Year in review
2021 has been a year of coming to grips with the pandemic, albeit in fits and starts, of abnormally high growth and inflation data prints, and of pervasive supply-chain bottlenecks and shortages. Unlike in 2020 when historic central bank and fiscal interventions boosted the returns of both stocks and bonds, fixed income suffered, while stocks outdid their strong 2020 performance, in line with our New Nominal theme. See three investment lessons learned in 2021 and salient investment trends on page 2. Against this backdrop, Official Institutions (OI) generally continued to see solid growth in their assets under management and healthy returns, as they further diversified their holdings—central banks from government bonds to mortgage-backed securities and corporate credit; Sovereign Wealth Funds and Pension Funds leaning even more strongly into alternatives. Inflation, sustainability and China were top of mind across all OI categories, with inflation driving many allocation decisions while sustainability and China saw a mix of exploration and execution. Adoption of exchange traded products continued to grow strongly. As this eventful year draws to a close, we share with you in this last OI Digest of 2021 our best insights from around BlackRock to start 2022 with an edge and keep it. On behalf of the Official Institutions Group and all of our BlackRock colleagues, thank you for your partnership and trust, and very best wishes for the Holidays and the New Year.

Happening in markets
Markets were somewhat unsettled in Q4 by a hawkish turn in DM central banks discourse and the emergence of a new, highly transmissible Covid variant. Spread assets, commodities and emerging markets underperformed while DM equities continued their positive run. ETP flows indicate that tactical moves by investors favoured US equities technology and healthcare. China and Brazil equities also saw a pick-up in interest. Investors continued to pile into inflation-linked bonds, while also building inflation protection through equities with infrastructure and sectors with a high beta to inflation. Investors have also started to engage more proactively than the first half of the year in spread assets.

A new market regime
It’s rare for global stock returns to be positive and bonds’ negative in any calendar year – and two years in a row has never happened on record (see chart above). As discussed in our 2022 global outlook Thriving in a new market regime, we see the forces that drove stocks up and bonds down in 2021 continuing. Three key themes will guide our investment strategies:

1. **Living with inflation**: Higher inflation has arrived. We expect it to decline but settle at higher levels than pre-Covid, as central banks prove more tolerant of higher inflation. Stay pro-risk and underweight government bonds.

2. **Cutting through confusion**: Uncertainty around Covid and restart dynamics could lead to policy errors and market volatility. Reduce overall risk.

3. **Navigating net zero**: The journey to net zero is not just a strategic story, it’s a new story for markets.
1. Appetite for inflation-sensitive exposures is growing – across asset classes
Year-on-year growth, global flows into energy, inflation-linked bond, and infrastructure ETPs

Source: BlackRock and Markit, as at 3 December 2021. Past flows into global ETPs are not a guide to current or future flows and should not be the sole factor of consideration when selecting a product. Figures are in US dollars, unless stated otherwise.

3. Balancing the barbell
Cumulative global flows into tech and financials sector ETPs, 2021 YTD

Source: BlackRock and Markit, as at 3 December 2021. Past flows into global ETPs are not a guide to current or future flows and should not be the sole factor of consideration when selecting a product. Figures are in US dollars, unless stated otherwise.

2. Investors are taking a more granular approach
Global flows into emerging market (EM) equity ETPs, 2021 YTD

Source: BlackRock and Markit, as at 3 December 2021. Past flows into global ETPs are not a guide to current or future flows and should not be the sole factor of consideration when selecting a product. Figures are in US dollars, unless stated otherwise.

4. Sustainable flows pouring in faster
Cumulative annual flows into global sustainable exchange traded products (ETPs) 2019 – 2021

Source: BlackRock, Bloomberg (as of October 2021; YTD data is through 30 September)
Strategic Asset Allocation Corner

Uncertainty over post-COVID global dynamics requires consideration of a range of potential outcomes. But what is the best way to do it? Here are some approaches worth considering:

Embracing Uncertainty

The post-COVID world faces uncertainty on several fronts – an acute investment challenge. Asset prices and risk profiles are likely to diverge depending on economic scenarios. Traditional approaches such as mean variance optimization (MVO) that rely on mean estimates assume certainty around how the world may evolve and asset prices react. The pandemic has reminded all that reality can stray considerably from expectations. In our recent paper co-authored with Singapore’s GIC, we discussed 2 alternatives to MVO – a scenario-based approach and a simulations-based approach, which both explicitly allow for uncertainty. A scenario-based approach aims to minimize the opportunity cost – or ‘regret risk’ of a macro outlook – unfolding differently from its base case, while simulation-based approach seeks maximizing portfolio returns under potential “worst-case” economic and market outcomes. Both approaches have pros and cons, but we believe both offer a higher chance at achieving portfolio resilience compared to ignoring uncertainty. Ongoing work at BlackRock in evolving the capital market assumptions involves more direct linkages to a macro scenarios and blending in elements of a scenario-based approach, while using simulation techniques. An illustration of this approach can be found in our latest Portfolio Perspectives which estimates how a different path for US policy rates or Chinese growth would impact our SAA views.

Source: GIC, BlackRock Investment Institute, November 2021. Notes: the chart shows three hypothetical asset allocations constructed at the end of Q3 2020 using three approaches: mean variance optimization (MVO), minimizing downside risk – or a simulation-based approach – and minimizing regret risk – a scenario-based approach. These allocations are purely illustrative to demonstrate the different portfolio techniques and approaches, and are based on BlackRock’s capital market assumptions as at 31 August 2020. They do not represent actual portfolios and should not be considered investment advice or recommendations. The allocation is hypothetical, is not representative of allocation that any investor actually employed and is not indicative of future results. The results are based on assumptions integral to the model which may or may not be testable and are subject to losses. These allocations were not made under actual market conditions and do not reflect actual trading or the effect of material economic and market factors on the decision-making process. Since trades have not actually been executed, results may have under- or over-compensated for the impact, if any, of certain market factors, such as lack of liquidity, and may not reflect the impact that certain economic or market factors may have had on the decision-making process.

BlackRock’s Market Driven Scenarios

BlackRock’s Risk and Quantitative Analysis team produces Market-Driven Scenarios, which seek to model how topical macroeconomic regimes or government policy could affect markets and portfolios. This quarter they focus on green inflation.

"Higher Inflation & Climate Policy" considers the macro impacts of shifting energy sources amid higher inflation

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Bumpy Energy Rebalance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description:</td>
<td>As governments and corporates commit to more aggressive net zero targets and transition away from coal, a supply-demand imbalance triggered by an unusually cold winter drives inflation up, although not enough to derail the broader economic restart.</td>
</tr>
<tr>
<td>Market Reaction:</td>
<td>Energy commodities rally, while broad equities, particularly industries with a heavy reliance on coal, sell off. US rates sell off and the yield curve bear steepens on anticipated tapering; inflation and long-term inflation expectations rise from higher energy prices.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 2</th>
<th>Tipping Point Stagflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description:</td>
<td>Increased demand for cleaner alternatives to coal such as natural gas, along with shortages in Europe going into a colder winter, stretch global energy supply chains that have been starved of investment. Coupled with slower growth, stagflation sets in.</td>
</tr>
<tr>
<td>Market Reaction:</td>
<td>Equities and US credit sell off on the back of slowing growth. The US yield curve bear flattens as short-term inflation expectations rise, driven by higher energy costs due to supply shortages in Europe. Oil prices increase.</td>
</tr>
</tbody>
</table>

BlackRock Reserve Manager Model Portfolios Update

Reflecting BlackRock’s latest capital market assumptions (CMAs) our Reserve manager portfolio features a slightly higher allocation to Japanese assets as these might be expected to diversify the portfolio in the current environment. We believe equities still provide an attractive risk-return tradeoff for reserve managers particularly as they sit alongside a portfolio of highly liquid fixed income assets. We keep real assets in the portfolio as we believe a small allocation preserves the liquidity of the portfolio and offers a diverse source of return. As seen on the chart, the more diversified ‘model’ portfolios led to a continued outperformance relative to the G7 Treasury benchmark. We still see government bonds playing a core role, especially short-dated Treasuries, given the low risk levels and explicit need for liquid assets.

Return focused reserve manager has a 2.5% volatility target. This is not an offer or solicitation to invest in BlackRock products. The figures shown relate to simulated past performance. Simulated Past performance is not a reliable indicator of current or future results. The ‘Paper Portfolio’ referred to is intended to provide only an example of the potential (multiplicative) strategy to be employed and does not take into consideration actual trading conditions and transaction costs. The figures are for illustrative purposes only and results cannot be guaranteed. Source: Refinitiv Datastream; monthly data in USD from 31-Dec-2014 to 30-Nov-2020. Index performance returns do not reflect any management fees, transaction costs or expenses. Indices are unmanaged and one cannot invest directly in an index. For illustrative purposes only. The chart shows the simulated hypothetical performance of two illustrative portfolios and two indices. This is a model portfolio so no actual returns have been realized.

Simulated historical performance of reserve portfolio

<table>
<thead>
<tr>
<th>Year</th>
<th>2.5% Return Target Portfolio</th>
<th>Reserve Manager ISAA Portfolio</th>
<th>G7 1-10 year bonds (hedged)</th>
<th>US Cash</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>-1.1%</td>
<td>-0.8%</td>
<td>1.3%</td>
<td>0.2%</td>
</tr>
<tr>
<td>2016</td>
<td>3.6%</td>
<td>3.7%</td>
<td>2.0%</td>
<td>0.5%</td>
</tr>
<tr>
<td>2017</td>
<td>3.6%</td>
<td>7.6%</td>
<td>1.4%</td>
<td>1.1%</td>
</tr>
<tr>
<td>2018</td>
<td>0.5%</td>
<td>-1.4%</td>
<td>2.2%</td>
<td>2.0%</td>
</tr>
<tr>
<td>2019</td>
<td>5.4%</td>
<td>11.7%</td>
<td>4.6%</td>
<td>2.3%</td>
</tr>
<tr>
<td>2020</td>
<td>9.6%</td>
<td>7.7%</td>
<td>3.9%</td>
<td>0.7%</td>
</tr>
<tr>
<td>2021</td>
<td>1.9%</td>
<td>3.1%</td>
<td>-0.8%</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
Official Institution trends & in the news

<table>
<thead>
<tr>
<th>Sustainability</th>
<th>Sustainability</th>
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<tbody>
<tr>
<td>• New members to the NGFS: The NGFS consists of 105 members and 16 observers, with recently joining members including Banco Central de Reserva del Perú, the Central Bank of Jordan, Banco Central de la República Dominicana, the Turkish Banking Regulation and Supervision Agency and the Jersey Financial Services Commission.</td>
<td>• The United Arab Emirates has become the first of the Persian Gulf’s petrostates to commit to eliminating planet-warming emissions within Paris accord’s five-year deadline.</td>
</tr>
<tr>
<td>• The Sovereign Fund of Egypt, Gabon Fund for Strategic Investments, the Hellenic Foundation for Assets and Participations, and the Nigerian Sovereign Investment Authority have joined the One Planet Sovereign Wealth Fund initiative.</td>
<td>• Kuwait Investment Authority will invest in green initiatives unveiled by Saudi Arabia as the Middle East’s biggest oil producers rally behind efforts to cut planet-warming gases.</td>
</tr>
<tr>
<td>• Central banks are increasingly focused on adopting environmental, social and governance (ESG) factors, but face two main hurdles: traditional reserve assets (i.e. government bonds) are non-compliant with ESG, and ESG bonds lack sufficient liquidity for reserve portfolios. Also noted in a recent survey by the World Bank RAMP program, ESG investing is still rarely adopted by central banks, and fewer than a quarter of respondents have included ESG objectives in their investment policy. This is largely explained by the focus of reserve portfolios on high-quality fixed-income assets, among which ESG instruments and strategies are rarely encountered.</td>
<td>• Saudi Arabia’s Public Investment Fund has applied for a license under China’s qualified foreign institutional investor scheme, allowing the Fund to invest directly into onshore assets.</td>
</tr>
<tr>
<td>• China Investment Corporation plans to focus on climate change as part of efforts to target thematic investment opportunities going forward, and will incorporate ESG factors into its entire investment process, from project screening to due diligence.</td>
<td>• The world’s largest central banks have been joining the fight against climate change: Bank of Japan, People’s Bank of China. Bank of England, Sweden’s Riksbank, ECB and U.S. Federal Reserve among those taking action.</td>
</tr>
<tr>
<td>• Taiwan’s Bureau of Labor Funds made changes to its outsourced managers in September by boosting the size of a passive environmental, social and governance-themed global equities mandate by US$260 million.</td>
<td>• Bank of Japan governor Haruhiko Kuroda outlined the elements he considers necessary to achieve and promote sustainable finance, including increasing the financial system’s resiliency against climate risks, increasing disclosures, and modernizing resources to facilitate the transition to net-zero.</td>
</tr>
<tr>
<td>• Hong Kong Monetary Authority is planning to prioritize investments into ESG if returns of the underlying assets are comparable to those without the same ESG tilt.</td>
<td>• Nordic central banks highlighted the role their institutions can play in tackling climate change – but also the limits of central bank action. Analyzing the work their institutions are carrying out regarding climate change, they also stressed governments and parliaments have the democratic legitimacy and tools to be more effective in this area.</td>
</tr>
<tr>
<td>• Korea Investment Corporation is building a model to successively control higher climate risks within its ESG portfolio.</td>
<td>• The Reserve Bank of New Zealand is planning to conduct climate stress tests in 2023. This follows its latest climate strategy.</td>
</tr>
<tr>
<td>• Bank of Korea examined several policies to improve the local financial sector’s contribution to reducing carbon emissions, and have pledged to increase the purchase of ESG-compliant products for their reserve portfolio.</td>
<td>• Schroders has joined forces with GIC for a research collaboration focused on climate portfolio analysis that outlines how an avoided emissions framework can complement conventional carbon metrics in investment and portfolio analysis.</td>
</tr>
<tr>
<td>• The Philippines central bank has indicated that that it is considering allocating capital to assets with sustainability characteristics.</td>
<td>• The NGFS has published their guide on climate related disclosures for central banks, noting central banks are recommended to disclose their high-level approach to climate-related risks and opportunities.</td>
</tr>
<tr>
<td>• Romania’s Finance Ministry has proposed adopting sustainable development principles to select investments for the country’s $191 billion wealth fund.</td>
<td>• The Bank of Mexico has indicated that that it is committed to reducing its carbon footprint. Its last climate strategy includes a thematic global equities mandate with a focus on French companies.</td>
</tr>
</tbody>
</table>

### Happening in OI Portfolios

#### Asset Allocation

<table>
<thead>
<tr>
<th>Asset Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>GIC</strong> views global inflation as the most significant threat to its portfolio.</td>
</tr>
<tr>
<td>• <strong>Middle Eastern funds remain bullish on Chinese equities</strong>, ADIA has boosted its A-shares holdings in the first half of the year.</td>
</tr>
<tr>
<td>• <strong>Temasek</strong> will continue to invest in China, though selectively with considerations for debt woes of Evergrande and government regulation.</td>
</tr>
<tr>
<td>• <strong>Korea Investment Corporation</strong> said the strong performance of traditional assets has resulted in a decrease in its alternative assets.</td>
</tr>
<tr>
<td>• Two straight years of declines do not indicate its shift from an absolute return strategies at 25% of its portfolio by 2027. <strong>KIC</strong> is also accelerating their venture capital investments.</td>
</tr>
<tr>
<td>• <strong>New Zealand Super</strong> is increasing its exposure to property in Asia Pacific, due to its favorable demographics and market dynamics, with a preference for developed markets including China, Japan, Korea and Australia.</td>
</tr>
<tr>
<td>• <strong>The Australian Government Future Fund</strong> uses alternatives as a skeleton to achieve portfolio goals, with absolute return strategies at the core of building a resilient portfolio.</td>
</tr>
</tbody>
</table>

#### People changes

<table>
<thead>
<tr>
<th>APAC</th>
<th>MIDDLE EAST &amp; AFRICA</th>
<th>AMERs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• RBNZ names new deputy governor</td>
<td>• Qatar emir names new central bank governor</td>
<td>• Biden re-nominates Powell as Fed chair</td>
</tr>
<tr>
<td>• Indian government reappoints Das as governor</td>
<td>• Iran appoints new governor</td>
<td>• IMF proposes Gita Gopinath for first deputy MD post</td>
</tr>
<tr>
<td>• Weidmann to step down as Bundesbank president</td>
<td>• Yemen replaces central bank governor</td>
<td>• Mexican senate approves first female governor</td>
</tr>
<tr>
<td>• Bank for International Settlements reappoints Carstens</td>
<td>• Turkish president names new central bank officials</td>
<td>• Peru’s president re-nominates long-standing governor</td>
</tr>
<tr>
<td>• Knot to assume FSB chairmanship</td>
<td>• Namibia president appoints governor to full term</td>
<td>• Chilean president grants Marcel new term as governor</td>
</tr>
<tr>
<td>• François Villéry de Galhau reappointed at the head of the Banque de France</td>
<td>• Guinea replaces central bank leadership</td>
<td>• Kareem Michael to be new Belize governor</td>
</tr>
</tbody>
</table>
The sustainability shift: the impact on energy investment

We believe the transition to net zero presents a historic investment opportunity and see the ‘green’ transition to a carbon-neutral world rewarding companies, sectors and countries that adjust and penalizing others.

Index + Alpha + Factors

This piece provides a new perspective on how they can be combined for optimal results by distinguishing the roles of asset class exposure via index funds, style factor exposure, and pure-alpha seeking return sources in excess of index and factor returns.

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