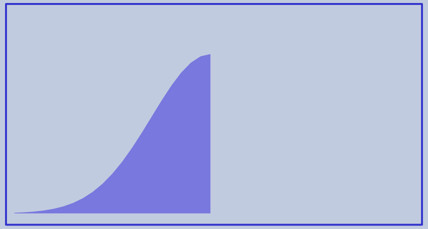


Definitions of Risk

What is risk?



Uncertainty?



Downside?

Extreme downside?

CALM's usage

- CALM defines risk as "uncertainty in financial outcomes over a one year time horizon"
- However, CALM assesses risk using an extreme downside measure
- Agencies remain responsible for managing their own risk/return trade-offs

Notes

- Only risk with a material financial impact is in scope. Other types of risk (e.g. reputational) are not covered
- Both financial (credit, market, liquidity, insurance etc.) and non-financial (operational, catastrophe etc.) risk is in scope
- CALM defines risk management as "Moderation of the probability and impact of unfortunate events through the identification, assessment and treatment of risk"

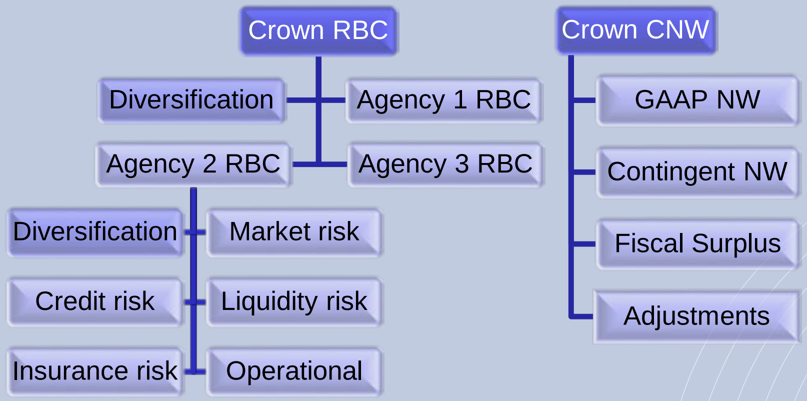
Measuring risk & capital

Measurement

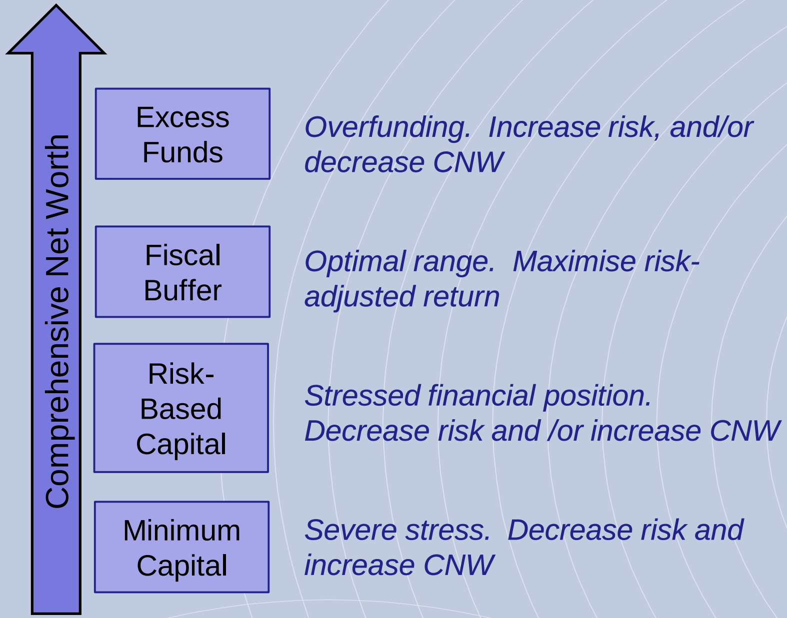
For ease of presentation, risk will be measured using a notional risk-based capital (RBC) framework, similar to those used in the financial services industry.

Each risk borne by each agency will generate a notional capital estimate equivalent to the amount of money which needs to be put aside now to cover possible losses over the coming year in, say, 99.5% of possible outcomes (equivalent to once in 200 years).

The Crown's overall required RBC will be built up from RBCs for agencies and individual risks (allowing for diversification and other necessary adjustments) as shown below.



Response



The minimum capital amount required for solvency may, in fact, be negative, reflecting the fact that the Crown retains a limited option to enhance CNW by increasing future fiscal surpluses.

Treating risk

Risk treatment by agencies

Agencies will retain primary responsibility for treating their own risk, although we expect CALM to raise risk management awareness and improve practices. For example, the RBC process could eventually be used to inform discussions between agencies, their boards and the Government about the risks that Agencies contribute to the Crown.

Maximising utility

A potential undesirable outcome of the RBC methodology would be the adoption by agencies of a highly risk-averse posture. This would reduce their RBC, but potentially at the cost of sacrificing the returns and outcomes that constitute the agency's mission.

CALM will mitigate this possibility by
- publishing the full distribution of potential outcomes, including the upside
- promoting the maximisation of utility by using RBC as a constraint rather than an objective in itself
- assuming that current investment and policy choices are a given.

Central risk treatment

Risk treatment by a central agency (eg, Treasury) may be appropriate in the following cases:
- Where this is the most efficient approach, eg, Insurances where volume discounts are available.
- Where risk concentrations are acceptable at agency level but excessive at the level of the Crown.
- Where there is no clear agency responsibility for treating a particular risk (eg, some non-departmental assets & liabilities.)

Treatment options

Transfer the risk away, using insurance, derivatives, catastrophe bonds etc.

Reduce the risk, for example by imposing operational limits on risk-taking activity.

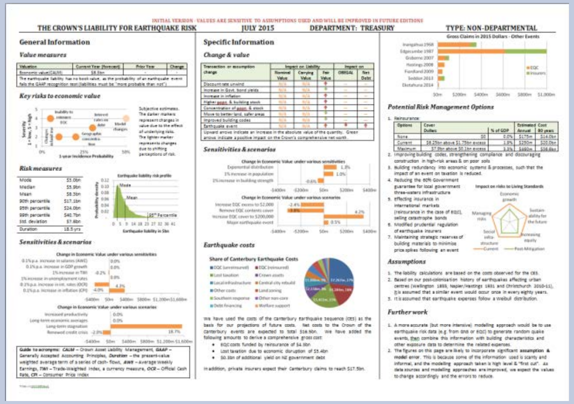
Increase risk where it is justified by expected increased social or financial returns.

Accept the risk by modifiying the parameters of the RBC calculation.

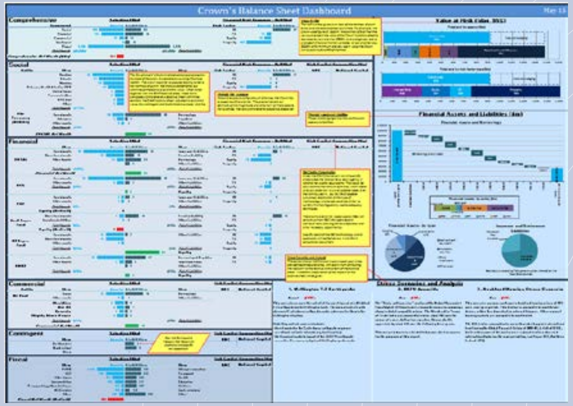
Avoid the risk by terminating the activity that generates it.

Reporting

Eight risk reports on significant individual assets or liabilities will be produced annually.



These reports will support the production of a half-yearly comprehensive balance sheet



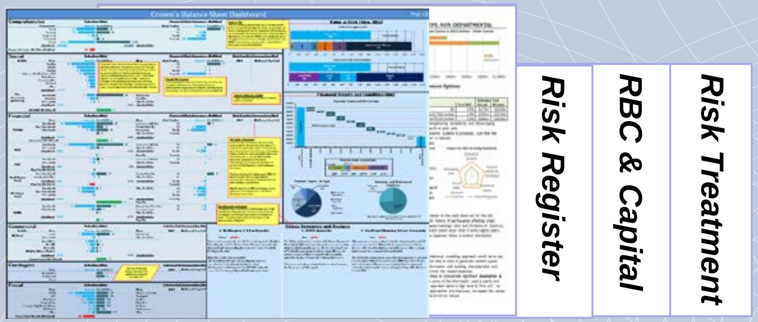
Risk Register

RBC & Capital

Risk Treatment

Other aspects of the risk management process will also be documented

At the end of each financial year, all of these documents will be combined into a formal risk report



Timelines

	Q3 15	Q4 15	Q1 16	Q2 16	Q3 16	Q4 16
Framework development	• Finalise consultation paper • Discuss with Treasury stakeholders	• Consultation with public sector	• Incorporate feedback in technical paper	• Draft Cabinet paper and (possibly) Cabinet office circular	• Implement material risk register	• Implement initial risk treatments

Agency Impact

Balance Sheet Section	Sub-Group	Data Requests		RBC Calculation		
		Specific	Ad-hoc	Full	Equity	Grouped
Social agencies	Financial	✓	✓	✓		
	Other material		✓	✓		
	Immaterial					✓
Financial institutions	Material	✓	✓	✓		
	Immaterial					✓
Commercial entities	Material				✓	
	Immaterial					✓
Contingent	Material		✓	✓		
Fiscal	Material			✓		