2020 Absolute Return Asset Class Review

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Spencer Edge, Albourne America

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Agenda

I. ARS Program: A Year in Review
II. ARS Portfolio and Performance
III. Market Review: Absolute Return
IV. Conclusions
Section I

ARS PROGRAM : A YEAR IN REVIEW
Comprehensive Annual Review Process

Why do we conduct annual reviews?

Per the TMRS IPS, comprehensive reviews are to be conducted and documented at least annually.

The Review Process Includes:
- Annual due diligence questionnaire, ADV and compliance, as appropriate, are reviewed
- Includes firm changes, personnel, investment strategy, style, process, and philosophy
- Compliance, operations, risk management, and performance
- Both quantitative and qualitative factors
- The review includes an onsite due diligence visit to the Manager’s office

The Annual Review process holds TMRS Staff accountable for its portfolio management process in order to preempt manager specific, strategic, or other potential problems.
### ARS Program Review

#### Absolute Return Initiatives Accomplished: Annual Review

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Develop a blueprint to implement a Direct Absolute Return Investment Program&lt;br&gt;Managerial prioritization, Staff experience and partner resources enabled TMRS to develop a path to ensure this outcome was accomplished</td>
<td>✔️</td>
</tr>
<tr>
<td>• Establish a due-diligence process to identify “best in class” manager opportunities&lt;br&gt;Sourcing, investment and operational due diligence, and leveraging Staff and partner relationships were key factors enabling the identification of opportunities</td>
<td>✔️</td>
</tr>
<tr>
<td>• Initiate &amp; execute on manager selection, negotiation, and funding while maintaining consideration of portfolio construction and diversification looking forward 2 years&lt;br&gt;Recommendations and approval of selected manager investments and funding are executed on a dynamic timeline taking into account anticipated portfolio diversification and market regimes</td>
<td>✔️</td>
</tr>
<tr>
<td>• Progress Direct Absolute Return Portfolio towards a state of “fully invested” while managing redemption timing, rebalancing challenges, and capacity constraints&lt;br&gt;Active decisions to weight managers and rebalance based on constraints are made in real time (Nov. 2016 Internal Memo)</td>
<td>✔️</td>
</tr>
<tr>
<td>• Construct and maintain the ARS Direct portfolio to accomplish TMRS’ investment objectives&lt;br&gt;$2.3 billion of ARS Direct capital deployed since Jan. 1, 2016. The risk/return profile of the Direct portfolio achieves TMRS investment objectives</td>
<td>✔️</td>
</tr>
<tr>
<td>• Monitor existing portfolio. Source, research, and pursue new strategies and co-invest opportunities&lt;br&gt;Additional strategies, including fund style co-invests, may be used to further optimize the portfolio as well as blend down fees with existing funds</td>
<td>In Process</td>
</tr>
<tr>
<td>• Finalize transition from BAAM Treaty Oak to Direct Portfolio</td>
<td>✔️</td>
</tr>
</tbody>
</table>
Portfolio Management Initiatives

Becoming a Strategic Partner

More Expensive

Direct Investor
- Asset Managers
- Sophisticated Institutions

Strategic Capital
- Sophisticated Institutions
- Separate Accounts, Co-Invest, etc.

Direct Fund
- Sophisticated Institutions
- Resourced Institutions

Fund of Funds
- Resourced Institutions
- Resource Constrained Institutions

More Specialized Expertise
ARS Program Review
Direct Funding Timeline

Total Direct Initial Subs: $990 million
Total Additional Subs: $215 million
$1,205 billion

Total Direct Initial Subs: $353 million
Total Additional Subs: $330 million
$683 million

Total Direct Initial Subs: $550 million
Total Additional Subs: No addl. subs
$550 million

Total Direct Initial Subs: $500 million
Total Additional Subs: $10 million
$510 million

Total Direct Initial Subs: No new initial
Subscriptions

Current Direct Investment Vehicles:
23
Total Direct Capital Approved:
$3.2 billion
Total Direct Capital Invested:
$3.0 billion

- Macro (2)
- LSE (4)
- ED (1)
- Credit (3)
- MS (1)
- RV (2)
- CTA (1)

- RV (2)
- MS (1)
- Macro (1)

- Credit (3)
- MS (1)
- Macro (1)
- RV (1)

- Macro (2)
- RV (1)
- Credit (1)

- No New Initial Subscriptions
### ARS Program Review

#### ARS Redemptions

<table>
<thead>
<tr>
<th>Year</th>
<th>Submitted Redemptions for</th>
<th>Fund 1</th>
<th>Fund 2</th>
<th>Fund 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>3 Funds</td>
<td>• Organizational Issues</td>
<td>• Team Turnover</td>
<td>• Firm decided to close</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Performance</td>
<td>• Risk Control</td>
<td>• Difficult market environment to implement strategy effectively</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Return Profile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>1 Fund</td>
<td>• AUM Increases</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Operational issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>1 Fund</td>
<td>• Performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Growth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Operational issues</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(Mar–2020) Multi–Strategy Fund +$20M
• Diversification
• Manager sizing
• Return Potential

(Apr–2020) Macro Fund +$20M
• Additional capacity granted to select investors

(Apr–2020) Relative Value Fund +$50M
• Favorable market environment prospectively
• Reduced mgmt. fee

(May–2020) Credit Fund +$25M
• Favorable market environment prospectively
• Limited capacity

(Jun–2020) Multi–Strategy Fund +$30M
• Compelling opportunities for Fund to take advantage of
• Limited capacity

(Apr–2020) Macro Fund +$36M
• Additional capacity granted to select investors
ARS Program Review
ARS Staff Resources

Absolute Return Team
Marc Leavitt (6 years TMRS)
Kevin Notaro (3 years TMRS)
Frank Atkins (1 year TMRS)
Timothy Sweeney (new to team)

ARS Team Experience
Marc Leavitt
24 years experience
Consultant, Hedge Fund, Family Office, Endowment
MBA, Charter Alternative Investment Analyst Designation

Kevin Notaro
16 years experience
Investment Management (Fund of Hedge Funds)
Finance Major

Frank Atkins
21 years experience
Equity Research, Consultant
MBA, CFA

Timothy Sweeney
16 years experience
Hedge Fund, Investment Bank
Finance Major

CIO
TJ Carlson

Risk Management
Dimitry Shishkoff
Melissa Jerkins
Ryan Conner
Janine Prukop

Private Equity
Tom Masthay
Peter Teneriello
Celisse Cobos

Real Assets
Eddie Schultz
Melody Bickersteth
Yvonne Huang
Josh Garcia

Public Equity
Kristin Qualls

Fixed Income
Jason Weiner
German Gaymer
Jacob Bowland

Operations
Sally Case
Geldon Vllahu
Peter Jeske

Admin. Support
Cindy Morse
Debbie West

Compliance
Kurt Cressotti

Absolute Return Team
Marc Leavitt (6 years TMRS)
Kevin Notaro (3 years TMRS)
Frank Atkins (1 year TMRS)
Timothy Sweeney (new to team)
ARS Program Review
Annual Review Highlights

Manager & Consultant Scorecard Summary:
All 23 manager relationships and 1 consultant relationship assessed are in satisfactory standing.

Contractual Compliance:
All managers, as appropriate, have certified compliance with relationship governing documents, including:

- Valuation policies
- Fees paid summary
- Regulatory actions
- Code of Ethics compliance

Monitoring and Review Summary:
Monthly, quarterly, and annual reviews (including annual onsite, due-diligence)

Manager Reporting: DDQ, Risk Reports, Commentary, Prime Broker & Administrator reports, Team and Portfolio Overviews, Monthly/Quarterly calls

Albourne Reports: Investment Due Diligence, Operational Due Diligence, Risk Management, Quantitative Due Diligence Summaries, Direct Portfolio level reporting and Risk Management Overviews

IPS Compliance and Monitoring at the Portfolio Level
ARS Program Review
Additional Information

ARS Team Activities
2015 Total Manager Meetings: 312
2016 Total Manager Meetings: 276
2017 Total Manager Meetings: 240
2018 Total Manager Meetings: 267
2019 Total Manager Meetings: 334
2020 Total Manager Meetings: 293*
ARS Total Manager Meetings: 1722

Credit: 274
Macro/CTA: 278
L/S Equity: 235
Relative Value: 226
Multi-Strategy: 154
Event Driven: 69
Fund of Fund: 100
Consultant: 127
Economists: 26
Other: 233

* As of August 7, 2020

On-site manager meetings have not occurred since Covid related lockdowns began. Traditional phone calls as well as video conferencing have taken the lead role for speaking with managers.
IPS Compliance Review

Vehicle Concentration Guideline – TMRS is within guideline limits that no more than 35% of the total net assets of the absolute return portfolio may be invested in any one Strategy.

Closed or Open-end Vehicle Concentration Limit – TMRS is within guideline limits that no more than 20% of total ARS assets may be invested in a single private investment Vehicle.

Commingled Open-End Concentration Limit – TMRS is within guideline limits that TMRS can not represent more than 25% of total net assets of a commingled investment vehicle.

Percentage of Manager AUM Limit – TMRS does not account for more than 25% of total AUM of any contracted manager’s total AUM.
Section II

ARS PORTFOLIO AND PERFORMANCE
Absolute Return Asset Class Objectives

IPS Stated Objective for the Absolute Return Portfolio:
“The Absolute Return portfolio is used to provide both favorable stand-alone, risk-adjusted returns as well as diversification for the overall plan.”

A primary goal of the annual review presentation is to discuss the Absolute Return portfolio and its construction relative to IPS stated performance goals & implementation objectives:

Benchmark Performance Goals:

- Long-term performance goal is a rate of return of 3-month LIBOR + 4%, net of investment management fees.
- The current (periods less than 5 years) strategic benchmark is the HFRI Fund of Fund Diversified Index, net of investment management fees, with similar risk relative to the benchmark.
- Additionally, as documented in the IPS, the absolute return portfolio is expected to generate returns net of all fees and expenses, in excess of their respective indices, over rolling five year investment time horizons.
Absolute Return Asset Class Objectives

The Direct Portfolio is designed to accomplish the following primary goals:

- Decrease total portfolio risk
- Potentially increase portfolio returns (as a Fixed Income substitute)
- Provide performance with low correlation to traditional asset classes
- Attractive risk-adjusted returns over the long-term
- Seek to generate positive returns regardless of traditional market benchmark returns
- Seek to capture Alpha: a manager’s rate of return in excess of that which can be explained by its systematic risk (represented by Beta)
Absolute Return Asset Class as a Diversifier

Diversifying during Equity Market Downturns

Hedge funds in traditional portfolios provide diversification

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Sources: HFRI, Standard & Poor's, Bloomberg, Barclays, FactSet, J.P. Morgan Asset Management.

*60/40 portfolio is 60% S&P 500 and 40% Bloomberg Barclays U.S. Aggregate. Hedge funds are represented by HFRI Macro.

Data is based on availability as of May 31, 2020.
Absolute Return Asset Class as a Diversifier

The benefits of adding a core diversified hedge fund allocation to different stock/bond portfolios

Source: JPMAAM.
### Broad Sources of Risk

<table>
<thead>
<tr>
<th>Primary Sources of Risk and Return (Risk Premia)</th>
<th>Asset Class Examples</th>
<th>Absolute Return Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rates</td>
<td>Gov’t Bonds</td>
<td>Core Fixed Income</td>
</tr>
<tr>
<td>Traditional</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Credit</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Equity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquidity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Engagement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optionality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complexity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ARS team is looking across a multitude of investment strategies to build out the portfolio.

Source: RVK
Implementation Risk Ranges
Implied by IPS Asset Class Guidelines
Portfolio Line Items and Volatility

ARS portfolio is diversified, yet maintains adequate levels of risk.

Source: Aksia
Sizing of managers is based on both qualitative and quantitative factors along with risk/reward profiles.
Portfolio Exposures

**Current Allocation**
(Strategy Exposures)

**Prospective Allocation**
(Strategy Exposures)

Estimates as of August 1, 2020

Source: State Street

ARS’ diversification remains balanced across strategies.

*Prospective portfolio exposure with full allocation to Varde Asia and Stone Oak
ARS portfolio has been built to be well diversified from a geographical standpoint.
ARS’ diversification remains balanced across strategies.
Hedge Fund Returns

Active management is critical for identifying top hedge fund strategies

Dispersion of Global Returns — YTD 2020

ARS’ diversification remains balanced across strategies.
Performance/Limiting Losses

Protecting Against Equity Market Downside

ARS Direct Performance During S&P 500 Down Months

Outperforming Benchmark During Down Periods

ARS Direct Performance During HFRI FOF Div Down Months

Sub $500M Invested

Source: State Street Investment Analytics
Performance

Up/Down Capture

*October 2014 – June 2020

Source: State Street Investment Analytics
## Absolute Return Performance
### Period Ending June, 2020 (Net All)

<table>
<thead>
<tr>
<th>Fund</th>
<th>MKT VALUE</th>
<th>% of Plan</th>
<th>1 Month</th>
<th>3 Months</th>
<th>YTD</th>
<th>1-YR</th>
<th>3-YR</th>
<th>ITD</th>
<th>Incept Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMRS - ABSOLUTE RETURN DIRECT</td>
<td>$2,955M</td>
<td>9.9%</td>
<td>1.44</td>
<td>5.61</td>
<td>-0.22</td>
<td>1.54</td>
<td>3.97</td>
<td>4.38</td>
<td>1-1-16</td>
</tr>
<tr>
<td>HFRI FOF DIVERSIFIED INDEX</td>
<td></td>
<td>1.70</td>
<td>7.28</td>
<td>-0.97</td>
<td>0.93</td>
<td>2.65</td>
<td>2.37</td>
<td></td>
<td>1-1-16</td>
</tr>
<tr>
<td>Excess</td>
<td></td>
<td>-0.26</td>
<td>-1.68</td>
<td>0.75</td>
<td>0.61</td>
<td>1.31</td>
<td>2.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Performance

ARS Direct: Albourne
Proforma/Actual Review

**Portfolio Objectives**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Target</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>Libor + 4.00%</td>
<td>4.24%</td>
</tr>
<tr>
<td>Volatility</td>
<td>3% - 6%</td>
<td>4.85%</td>
</tr>
<tr>
<td>Historical Sharpe Ratio</td>
<td>1</td>
<td>0.66</td>
</tr>
</tbody>
</table>

Portfolio Objectives evaluated over Oct 2014-Jun 2020

*Portfolio returns are Proforma from Oct 2014 thru Dec 2015, at which point TMRS ARS direct portfolio begins.
Hedge Fund Returns

Manager selection is even more important in challenging markets

ARS’ diversification remains balanced across strategies.

Source: Hedge Fund Research, JPMAAM. Dispersion represents the standard deviation of returns for a given month across funds in the same strategy. Industry includes all funds. The dispersion numbers are then put into percentiles from the period of January 2007 to March 2020.
Average returns (3 year rolling) have compressed post crisis when considering prevailing Libor rates.

Source: Barclays, HFR, Bloomberg
Data thru Jun–20
Returns, on a risk-adjusted basis, are in line with pre-crisis profiles.
Volatility remains relatively low while stocks and bonds are near highs.

Source: HFRI, CBOE, MSCI, FactSet, J.P. Morgan Asset Management
Performance/Limiting Losses

Protecting Against Equity Market Downside

Over the last 20 years, HFIs have mitigated the downside during the two bear markets (2001 and 2008) and three bull market corrections (2011, 2015, 2018).

Cumulative HF Industry & MSCI World Returns (Indexed to $100), 2000-Mar 2020

- **Dotcom Bubble**
  - HF: -2.1%
  - MSCI: -46.8%

- **GFC**
  - HF: -21.4%
  - MSCI: -54.0%

- **Eurozone Crisis**
  - HF: -8.2%
  - MSCI: -13.5%

- **COVID-19 Crisis**
  - HF: -8.2%
  - MSCI: -21.1%

- **15/16 Correction**
  - HF: -7.2%
  - MSCI: -12.0%

- **4Q18 Correction**
  - HF: -6.0%
  - MSCI: -13.4%

<table>
<thead>
<tr>
<th>HF Recovery to HWM</th>
<th>MSCI Recovery to HWM</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/a</td>
<td>~70 mths</td>
</tr>
<tr>
<td>~36 mths</td>
<td>~70 mths</td>
</tr>
<tr>
<td>~20 mths</td>
<td>~20 mths</td>
</tr>
<tr>
<td>~20 mths</td>
<td>~9 mths</td>
</tr>
<tr>
<td>~20 mths</td>
<td>~9 mths</td>
</tr>
</tbody>
</table>

Source: HFR, Barclays
## Performance/Limiting Losses

### Protecting Against Equity Market Downside

Hedge Funds may not cope well during sudden ‘shock’ months of bear markets, but they capture much less of the downside for the remainder of the crisis.

<table>
<thead>
<tr>
<th>Bear Markets</th>
<th>Periods</th>
<th>Cumulative MSCI W</th>
<th>Cumulative HF</th>
<th>HF Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dotcom Bubble</strong></td>
<td>Total Period</td>
<td>-46.8%</td>
<td>-2.1%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>“Shock” Month²</td>
<td>-6.4%</td>
<td>-2.8%</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>(Sept 01)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remaining Months³</td>
<td>-40.4%</td>
<td>0.7%</td>
<td>-2%</td>
</tr>
<tr>
<td><strong>Global Financial Crisis</strong></td>
<td>Total Period</td>
<td>-54.0%</td>
<td>-21.4%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>“Shock” Month²</td>
<td>-9.7%</td>
<td>-5.7%</td>
<td>59%</td>
</tr>
<tr>
<td></td>
<td>(Sept 08)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remaining Months³</td>
<td>-44.3%</td>
<td>-15.7%</td>
<td>35%</td>
</tr>
<tr>
<td><strong>COVID-19 Crisis</strong></td>
<td>Total Period</td>
<td>-21.1%</td>
<td>-8.2%</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>“Shock” Month²</td>
<td>-12.0%</td>
<td>-5.8%</td>
<td>48%</td>
</tr>
<tr>
<td></td>
<td>(March 20)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remaining Months³</td>
<td>-9.0%</td>
<td>-2.4%</td>
<td>26%</td>
</tr>
</tbody>
</table>

Source: HFR, Barclays
The Importance of Limiting Losses


ARS’ priority on downside protection in market pullbacks.

Source: JP Morgan
Section III

MARKET REVIEW: ABSOLUTE RETURN
Market Outlook

Prolonged policy and sentiment driven market oscillating between two regimes

Bullish regime

- Monetary and fiscal policy has created a floor on global equities and corporate bonds
- Zero and negative global rates mean there is no alternative (TINA) to risk assets
- The V-shaped recovery that started in Q2 will continue through the end of 2020
- Covid has further catalyzed an ongoing multi-decade technology revolution that will lead to increases in total factor productivity (TFP) in the US that will lead to sustained long term growth.

Bearish regime

- Economic activity levels remain the lowest since the Great Recession with no end in sight
- Monetary policy cannot solve current structural economic issues
- Fiscal policy will lapse and not be expanded
- Valuations are not reflective of the underlying fundamentals of the economy and companies
- There will be cascading defaults globally

Over the next 6-12 months, the belief is that markets will oscillate as a result of expectations about which of these scenarios is most likely. This oscillation will cause periods of irrational exuberance similar to 5/31 - 6/8 followed by indiscriminate selling similar to 6/09 - 6/26. We think this environment will create substantial tactical opportunities due to the level uncertainty that persists.

Source: Infinity Q Capital Management Research
Market Volatility

S&P 500 vs VIX Volatility Index

[Graph showing the comparison between S&P 500 Index and VIX Index (R1) from 7/31/2017 to 7/31/2020]
Bear Market Comparisons
Shortest bear market in the history of the S&P 500

Chart uses S&P 500 Price Return index. A bear market is defined as a 20% decline in the S&P 500 from its previous peak, and ends when index reaches its low and subsequently rises by 20%.
Bear Market – Underlying S&P 500 Sectors

Dispersion amongst sectors is great

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Economic Stimulus Crisis Response

Unprecedented response as a % of GDP

Source: McKinsey
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Super Strategy</th>
<th>Jan-20</th>
<th>Feb-20</th>
<th>Mar-20</th>
<th>1Q 2020</th>
<th>Apr-20</th>
<th>May-20</th>
<th>Jun-20</th>
<th>2Q 2020</th>
<th>YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF Universal</td>
<td>HF Universal</td>
<td>0.0%</td>
<td>-1.3%</td>
<td>-6.9%</td>
<td>-8.0%</td>
<td>3.2%</td>
<td>2.2%</td>
<td>1.9%</td>
<td>7.4%</td>
<td>-1.6%</td>
</tr>
<tr>
<td>CB Arbitrage</td>
<td>Relative Value</td>
<td>0.6%</td>
<td>0.5%</td>
<td>-8.1%</td>
<td>-7.1%</td>
<td>3.9%</td>
<td>1.6%</td>
<td>3.1%</td>
<td>8.8%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Fixed Income Arbitrage</td>
<td>Relative Value</td>
<td>0.9%</td>
<td>0.2%</td>
<td>-2.7%</td>
<td>-1.7%</td>
<td>2.4%</td>
<td>1.6%</td>
<td>1.1%</td>
<td>5.2%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Fundamental Equity MN</td>
<td>Relative Value</td>
<td>-0.2%</td>
<td>0.1%</td>
<td>-3.0%</td>
<td>-3.2%</td>
<td>2.5%</td>
<td>0.3%</td>
<td>1.7%</td>
<td>4.6%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Quantitative Equity MN</td>
<td>Relative Value</td>
<td>-0.2%</td>
<td>-2.5%</td>
<td>-3.6%</td>
<td>-6.2%</td>
<td>0.9%</td>
<td>-0.5%</td>
<td>0.6%</td>
<td>1.0%</td>
<td>-5.3%</td>
</tr>
<tr>
<td>Relative Value Credit</td>
<td>Relative Value</td>
<td>0.8%</td>
<td>0.3%</td>
<td>-6.2%</td>
<td>-5.2%</td>
<td>2.3%</td>
<td>1.4%</td>
<td>2.1%</td>
<td>6.0%</td>
<td>0.6%</td>
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<td>Statistical Arbitrage</td>
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<td>-0.4%</td>
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<td>3.0%</td>
</tr>
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<td>Structured Credit - Relative Value</td>
<td>Relative Value</td>
<td>1.2%</td>
<td>-0.4%</td>
<td>-20.2%</td>
<td>-19.6%</td>
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<td>-11.9%</td>
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<tr>
<td><strong>Relative Value</strong></td>
<td><strong>Relative Value</strong></td>
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<td><strong>-0.4%</strong></td>
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<td><strong>1.4%</strong></td>
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<td><strong>5.8%</strong></td>
<td><strong>-2.3%</strong></td>
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<tr>
<td>Activist</td>
<td>Event Driven</td>
<td>-1.0%</td>
<td>-6.7%</td>
<td>-19.2%</td>
<td>-25.3%</td>
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<td>2.5%</td>
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</tr>
<tr>
<td>Distressed / Restructuring</td>
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<td>-1.5%</td>
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<td>-14.3%</td>
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<tr>
<td>Emerging Market Fixed Income</td>
<td>Event Driven</td>
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<td>-1.7%</td>
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<td>-0.2%</td>
<td>0.5%</td>
<td>5.4%</td>
<td>-4.3%</td>
</tr>
<tr>
<td><strong>Event Driven</strong></td>
<td><strong>Event Driven</strong></td>
<td><strong>-0.4%</strong></td>
<td><strong>-2.7%</strong></td>
<td><strong>-13.1%</strong></td>
<td><strong>-15.8%</strong></td>
<td><strong>5.5%</strong></td>
<td><strong>2.6%</strong></td>
<td><strong>2.7%</strong></td>
<td><strong>11.2%</strong></td>
<td><strong>-6.3%</strong></td>
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<tr>
<td>Asia Pacific Long / Short</td>
<td>Equity Long/Short</td>
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<td>0.5%</td>
<td>-6.8%</td>
<td>-7.1%</td>
<td>5.0%</td>
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<td>4.2%</td>
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<td>Equity Long/Short</td>
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<td>-11.0%</td>
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<td>7.3%</td>
<td>-4.9%</td>
</tr>
<tr>
<td>European Long / Short</td>
<td>Equity Long/Short</td>
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<td>-7.7%</td>
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<td>-1.6%</td>
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<tr>
<td>Japan Long / Short</td>
<td>Equity Long/Short</td>
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<td>-2.8%</td>
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<td>-6.4%</td>
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<td>-3.2%</td>
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<td>-7.1%</td>
<td>-9.8%</td>
<td>4.5%</td>
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<td>-2.2%</td>
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<td><strong>Equity L/S</strong></td>
<td><strong>Equity Long/Short</strong></td>
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<td><strong>-1.9%</strong></td>
<td><strong>-7.1%</strong></td>
<td><strong>-9.1%</strong></td>
<td><strong>5.2%</strong></td>
<td><strong>3.2%</strong></td>
<td><strong>2.0%</strong></td>
<td><strong>10.7%</strong></td>
<td><strong>0.4%</strong></td>
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<tr>
<td>CTA</td>
<td>Directional</td>
<td>1.4%</td>
<td>-1.5%</td>
<td>0.7%</td>
<td>0.6%</td>
<td>-0.2%</td>
<td>-0.6%</td>
<td>-0.7%</td>
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<td>-1.1%</td>
</tr>
<tr>
<td>Global Asset Allocation</td>
<td>Directional</td>
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<td>0.4%</td>
<td>-3.8%</td>
</tr>
<tr>
<td>Global Macro</td>
<td>Directional</td>
<td>-0.5%</td>
<td>0.2%</td>
<td>-2.2%</td>
<td>-2.5%</td>
<td>1.6%</td>
<td>1.5%</td>
<td>2.0%</td>
<td>5.1%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Insurance</td>
<td>Directional</td>
<td>0.6%</td>
<td>0.5%</td>
<td>-0.3%</td>
<td>0.8%</td>
<td>0.0%</td>
<td>0.6%</td>
<td>0.8%</td>
<td>1.4%</td>
<td>2.0%</td>
</tr>
<tr>
<td><strong>Directional</strong></td>
<td><strong>Directional</strong></td>
<td><strong>0.3%</strong></td>
<td><strong>-0.6%</strong></td>
<td><strong>-2.0%</strong></td>
<td><strong>-2.3%</strong></td>
<td><strong>0.8%</strong></td>
<td><strong>1.3%</strong></td>
<td><strong>0.4%</strong></td>
<td><strong>2.5%</strong></td>
<td><strong>-0.4%</strong></td>
</tr>
</tbody>
</table>

Source: Albourne HedgeRS Indices.

* Based on fund returns/estimates received as at 14-Jul-2020. Past performance is not necessarily indicative of future results.
The 2nd quarter of 2020 saw a remarkable rally in risk assets, on the heels of the record-setting Feb.-March market drawdown. The MSCI ACWI TR was up 20%, while IG/HY bonds and commodities were up 9-10% and 13.3%.

Structured Credit Relative Value strategy continues to recover from the March lows, with the strategy (Asset-Weighted) index gaining +4.8% in June 2020 on the heels of a strong May (+3.5%). CLOs have rallied for three straight months. Outperformance was driven by exposure to riskier tranches that are mostly held by hedge funds. In spite of the significant 2Q rally, Structured Credit remains the worst-performing hedge fund sub-strategy YTD (-13%), due to the severity of the March correction in the space.

Equity L/S strategies posted strong gains in 2Q in concert with the global rally in equities. The broad index (Asset-Weighted) is now up 2.7% YTD. Regionally, Asia Pacific Long/Short has outperformed (+10% YTD) its counterparts with the strategy continuing to produce significant alpha. For US managers positive performance was led by the long book in June. Specifically, long exposure to Technology and Consumer Discretionary drove performance. In the latter part of May we had a significant factor sell-off and the rotation into Value led to a degradation of alpha for many managers. The rotation was short-lived as it continued only up to the second trading week of June, as Momentum and Growth again took authority of the market, leading to a rebound in alpha for the strategy in the second half of the month.

Convertible Bond Arbitrage managers posted significant gains in 2Q, retracing most of March -10.3% drawdown, to finish flat YTD. Gains continued to be driven by new issue trades primarily. June was another strong month for new issuance with $20bn of gross proceeds and the second highest monthly total on record behind May’s $26bn. This has brought the total issuance in the first half of 2020 above the levels since for the whole of 2019. Managers active in SPAC trades also saw strong performance from those books as an active month for SPAC M&A deals - and strong performance from those names post-acquisition - provided an uplift across the universe. The broad convertible universe richened slightly in June but still remains cheap. The overall US convertible market (ICE BofA All US Convertible Index - VXA0 index) is now above +7% YTD as of June 2020 despite the broader equity market remaining in negative territory.

Amidst the continued recovery in HY Credit, especially in triple C rated bonds, Relative Value Credit and Distressed/Restructuring strategies continue to retrace their March losses. RVC is now positive YTD (+52bps), while Distressed/Restructuring is still firmly in negative territory -6.4% YTD.

CTA managers have struggled in recent months and YTD (-4.7%). June was another predominately negative month for CTAs with the AW Index down -1.3% for the month. Similar to May (-1%), some of the bigger losses were in commodities and FX (long USD) as the market recovery continued. Leverage still remains lower than normal due to volatility remaining elevated, but vol targets and VaR are at more normal levels compared to previous months.
General Observations and Themes

- Market volatility YTD highlights value of uncorrelated strategies
  - The trend into Private Equity continues, while investors have also been committing to various Private Credit strategies given the dislocation and pickup in defaults
  - The next area of interest appears to be less correlated hedge fund strategies as a proxy for the lost protective characteristics of bonds; despite this, Healthcare and Technology ELS also remain popular

- Performance overall has generally been positive
  - Alternatives performance through June of this year has generally been compelling versus traditional assets
  - The median Albourne client HF portfolio returned ~0.96% YTD, and those with lower beta mandates appear to have done better with a median of 1.55% YTD
  - While most areas have held up well, certain strategies such as Structured Credit have struggled, and investors are reconsidering its suitability within their portfolios
  - Expect certain managers to continue to see substantial outflows where performance has been lagging and decayed further in 2020
General Observations and Themes

- What is the future of investment and operational due diligence?
  - Thus far, Albourne’s due diligence processes have continued uninterrupted; reduced travel has provided more time for analysts to explore the myriad other complexities of this new environment, communicated to clients through research updates
  - Business continuity plans appear to have worked successfully in most cases

- How will the industry deal with a remote workforce?
  - Asset managers and investors have had to deal with a wide range of new issues created by homeworking, however a survey of managers showed 100% who believe their key personnel have been able to fulfill their duties and 99% of managers stated they underwent no changes to operational processes
  - Going forward there are new security and IT considerations/challenges to ensure privacy obligations are met and the risk of data loss is mitigated

- Social issues are impacting asset management
  - Interest in ESG and D&I related initiatives has picked up dramatically; Albourne is launching a new D&I questionnaire imminently and recently published an ESG primer
Hedge Fund Strategy Outlook

• **Directional** strategies are positioned defensively due to the uncertainty surrounding the COVID–19 pandemic. Global Macro managers are monitoring geopolitical and economic situations including US/China relations, political/fiscal dynamics in the EU and the 2020 US presidential elections.

• **Relative Value** managers are looking for opportunities due to the dislocation caused by the pandemic. For Relative Value Credit managers, HY spread dispersion remains elevated which is posing a lot of opportunities.

• **Long Short** managers believe the market is bifurcated between companies likely to come out of this period well while others might suffer from reduced demand, creating many long and short opportunities in the market.

• **Event Driven** managers are finding opportunities across the spectrum. For Distressed Restructuring managers, the current market environment is expected to create many actionable distressed opportunities.
Section IV

CONCLUSIONS
Conclusions

• In the past four and a half years, TMRS Staff has focused on the implementation and execution of the strategic decision to build out a Direct Absolute Return Program.

• Mindset: Protect Capital in anticipation of market volatility

• Despite challenges, the Direct Portfolio is achieving return objectives, as illustrated in the IPS, both from a relative and absolute perspective.

• The Portfolio is constructed to seek attractive risk-adjusted returns over the long-term while providing performance that has low correlation to traditional asset classes.

• Global markets tend to be cyclical and diverse, with bouts of volatility disruptions. This poses both opportunities and risks for ARS’ overall investment portfolio and prospects going forward.
DISCLOSURES

TMRS periodically discloses public information that is not excepted from disclosure under Section 552.0225(b) of the Texas Public Information Act. Information provided by a manager, a Managing General Partner (GP), any of its Associates or other data provider to TMRS or a TMRS service provider, and contained in these materials (i) may have been independently produced or modified by TMRS or the TMRS service provider; (ii) has not been reviewed or approved by the manager, Managing GP or any of its Associates; and (iii) may not reflect the historical performance or asset value reflected in the manager’s, Managing GP’s or any of its Associates’ records and, therefore, should not be used for comparative purposes.