View from the top: Think long term
Anton Eser, Chief Investment Officer, Legal & General Investment Management
Tackling long-term challenges together

The Energy revolution is here

Building a connected view of the world

The world is Ageing

Technology is changing the way we live

Politics and unconventional policy play an increasingly more prominent role

Long-term thinking is key to success
The world we live in is characterized by very high debt levels which, while asset prices have soared.
Trend growth has fallen
We’re running out of workers and productivity has slowed

Source: LGIM
The implications of the long-term themes

Demographics
- Weaker global growth
- Low interest rates and inflation
- Hard choices for politicians

Energy
- Revolution is here
- Different implications for commodities
- Huge renewables capital requirement

Technology
- Technology change impacts all sectors
- Productivity potential
- Deflationary
- Stranded labour

Politics
- Unconventional monetary policy
- Anti-Globalisation
- Populism
Short-term solutions

**Central bank balance sheets**
- USD trn
- Y-axis: 0 to 20
- X-axis: 2008 to 2018
- Legend: China FX Reserves (gray), BoE Purchase Programme (red), ECB Balance Sheet (green), BoJ Balance Sheet (yellow), Fed Balance Sheet (blue)

**Debt mountain**
- US non-financial debt to GDP (%)
- Y-axis: 100 to 280
- X-axis: 1952 to 2012
- Legend: US non-financial debt to GDP (%) (blue)

Source: Bloomberg L.P., BIS
Politics – New political paradigm

Income inequality is a key tail risk

Seismic shifts or tiny twists?

- **Brexit** uncertainty very divisive
- **Trump** epitomises populism in action
- **Far-right** is part of the coalition government
- **Parties** from opposite ends of the political spectrum, united by fiscal expansion
- **Centre-left** losing century old grip
- **50%** voted for populist parties in election 1st round

Source: LGIM, as of 31 July 2018
Unconventional policy in the next downturn

“The effectiveness of anti-deflation policy could be significantly enhanced by cooperation between the monetary and fiscal authorities.” – Ben Bernanke, November 2002

“The rich have made a killing off QE. Next time it should be injected directly into the veins of the real economy” – Jeremy Corbyn, September 2015

Source: BIS, average central bank rate of Australia, Canada, Switzerland, China, UK, Japan, Sweden, USA and Euro area
Solid global growth, boosted by US fiscal stimulus

Contribution to world GDP growth % YOY

Source: LGIM, Macrobond. Historical analysis and current forecast do not guarantee future results.
Quantitative tightening is accelerating

Source: Morgan Stanley, LGIM estimates.
Historical analysis and current forecast do not guarantee future results.
Signs of stress

Source: Bloomberg L.P., number per US dollar rebased to 100 in January 2017
Focus on valuations

Expected Risk Premia

Relative to 15 Year Distribution

US Equities
Euro-zone Equities
Emerging Market Equities
US Investment Grade Credit
US High Yield
Emerging Market Debt (Hard)
EM Local

Risk Premia (%)

Source: LGIM, Risk free rate UK equivalent. Current forecast does not guarantee future results.
CAPE Fear

On this metric, US equity valuations have only been more stretched in 1929 and 1999/2000.

Source: Robert Shiller, LGIM. Historical analysis and current forecast do not guarantee future results.
Europe and Asia sharing similar challenges

- **Nordics**
  - Average guaranteed rate: 3-3.5%
  - Ability to reduce guarantees: Medium
  - Duration gap: >10y

- **China**
  - Average guaranteed rate: 2-3%
  - Ability to reduce guarantees: High

- **South Korea**
  - Average guaranteed rate: 5-6%
  - Ability to reduce guarantees: Low
  - Duration gap: 0-2y

- **Taiwan**
  - Average guaranteed rate: 4-5%
  - Ability to reduce guarantees: Low
  - Duration gap: 5-8y

- **Hong Kong**
  - Average guaranteed rate: 2.5-3.5%
  - Ability to reduce guarantees: Medium

- **UK**
  - Average guaranteed rate: 0-1%
  - Ability to reduce guarantees: High
  - Duration gap: Low

- **France**
  - Average guaranteed rate: 0-1%
  - Ability to reduce guarantees: Medium
  - Duration gap: 2-5y

→ High proportion of guaranteed products on balance sheet
→ High guaranteed rates
→ Low interest rate environment
→ Duration mismatch

Seeking a balance of outcomes

Outcomes

<table>
<thead>
<tr>
<th>ALM</th>
<th>Match key duration and convexity risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>Book yield maximisation (“amortised cost” assets)</td>
</tr>
<tr>
<td></td>
<td>Controlling P&amp;L volatility (“fair value” assets)</td>
</tr>
<tr>
<td></td>
<td>Tax-efficient wrappers and strategies</td>
</tr>
<tr>
<td>Solvency risk</td>
<td>Controlling Net Surplus volatility</td>
</tr>
<tr>
<td></td>
<td>Maximising Solvency Adjusted Sharpe Ratio (SASR)</td>
</tr>
<tr>
<td>Regulatory capital</td>
<td>Controlling regulatory capital consumption</td>
</tr>
<tr>
<td></td>
<td>Maximising Return on Regulatory Capital (RORC)</td>
</tr>
<tr>
<td>ESG</td>
<td>Sustainable investing</td>
</tr>
<tr>
<td></td>
<td>Active engagement (voting and divestment process)</td>
</tr>
</tbody>
</table>

Source: LGIM. For illustrative purposes only.
1. The Solvency Adjusted Sharpe Ratio (SASR) is the ratio between the asset portfolio return versus Solvency ratio volatility.
2. The Return On Regulatory Capital (RORC) is the ratio between the asset portfolio return versus the regulatory capital consumption.
Macro-thematic investment process

Stable through-the-cycle returns

Long-term themes
- Tightening monetary policy bites
- Political uncertainty
- Mounting debt and deteriorating demographic trends leading to deflation
- Technology disruption
- Energy transformation

Asset Allocation
- Underweight risk
- Significant underweight to Europe with a bias for US
- Preference for non-cycicals
- Preference for domestic versus Emerging Markets

Fundamental Research
- Consider potential disruptors
- Stable cashflow
- Integrated ESG - Sourcing sustainable investment ideas through strong corporate access

Source: LGIM. There is no guarantee that the investment strategies presented will yield future results.
Looking after your assets over the long term

AUM growth by strategy ($bn)

<table>
<thead>
<tr>
<th>Strategy</th>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact Investing</td>
<td>101</td>
<td>248</td>
</tr>
<tr>
<td>Sustainable Investing</td>
<td>137</td>
<td>331</td>
</tr>
<tr>
<td>Best-in-class Screening</td>
<td>890</td>
<td>1,030</td>
</tr>
<tr>
<td>Norms-based Screening</td>
<td>4,385</td>
<td>6,210</td>
</tr>
<tr>
<td>Corporate Engagement</td>
<td>5,919</td>
<td>8,365</td>
</tr>
<tr>
<td>ESG Integration</td>
<td>7,527</td>
<td>10,369</td>
</tr>
<tr>
<td>Exclusionary Screening</td>
<td>12,046</td>
<td>15,023</td>
</tr>
</tbody>
</table>

$238bn → $579bn

+143%

Market leaders in Active Ownership and ESG

Governance
We collaborate with regulators and investors to enhance the whole market returns

Engagement
We engage to create positive change at the companies we invest in

Voting
We hold companies to account and use no abstentions

ESG integration into Investment Process
Identifying the companies that will succeed in a rapidly changing world

Core Product
ESG is integrated into how we fundamentally assess a company

Future World
Investing for a better tomorrow going further to address ESG issues

Source: LGIM. For illustrative purposes only.
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