



MINUTES

**Educational Session of the Board of Trustees
of the State Universities Retirement System
Friday, February 3, 2023, 9:00 a.m.
State Universities Retirement System
Via remote access due to ongoing COVID-19 concerns**

The education session held on February 2, 2023, was conducted via video conference pursuant to the Governor's COVID-19 Executive Order dated January 6, 2023, and subsection (e) of Section 7 of the Illinois Open Meetings Act. Chair John Atkinson of the SURS Board of Trustees determined that a full, in-person meeting was not practical nor prudent due to the ongoing COVID-19 disaster concerns.

The following trustees were present: Mr. John Atkinson, Dr. Andriy Bodnaruk, Mr. Richard Figueroa, Dr. Fred Giertz, Mr. Scott Hendrie, Dr. Steven Rock, Mr. Collin Van Meter, Mr. Antonio Vasquez and Mr. Mitch Vogel.

Others present: Ms. Suzanne Mayer, Executive Director; Mr. Douglas Wesley, Chief Investment Officer (CIO); Ms. Ellen Hung, Deputy CIO; Ms. Kim Pollitt, Mr. Joe Duncan and Mr. Shane Willoughby, Sr. Investment Officers; Mr. Brian Deloria, Mr. Alex Ramos and Ms. Kelly Valle, Investment Officers; Ms. Stephany Brinkman, Investment Analyst; Ms. Dallen Roman, Investment Intern; Ms. Bianca Green, General Counsel; Ms. Tara Myers, Chief Financial Officer; Ms. Heather Kimmons, Associate Legal Counsel; Ms. Jackie Hohn, Chief Internal Auditor; Ms. Nichole Hemming, Chief Human Resources Officer; Ms. Kristen Houch, Director of Legislative and Stakeholder Relations; Ms. Alicia Route, Legislative Analyst; Ms. Kelly Carson and Ms. Chelsea McCarty, Executive Assistants; Mr. David Sancewich, Ms. Ghiané Jones and Mr. Colin Bebee, of Meketa; and Mr. Michael Calabrese of Foley.

Board of trustees roll call attendance was taken. Trustee Atkinson, present; Trustee Bodnaruk, absent; Trustee Figueroa, present; Trustee Flaherty, absent; Trustee Giertz, present; Trustee Hendrie, present; Trustee Lyons, absent; Trustee Rock, present; Trustee Van Meter, present; Trustee Vasquez, present; and Trustee Vogel, present.

Trustee Bodnaruk physically joined the meeting at 9:30 a.m.

The Trustee Educational Forum commenced at 9:00 a.m. with the following speakers providing educational presentations to the trustees covering Private Credit and Direct Lending, Systematic Trend Following Strategies, the 2023 Economic Outlook, and Securities Litigation and the Foreign Opt-In Litigation Process.

- Private Credit and Direct Lending Overview – Neuberger Berman
- Review of Systematic Trend Following Strategies – Aspect Capital

- 2023 Economic Outlook - Carlyle
- Securities Litigation Overview and Foreign Opt-In Process – Labaton Sucharow

The Trustee Educational Forum lasted four and a half hours and concluded at 1:49 p.m. at the end of the presentations.

Copies of the educational presentations are included as the following exhibits:

- [Exhibit 1](#) – Private Credit – Direct Lending Overview
- [Exhibit 2](#) – Aspect Trend Educational Session
- [Exhibit 3](#) – Deglobalization

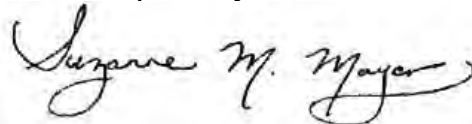
PUBLIC COMMENT

There were no public comments presented to the SURS Board of Trustees.

There was no further business brought before the board and Trustee Rock moved that the meeting be adjourned. The motion was seconded by Trustee Figueroa which passed via the following roll call vote:

Trustee Atkinson	- aye
Trustee Bodnaruk	- aye
Trustee Figueroa	- aye
Trustee Flaherty	- absent
Trustee Giertz	- aye
Trustee Hendrie	- aye
Trustee Lyons	- absent
Trustee Rock	- aye
Trustee Van Meter	- aye
Trustee Vasquez	- aye
Trustee Vogel	- aye

Respectfully submitted,



Ms. Suzanne M. Mayer
Executive Director and Secretary, Board of Trustees

SMM:kc

NEUBERGER	BERMAN
-----------	--------

SURS Direct Lending Discussion

February 3, 2023

Please note, this information has been produced at the request of SURS. The information is confidential and may not be reproduced, used or disclosed, or distributed in whole or in part without prior written consent. Disclosure to persons other than the intended recipient and their representatives is prohibited. We deem this proprietary information contained within as trade secrets, subject to applicable state/local law.

Neuberger Berman Biographies



Susan Kasser, CFA is the Head of Neuberger Berman Private Debt. The Private Debt business manages \$13 billion of investor capital dedicated to investing in first lien and unitranche loans to market leading companies owned by private equity firms. Prior to joining Neuberger Berman in 2013, she was an investment professional in the Direct Lending business of the Carlyle Group. Prior to joining Carlyle, Ms. Kasser worked at Goldman Sachs in several roles, including as an investment banker in the Leveraged Finance group, a fund investor and direct private equity co-investor in the Private Equity Group, and as a financial analyst in Global Investment Research. In addition to serving on the National Board of the Enterprise Club of the American Enterprise Institute, Susan serves on the Investment Committee and the Board of Directors for Vail Health, an independent, nonprofit health care system in Eagle County, Colorado. Ms. Kasser received an M.A. in International Economics and Finance and a B.A. in Philosophy from Brandeis University, where she graduated magna cum laude and Phi Beta Kappa. She holds the designation of Chartered Financial Analyst.



Thomas Obaseki, Managing Director, joined the firm in 2021. Thomas is a Client Advisor in the North American Institutional Client Group, working with public and corporate pensions, foundations, endowments, family offices and other institutions. Additionally, Thomas also serves as the US Public Funds client segment lead. Thomas joined the firm from Acadian Asset Management where he co-led the US public pensions practice nationally. Prior to Acadian, Thomas was with Wellington Management Company as a multi-asset investment specialist & a consultant relations officer. Earlier in his career, he held institutional investments & sales positions at Fidelity Investments and with J.P. Morgan's Investment Bank. Before business school, Thomas served as a Captain in the United States Army, leading a large combat unit in Baghdad, Iraq. He is a recipient of the Bronze Star Medal. Thomas received an M.B.A. from the University of Virginia Darden School of Business and a B.S. in Engineering Management from the United States Military Academy at West Point.



Cheryl Cannistra, Senior Vice President, joined the firm in 2011. Cheryl is the Head of North America Institutional Client Service and serves as a Client Service Advisor working with public and corporate pensions, foundations, endowments, family offices and other institutions. Prior to joining the firm, she worked at Driehaus Capital Management LLC for over 23 years, most recently as a vice president of relationship management. Prior to that role she was the director of client servicing and marketing, and before that she was a senior relationship manager. Cheryl received a BA in Economics from the University of Illinois.

Neuberger Berman Overview

Investing for clients for over 80 years

NEUBERGER BERMAN: \$408BN

Equities | \$110bn

Fixed Income | \$161bn

Private Equity | \$77bn

Private Credit | \$20bn

Alternatives | \$30bn

Real Assets | \$10bn

THE NB DIFFERENCE

Independent

100%

Employee-Owned

Global

39

Cities and 20 Portfolio
Management Centers

Scale

2,600+

Employees

Depth

700+

Investment
Professionals

Stability

96%

Retention
Rate¹

Alignment

100%

Deferred Cash
Compensation Directly
Linked To Strategies

Leadership



Awarded to <1% of
Investment Management
Signatories²

ESG



(5 out of 5 stars)

Awarded Top Scores for
ESG Integration by UN
PRI³

Culture

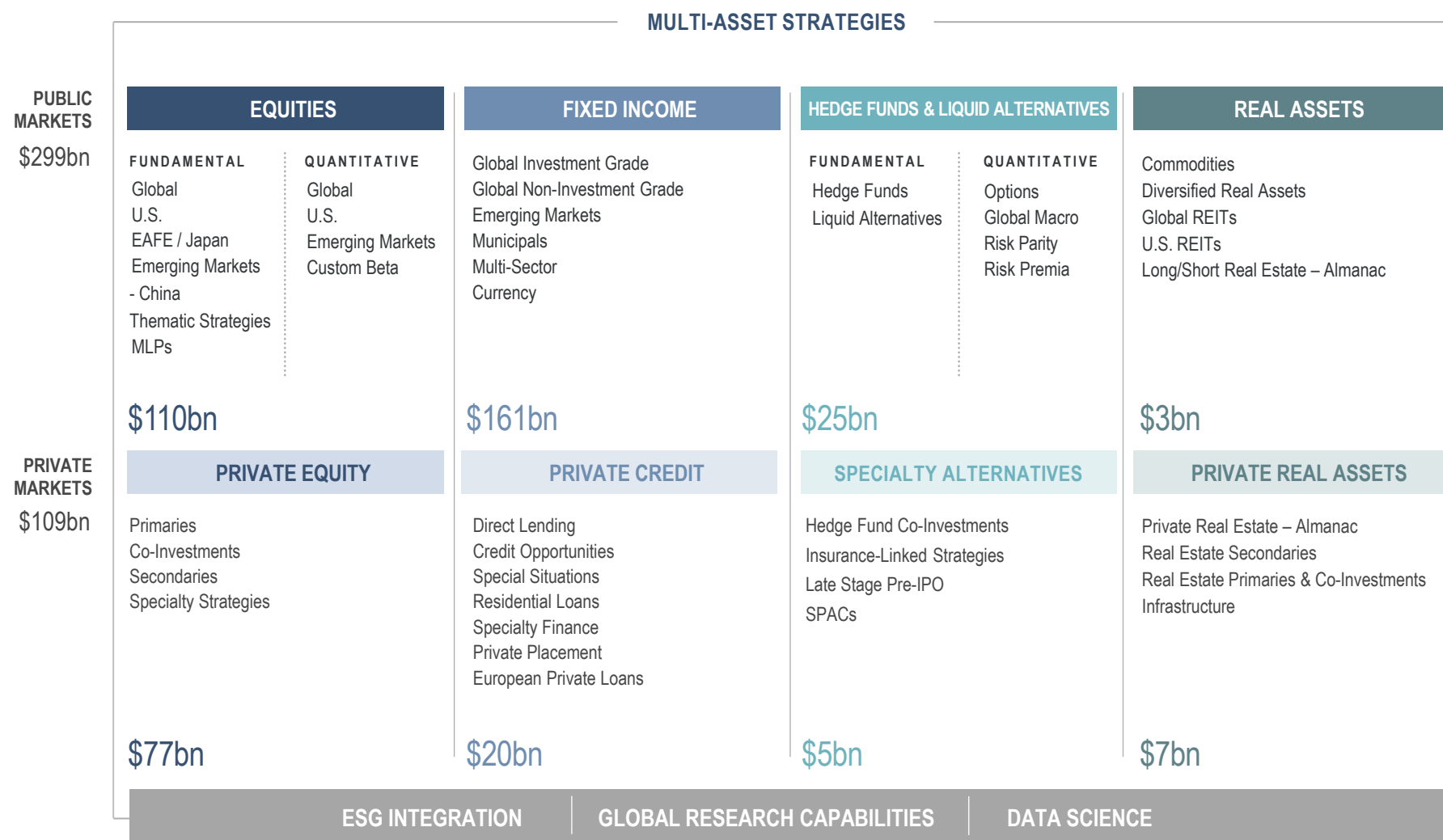


Awarded 1st or 2nd Place
in Each of the Last Eight
Consecutive Years by
Pension & Investments⁴

As of September 30, 2022. Figures may not sum up due to rounding. 1. Retention of MD and SVP level since becoming an independent company in 2009. 2. Awarded by UN-supported Principles for Responsible Investment (PRI). The PRI 2020 Leader's Group is awarded to only 20 of 2,400 PRI investment manager signatories. 3. For illustrative and discussion purposes only. PRI grades are based on information reported directly by PRI signatories, of which investment managers totalled 3,404 for 2021. Please see Principles for Responsible Investment (PRI) Scores and PRI Endnotes for information regarding PRI scores shown. 4. Among organizations with over 1,000 employees by Pensions & Investments.

Our Comprehensive Investment Offering Spans All Major Asset Classes

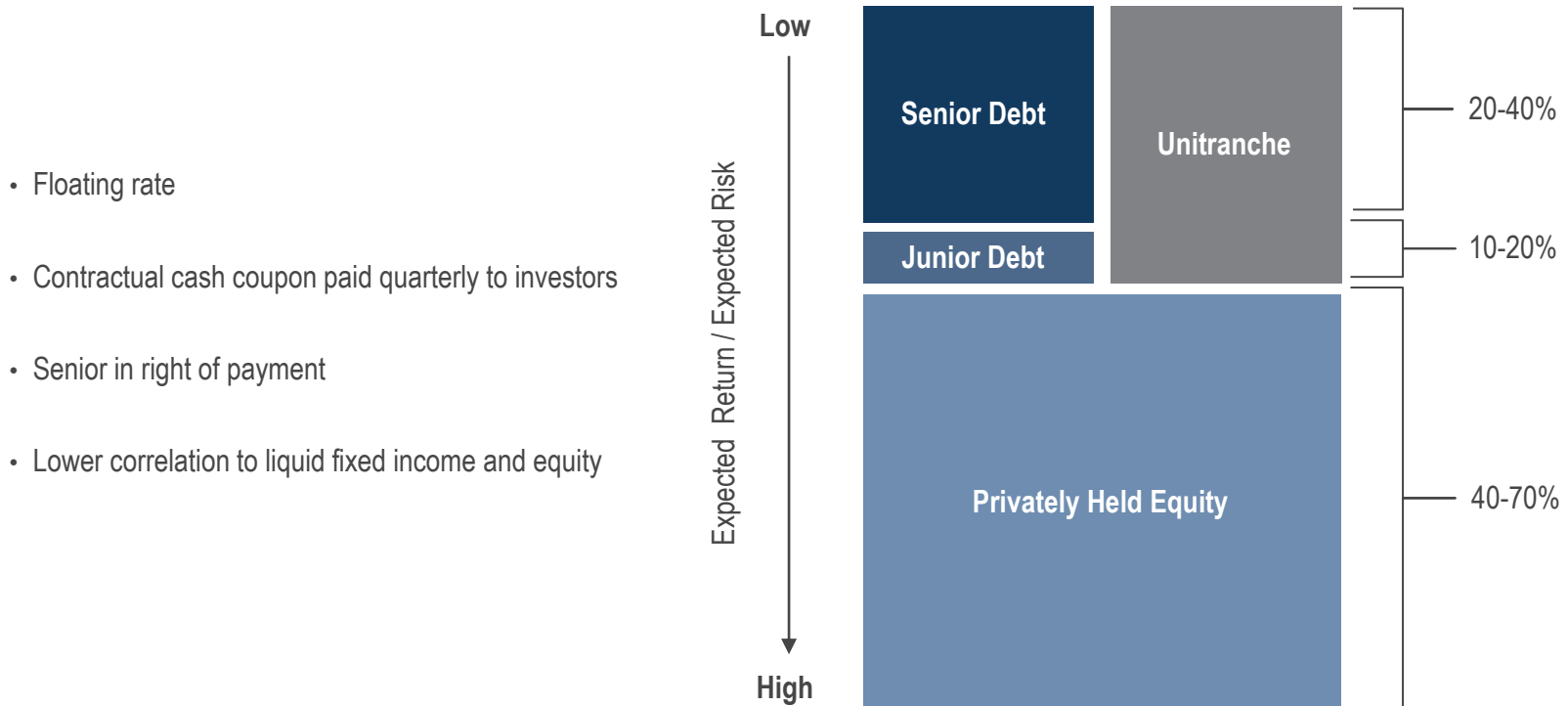
Investing \$408bn for clients globally



1. As of September 30, 2022. Figures may not sum up due to rounding.

What is Direct Lending?

Loans to private companies, generally owned by private equity funds



Direct Lending offers strong downside protection

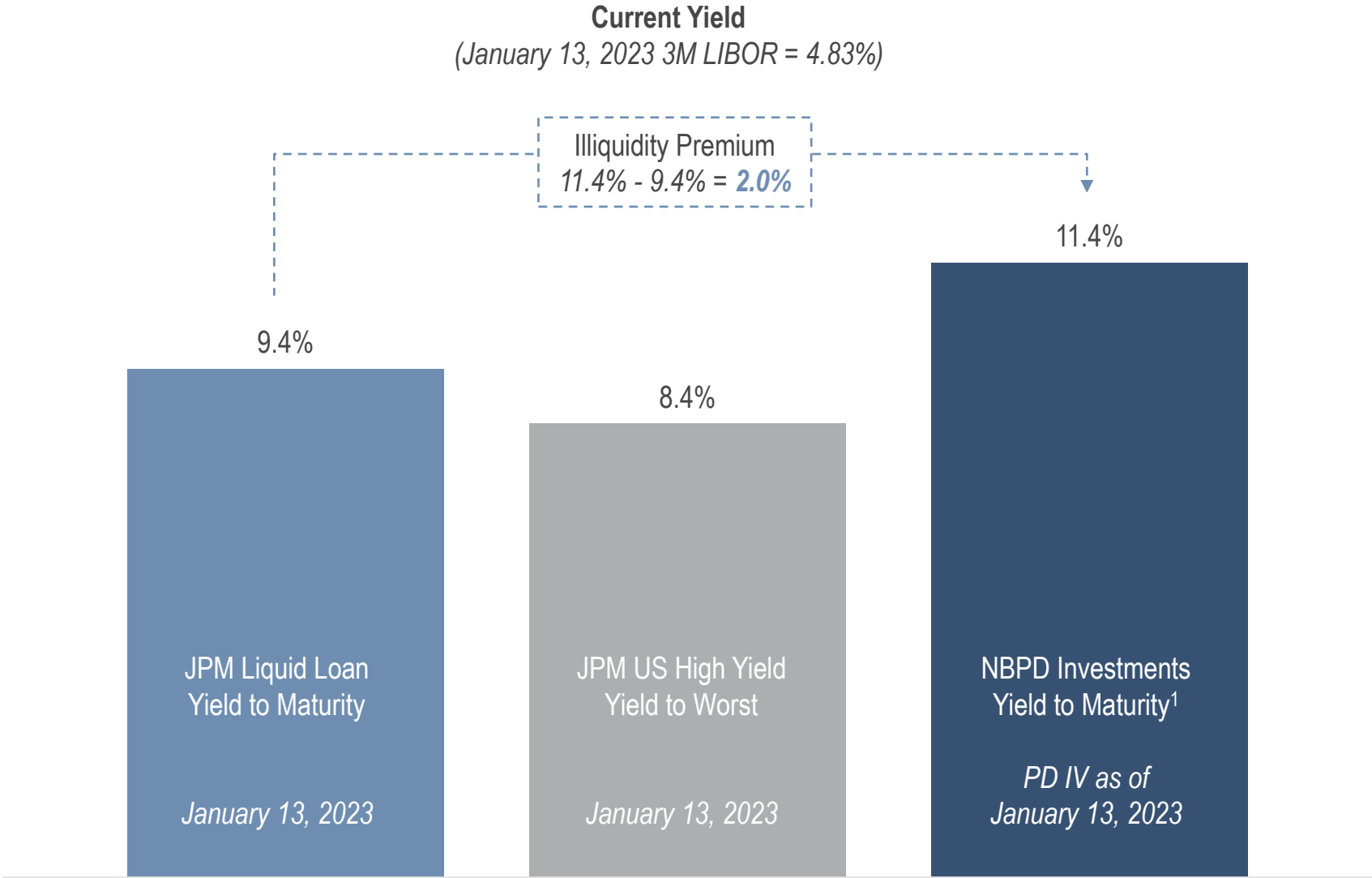
Structural Seniority

Lower Default Rates

Higher Recovery Rates

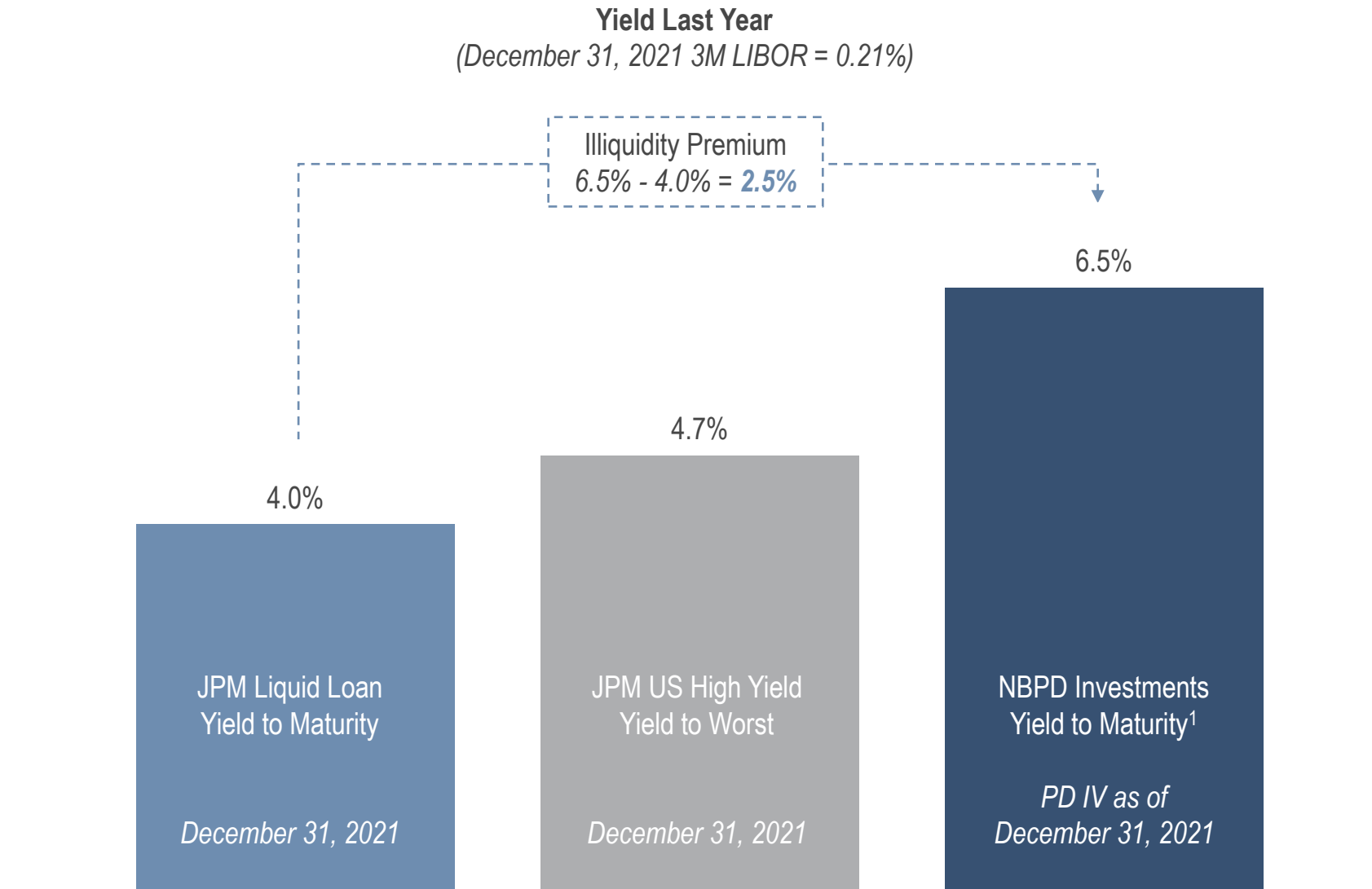
Tighter Credit Documentation

Yield Premium: Current



Source: JPMorgan.
1. NBPD Commitments assumes a maturity of 5.5 years. Yields are gross.

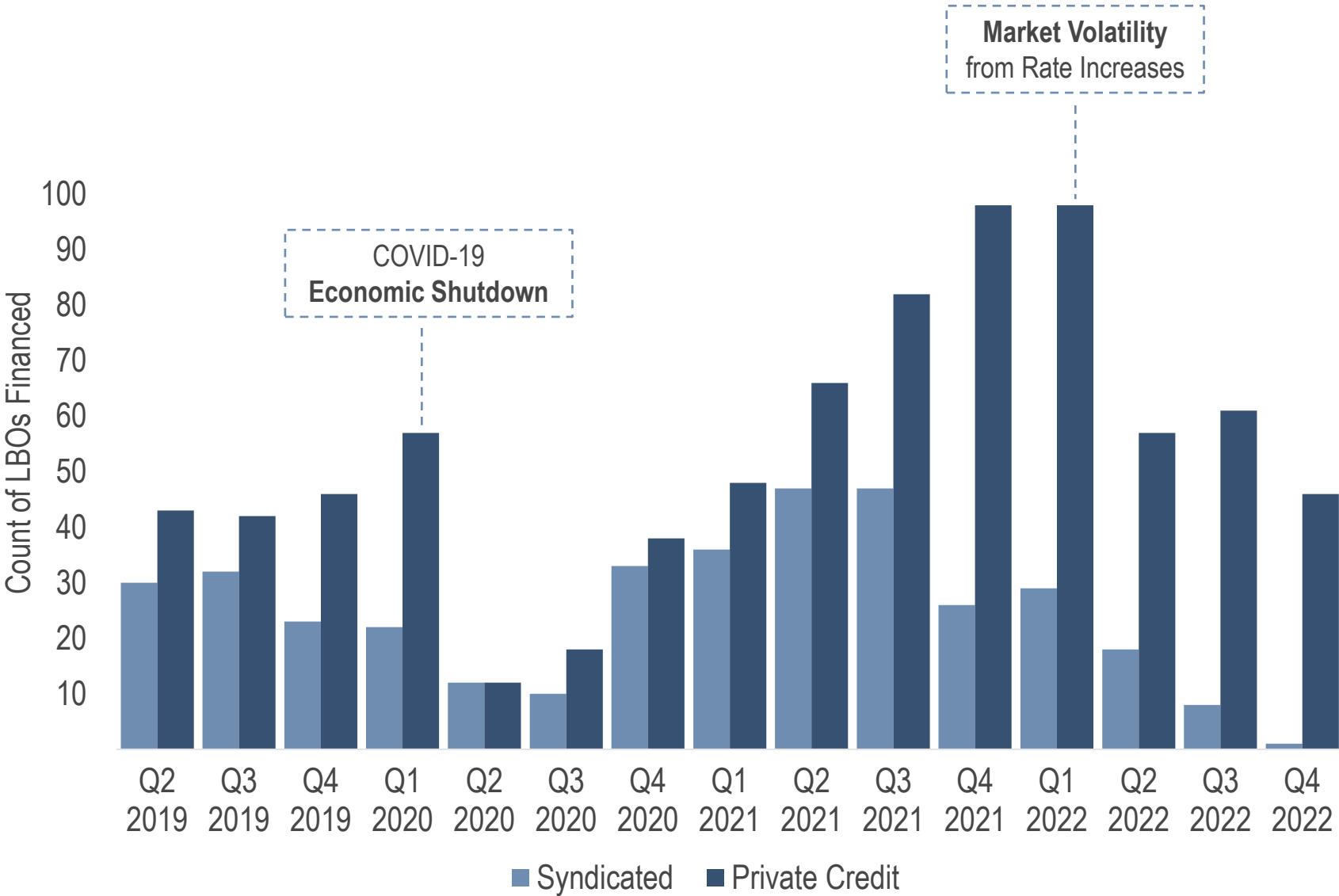
Yield Premium: December 2021



Source: JPMorgan.

1. NBPD Commitments assumes a maturity of 5.5 years. Yields are gross.

Private Credit has Proved a More Reliable Financing Partner through Times of Turmoil



Source: S&P LCD.

Key Characteristics of Direct Lending

Seniority

- Senior in right of payment
- Downside protection
- High recovery rates
- Tight credit documentation

Private markets

- Sourcing advantage
- Information asymmetry
- Lower correlation to liquid fixed income and equity
- Low volatility

Floating rate coupon

- Contractual cash coupon paid quarterly to investors
- Benefit of rising rates

Asset selectivity

- Few industry benchmarks, ability to overweight / underweight industries
- Bottom-up security selection
- Multi-year time period, little pressure to invest capital

Oversight

- Sponsor ownership provides manager oversight
- Typically lower default rates than non-sponsored loans

Investment Challenge of Direct Lending

- The market is competitive, inefficient and relationship oriented
- Direct Lending is return asymmetric: what you DON'T DO is more important than what you DO
- Selectivity and deal sourcing are in opposition
- “The three most important words in investing are margin of safety” - Warren Buffet

Neuberger Berman Platform Attractively Positioned to Generate Direct Lending Deal Flow

High Selectivity Due to the Ability to Say ‘No Thank You’

Low 6.1% investment rate

Lender to Private Equity Companies

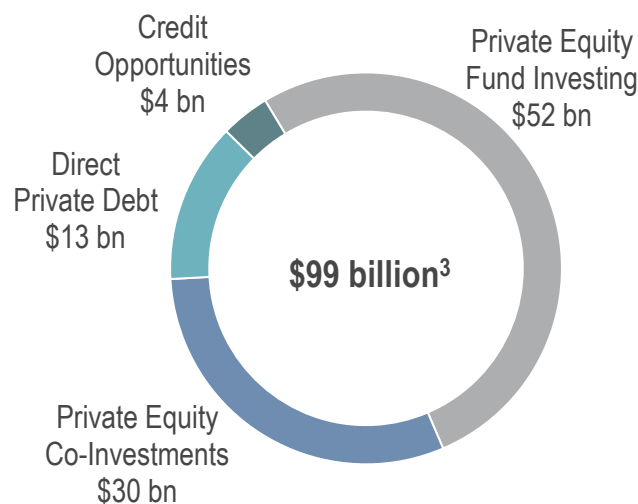
\$4.1 billion invested or committed into first lien and unitranche loans over last twelve months¹

Up to \$500 million committed per investment to companies with **\$25+ million of EBITDA**

3,200+ opportunities reviewed since launch of NB Private Debt Fund III²

Direct lender to **120+** companies today¹

\$99 Billion of Capital Dedicated to Supporting the Private Equity Ecosystem



Private Equity GP Relationships

595+ private equity fund commitments⁴

265+ private equity fund board seats⁵

\$5.3 billion of private equity fund investments in 2022⁶

6,630+ underlying private equity owned portfolio companies⁷

Source: NB Alternatives Advisers LLC. 1. Includes all holdings across NB Private Debt strategy as of December 31, 2022. 2. NBPD III began investing in November 2017. 3. As of December 31, 2022. Includes estimated allocations of dry powder for diversified portfolios consisting of primaries, secondaries, and co-investments. Amounts may vary depending on how mandates are invested over time. 4. As of September 30, 2022. 5. As of September 30, 2022. Includes Limited Partner Advisory Committee seats and observer seats for PIPCO and Secondaries since inception. 6. Represents opportunities reviewed, made and committed to across primaries and secondary fund investments. 7. Represents active portfolio companies for PIPCO and Secondaries through September 30, 2022.

Risk Management Integrated into Portfolio Investing

Company Characteristics

- US **private equity-owned** companies
- High quality and **market leading**
- **Substantial margin of safety** to absorb inflation and rising rates
- Enterprise value cushion of **67%**¹

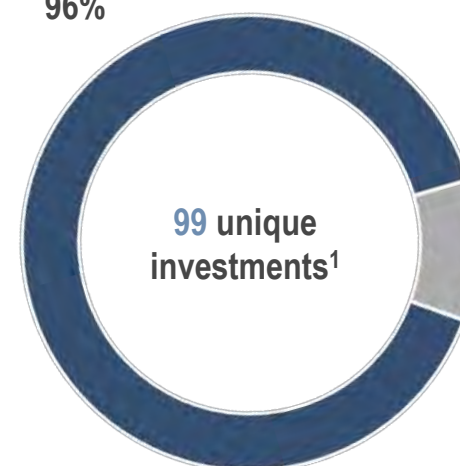
Industry Characteristics

- Growing and benefiting from secular tailwinds
- Recession resilient
- Limited international supply chain dependencies
- **Emphasis on investments in software, healthcare and business services**

Loan Characteristics

- **Floating rate, senior secured** loans

**First Lien and
Unitranche Loans**
96%



**Second Lien Loans,
Preferred / Equity**
4%

1. PD IV portfolio as of 9/30/2022.

NB Private Debt Fund IV Summary

As of September 30, 2022

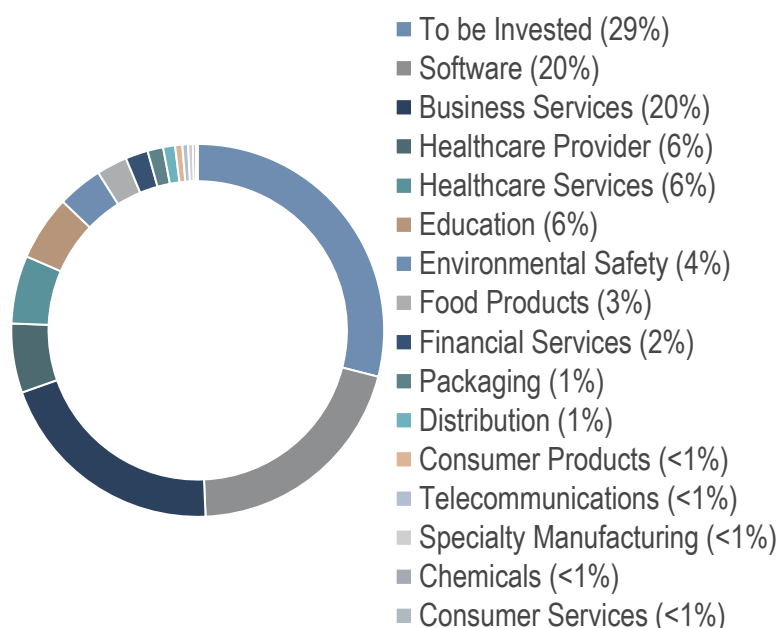
Key Fund Statistics

Limited Partner Commitments:	\$4.3 billion
Capital Called:	60%
Cumulatively Invested Capital:	71%
Gross Portfolio Levered / Unlevered Cash Yield ³ :	14.2% / 9.4%
Pro Forma Gross Levered / Unlevered Cash Yield ³ :	15.3% / 10.4%
DPI Levered / Unlevered:	0.06x / 0.02x
Annualized Default / Loss Rate ¹ :	0.0% / 0.0%

Highlights

- 90-95%+ floating rate, **senior secured** loans
- Highly diversified with **125+ investments** expected
- **Emphasis on software, healthcare and business services.** No investments in auto, energy, travel, housing, leisure, restaurants, or retail
- Based on NB's proprietary rating methodology, 83% of sponsors rated **Integrated or Developing** in their approach to ESG

Breakdown by Industry



Breakdown by Security of Unrealized Portfolio

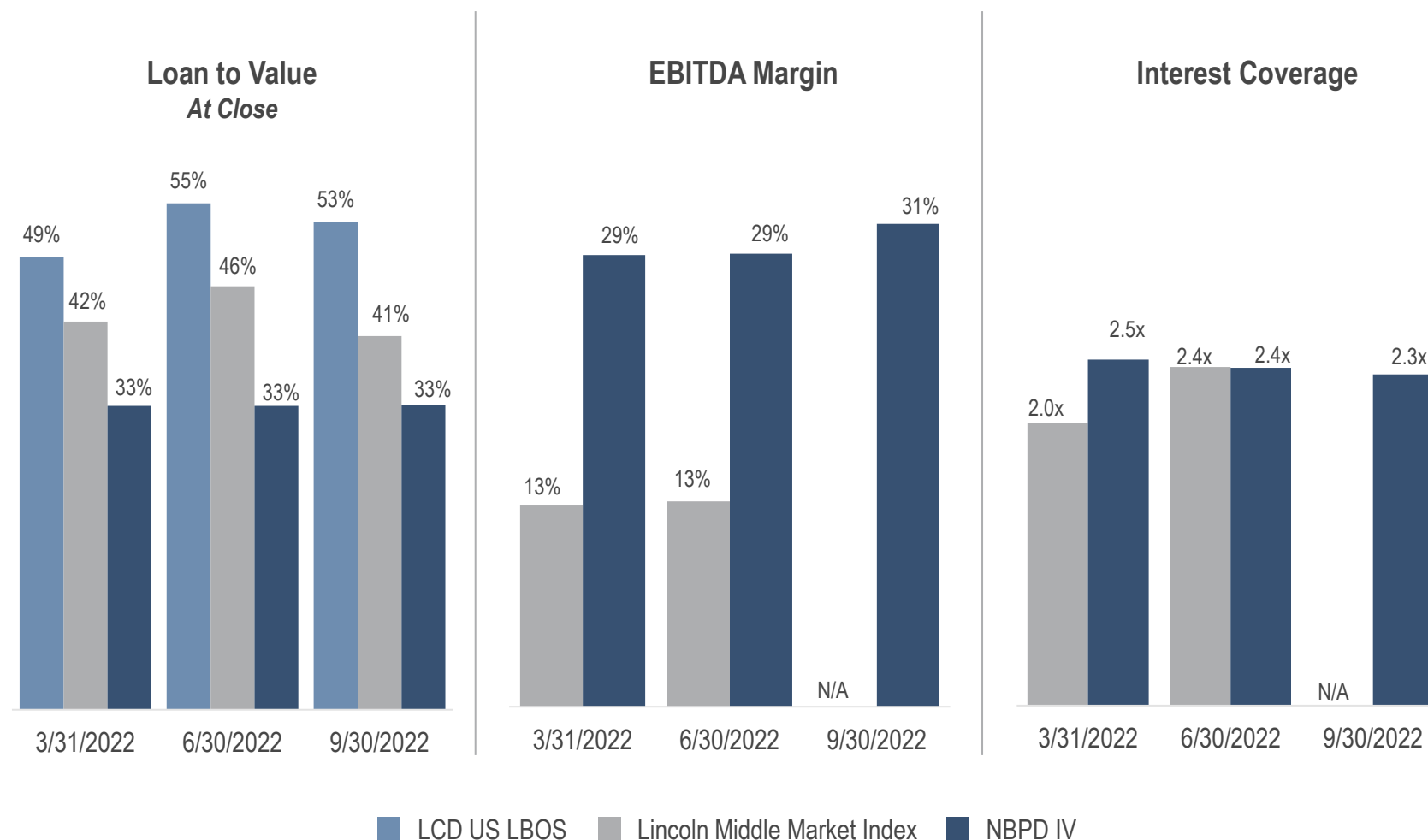


Security	Security Net Leverage	Enterprise Value	LTV
First Lien	5.0x	16.6x	30%
Unitranche	6.5x	18.5x	35%
Second Lien	5.8x	10.5x	55%

Note: There is no assurance or guarantee that pro forma calculations will come to fruition.

Please see the full summary of investments for NB Private Debt Funds IV, which must be read in conjunction with the performance information provided. 1, 2, 3 see endnotes.

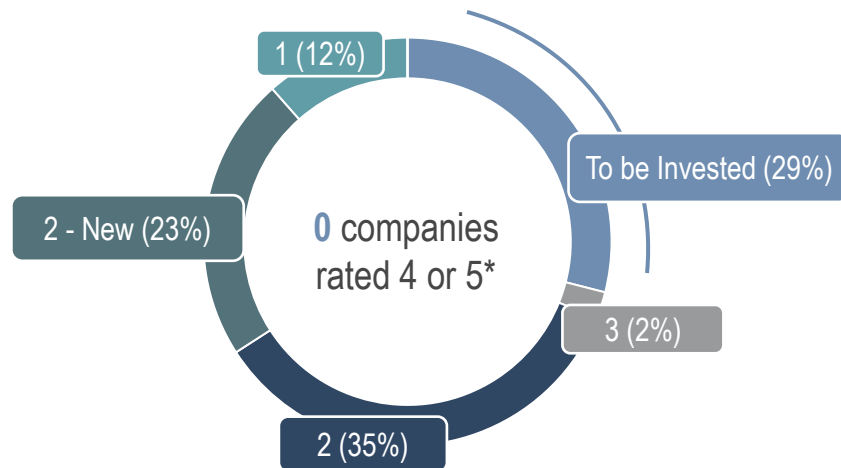
Our Focus on High Quality Portfolio Companies are Crucial to a Resilient Portfolio in Trying Times



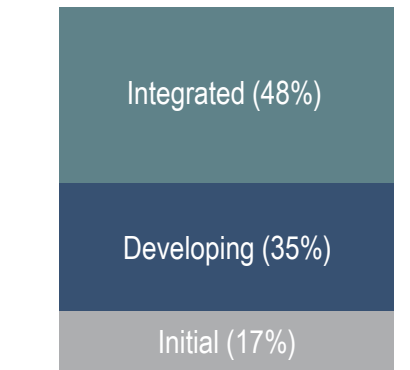
NBAA Analysis. LCD US LBOs: Includes all US LBOs, sponsored and non-sponsored. Lincoln Middle Market Index: Lincoln Middle Market Index data includes a population of 1,500+ private equity-owned U.S. companies sourced from Lincoln International. Lincoln International is a third party valuation agent that NBPD employs. Data includes quarter-over-quarter growth of financials as of stated date and quarter preceding stated date. For example, 9/30/2022 represents growth from LTM 6/30/2022 to LTM 9/30/2022. . See endnotes additional information on benchmark.

NB Private Debt Fund IV Summary (continued)

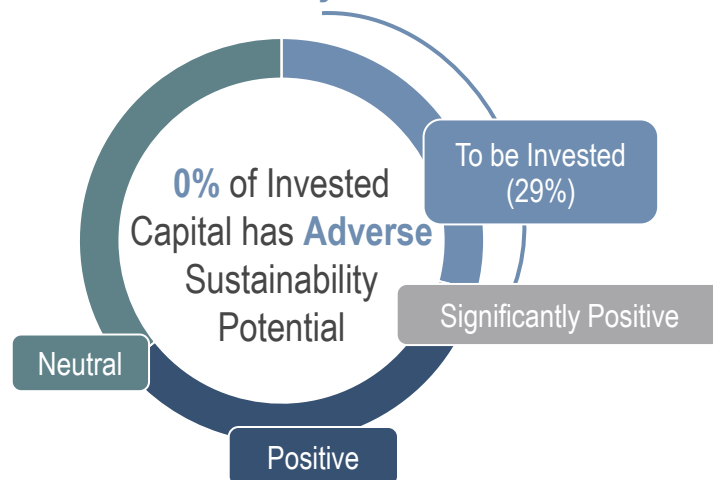
Portfolio Ratings



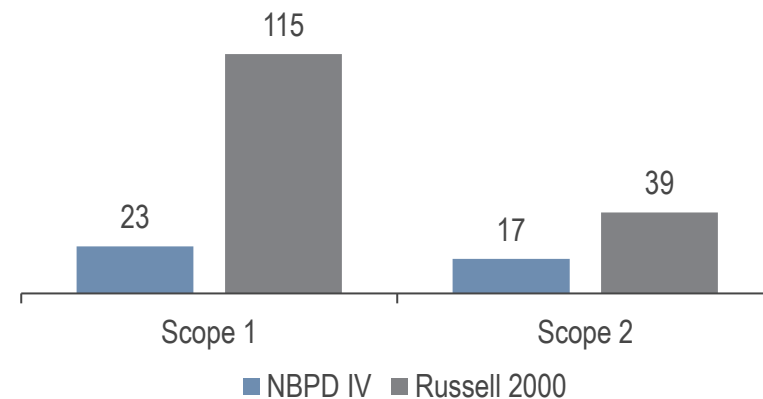
Manager ESG Scorecards



Portfolio Sustainability

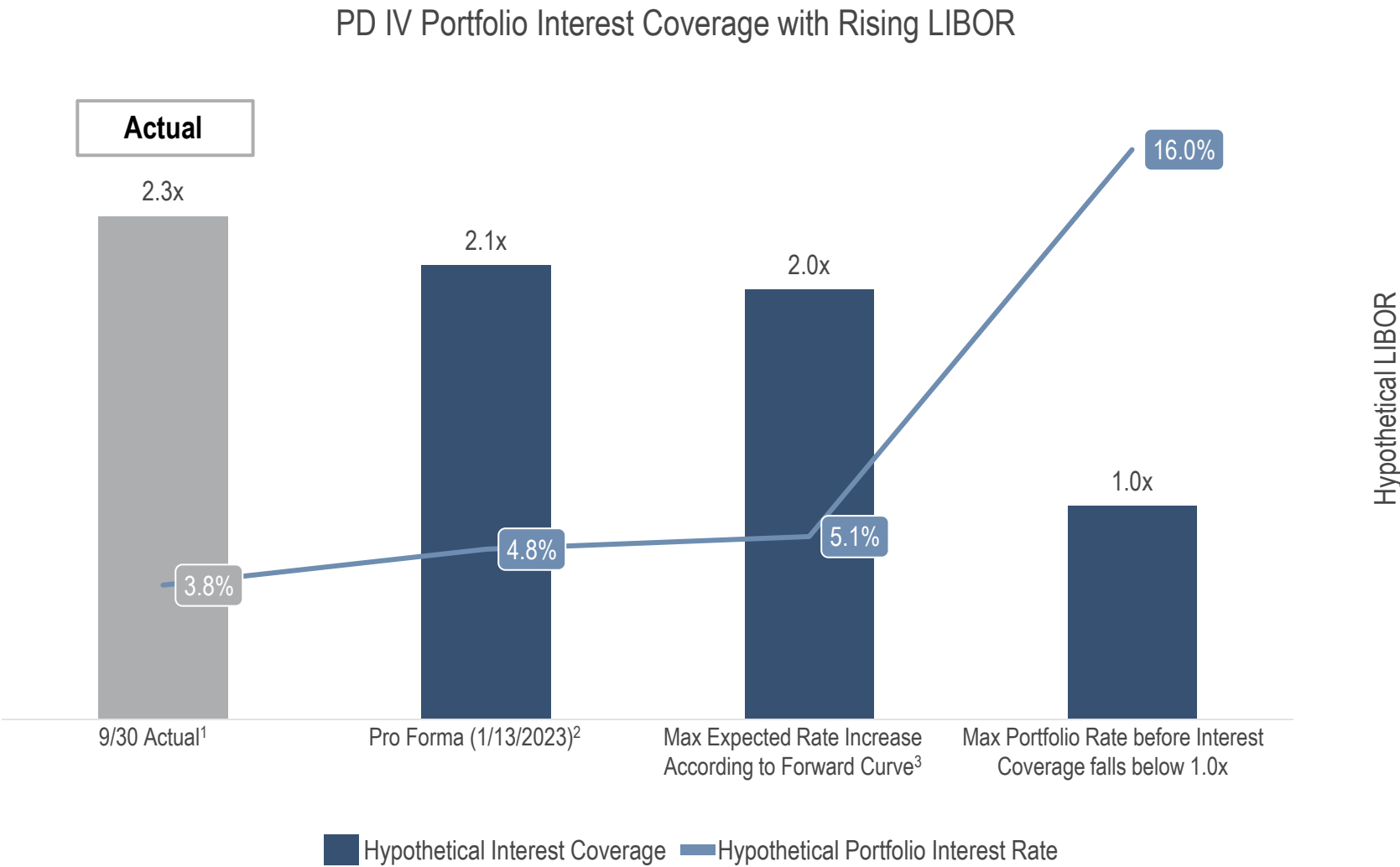
Carbon Intensity¹

(Tons CO2 Emissions per \$1 million of revenue)



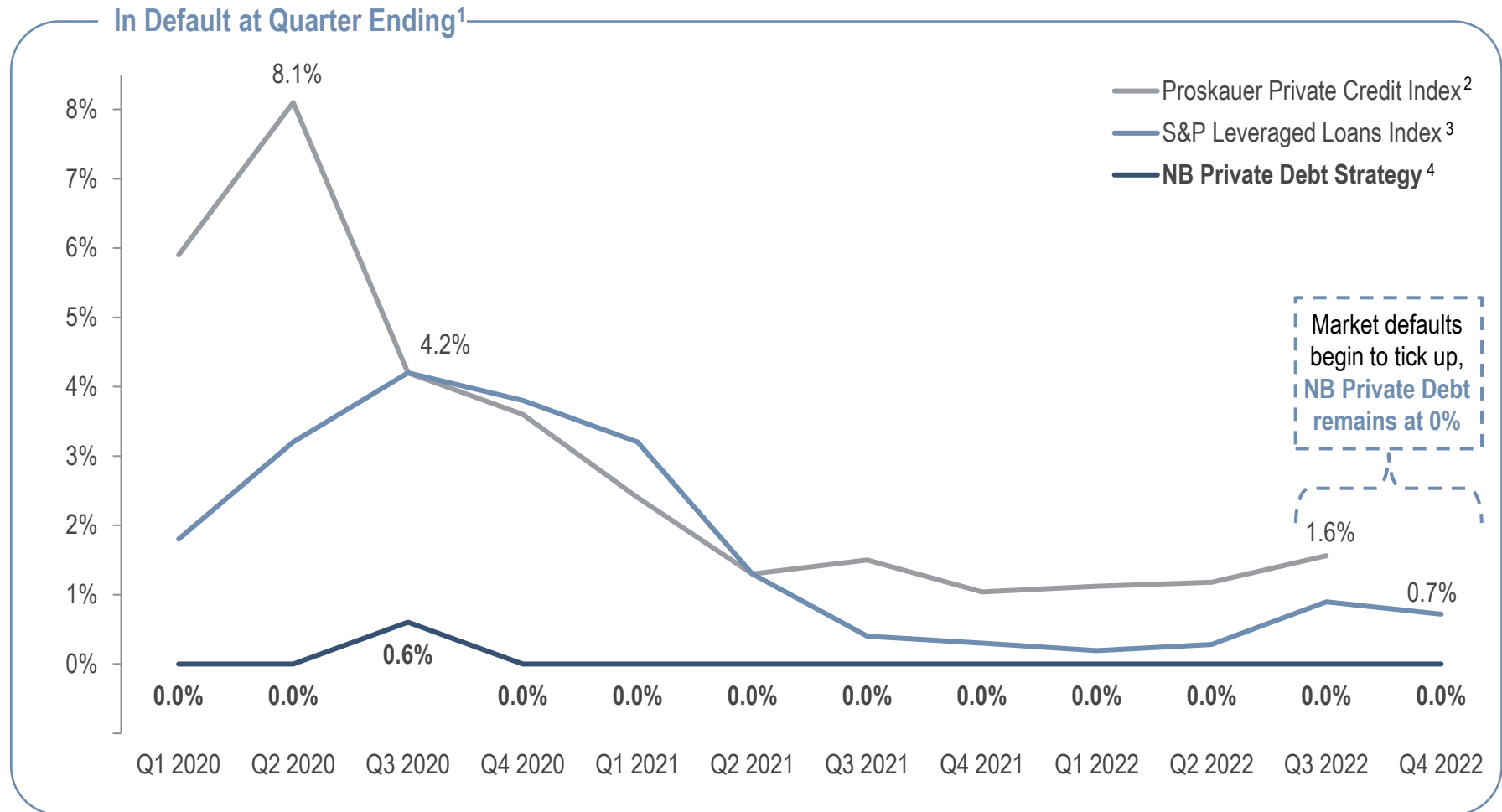
As of September 30, 2022. Past performance is not indicative of future results. Note: For illustrative and discussion purposes only. Actual events or results may vary significantly from those reflected or contemplated. There can be no assurance that the strategy will achieve comparable results, nor that the strategy will be able to or will ultimately elect to implement the assumptive investment strategy and approach described herein. The use of ESG factors could result in selling or avoiding investments that subsequently perform well, or purchasing investments that subsequently underperform. 1. Sourced: Trucost. Carbon emission is apportioned to the portfolio based on NB Private Debt investment amount and enterprise value + cash. Adverse Sustainability Potential is defined as companies that contribute to significant adverse outcomes for people or the environment. For additional sustainability definitions, please refer to PRI and Sustainability Endnotes.

Interest rates would need to increase by over 1,100 bps for coverage to go below 1x



For illustrative and discussion purposes only. There is no assurance or guarantee that pro forma calculations will come to fruition. 1. Actual PD IV portfolio as of 9/30/2022. 2. As of 12/31/2022 three-month LIBOR is 4.8%. 3. Source: Bloomberg as of January 2023.

NB Private Debt Selectivity Has Translated to Lower Defaults



Note: The index performance is presented for illustrative purposes only to show general trends in the market for the relevant periods shown. 1, 2, 3, 4 please refer to endnotes.

NB Private Debt Has Demonstrated Strong Investment Performance

\$15.1 billion committed / invested across **215 companies**

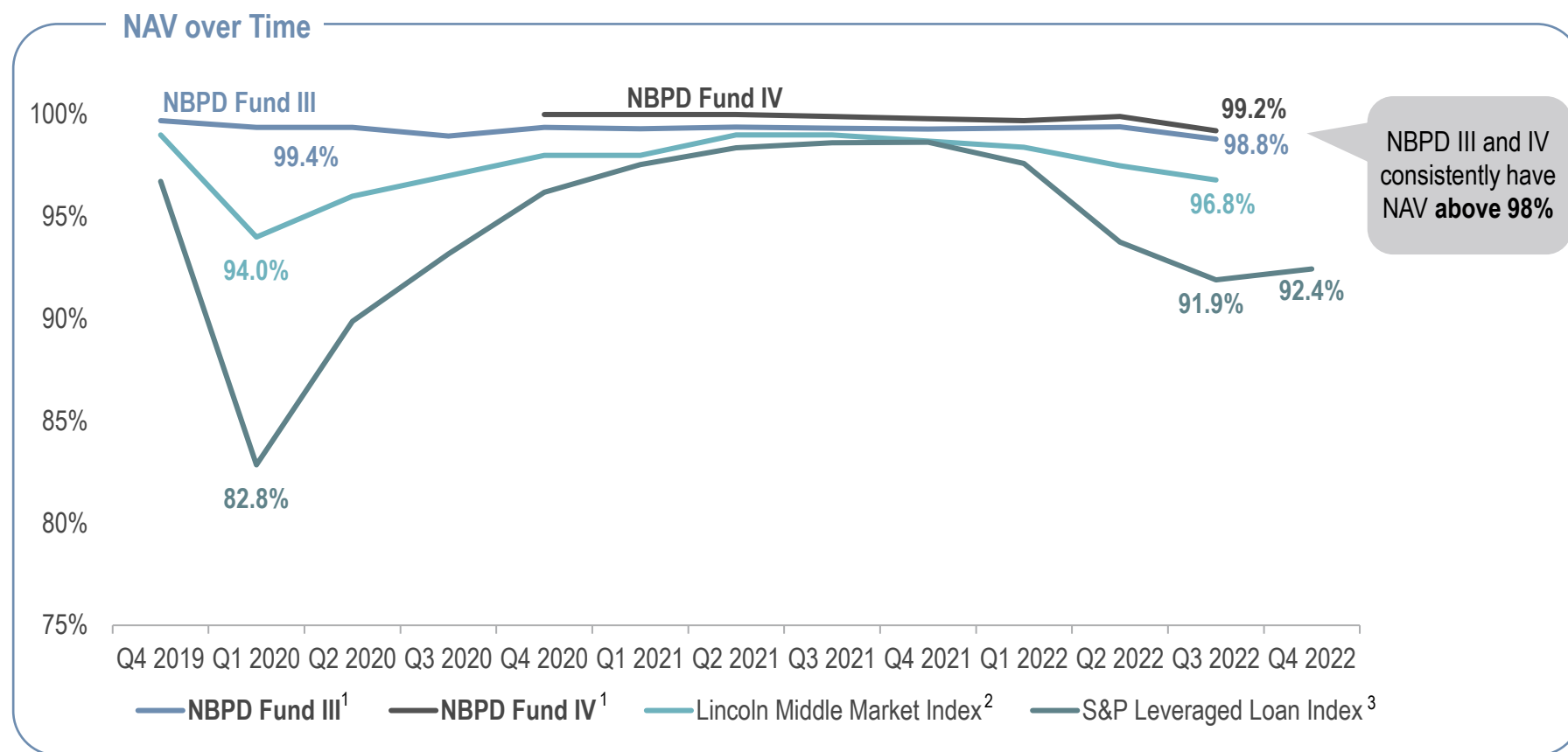
Annualized Default Rate¹: **0.04%**

Annualized Loss Rate¹: **0.01%**

As of September 30, 2022	Vintage	Focus	Type	Net MOIC ²	Net IRR ²	Cash Yield ³	Annualized Default / Loss Rate ¹
NB Private Debt Fund IV	2021	1L	Levered	1.09x	15.7%	14.2%	0.0% / 0.00%
			Unlevered	1.05x	8.0%	9.4%	
NB Private Debt Fund III	2017	1L	Levered	1.25x	10.6%	13.7%	0.1% / 0.01%
NB Private Debt Fund II	2015	2L	Unlevered	1.30x	8.5%	10.7%	0.2% / 0.09%
NB Private Debt Fund I	2014	2L	Unlevered	1.26x	10.1%	11.0%	0.2% / 0.11%

Note: The index performance is presented for illustrative purposes only to show general trends in the market for the relevant periods shown. 1, 2, 3 please refer to endnotes.

NB Private Debt has Demonstrated Stability



1. Note: The index performance is presented for illustrative purposes only to show general trends in the market for the relevant periods shown. The investment objectives and strategies and risk and reward profiles of each index may be different than those of the Fund. A variety of factors may cause this comparison to be an inaccurate index for any particular fund and the benchmarks do not necessarily represent the actual investment strategy of a fund. It should not be assumed that any correlations to the index based on historical returns would persist in the future. Past performance is not indicative of future results. 1. As of 9/30/22. NBAA Analysis. Net Asset Value of PD III and IV are preliminary and subject to change. Cumulatively invested capital in PD III is \$4.8 billion. Cumulatively invested capital in PD IV is \$4.6 billion. There can be no assurance that future funds will achieve the targeted or desired diversification or asset allocations, that future funds will be able to or will ultimately elect to implement the assumptive investment strategy and approach, nor that future funds will achieve similar characteristics to predecessor funds. Past performance is not indicative of future results. 2. Source: Lincoln International Valuations and Opinions Group. Universe includes 1,500+ private equity-owned U.S. companies with a median LTM EBITDA of \$41 million. Default rates are trailing 6 quarters. 3. Source: S&P / LSTA Leveraged Loan Index, which includes all term loans from syndicated credits that are senior secured, minimum tenor of 1 year, USD denominated, minimum L+125 spread, and >\$50m initially funded loans. Defaults are on an LTM basis.

Endnotes for Private Debt

Slide: NB Private Debt Fund IV Summary

1. Calculated as the cumulative default or loss rate divided by the total number of years since inception of the Fund.
2. Returns for Fund IV reflect the blended net returns for both institutional and non-institutional investors, taking into account the different management fee (typically 1.5% for non-institutional and 1.0% for institutional) and performance fee/carried interest (typically 15% for non-institutional and 12.5% for institutional) rates for each group. In particular, non-institutional investors – which represented 1.5% of the Fund – typically experienced lower returns than are shown above. For additional information concerning the historical returns of institutional and non-institutional investors, please contact NBAA. Except otherwise indicated, all returns are shown net of management fees and other expenses and the effect of the carried interest/performance fee that would be paid with respect to a particular Fund if its entire portfolio were liquidated at the remaining unrealized fair market value. An individual investor's return may vary based on timing of capital transactions, differences in fees, and the structure of such investor's investment. Returns for Fund IV without the use of its subscription credit facility/asset-backed leverage, would be lower.
3. Assumes a 60% advance rate on all First Lien and Unitranche investments with a cost of leverage equal to LIBOR plus 2.50%. Other yields are calculated on an unlevered basis. As of 9/30/2022, three-month LIBOR was 3.75%. As of 1/13/2022 three-month LIBOR was 4.8%.

Slide: NB Private Debt Selectivity Has Translated to Lower Defaults

1. The investment objectives, strategies, and risk and reward profiles of each index may be different than those of the Fund. A variety of factors may cause this comparison to be an inaccurate index for any particular fund and the benchmarks do not necessarily represent the actual investment strategy of a fund. It should not be assumed that any correlations to the index based on historical returns would persist in the future. Past performance is not indicative of future results. Indices are unmanaged and represent a fixed group of securities. The figures for the indices reflect the reinvestment of dividends but do not reflect the deduction of any fees or expenses which would reduce returns. The Fund does not invest in all or necessarily any of the securities that comprise the indices shown. In addition, the Fund may have different and higher levels of risk, including through the use of leverage, concentrated positions, and volatility.
2. Source: Proskauer Rose. The Private Credit Index, also known as the 'Proskauer Private Credit Default Index,' includes 934 active senior secured and unitranche loans in the United States representing \$149bn in original principal amount.
3. Source: S&P / LSTA Leveraged Loan Index, which includes all term loans from syndicated credits that are senior secured, minimum tenor of 1 year, USD denominated, minimum L+125 spread, and >\$50m initially funded loans. Defaults are on an LTM basis.
4. As of 6/30/22. Cumulatively invested capital in PD Strategy is \$11.6 billion. The PD Strategy includes track record from Funds I, II, III, IV (Funds I-II primarily invested in 2nd lien loans while Funds III-IV intend to invest primarily in originated 1st lien loans).

NB Private Debt Has Demonstrated Strong Investment Performance

Past performance is not indicative of future results. Please see the full summary of investments for NB Private Debt Funds IV – III, which must be read in conjunction with the performance information provided. The full investment track record of Funds I - II are available in the investor data room or upon request.

1. As of September 30, 2022. Calculated as the cumulative default or loss rate divided by the total number of years since inception of the Fund.
2. For Fund III and IV, Ever Invested is based on cumulatively invested capital inclusive of asset leverage, over investable capital also inclusive of asset leverage. Fund II and I did not utilize asset leverage, so Ever Invested is based on cumulatively invested capital, over LP commitments.
3. The net returns have been calculated based on amounts and dates the capital contributions made to the fund and cash distributions received from the fund by all the Limited Partners. Gross returns are before the subtraction of accrued and paid performance fees, management fees and partnership expenses, except for interest expenses related to the fund's credit facilities. Net returns are after the subtraction from the gross returns, the aggregate amount of accrued and paid performance fees, management fees and partnership expenses. Limited Partners with different management fee and performance fee rates could have returns that vary materially from the returns shown. An individual LP's return may also vary based on the timing of capital transactions, the feeder partnership they are invested in, and blocker elections. Net IRR of Fund III and IV without the use of a capital call facility would be lower if and when the fund is profitable. Please see Endnotes for important information regarding the performance information presented herein.

Endnotes for Private Debt (continued)

Slide: Our Focus on High Quality Portfolio Companies are Crucial to a Resilient Portfolio in Trying Times

1. The investment objectives, strategies, and risk and reward profiles of each index may be different than those of the Fund. A variety of factors may cause this comparison to be an inaccurate index for any particular fund and the benchmarks do not necessarily represent the actual investment strategy of a fund. It should not be assumed that any correlations to the index based on historical returns would persist in the future. Past performance is not indicative of future results. Indices are unmanaged and represent a fixed group of securities. The figures for the indices reflect the reinvestment of dividends but do not reflect the deduction of any fees or expenses which would reduce returns. The Fund does not invest in all or necessarily any of the securities that comprise the indices shown. In addition, the Fund may have different and higher levels of risk, including through the use of leverage, concentrated positions, and volatility.

PRI and Sustainability Endnotes

PRI Endnotes

Principles for Responsible Investment (PRI) 2020 Leaders' Group: The year 2020 represents the first year that asset managers became eligible for PRI Leader designation, which formerly included asset owners only. The new designation was awarded to only 20 of the 2100+ investment manager PRI signatories. The Leaders' Group showcases signatories at the cutting edge of responsible investment, and highlights trends in what they are doing. PRI uses signatories' reporting responses and assessment data to identify those that are doing excellent work in responsible investment – across their organizations and with a focus on a given theme each year. The 2020 theme is climate reporting. Information about PRI Leader is sourced entirely from PRI and Neuberger Berman makes no representations, warranties or opinions based on that information.

Important Information about PRI Grades: For illustrative and discussion purposes only. PRI grades are based on information reported directly by PRI signatories, of which investment managers totaled 3,404 for 2021, 1,924 for 2020, and 1,119 for 2019. Due to some technical problems that the PRI had migrating to a new data platform, the results of the 2021 reporting cycle (based on the calendar year 2020) were delayed. Note that scores for the 2021 reporting cycle cannot be compared to previous years due to the change in PRI assessment methodology. Although there was not a Leaders' Group announced by the PRI based on reporting in 2021, Neuberger Berman achieved a 5-star rating in every eligible module in the PRI's 2021 Reporting Framework. Unlike previous years, the indicator scores are assigned one of five performance bands (from 1 to 5 stars) instead of six performance bands (from A+ to E). All PRI signatories are eligible to participate and must complete a questionnaire to be included. The underlying information submitted by signatories is not audited by the PRI or any other party acting on its behalf. Signatories report on their responsible investment activities by responding to asset-specific modules in the Reporting Framework. Each module houses a variety of indicators that address specific topics of responsible investment. Signatories' answers are then assessed and results are compiled into an Assessment Report. The Assessment Report includes indicator scores, summarizing the individual scores achieved and comparing them to the median; section scores, grouping similar indicator scores together into categories (e.g. policy, assurance, governance) and comparing them to the median; module scores, aggregating all the indicator scores within a module to assign one of six performance bands (from E to A+). Neuberger Berman did not pay a fee to participate and awards and ratings referenced do not reflect the experiences of any Neuberger Berman client and readers should not view such information as representative of any particular client's experience or assume that they will have a similar investment experience as any previous or existing client. Awards and ratings are not indicative of the past or future performance of any Neuberger Berman product or service. Moreover, the underlying information has not been audited by the PRI or any other party acting on its behalf. While every effort has been made to produce a fair representation of performance, no representations or warranties are made as to the accuracy of the information presented, and no responsibility or liability can be accepted for damage caused by use of or reliance on the information contained within this report. Information about PRI grades is sourced entirely from PRI and Neuberger Berman makes no representations, warranties or opinions based on that information.

Sustainability Endnotes

For illustrative and discussion purposes only. Actual events or results may vary significantly from those reflected or contemplated. There can be no assurance that the strategy will achieve comparable results, nor that the strategy will be able to or will ultimately elect to implement the assumptive investment strategy and approach described herein. The use of ESG factors could result in selling or avoiding investments that subsequently perform well, or purchasing investments that subsequently underperform.

GP ESG Integration Definitions

Integrated: Formal part of IC, detailed policy, senior investment professional in charge, training, reporting

- Valuation impacts of ESG risks / opportunities are weighted formally in the investment process
- Detailed ESG policy and overseen by a named senior investment professional
- Team is all trained for ESG
- ESG value creation is pursued during the ownership period
- ESG data is tracked and reported to investors at the company level

Developing: Formal policy, not too detailed, less formal in IC, not much reporting

- ESG is a part of the investment process and performed at the company level
- Formal ESG policy
- ESG overseen by a named professional
- ESG data is tracked at the company level

Initial: Basic everything

- Basic inclusion of certain industries or companies (sanctions, weapons, etc.)
- Basic statement of belief in ESG
- Basic monitoring of potential ESG issues

Absent: No policy

Sustainability Potential Definitions

Significant Positive Sustainability Potential

- Companies that contribute to solutions to pressing social or environmental challenges

Positive Sustainability Potential

- Companies that have an overall positive benefit to people or the environment

Neutral Sustainability Potential

- Companies that have a mixed or unknown benefit to people or the environment

Adverse Sustainability Potential

- Companies that contribute to significant adverse outcomes for people or the environment

Awards Disclosures

The Asset Management Awards are designed to recognize outstanding achievement in the UK/European institutional and retail asset management spaces. The Asset Management Awards' judging is undertaken by a group of judges with expertise across the UK/European institutional and retail asset management spaces. Each judge reviews submitted entry material and then scores the entries out of a total of score of 10 providing their reasoning as to why they have submitted that score. Two judges analyze each category and the firm with the highest overall score wins that category. Votes are verified by Insurance Asset Management's editorial team. The award does not constitute an investment recommendation. NB Private Equity did not pay a fee to participate. Awards and ratings referenced do not reflect the experiences of any Neuberger Berman client and readers should not view such information as representative of any particular client's experience or assume that they will have a similar investment experience as any previous or existing client. Awards and ratings are not indicative of the past or future performance of any Neuberger Berman product or service.

European Pensions, a leading publication for pension funds across Europe, launched these awards to give recognition to and honor the investment firms, consultancies and pension providers across Europe that have set the professional standards in order to best service European pension funds over the past year. Judging is undertaken by a group of judges with expertise across the European pension fund space. Each judge reviews submitted entry material and then scores the entries out of a total of score of 10 providing their reasoning as to why they have submitted that score. Two judges analyze each category and the firm with the highest overall score wins that category. Votes are verified by the European Pensions' editorial team. The award does not constitute an investment recommendation. NB Private Equity did not pay a fee to participate. Awards and ratings referenced do not reflect the experiences of any Neuberger Berman client and readers should not view such information as representative of any particular client's experience or assume that they will have a similar investment experience as any previous or existing client. Awards and ratings are not indicative of the past or future performance of any Neuberger Berman product or service.

Private Equity Wire, a specialist industry publication in Europe launched these awards to showcase excellence among industry participants. The publication partnered with Bloomberg to create a clearly defined methodology for selecting the award winners. Shortlists were created by Bloomberg from a fund manager universe including all funds managed by European-domiciled GPs with a minimum fund size of \$100 million. Asset band grouping thresholds were based on individual fund sizes – not overall GP assets under management in a category. Funds were grouped according to category and vintages from 2013 to 2018 and ranked on the basis of their net IRR. GPs with more than one fund ranked among the top performers across multiple vintages within any category were shortlisted. Winners from each category were then decided by majority vote from the publication's readers. The award does not constitute an investment recommendation. NB Private Equity did not pay a fee to participate. Awards and ratings referenced do not reflect the experiences of any Neuberger Berman client and readers should not view such information as representative of any particular client's experience or assume that they will have a similar investment experience as any previous or existing client. Awards and ratings are not indicative of the past or future performance of any Neuberger Berman product or service.

Insurance Investment Outsourcing Report: Insurance Asset Manager Rankings 2022 Edition. Neuberger Berman paid a fee to have access to the Insurance Asset Outsourcing Exchange database, but not to be included in The Insurance Investment Outsourcing Report or leaderboards. General Account (GA) assets fund the liabilities underwritten by the insurer and are available to pay claims and benefits to which insureds or policyholders are entitled. General account assets exclude assets held in separate accounts for variable annuity and unit-linked investments as well as pension fund assets. The award does not constitute an investment recommendation. NB Private Equity did not pay a fee to participate. Awards and ratings referenced do not reflect the experiences of any Neuberger Berman client and readers should not view such information as representative of any particular client's experience or assume that they will have a similar investment experience as any previous or existing client. Awards and ratings are not indicative of the past or future performance of any Neuberger Berman product or service.

Disclaimer

Epidemics, Pandemics, Outbreaks of Disease and Public Health Issues. Neuberger Berman's business activities as well as the activities of the Fund and its operations and investments could be materially adversely affected by outbreaks of disease, epidemics and public health issues in Asia, Europe, North America, the Middle East and/or globally, such as COVID-19 (and other novel coronaviruses), Ebola, H1N1 flu, H7N9 flu, H5N1 flu, Severe Acute Respiratory Syndrome, or SARS, or other epidemics, pandemics, outbreaks of disease or public health issues. In particular, coronavirus, or COVID-19, has spread and is currently spreading rapidly around the world since its initial emergence in December 2019 and has negatively affected (and may continue to negative affect or materially impact) the global economy, global equity markets and supply chains (including as a result of quarantines and other government-directed or mandated measures or actions to stop the spread of outbreaks). Although the long-term effects of coronavirus, or COVID-19 (and the actions and measures taken by governments around the world to halt the spread of such virus), cannot currently be predicted, previous occurrences of other epidemics, pandemics and outbreaks of disease, such as H5N1, H1N1 and the Spanish flu, had material adverse effects on the economies, equity markets and operations of those countries and jurisdictions in which they were most prevalent. A recurrence of an outbreak of any kind of epidemic, communicable disease, virus or major public health issue could cause a slowdown in the levels of economic activity generally (or push the world or local economies into recession), which would be reasonably likely to adversely affect the business, financial condition and operations of Neuberger Berman and the Fund. Should these or other major public health issues, including pandemics, arise or spread farther (or continue to worsen), Neuberger Berman and the Fund could be adversely affected by more stringent travel restrictions (such as mandatory quarantines and social distancing), additional limitations on Neuberger Berman's (or the Fund's) operations and business activities and governmental actions limiting the movement of people and goods between regions and other activities or operations.

Geopolitical Risk. Neuberger Berman's business activities as well as the activities of the Fund and its operations and investments could be materially adversely affected by geopolitical issues in Asia, Europe, North America, the Middle East and/or globally. In particular, the current Ukraine-Russia conflict, which commenced in 2021, has caused, and is currently expected to continue to cause a negative impact on and significant disruptions to the economy and business activity globally (including in the countries in which the Fund invests), and therefore could adversely affect the performance of the Fund's investments. The conflict between the two nations and the varying involvement of the United States and other NATO countries could preclude prediction as to their ultimate adverse impact on global economic and market conditions, and, as a result, presents material uncertainty and risk with respect to the Fund and the performance of its investments or operations, and the ability of the Fund to achieve its investment objectives. Developing and further governmental actions (sanctions-related, military or otherwise) may cause additional disruption and constrain or alter existing financial, legal and regulatory frameworks and systems in ways that are adverse to the investment strategy that the Fund intends to pursue, all of which could adversely affect the Fund's ability to fulfill its investment objectives. Additionally, to the extent that third parties, investors, or related customer bases have material operations or assets in Russia or Ukraine, they may have adverse consequences related to the ongoing conflict.

Valuation Risk. Due to the illiquid nature of many Fund investments, any approximation of their value will be based on a good-faith determination as to the fair value of those investments. There can be no assurance that these values will equal or approximate the price at which such investments may be sold or otherwise liquidated or disposed of. In particular, the impact of the recent COVID-19 pandemic is likely to lead to adverse impacts on valuations and other financial analyses for current and future periods.

The information contained herein must be treated in a confidential manner and may not be reproduced, used or disclosed, in whole or in part, without the prior written consent of the Adviser or the Fund. Disclosure to persons other than the recipient potential Investor and their representatives is prohibited.

This presentation (the "Presentation") is being furnished on a confidential basis to a sophisticated investor for informational and discussion purposes only and does not constitute an offer to sell or a solicitation of an offer to purchase any security. Any such offer or solicitation shall be made pursuant to additional documentation relating to the Fund, which documentation describes risks related to an investment in the Fund as well as other important information about the Fund and its sponsor. The information set forth herein does not purport to be complete and is subject to change. This Presentation is qualified in its entirety by all of the information set forth in any such additional documentation. This Presentation does not constitute a part of any offering documentation of any Fund. Please refer to the Memorandum for important disclosures regarding various risks related to investment in the Fund. An investment in the Fund involves significant risks, including the risk of total loss of capital.

This presentation may include information from other funds managed by the Adviser and its predecessors-in-interest. Neuberger Berman and its affiliates are the successor to all of the predecessors' operational assets, and employ substantially all of their key personnel, and the Adviser became either the advisor or sub-advisor to the funds previously advised by the predecessors. Historical information contained herein is for illustrative purposes only; such information is based on market and other conditions at the time that may significantly change, and should not be relied upon. Past performance is not indicative of future results. There can be no assurance that investments marked with the footnote "Pending investments in process of documentation" will close, or that any of the terms of such transactions described herein or under discussion will be achieved. There can be no assurance that the Fund will achieve comparable results, that targeted diversification or asset allocations will be met or that the Fund will be able to implement its investment strategy and investment approach or achieve its investment objective.

Where an unrealized investment has been valued by the general partner of the fund, there can be no assurance that these values will ultimately be realized upon disposition of the investments. The values of unrealized investments are estimated, inherently uncertain and subject to change. Actual returns on unrealized investments will depend on, among other factors, future operating results, the value of the assets and market conditions at the time of disposition, legal and contractual restrictions on transfer that may limit liquidity, any related transaction costs and the timing and manner of sale, all of which may differ from the assumptions and circumstances on which the valuations used in the prior performance data contained herein are based. Accordingly, actual realized returns on unrealized investments may differ materially from the returns indicated herein.

Disclaimer (*continued*)

Statements contained in this Presentation that are not historical facts are based on current expectations, estimates, projections, opinions and beliefs of the General Partner. Such statements involve known and unknown risks, uncertainties and other factors, and undue reliance should not be placed thereon. In addition, this Presentation contains "forward-looking statements." Actual events or results or the actual performance of the Fund may differ materially from those reflected or contemplated in such forward-looking statements. No presentation or warranty is made as to future performance or such forward-looking statements. Financial or other projections described herein are illustrative and intended for discussion purposes only. Alternative assumptions may result in significant differences in such illustrative projections. Opportunities described in such illustrative projections may not be found nor is prospective performance of the type described guaranteed, and the Fund may not be able to achieve its objective or implement its strategy. Certain economic and market information contained herein has been obtained from published sources prepared by third parties and in certain cases has not been updated through the date hereof. While such sources are believed to be reliable, neither the Fund, its General Partner, the Adviser nor their respective affiliates or employees assume any responsibility for the accuracy or completeness of such information. Unless otherwise indicated, returns are presented on a "gross" basis (i.e. they do not reflect the management fees, carried interest, transaction costs and other expenses that may be paid by Investors, which may be significant and may lower returns).

Neither Neuberger Berman nor any of its affiliates have made any representation or warranty, express or implied, with respect to the fairness, correctness, accuracy, reasonableness or completeness of any of the information contained herein (including but not limited to information obtained from third parties unrelated to Neuberger Berman), and they expressly disclaim any responsibility or liability therefore. In particular, no third party has prepared, reviewed or approved the information contained herein and, accordingly, no third party has made any representation or warranty, express or implied, with respect to the fairness, correctness, accuracy, reasonableness or completeness of any portion of the information contained herein. Neither Neuberger Berman nor any of its affiliates have any responsibility to update any of the information provided in this summary document. Fund terms described herein are summaries only and may be incomplete. Such summaries are qualified in their entirety by the Memorandum and fund documents, including the Partnership Agreement, which may change without notice.

These materials and the information contained herein are not, and under no circumstances are to be construed as, an advertisement or a public offering of securities in Canada or any province or territory thereof. Under no circumstances are these materials and the information contained herein to be construed as an offer to sell securities or as a solicitation of an offer to buy securities in any jurisdiction of Canada. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the deal registration requirement in the relevant province or territory of Canada in which such offer or sale is made. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon the merits of the investments described herein and any representation to the contrary is an offence. Upon receipt of these materials, each Canadian recipient will be deemed to have represented that the investor is an "accredited investor" as such term is defined in section 1.1 of National Instrument 45-106 Prospectus Exemptions or, in Ontario, in section 73.3(1) of the Securities Act (Ontario), as applicable, and a "permitted client" as such term is defined in section 1.1 of National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations, respectively. In Canada, the Adviser relies on the "international investment fund manager exemption" under Multilateral Instrument 32-102 Registration Exemptions For Non-Resident Investment Fund Managers in Ontario, Quebec and Newfoundland and Labrador, and the "international adviser exemption" under National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations in Ontario and Quebec.

© 2023 NB Alternatives Advisers LLC

This material is provided for informational purposes only and nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security. Information is obtained from sources deemed reliable, but there is no representation or warranty as to its accuracy, completeness or reliability. All information is current as of the earlier of the dates specified herein or the date of this presentation and is subject to change without notice. Any views or opinions expressed may not reflect those of the firm as a whole. Neuberger Berman products and services may not be available in all jurisdictions or to all client types. Investing entails risks, including possible loss of principal. Investments in hedge funds and private equity are speculative and involve a higher degree of risk than more traditional investments. Investments in hedge funds and private equity are intended for sophisticated investors only. Indexes are unmanaged and are not available for direct investment. Past performance is no guarantee of future results.

All information as of the date indicated. Firm data, including employee and assets under management figures, reflect collective data for the various affiliated investment advisers that are subsidiaries of Neuberger Berman Group LLC (the "firm"). Firm history and timelines includes the history and business expansions of all firm subsidiaries, including predecessor entities and acquisition entities. Investment professionals referenced include portfolio managers, research analysts/associates, traders, and product specialists and team dedicated economists/strategists.

NB Alternatives Advisers LLC ("NBAA") is a registered investment adviser. For additional information and required disclosure regarding the advisory services provided by NBAA, please see NBAA's Form ADV Part 2A. Brokerage services, if any, are provided by Neuberger Berman BD LLC ("NBBD"), an affiliate of NBAA and a registered broker-dealer and member FINRA/SIPC. For additional information and required disclosure regarding the brokerage services provided by NBBD, please see NBBD's Regulation Best Interest Disclosure Statement at http://www.nb.com/reg_BI_disclosure_nbbd/ and Form CRS at http://www.nb.com/form_CRS_nbia_nbbd/.

This material is being issued on a limited basis through various global subsidiaries and affiliates of Neuberger Berman Group LLC. Please visit www.nb.com/disclosure-global-communications for the specific entities and jurisdictional limitations and restrictions.

The "Neuberger Berman" name and logo are registered service marks of Neuberger Berman Group LLC.

© 2023 Neuberger Berman Group LLC. All rights reserved.



Review of Systematic Trend Following Strategies

Prepared for Illinois SURS

3 February 2023

PURSUANT TO AN EXEMPTION FROM THE COMMODITY FUTURES TRADING COMMISSION IN CONNECTION WITH ACCOUNTS OF QUALIFIED ELIGIBLE PERSONS, THIS BROCHURE OR ACCOUNT DOCUMENT IS NOT REQUIRED TO BE, AND HAS NOT BEEN, FILED WITH THE COMMISSION. THE COMMODITY FUTURES TRADING COMMISSION DOES NOT PASS UPON THE MERITS OF PARTICIPATING IN A TRADING PROGRAM OR UPON THE ADEQUACY OR ACCURACY OF COMMODITY TRADING ADVISOR DISCLOSURE. CONSEQUENTLY, THE COMMODITY FUTURES TRADING COMMISSION HAS NOT REVIEWED OR APPROVED THIS TRADING PROGRAM OR THIS BROCHURE OR ACCOUNT DOCUMENT.

Aspect Capital

Innovative provider of systematic alternative investment solutions

Founded by industry pioneers and driven by a continuous research and development effort, Aspect has a long history of providing innovative products and diversifying performance.

A client-focused solutions provider, Aspect has developed deep and long-standing relationships with global institutional investors and distribution partners.

Founded in 1997 by Anthony Todd and Martin Lueck

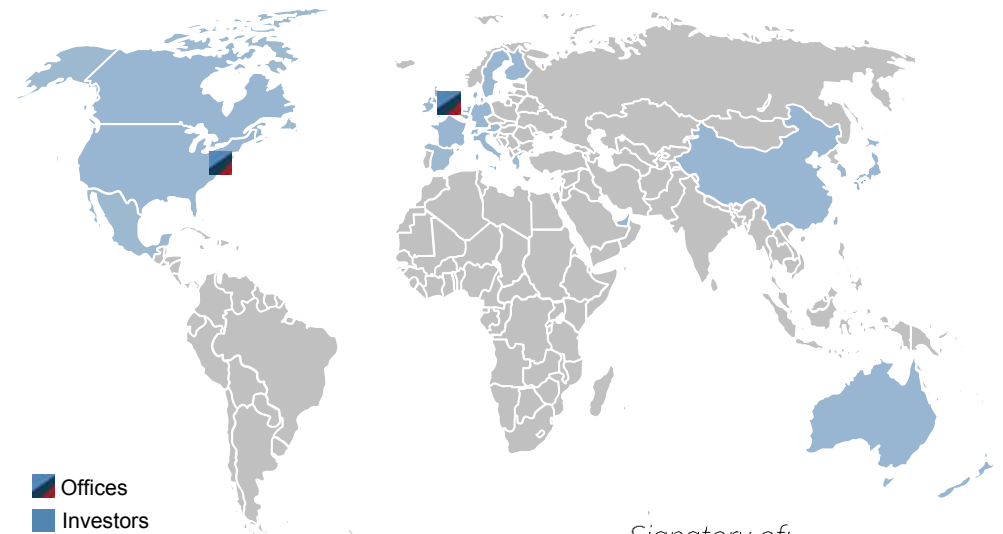
\$9.9bn under management

Team of 130 including 84 in R&D

51 PhDs and Masters

Diverse, collegiate and dynamic culture

Aspect's Global Reach



Signatory of:



As at end of December 2022.

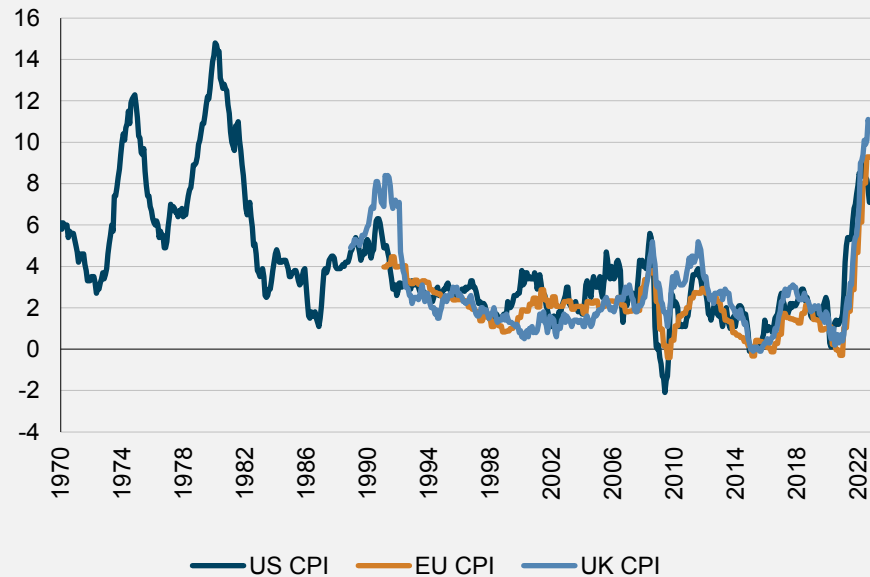
Note: Total number of PhDs and Masters degrees held across all departments of Aspect Capital. Research and Development headcount includes Aspect's Research, Execution, Technology, Risk and Investment Solutions teams.

Agenda

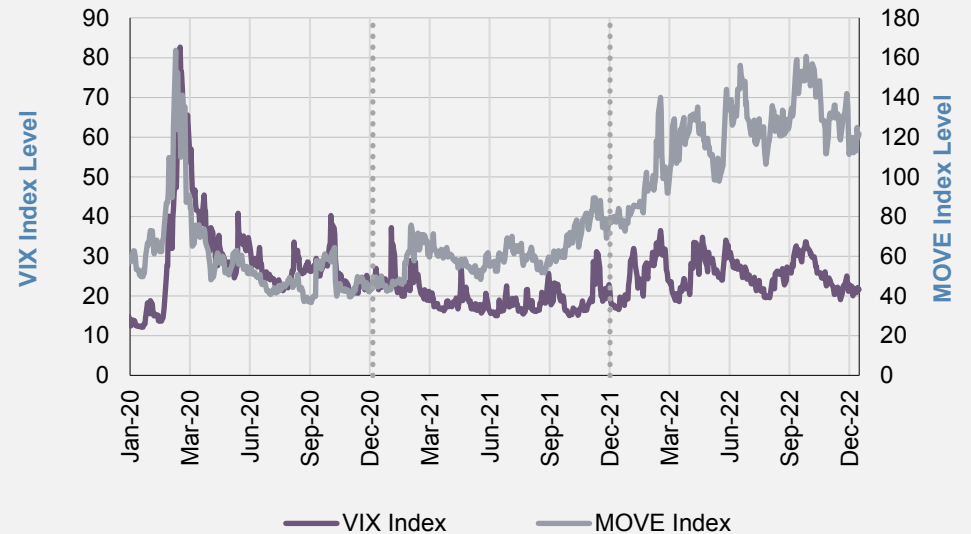
- Market Context
- Trend Following:
 - What?
 - Why?
 - How?
- Review of Aspect Core Trend in 2022
- Outlook for 2023

2022: Inflation Persists and Risk-free is Getting Riskier

Inflation in the US, the UK and the EU: Jan 1970 to Nov 2022



Stocks and Bonds Implied Volatility: Jan 2020 to Dec 2022



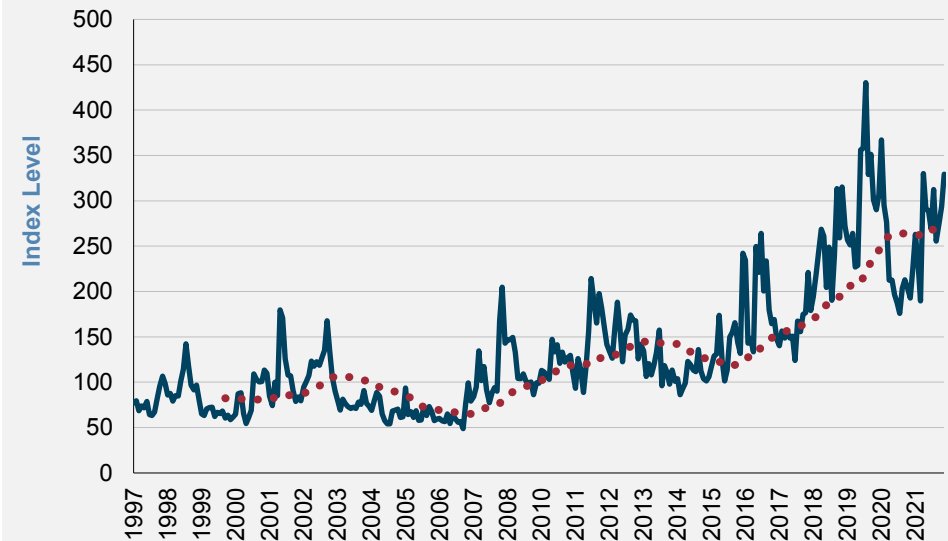
Source: Bloomberg. The data above with respect to various indices is shown for illustrative purposes only. Detailed descriptions of the indices used above are available from Aspect upon request.

War: Multiplier of Disruption in an Already Disrupted World

Global economic disruption amplified by the war in Ukraine:

- **Humanitarian impact** – millions of refugees, catastrophic loss of life
- **Higher commodity prices** – higher costs of raw materials, heating, power and food
- **Disruption of trade** – de-globalisation and broken supply chains
- **Financial instability** – higher occurrence of default, worsening liquidity conditions
- **Policy response** – sanctions, Russia's removal from SWIFT
- **Energy crisis** – Europe's push for less reliance on Russian gas, severe weather

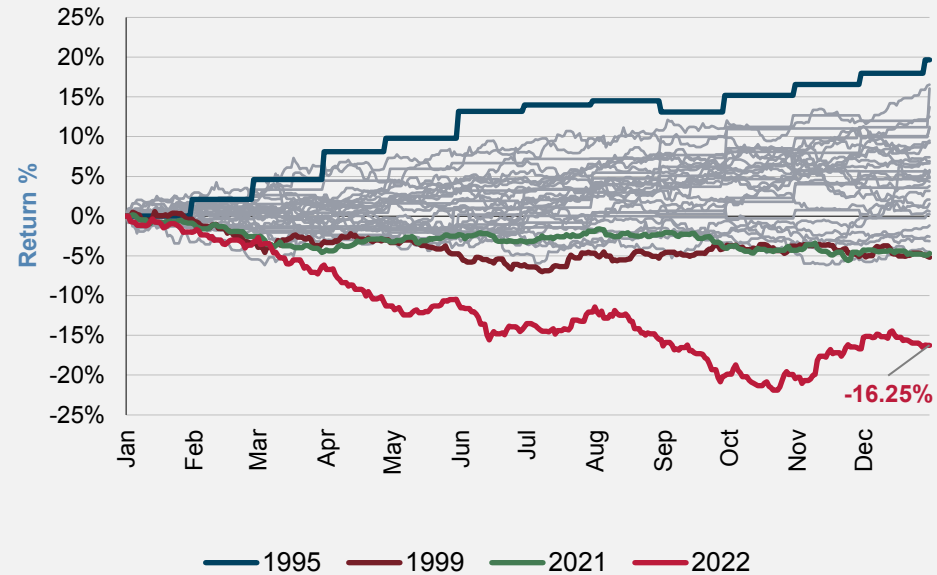
Global Economic Policy Uncertainty Index: Jan 1997 to Nov 2022



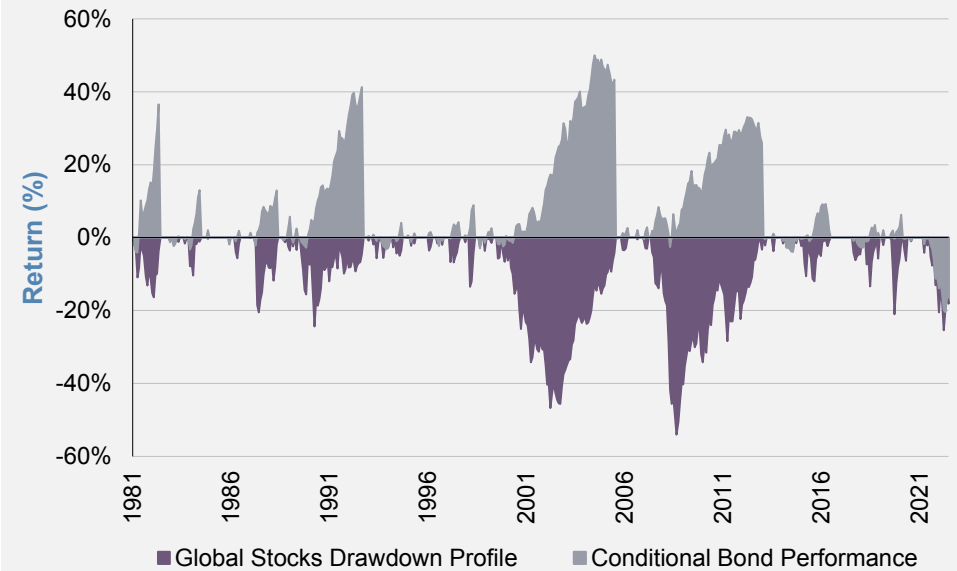
Source: The data with respect to various indices is shown for illustrative purposes only. Detailed descriptions of the indices used above are available from Aspect upon request.

End of the Goldilocks Era

Bloomberg Global Aggregate Bond Total Return Index Daily Performance: 1990 to Dec 2022



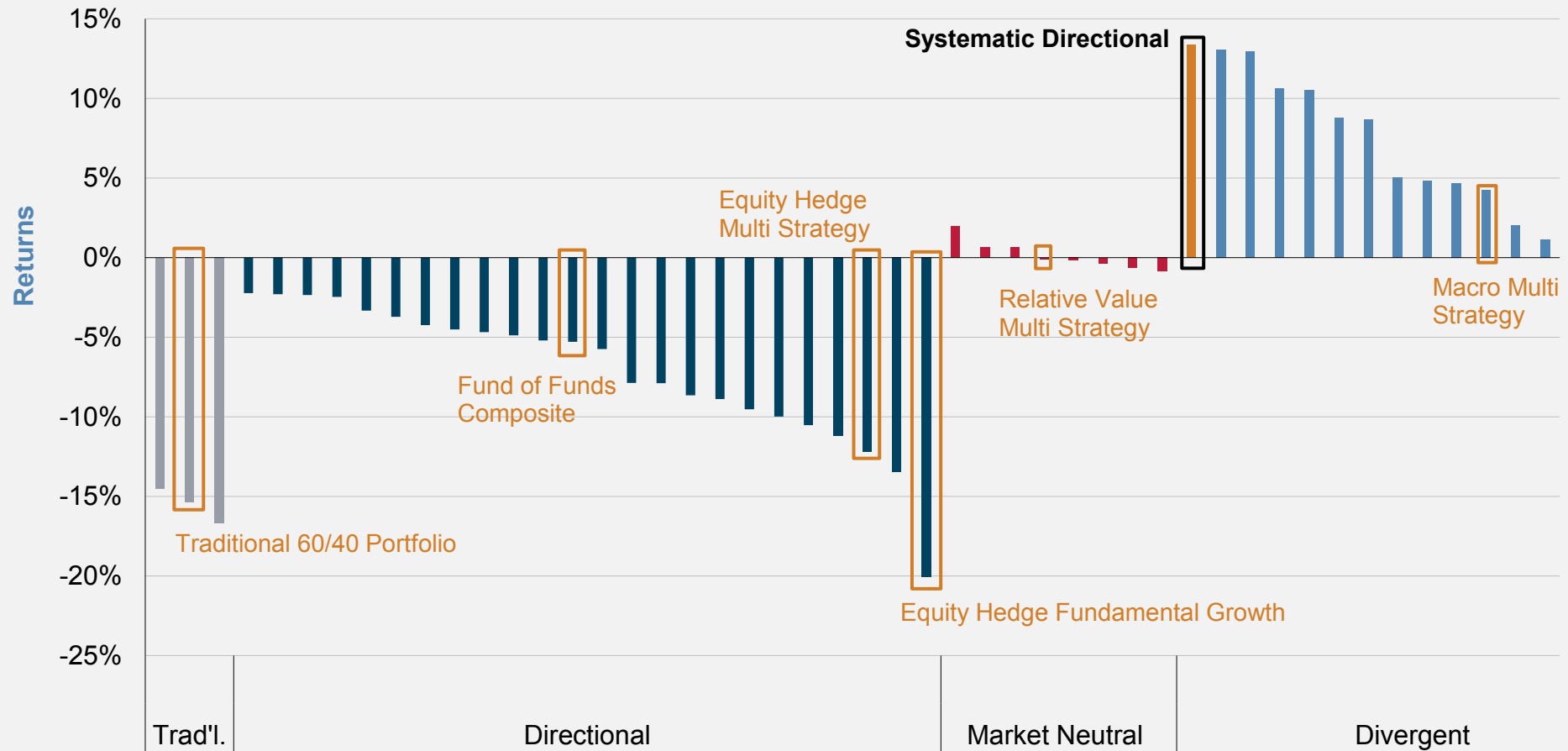
Bond Performance During Equity Drawdowns: Jan 1981 to Dec 2022



Source: Bloomberg. The data above with respect to various indices is shown for illustrative purposes only. Detailed descriptions of the indices used are available from Aspect upon request.

2022: Divergent Strategies Outperform

Performance by Hedge Fund Strategy Type: Jan 2022 to Nov 2022

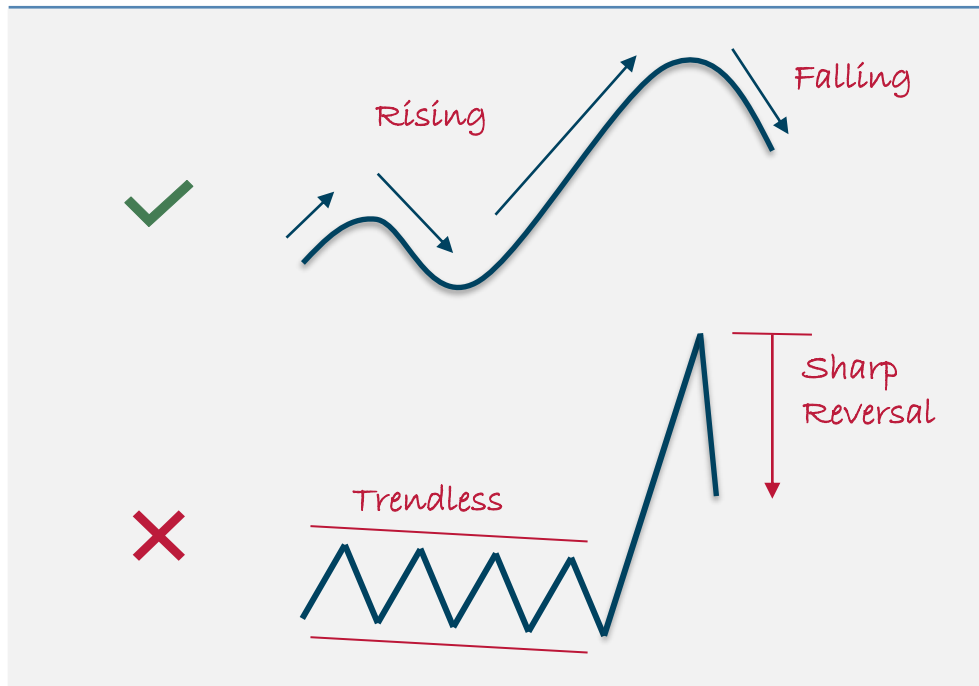


Source: Bloomberg (MSCI, HFRI Indices), bfinance: "Clarifying the Case for 'Convex' or 'Divergent' Hedge Fund Strategies". The data above with respect to various indices is shown for illustrative purposes only. Detailed descriptions of the indices used above are available from Aspect upon request.

Agenda

- Market Context
- Trend Following:
 - What?
 - Why?
 - How?
- Review of Aspect Core Trend in 2022
- Outlook for 2023

Trend Following: What?



Trends are persistent yet unpredictable and arise over different timescales

Trends are generated by aggregate behaviour of market participants

Investment Philosophy

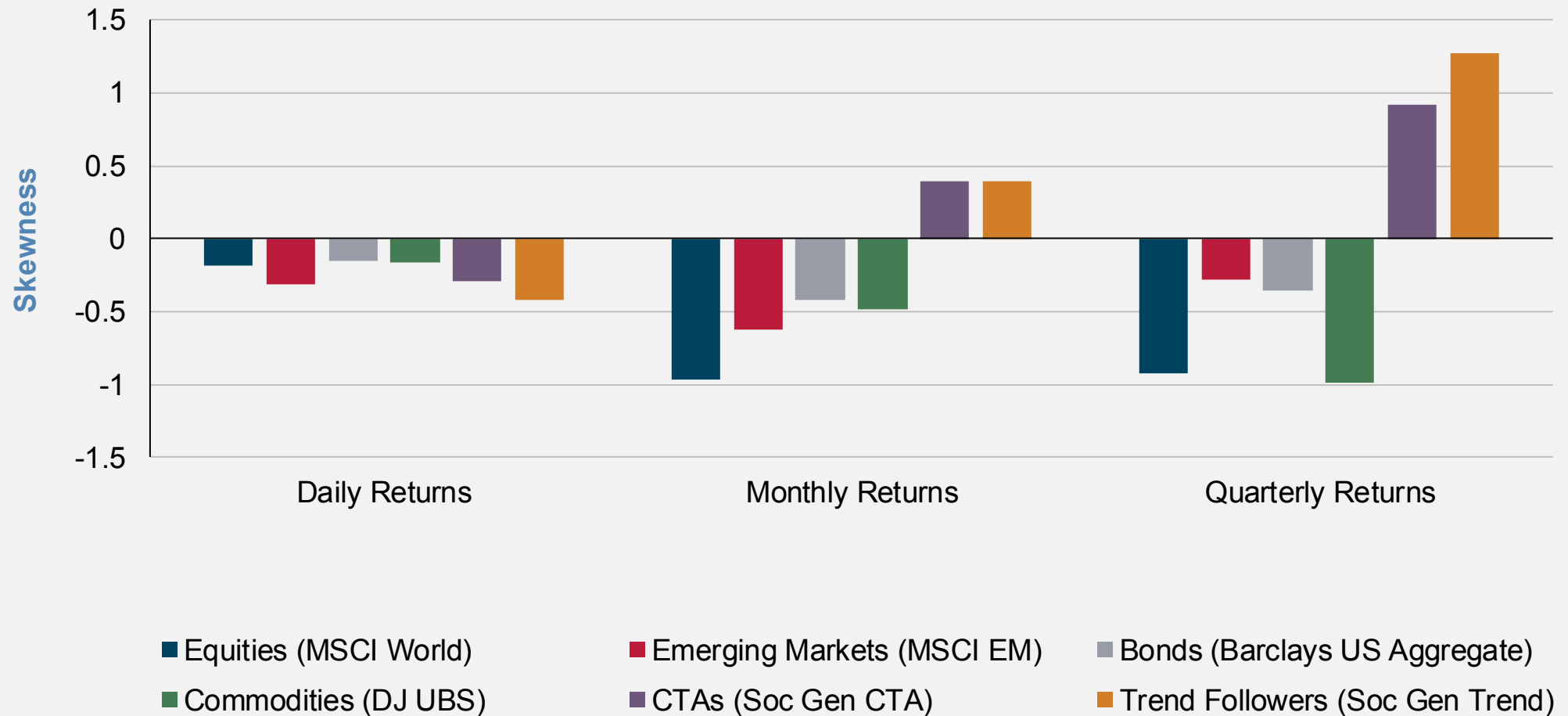
Markets evolve: ongoing research is vital

Investment Management: Multi-layered challenge

- Trend following involves buying (selling) an asset when its price starts to rise (fall) in the hope that it continues to rise (fall)
- Can benefit from both rising and falling prices
- Drivers of trends are well-documented in financial literature: behavioural biases, economic cycles, structural factors

Trend Following: Why? Positive Skewness – An Elusive Property

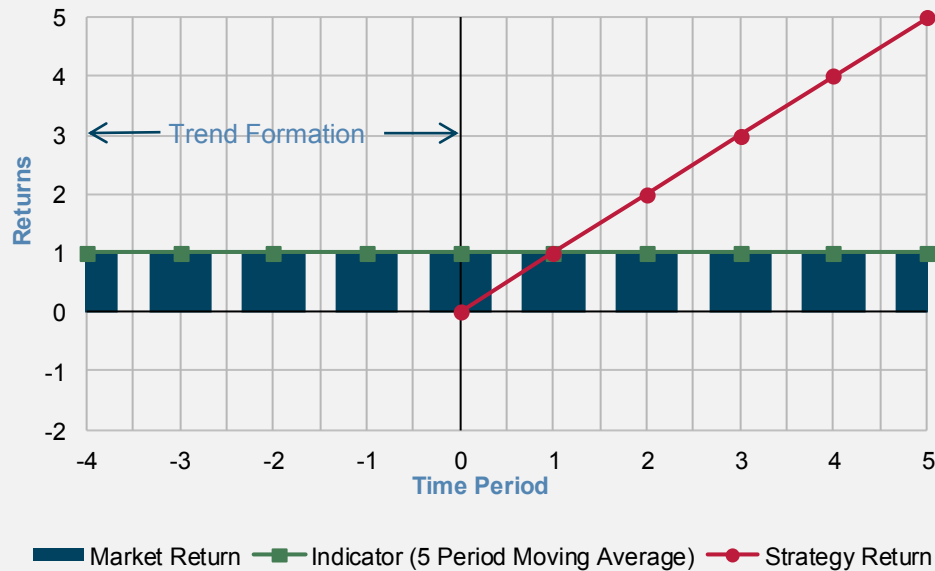
Asset Class Skewness over Different Measurement Windows: 2000 to 2021



Source: Bloomberg. The data above with respect to various indices is shown for illustrative purposes only. Detailed descriptions of the indices used above are available from Aspect upon request.

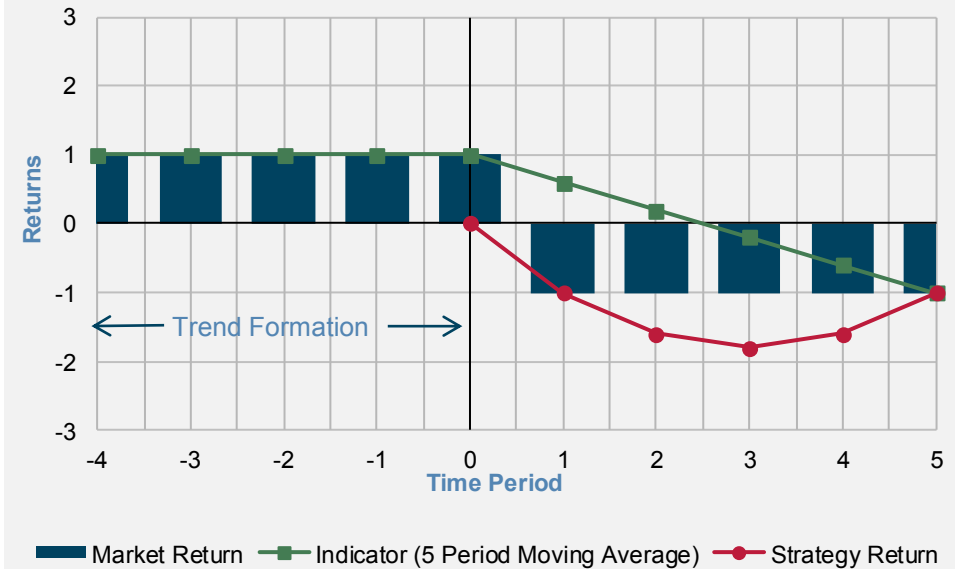
Trend Following in Theory: Trends and Trend Reversals

Generic Example: Trend Continuation



- Trend following profits when trends persist

Generic Example: Trend Reversal

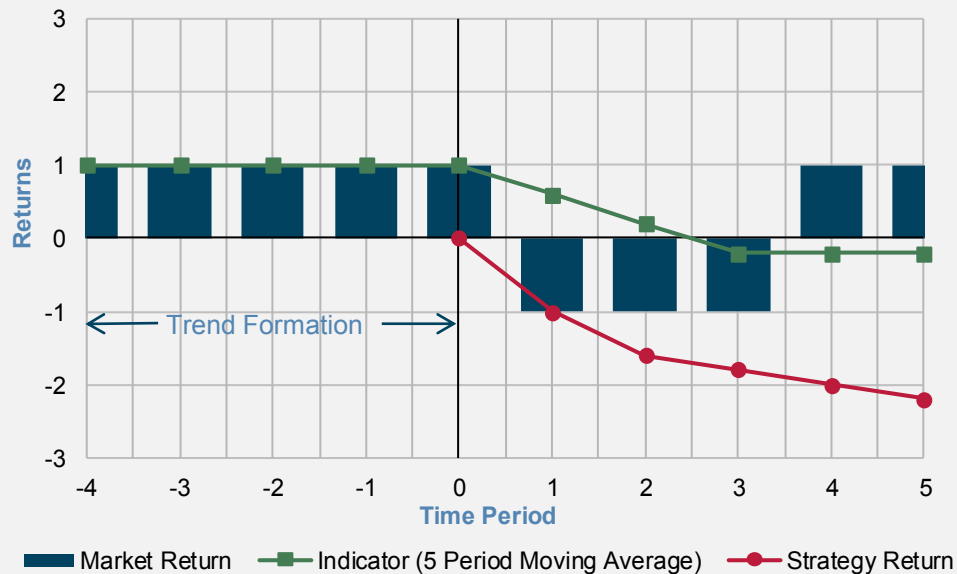


- Trend reversals lead to losses
- But strategy reacts and changes exposure

Note: For illustrative purposes only. Generic example of trend following behaviour using a simple model of a market moving by +1 or -1 each period, and a trend following indicator defined as the average of the market moves over the 4 previous periods.

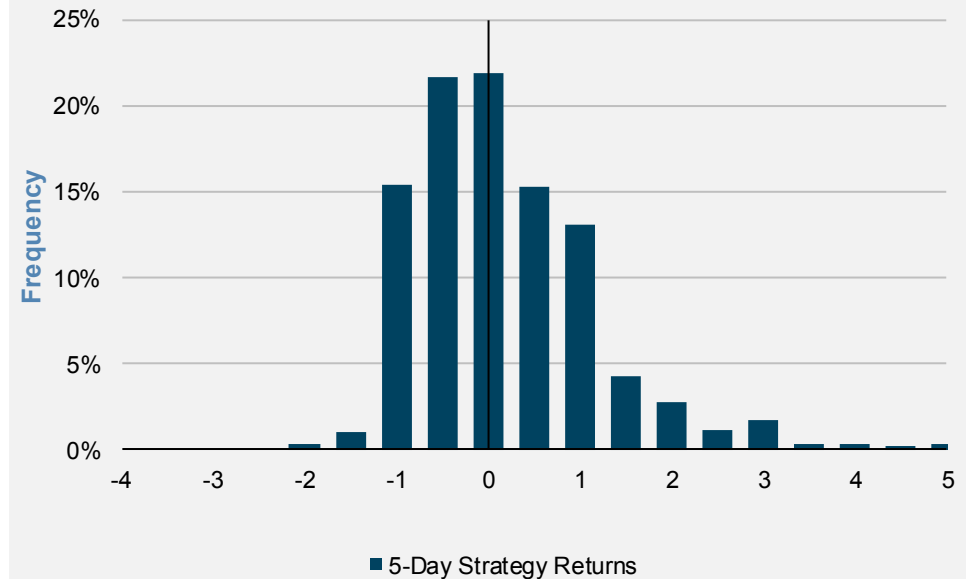
Trend Following in Theory: Naturally Skewed Returns

Generic Example: Range-bound Conditions



- Biggest losses happen in range-bound conditions
- Loss remains smaller than largest gains

Distribution of All Possible Outcomes Exhibits Positive Skew



- Result is natural positive skewness
- But only when strategy has time to react

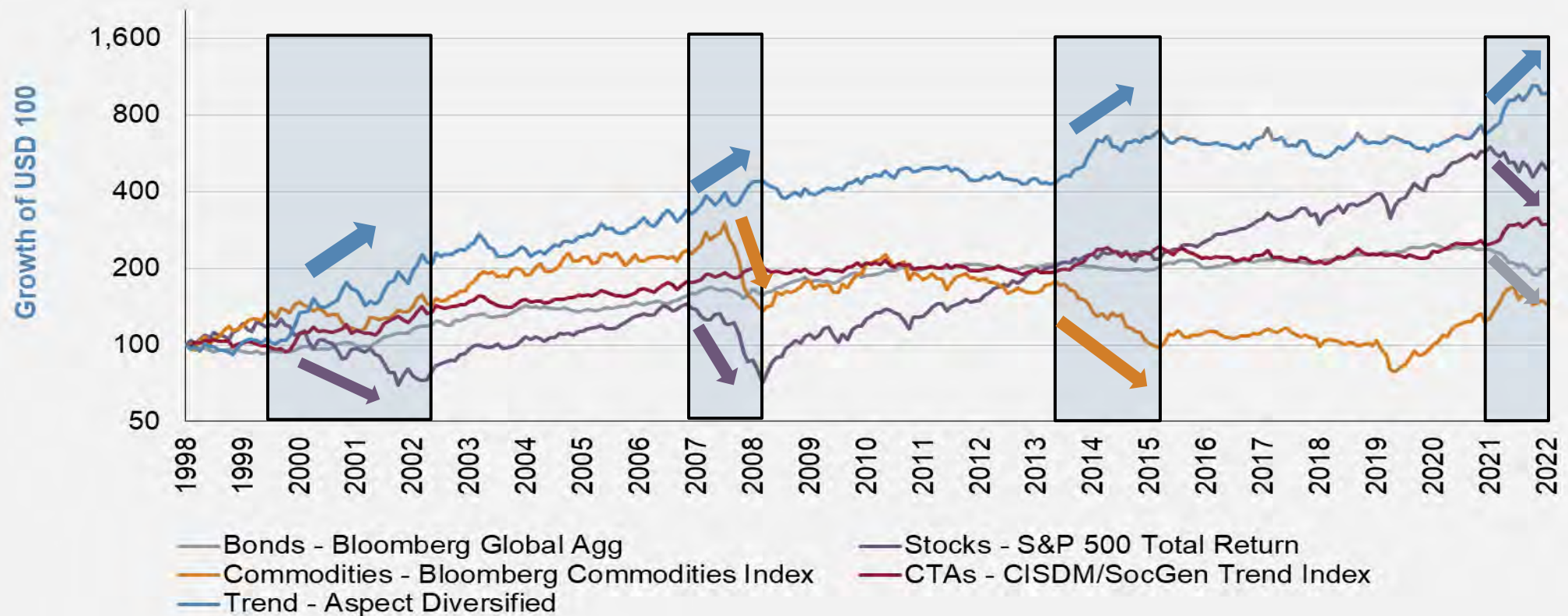
Note: For illustrative purposes only. Generic example of trend following behaviour using a simple model of a market moving by +1 or -1 each period, and a trend following indicator defined as the average of the market moves over the 4 previous periods.

Agenda

- Market Context
- Trend Following:
 - What?
 - Why?
 - How?
- Review of Aspect Core Trend in 2022
- Outlook for 2023

Trend Following: Why? Long Term Diversifying Returns

Performance of Trend Strategies vs Stocks, Bonds and Commodities: 1998 to 2022

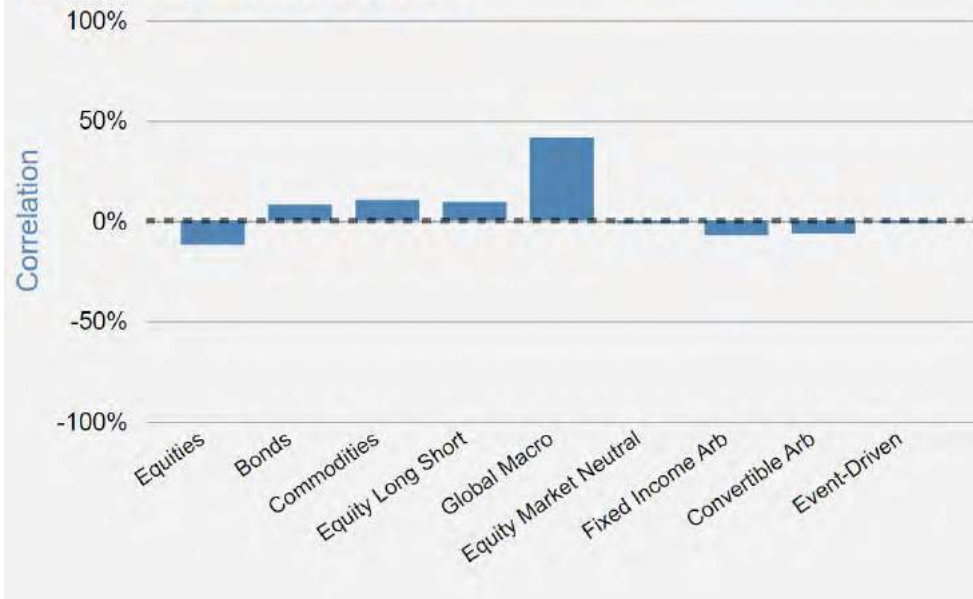


Source: Bloomberg. The data shown above with respect to various indices is used for comparative purposes only. The data above is not intended to indicate that there is a correlation between the Programme and any such indices. The indices shown may not be subject to the same fees or expenses to which the Programme is subject. It is not possible to invest in an index. It should not be assumed that the Programme will invest in any specific components comprising the indices shown. Detailed descriptions of the indices used above are available at the end of this presentation.

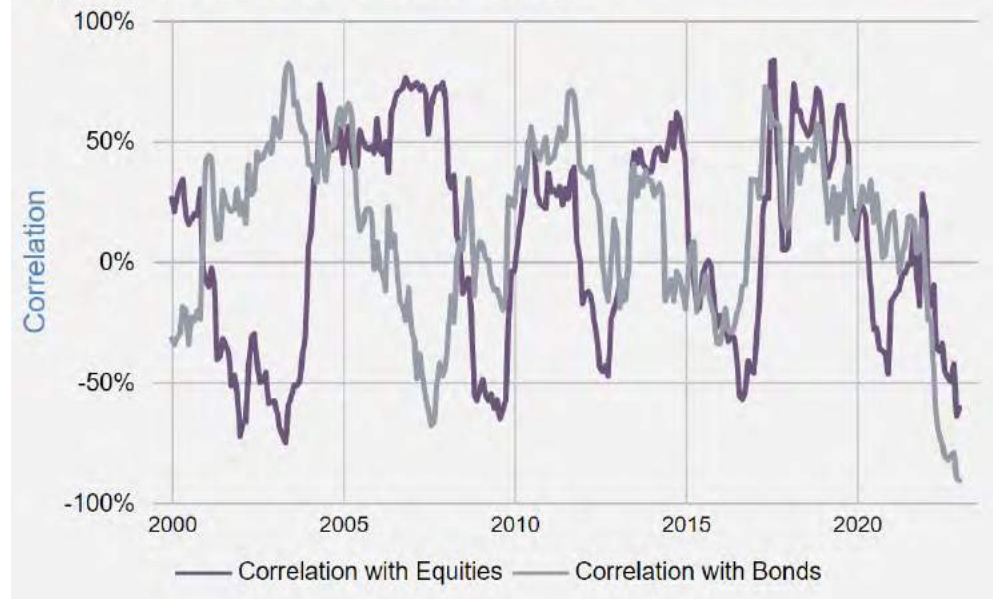
Note: Aspect Diversified started trading on 15th December 1998. The performance data used above for Aspect Diversified from January 2022 onwards has not been audited. The returns shown are net of the fees (and relevant crystallisation periods) applicable to the A share class of the flagship fund trading the programme over time, currently a 2.00% management fee (accrued weekly and paid monthly in arrears) and 20.00% performance fee (determined and debited (if applicable) annually). The returns used include the reinvestment of all sources of earnings. The performance of customised or modified implementations of the Programme may differ to the performance shown above. **PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.** Please see relevant risk disclaimers at the end of this presentation.

Trend Following: Why? Dynamic and Low Correlations

Correlation Between Investment Sectors and Aspect Diversified Programme: Jan 1999 to Dec 2022



Rolling 12 Month Correlation Between Aspect Diversified Programme, Equities and Bonds: Dec 1999 to Dec 2022

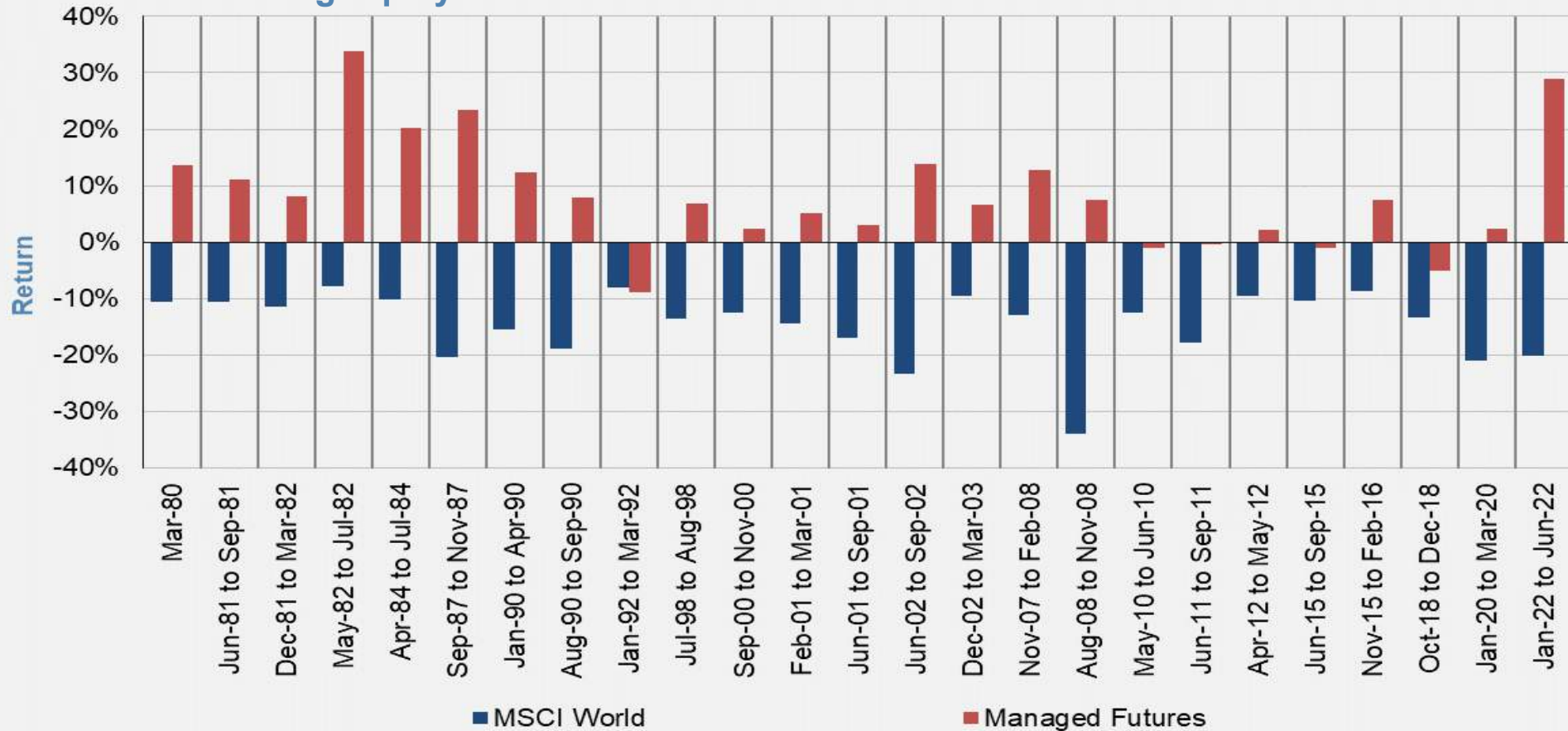


Source: Aspect Capital, Datastream. Indices: Stocks: MSCI World; Bonds: Barclays Global Aggregate; Commodities: Bloomberg Commodity Total Return Index; Hedge Fund Indices: Credit Suisse Hedge Fund Indices. The data shown above with respect to various indices is presented because Aspect believes that it serves as a useful point of comparison with aspects of the Programme portfolio management and composition. The Programme portfolio will not replicate any of these indices and no guarantee is given that performance will match any of the indices; it is not possible to invest in any index. Detailed descriptions of the indices shown above are available at the end of this presentation.

Note: Aspect Diversified started trading on 15th December 1998. The performance data used above for Aspect Diversified from January 2022 onwards has not been audited. The returns shown are net of the fees (and relevant crystallisation periods) applicable to the A share class of the flagship fund trading the programme over time, currently a 2.00% management fee (accrued weekly and paid monthly in arrears) and 20.00% performance fee (determined and debited (if applicable) annually). The returns used include the reinvestment of all sources of earnings. The performance of customised or modified implementations of the Programme may differ to the performance shown above. **PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.** Please see relevant risk disclaimers at the end of this presentation.

Trend Following: Why? Crisis Risk Mitigation over the Short-Term

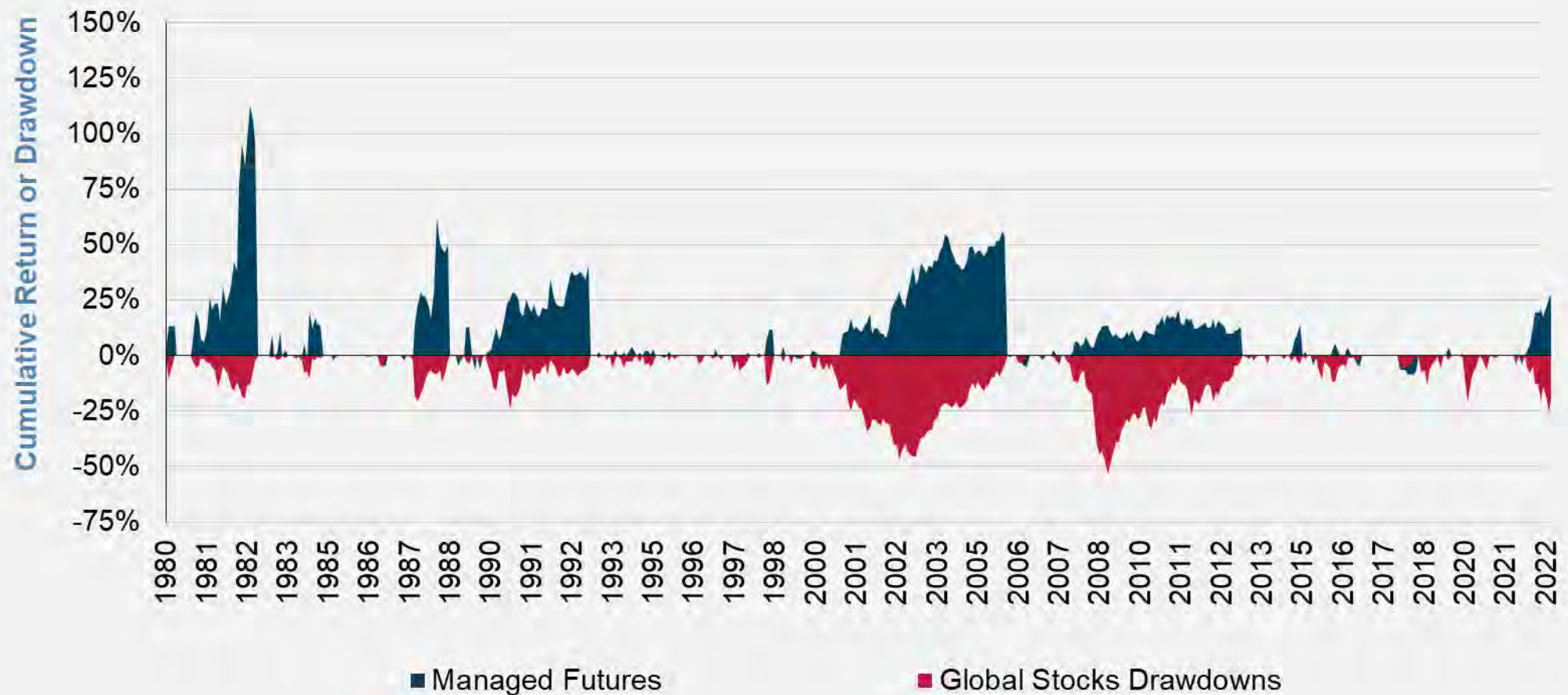
Performance During Equity Drawdowns: 1980 to 2022



Source: Bloomberg, CISDM, SG Trend. The data used for Managed Futures is comprised of CISDM data from 1980 to end of 1999, SG Trend Index from 2000 onwards. The data above with respect to various indices is shown for illustrative purposes only. Detailed descriptions of the indices used above are available from Aspect upon request.

Trend Following: Why? Crisis Risk Mitigation over the Long-Term

Cumulative Returns Conditional on S&P 500 Drawdowns: 1980 to 2022



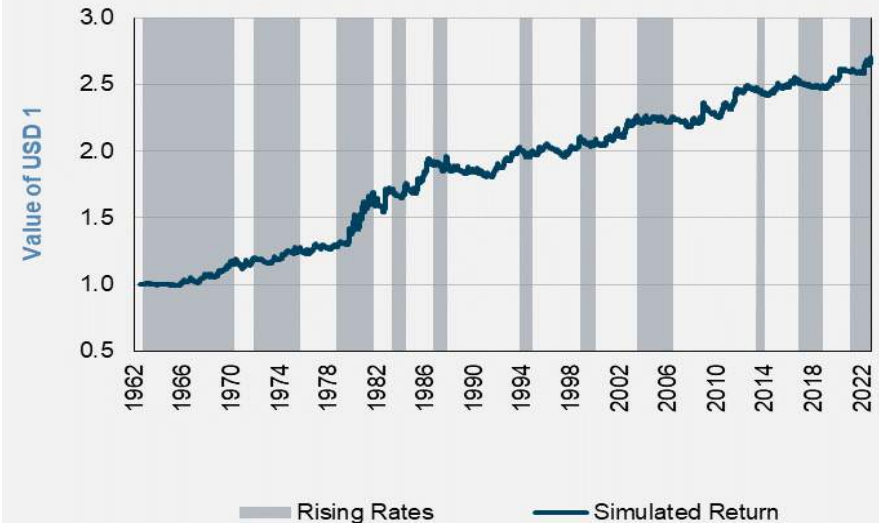
Source: Bloomberg, CISDM, SG Trend. The data used for Managed Futures is comprised of CISDM data from 1980 to end of 1999, SG Trend Index from 2000 onwards. The data above with respect to various indices is shown for illustrative purposes only. Detailed descriptions of the indices used above are available from Aspect upon request.

Trend Following: Why? Performance in Rising and Falling Yields

US 10 Year Generic Bond Yield: 1962 to 2022



Gross Simulated Returns from Trend Following the Generic US 10 Year Bond Future*: 1962 to 2022



	All Periods	Rising Rates	Falling Rates
Annualised Return	2.85%	2.75%	2.95%
Annualised Volatility	5.02%	4.74%	5.29%
Information Ratio	0.57	0.58	0.56

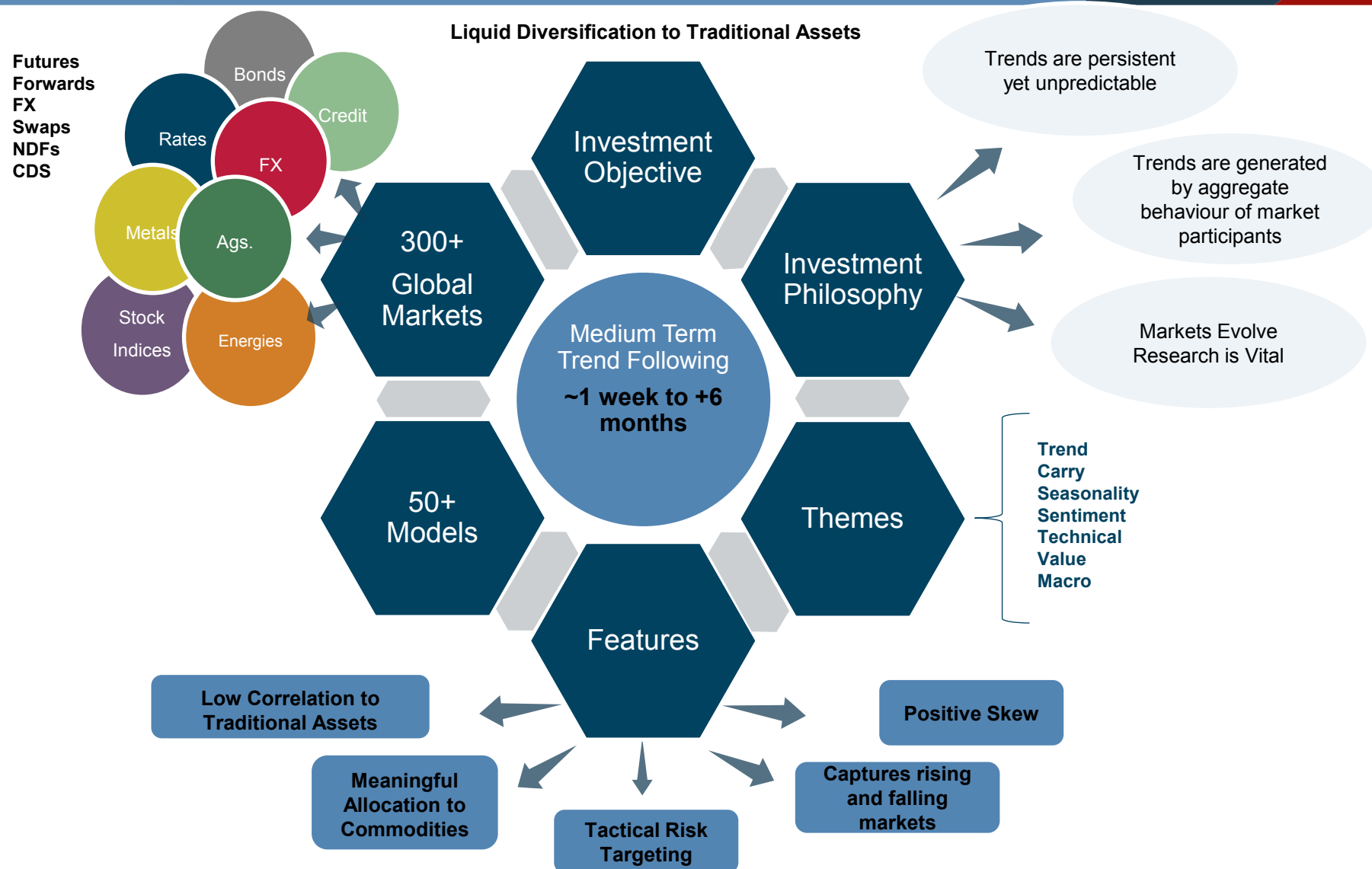
Source: Aspect Capital, Bloomberg. *The Generic US 10Y Future refers to the synthetic extension of the data prior to the existence of the 10Y futures contract using US Treasury yields data.

NOTE: UNLIKE THE RESULTS SHOWN IN AN ACTUAL PERFORMANCE RECORD, THESE RESULTS DO NOT REPRESENT ACTUAL TRADING AND ARE BACKTESTED. RESULTS ARE CALCULATED THROUGH THE APPLICATION OF THE STRATEGY ON HISTORICAL MARKET DATA. HYPOTHETICAL PERFORMANCE HAS MANY INHERENT LIMITATIONS. ONE OF THE LIMITATIONS OF SUCH PERFORMANCE IS THAT RESULTS ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. THERE ARE FREQUENTLY SIGNIFICANT DIFFERENCES BETWEEN SUCH PERFORMANCE AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAMME. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS. Please see relevant risk disclaimers at the end of this presentation.

Agenda

- Market Context
- Trend Following:
 - What?
 - Why?
 - How?
- Review of Aspect Core Trend in 2022
- Outlook for 2023

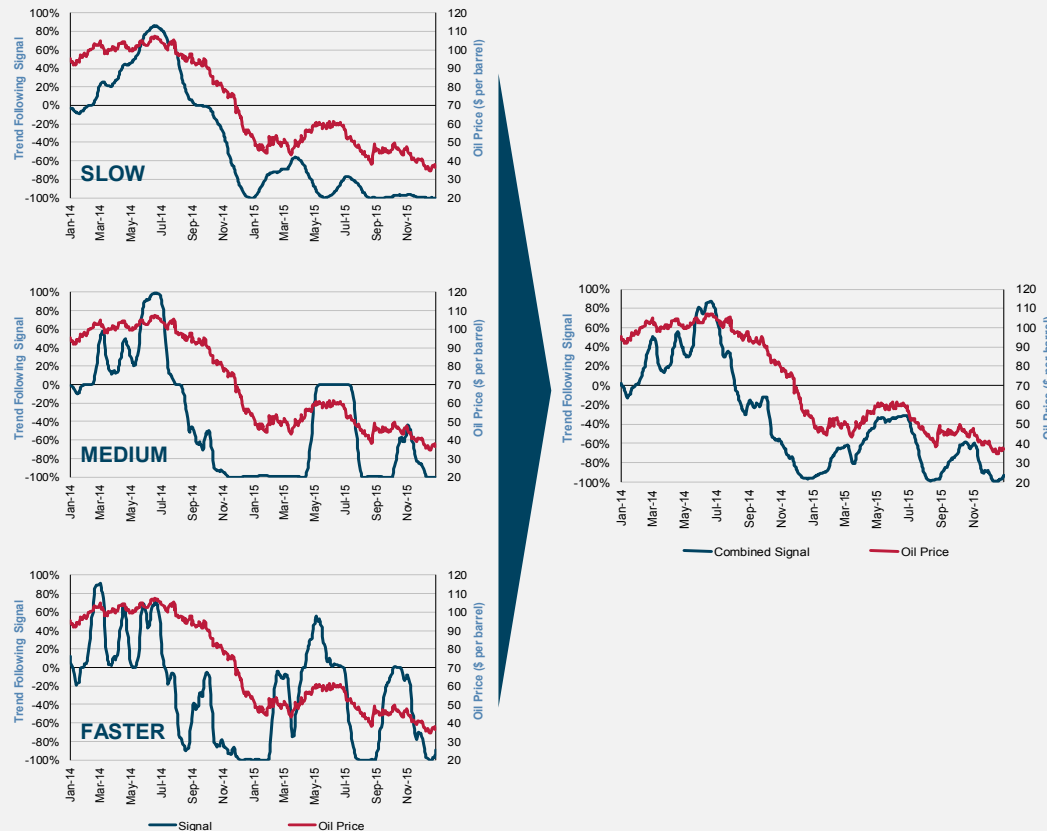
Aspect's Trend Capability



Note: For illustrative purpose only. May be subject to change. *There is no guarantee that any target referenced will be achieved, and the actual fund volatility may vary. Targets may be restated over time.

Trend Following: How?

Individual and Combined Trend Following Signals for WTI Crude Oil: 2014 to 2015



Trend following has several potentially attractive features:

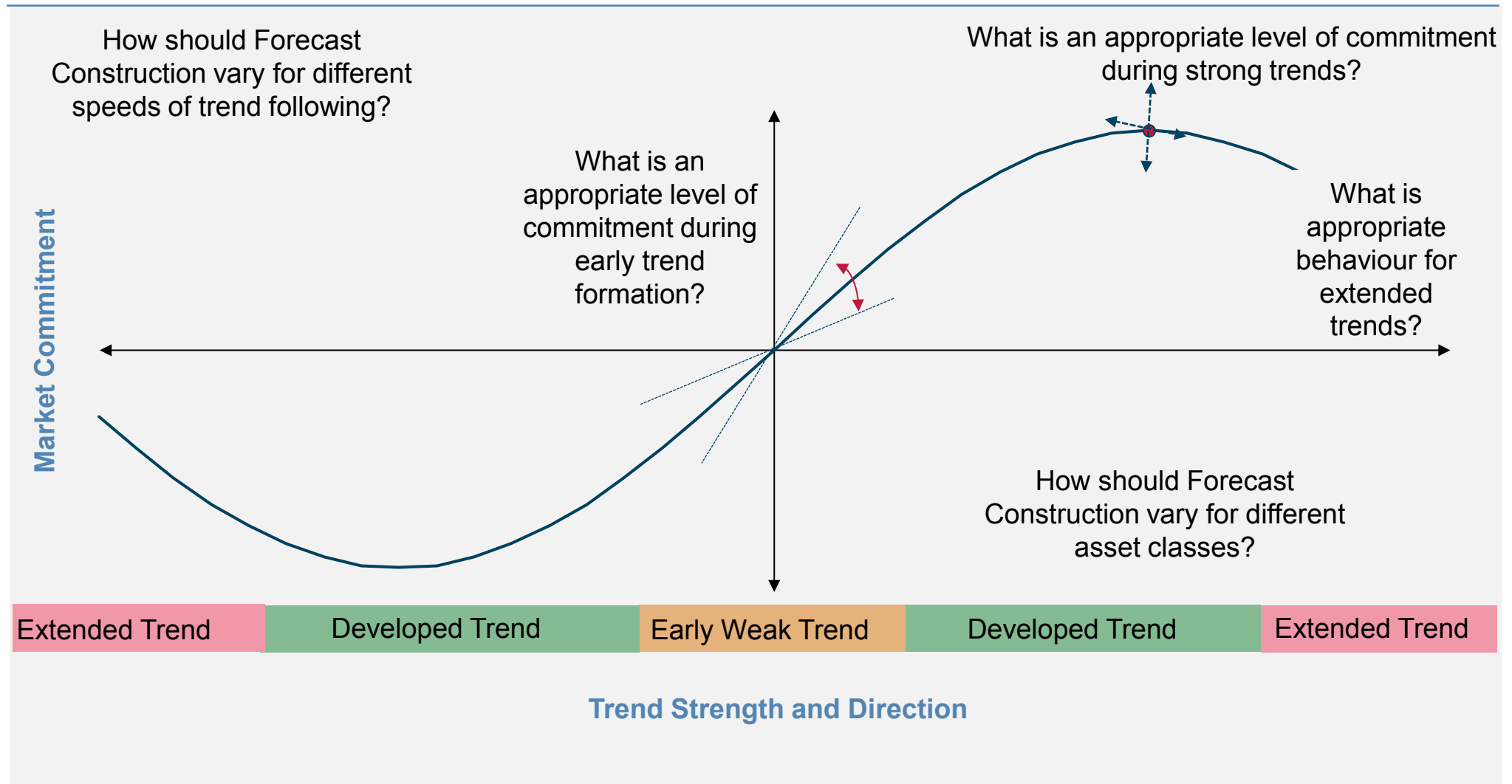
- Based on statistical analysis of price action
- Seven timeframes identify 2-week to 6-month trends
- Signals adjust to unfavourable conditions (run winners, trim losses)
- Accounts for term structure changes and seasonality

Systematically applied:

- Covering financials and commodities
- Signals reflect trend direction and conviction
- Model implementation designed to avoid directional bias
- Can profit equally from uptrends and downtrends

Note: For illustrative purposes only.

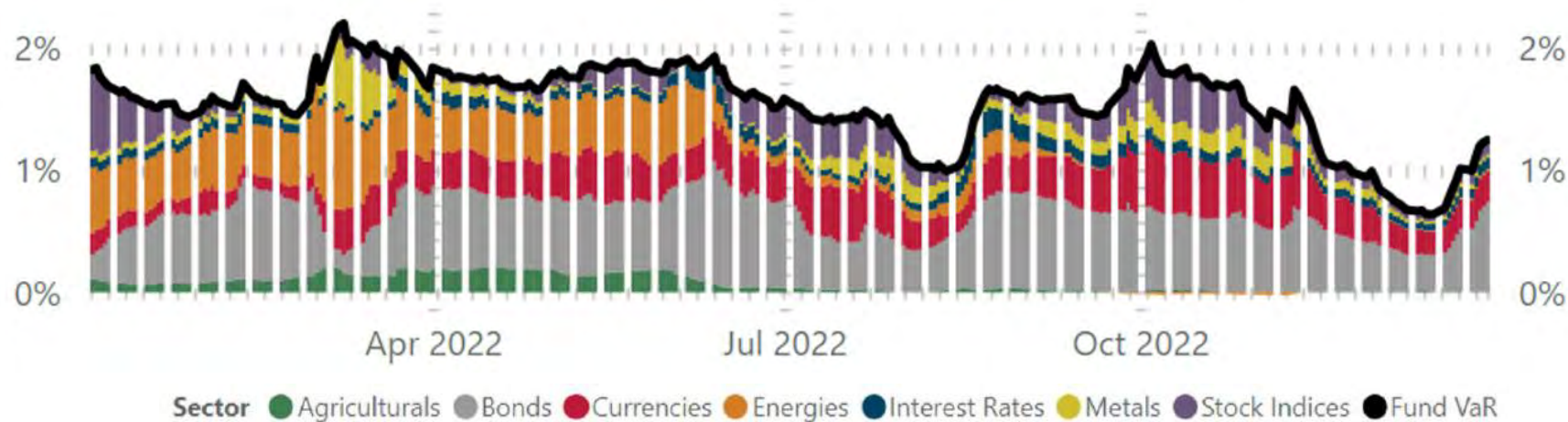
Trend Following: How? Unbiased and Adaptive Position Functions



Note: For illustrative purposes only.

Trend Following: How? Robust and Dynamic Portfolio Construction

Aspect Core Diversified Programme Portfolio VaR and Sector Marginal Contribution to Risk: 2022



Portfolio Construction

- Positions sized inversely to volatility
- Systematic risk targeting
- Dynamic risk profile is controlled by pre-set constraints
- Reflects extent and location of market opportunities
- Unbiased: long-term commitment to diversification

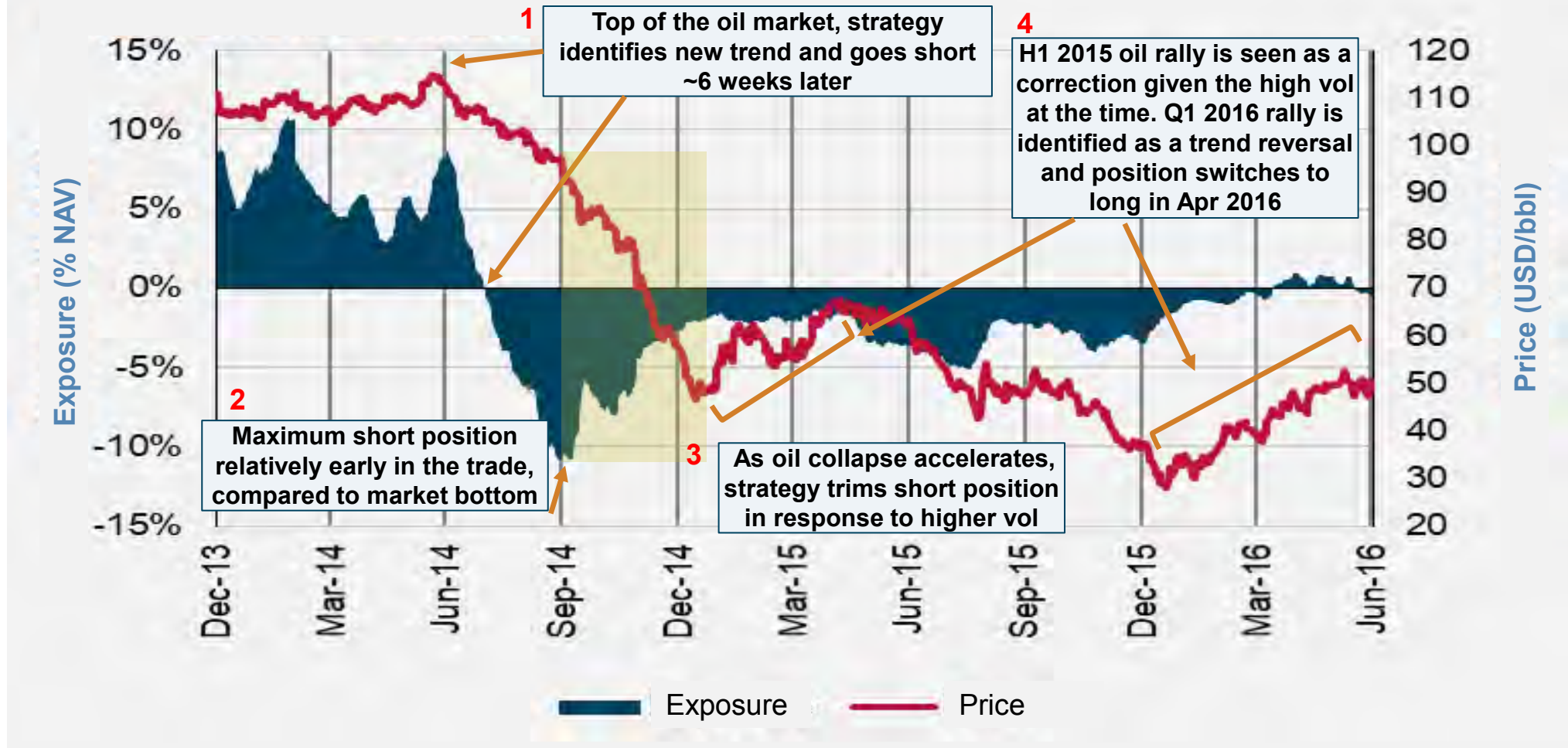
Risk Management

- Integrated systematic risk and exposure limits
- Operate at multiple programme layers
- Designed to avoid over-exposure and concentration
- Supplemented by scenario analysis and stress testing

Note: VAR (%) - 1 day Value at Risk at a 95% confidence level.

Ideal Trade Example: Intuitive and Adaptive

Brent Crude Oil Price Action and Exposure: 1 Dec 2013 to Jun 2016



Source: Aspect Capital and Bloomberg. For illustrative purposes only.

Aspect's Key Differentiators

Style Consistency

A diversifying **medium term trend following** strategy built using hypothesis based research without over-optimisation, data-mining or data-fitting

Risk Awareness

Sophisticated portfolio construction and **intraday risk controls** aim to allow the programme to be **highly responsive** and adapt quickly to ever-changing market conditions

Balanced

Trend model construction looks to **maximise investor utility** by balancing long term expected risk-adjusted returns and short term portfolio dynamism

Unbiased

Models have **no directional bias**; positions react to developing trends irrespective of direction

Diversified

Diversified across market and timeframe with **material allocation to commodities and less traditional markets**

Experience

Over **25 years experience** in managing liquid alternative investment strategies for institutional investors

Transparency

Proud to **provide in-depth detail** of systems and develop **long-standing partnerships** with investors to better serve their investment needs

Enhanced Research

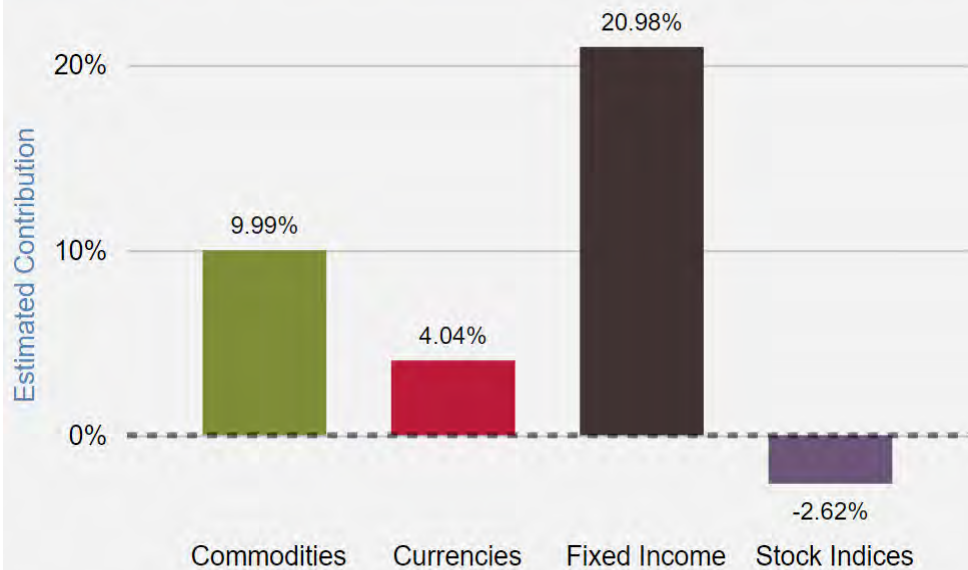
Dedicated to **constant evolution** through robust, **hypothesis based research**

Agenda

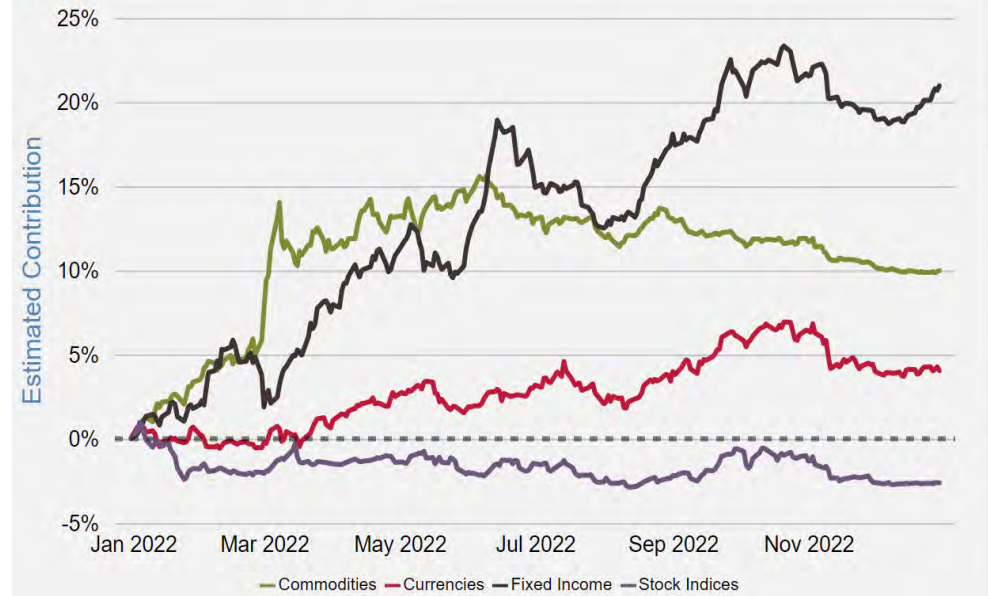
- Market Context
- Trend Following:
 - What?
 - Why?
 - How?
- Review of Aspect Core Trend in 2022
- Outlook for 2023

Performance Update: 2022

(Gross Estimated) Aspect Core Diversified HV Programme Attribution by Sector: 2022 YTD



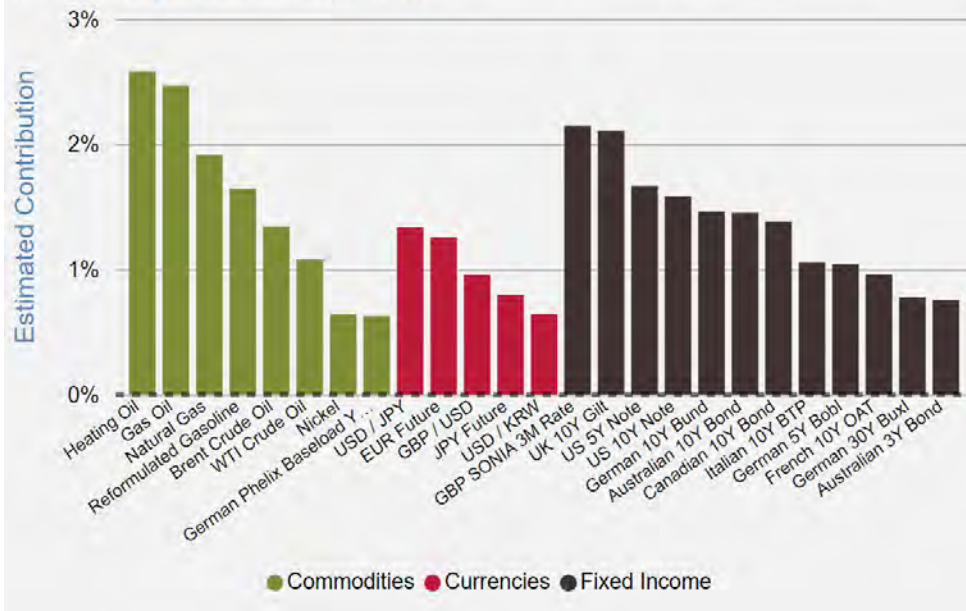
(Gross Estimated) Aspect Core Diversified HV Programme Attribution by Sector: 2022 YTD



Note: Attribution figures are gross and as such do not reflect the deduction of fees and expenses which would have lowered overall performance. The returns shown above have not been audited and include the reinvestment of all sources of earnings. **SEE PAGE 34 OF THIS PRESENTATION FOR THE HISTORICAL NET PERFORMANCE OF THE PROGRAMME. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.** Please see the relevant risk disclaimers at the end of this presentation.

Performance Update: 2022

(Gross Estimated) Aspect Core Diversified HV Programme Top 25 Absolute Attribution by Instrument: 2022 YTD

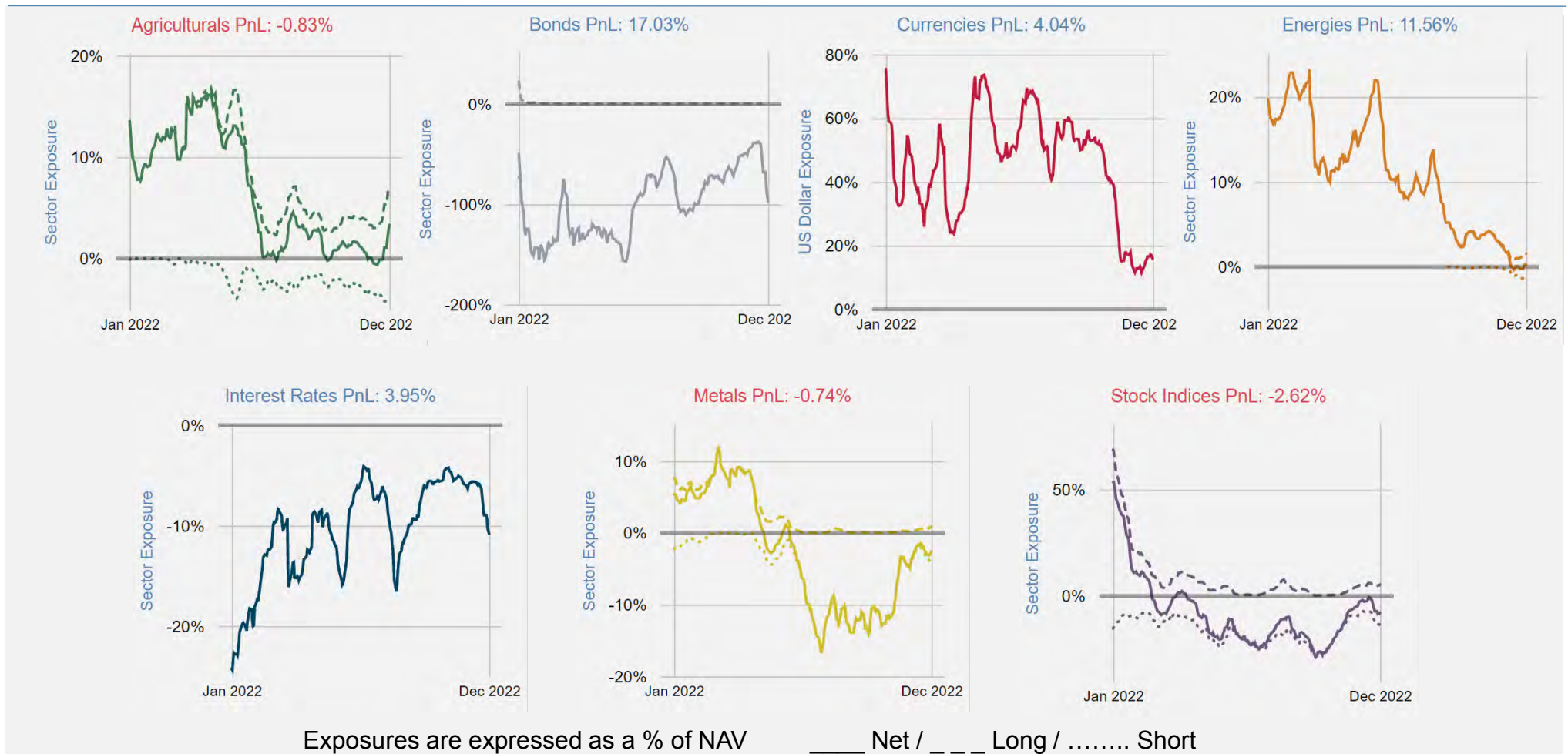


Top Markets	Attribution 2022 YTD
Heating Oil	2.58%
Gas Oil	2.47%
GBP SONIA 3M Rate	2.15%
UK 10Y Gilt	2.11%
Natural Gas	1.91%

Bottom Markets	Attribution 2022 YTD
CHF Future	-0.51%
EUR / GBP	-0.49%
S&P 500 Index	-0.40%
Australian SPI 200 Index	-0.39%
Silver	-0.36%

Note: Attribution figures are gross and as such do not reflect the deduction of fees and expenses which would have lowered overall performance. The returns shown above have not been audited and include the reinvestment of all sources of earnings. **SEE PAGE 34 OF THIS PRESENTATION FOR THE HISTORICAL NET PERFORMANCE OF THE PROGRAMME. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.** Please see the relevant risk disclaimers at the end of this presentation.

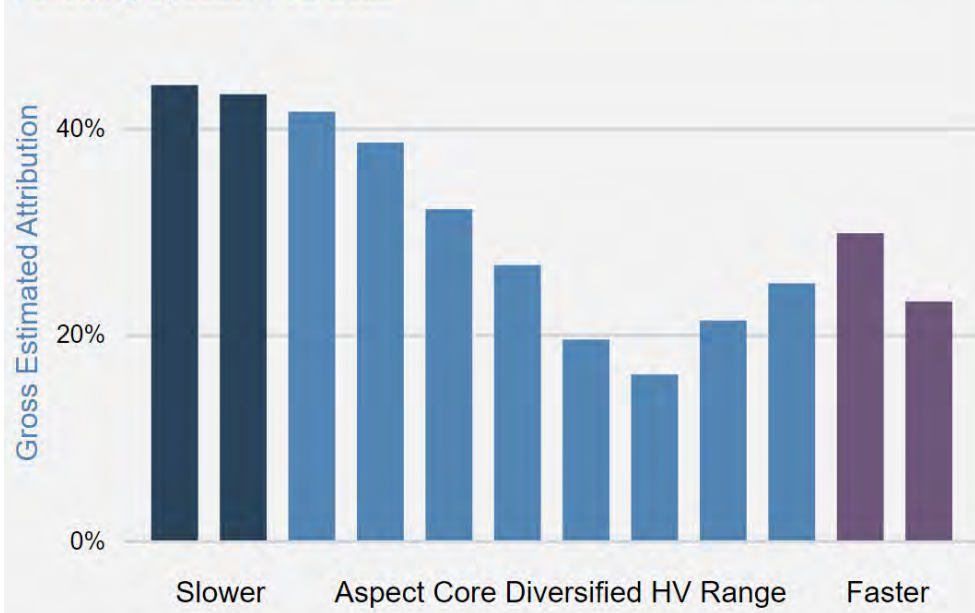
Dynamic Asset Class Exposures: 2022



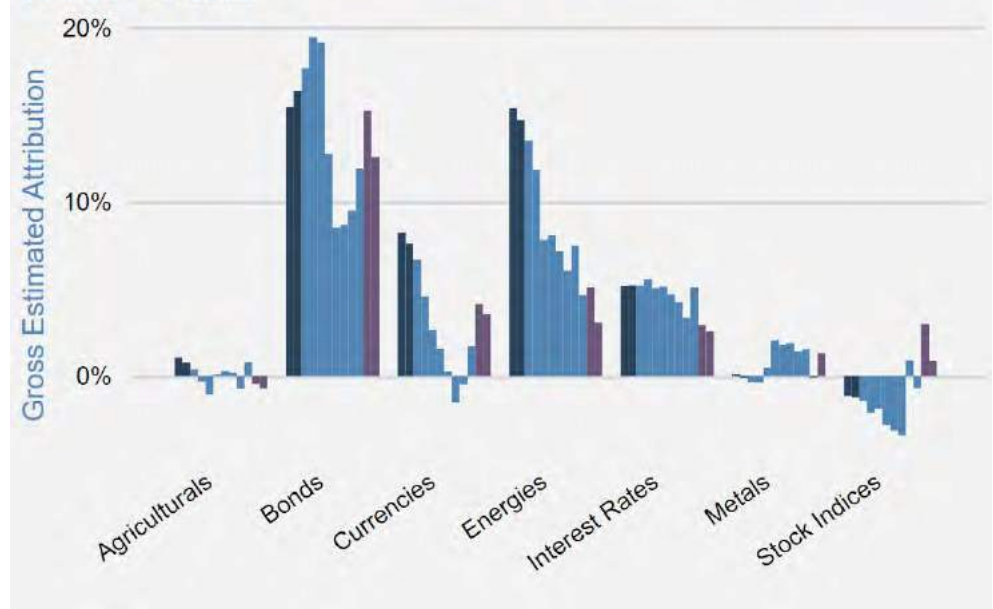
Note: Attribution figures are gross estimated and as such do not reflect the deduction of fees and expenses which would have lowered overall performance. The returns shown above have not been audited and include the reinvestment of all sources of earnings. **See page 34 of this presentation for the historical net performance of the Programme. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.** Please see the relevant risk disclaimers at the end of this presentation.

Performance by Trend Speed: 2022

Aspect Core Diversified HV Simulated Performance of Varying Trend Following Speeds: YTD 2022



Aspect Core Diversified HV Simulated Performance by Filter Speed and Sector: YTD 2022



Note: Analysis above is intended to represent individual trend filters of the Aspect Core Diversified HV Programme. Filters do not change through time, nor are they traded on a standalone basis. The simulation represents the performance that would have been generated if full trend following risk had been allocated to each filter. This analysis is used for illustrative purposes only.

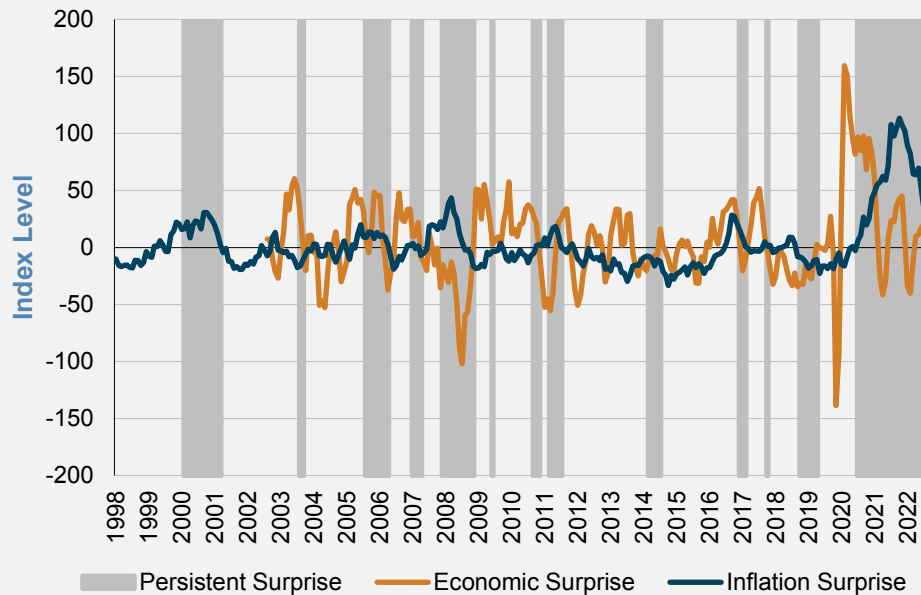
The performance data shown above is gross. As such, it does not reflect the deduction of fees and expenses which would have lowered performance. The returns shown above have not been audited and include the reinvestment of all sources of earnings. See penultimate page for the historical net performance of the Programme. **UNLIKE THE RESULTS SHOWN IN AN ACTUAL PERFORMANCE RECORD, THESE RESULTS DO NOT REPRESENT ACTUAL TRADING AND ARE BACKTESTED. RESULTS ARE CALCULATED THROUGH THE APPLICATION OF THE STRATEGY ON HISTORICAL MARKET DATA. HYPOTHETICAL PERFORMANCE HAS MANY INHERENT LIMITATIONS. ONE OF THE LIMITATIONS OF SUCH PERFORMANCE IS THAT RESULTS ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. THERE ARE FREQUENTLY SIGNIFICANT DIFFERENCES BETWEEN SUCH PERFORMANCE AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAMME. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.** Please see relevant risk disclaimers at the end of this presentation.

Agenda

- Market Context
- Trend Following:
 - What?
 - Why?
 - How?
- Review of Aspect Core Trend in 2022
- Outlook for 2023

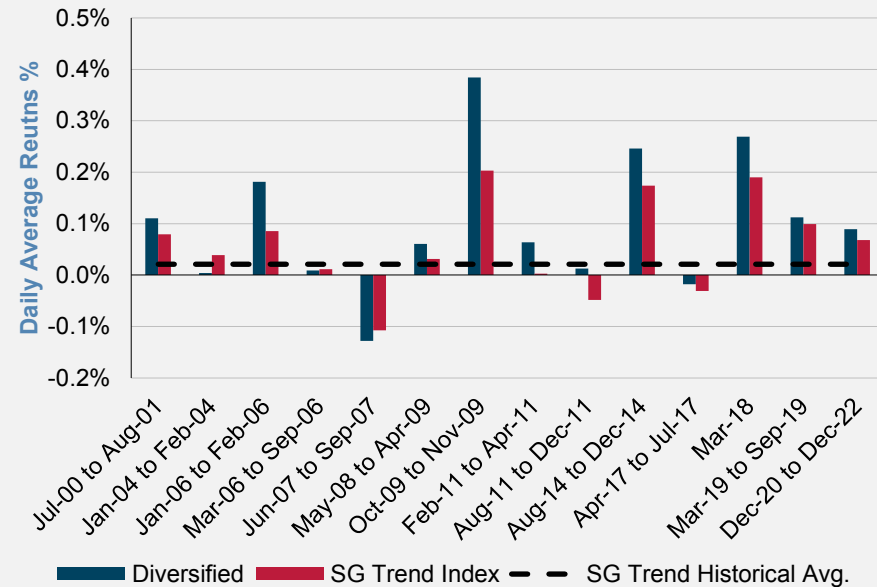
Trend Utility Amidst Uncertainty

Persistent Economic and Inflation Surprise: 1998 to 2022



- Citi Surprise indices = actual results – forecasts (G10)
- Shaded area illustrates when persistent surprises have occurred in the prior 6 months

Daily Average Returns During Persistent Surprise Periods

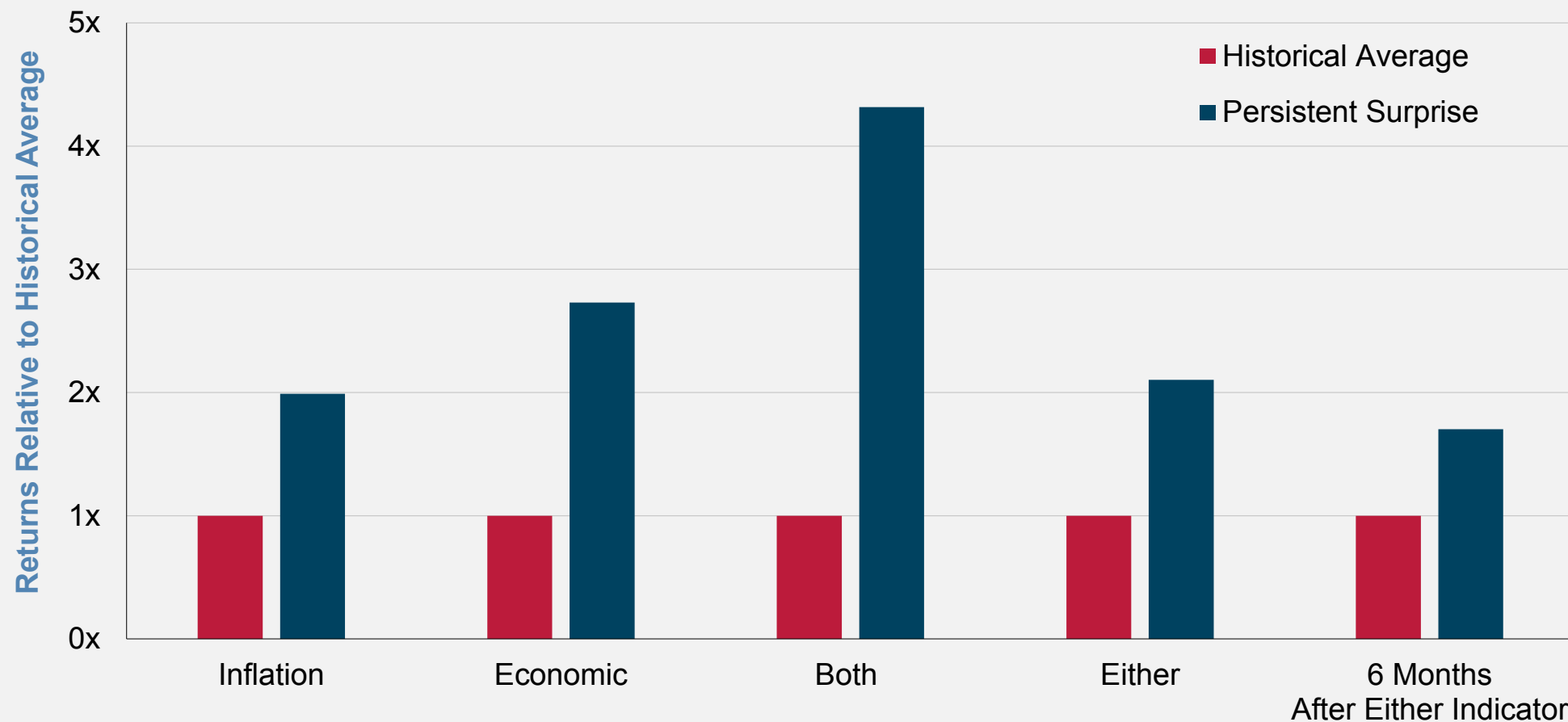


- Notable above average trend following returns are witnessed during periods of persistent surprise

Source: Aspect Capital, Bloomberg. The data shown above with respect to various indices is used for comparative purposes only. The data above is not intended to indicate that there is a correlation between the Programme and any such indices. The indices shown may not be subject to the same fees or expenses to which the Programme is subject. It is not possible to invest in an index. It should not be assumed that the Programme will invest in any specific components comprising the indices shown. Detailed descriptions of the indices used above are available at the end of this presentation. **Note: Aspect Diversified** started trading on 15th December 1998. The performance data used above for Aspect Diversified from January 2022 onwards has not been audited. The returns shown are net of the fees (and relevant crystallisation periods) applicable to the A share class of the flagship fund trading the programme over time, currently a 2.00% management fee (accrued weekly and paid monthly in arrears) and 20.00% performance fee (determined and debited (if applicable) annually). The returns used include the reinvestment of all sources of earnings. The performance of customised or modified implementations of the Programme may differ to the performance shown above. **PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.** Please see relevant risk disclaimers at the end of this presentation.

A Strategy for Uncertainty

Trend Index Returns Conditional on Persistent Surprises



Source: Macrobond, Bloomberg, CISDM. The data used for the Trend Index returns is comprised of CISDM data from 1998 to end of 1999, SG Trend Index from 2000 onwards. The data with respect to various indices is shown for illustrative purposes only. Detailed descriptions of the indices used above are available from Aspect upon request.

2023: Aspect Capital Outlook

- Goldilocks era has ended and volatility has returned
- Multiple entrenched sources of uncertainty remain
 - Inflation is not homogenous globally – reaction to it will be differentiated
 - Higher interest rates will expose structural weaknesses over time
 - Geopolitical tensions remain significant
 - Energy shortage continues to challenge Europe
 - De-globalisation adds friction
- Diversification, asset allocation and manager selection crucial again
- Aspect Trend solutions:
 - Adaptive, unbiased, directionally agnostic
 - Highly liquid; highly scalable
 - Material commodity exposure
 - 20+ years of experience
- A strategy with a proven history of portfolio risk mitigation in periods of uncertainty

Aspect Core Diversified HV Programme: Track Record

Aspect Core Diversified Programme: 15% Volatility Adjusted Representative Account - Net Monthly Rate of Return

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2014											5.74%	5.25%	11.29%
2015	5.84%	-1.22%	4.32%	-7.53%	0.30%	-4.37%	5.63%	-2.30%	2.09%	-2.47%	3.38%	-1.51%	1.22%
2016	5.03%	2.15%	-6.09%	-4.59%	-0.62%	5.04%	1.18%	-2.22%	-0.15%	-3.79%	-1.88%	0.70%	-5.76%
2017	-0.40%	2.33%	-1.35%	-1.64%	-0.02%	-3.09%	0.57%						-3.63%

Aspect Core Diversified HV Commingled Vehicle - Net Monthly Rate of Return

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2017							1.98%	3.34%	-3.53%	6.98%	2.84%	-0.07%	11.77%
2018	9.78%	-11.59%	-0.85%	1.34%	-7.21%	1.94%	-0.24%	1.53%	-0.85%	-8.25%	-3.52%	-0.25%	-18.21%
2019	-2.20%	1.46%	6.01%	4.70%	-2.74%	3.28%	3.59%	6.19%	-4.79%	-3.28%	1.10%	-1.35%	11.77%
2020	-0.79%	2.05%	5.49%	-1.15%	-2.57%	-2.01%	0.35%	-3.21%	-0.71%	0.49%	-1.97%	4.81%	0.37%
2021	-1.68%	3.15%	1.14%	2.55%	2.05%	-2.74%	-1.79%	0.37%	3.16%	4.06%	-8.01%	1.98%	3.63%
2022	3.87%	3.04%	11.21%	7.32%	-0.26%	5.14%	-5.13%	6.77%	7.71%	-0.04%	-7.05%	0.97%	37.11%

Note: From 7 November 2014 to 17 July 2017 the live returns shown refer to a Representative Account trading the Aspect Core Diversified Programme, adjusted to a 15% volatility target and to a 1.25% management fee (accrued daily and paid monthly in arrears). **THESE RESULTS ARE BASED ON SIMULATED OR HYPOTHETICAL RESULTS THAT HAVE CERTAIN LIMITATIONS. UNLIKE THE RESULTS SHOWN IN AN ACTUAL PERFORMANCE RECORD, THESE RESULTS DO NOT REFLECT ACHIEVED RESULTS AS THE RETURNS HAVE BEEN ADJUSTED.** From 17th July 2017 the performance shown is that of the commingled vehicle that trades the Aspect Core Diversified HV Programme. The performance data shown is net of the fees (and relevant crystallisation periods) applicable to this share class over time, currently a 1.25% management fee (accrued daily and paid monthly in arrears). The performance data shown above from January 2022 onwards has not been audited. The returns shown include the reinvestment of all sources of earnings. **PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.** Please see relevant risk disclaimers at the end of this presentation.

Aspect Diversified Programme: Track Record

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
1999	-4.88%	2.86%	-4.84%	7.26%	-2.53%	-0.41%	-3.16%	-0.67%	-1.76%	-3.40%	7.66%	5.66%	0.65%
2000	1.64%	-0.28%	-0.57%	-2.69%	3.72%	-3.19%	-1.85%	3.43%	-0.16%	3.62%	8.12%	11.73%	24.93%
2001	0.87%	0.35%	10.48%	-6.85%	-2.10%	0.41%	3.52%	2.72%	10.13%	5.25%	-5.62%	-2.81%	15.79%
2002	-5.15%	-9.73%	4.81%	-2.73%	2.52%	11.29%	8.47%	1.63%	7.16%	-6.51%	-4.86%	13.90%	19.19%
2003	3.72%	8.35%	-7.08%	-1.48%	10.49%	-3.10%	2.17%	-0.57%	1.94%	2.46%	-0.92%	4.13%	20.59%
2004	1.90%	6.78%	-5.27%	-7.55%	-1.38%	-7.96%	-0.24%	0.80%	0.67%	3.33%	5.17%	-3.01%	-7.72%
2005	-7.48%	4.09%	1.44%	-2.94%	4.61%	4.47%	-0.87%	4.24%	0.58%	-1.43%	5.80%	-0.28%	12.01%
2006	2.47%	-1.31%	5.31%	5.10%	-4.98%	0.49%	-4.56%	-0.59%	0.37%	4.81%	0.23%	5.52%	12.84%
2007	2.78%	-5.83%	-1.94%	4.66%	6.22%	3.68%	-5.68%	-6.53%	5.51%	7.33%	-4.21%	3.40%	8.18%
2008	4.97%	7.63%	-3.64%	-5.26%	4.27%	8.07%	-9.33%	-4.47%	3.33%	10.01%	5.52%	3.88%	25.42%
2009	0.47%	0.74%	-3.67%	-3.06%	-2.13%	-7.91%	-1.55%	4.29%	2.95%	-4.53%	8.08%	-4.48%	-11.24%
2010	-2.64%	2.35%	3.95%	2.22%	-3.34%	0.68%	-2.01%	7.01%	1.05%	4.52%	-4.78%	6.17%	15.36%
2011	-1.29%	2.49%	-1.33%	4.33%	-5.24%	-3.16%	8.10%	1.79%	0.27%	-4.52%	1.51%	2.28%	4.51%
2012	1.26%	2.19%	-2.62%	0.88%	0.91%	-5.31%	3.43%	-3.24%	-3.33%	-4.36%	-1.25%	0.67%	-10.66%
2013	3.64%	-3.25%	1.67%	3.58%	-6.44%	0.34%	-1.84%	-2.88%	-2.73%	1.93%	2.00%	-0.01%	-4.43%
2014	-5.64%	1.65%	-1.68%	1.67%	2.39%	1.73%	-0.07%	5.20%	1.61%	3.74%	12.02%	6.48%	32.02%
2015	4.60%	-0.44%	3.70%	-9.69%	-0.34%	-4.59%	9.25%	1.03%	3.27%	-2.42%	6.25%	-1.54%	7.89%
2016	2.85%	2.26%	-4.69%	-5.02%	-1.77%	4.30%	0.92%	-2.85%	0.51%	-4.00%	-1.41%	-0.15%	-9.17%
2017	0.14%	1.53%	-2.61%	-0.47%	0.13%	-2.67%	0.59%	3.29%	-4.44%	8.24%	1.40%	0.32%	5.00%
2018	8.72%	-9.86%	2.19%	3.13%	-9.29%	2.02%	-0.77%	3.12%	-0.95%	-9.23%	-2.04%	-0.88%	-14.62%
2019	-0.84%	3.96%	4.35%	4.79%	-3.29%	5.08%	4.30%	7.04%	-3.87%	-3.52%	2.00%	-0.76%	20.09%
2020	0.42%	0.21%	0.48%	-1.11%	-1.51%	-2.13%	0.91%	-5.28%	-1.05%	-0.20%	-1.41%	7.64%	-3.46%
2021	-1.21%	2.21%	3.51%	3.06%	3.19%	-3.99%	0.02%	2.23%	4.11%	-1.37%	-5.25%	2.64%	8.95%
2022	5.92%	2.55%	9.08%	8.36%	0.54%	3.66%	-3.51%	5.80%	5.16%	1.85%	-4.30%	0.32%	40.46%

Note: Aspect Diversified started trading on 15th December 1998. The performance data used above for Aspect Diversified from January 2022 onwards has not been audited. The returns shown are net of the fees (and relevant crystallisation periods) applicable to the A share class of the flagship fund trading the programme over time, currently a 2.00% management fee (accrued weekly and paid monthly in arrears) and 20.00% performance fee (determined and debited (if applicable) annually). The returns used include the reinvestment of all sources of earnings. The performance of customised or modified implementations of the Programme may differ to the performance shown above. **PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.** Please see [relevant risk disclaimers](#) at the end of this presentation.

Disclaimer

This material has been prepared by Aspect Capital Limited which is authorised and regulated for investment management by the Financial Conduct Authority ("FCA") in the United Kingdom. Any opinions expressed are subject to change and should not be interpreted as investment advice or a recommendation. This information has been prepared for circulation to investment professionals who are or would be classified as Professional Clients or Eligible Counterparties under the UK FCA rules and who, if they are US residents or citizens, are or would be qualified as "Qualified Purchasers" under the US Investment Company Act 1940 and "Qualified Eligible Persons" under the US Commodity Futures Trading Commission regulations and who if they are resident in Canada are "permitted clients" within the meaning of Canadian securities legislation, and is specifically not intended for any other persons including persons who are or would be classified as Retail Clients under the UK FCA rules. It is a confidential communication to, and solely for the use of such persons who, as set out above, are permitted to receive it. The information may be subject to verification or amendment and has been supplied for information purposes only. No representation or warranty is made, whether expressly or implied, by Aspect Capital Limited, its Directors or employees, as to the accuracy or completeness of the information provided. An Aspect investment programme investor may lose all or substantially all of its investment. To the extent that the term/s "systematic" and/or "automatic" is/are used in this document to describe Aspect Capital Limited's investment strategy and/or a number of related processes, it should be noted that human discretion is necessarily involved in the development of Aspect Capital Limited's operations (including the Aspect Diversified Programme and other programmes offered by Aspect Capital Limited from time to time) and in certain circumstances Aspect Capital Limited may also deviate from its automatic systems, for example as a result of external, unforeseen or dramatic events. Note that any Assets Under Management ("AUM") figure for Aspect Capital Limited detailed in this document includes all AUM managed by Aspect on a discretionary basis. It does not include AUM managed by Aspect on a non-discretionary basis.

This information is neither an offer to sell an interest or otherwise invest in any fund or other investment vehicle including a managed account, sponsored or managed by Aspect Capital Limited whether as investment manager, commodity trading advisor or otherwise (each, an "Aspect Product"). Any such offer, if made, would be made only by way of the final offering documents, disclosure document and/or investment management agreement (together "offering documents") of such Aspect Product and only in jurisdictions where, and to such persons to whom, such an offer would be lawful. Any decision to invest in an Aspect Product should be made only on the basis of consideration of all of the final offering documents in respect of such Aspect Product. Such final offering documents contain important information concerning risk factors and other material aspects of such Aspect Product and must be read carefully before a decision to invest is made. This information must be accompanied or preceded by the final offering documents of the relevant Aspect Product. In accepting receipt of the information contained herein all recipients will be taken to have agreed with Aspect Capital Limited not to distribute such information to any other person save (i) in accordance with the above restrictions, and applicable law and regulation and (ii) without making any changes which would make that information inaccurate or misleading. Aspect Capital Limited is exempt from the requirement to hold an Australian financial services licence under the Corporations Act 2001 (Cth). Aspect Capital Limited is authorised and regulated under the laws of the United Kingdom which differ from Australian laws. Aspect Capital Limited is not registered with any securities regulatory authority in Canada. Certain Aspect Products are distributed in Switzerland. The distribution of shares in certain Aspect Products in Switzerland must exclusively be made to qualified investors. In respect of such products, Banque Heritage SA with registered office at 61 route de Chêne, 1208 Geneva (www.heritage.ch), is the representative (the "Representative") and the paying agent in Switzerland. The place of performance and jurisdiction for shares in those Aspect Products distributed in Switzerland are at the registered office of the Representative. Some Aspect Products are made available in Switzerland solely to qualified investors, at the exclusion of qualified investors with an opting-out pursuant to Art. 5(1) of the Swiss Federal Act on Financial Services ("FinSA"). In respect of these products, no representative or paying agent has been appointed in Switzerland. Aspect Capital Limited is a company registered in England and Wales under registered no. 3491169. Its registered office is at 10 Portman Square, London W1H 6AZ. ASPECT, ASPECT CAPITAL, the ASPECT CAPITAL device and ASPECT CAPITAL: THE SCIENCE OF INVESTMENT are registered trademarks of Aspect Capital Limited. © Aspect Capital Limited 2023. All rights reserved.

Important Performance Information

An individual investor's performance may differ from the performance results set forth herein due of a number of factors, including (a) timing differences between subscriptions and redemptions, which may result in some investors being above their high watermark when others are below their high watermark, and (b) different expenses, fees, and other charges paid by investors. Any index presenting the performance of hedge funds generally or a hedge fund sector may overstate performance and understate volatility because hedge funds generally or in the reported sector that have not performed well enough are often excluded from such an index. Performance by sector is intended to be indicative and to give an estimate of winning and losing components of the relevant Aspect programme. Unless otherwise specified, all performance attribution information is specified on a gross basis. Gross performance attribution information is based on internal estimates of trading profits and losses and does not include management fees, cash or other expenses. Gross performance is based on information believed to be accurate. It has not been audited by a third party. The Aspect Diversified Programme and the other programmes offered by Aspect Capital Limited from time to time are quantitative, systematic investment programmes. The performance and other attributes of Aspect Products that are in the form of an investment fund may differ from those of the programme in which they invest including as a result of fees and expenses payable by such Aspect Products. All data sourced from Aspect Capital Limited unless otherwise specified. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Disclaimer

Investment Risks

Any person making an investment in an Aspect Product must be able to bear the risks involved and must meet such Aspect Product's suitability requirements. Some or all alternative investment programmes may not be suitable for certain investors. No assurance can be given that any Aspect Product's investment objective will be achieved. Among the risks which Aspect Capital Limited wishes to call to the particular attention of persons receiving this brochure are the following: Aspect Products are speculative and involve a substantial degree of risk; Aspect Products' performance may be volatile; Redemptions may be made only if an investor provides prior written notice of its desire to redeem in advance of the intended redemption date; There is no secondary market for the shares in Aspect Products that are in the form of an investment fund and none is expected to develop; There are restrictions on transferring shares in an Aspect Product that are in the form of an investment fund; An Aspect Product's fees and expenses are significant. Trading profits must be greater than such fees and expenses to avoid loss of capital; Aspect Products are not required to provide periodic pricing or valuation information to investors with respect to the Aspect Product's individual investments; Aspect Products are not mutual funds and are not subject to regulation under the US Investment Company Act 1940, as amended; Orders executed for Aspect Products will take place on non-US and US markets; Aspect Products may be subject to conflicts of interest; Aspect Funds utilise leverage through the use of margin-traded instruments. Use of leverage presents opportunities for increasing total returns, but may potentially increase losses.

Please pay particular attention to the risk factors and conflicts of interests sections of each Aspect Product's offering documents.

HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAMME.

ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED AND BACK-TESTED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAMME IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAMME WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS.

Simulated results presented in this presentation for any Aspect Product are calculated and back-tested by taking the historical market information available at the relevant point in time. Hypothetical trades relevant to each current strategy are generated on the basis of this information. Positions are valued using the prevailing market prices at each point in time. Performance is calculated using these valuations and subtracting the relevant management and performance fees (where applicable) of the Aspect Product, using standard methodology. Simulations are relevant to show the pattern of returns, but are not a forecast of future performance. There are many assumptions made, many of which may not prove to be accurate in actual trading. These figures are based on information believed to be accurate but have not been audited by a third party. Information is for illustrative purposes only.

The case studies included in this presentation are for illustrative purposes only and do not represent all futures positions purchased, sold or recommended for advisory clients by Aspect Capital Ltd. during the periods shown. The case studies presented are intended to outline how certain investment ideas may be identified, developed and executed. Unless otherwise indicated, you should not assume that investments shown and discussed were or will be profitable or that losses will not be incurred. In addition, due to changes in market conditions, similar opportunities may not be available currently or going forward. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.


Index Glossary

Index	Description
S&P 500	Index includes 500 leading companies and covers approximately 80% of the U.S. equity market's available market cap
Bloomberg Global Aggregate Bond Total Return Index	A broad-based global investment grade fixed-income index, including the reinvestment of all cash distributions
Bloomberg Commodity Total Return Index	An index tracking prices of futures contracts on physical commodities, and including the reinvestment of all cash distributions
CISDM Equal Weighted CTA Index	Reflects the average performance of Commodity Trading Advisors reporting to the CISDM Hedge Fund/CTA Database
SG Trend Index	A subset of the SG CTA Index, and follows traders of trend following methodologies. The SG CTA Index is equal weighted, calculates the daily rate of return for a pool of CTAs selected from the larger managers that are open to new investment

Contact Details

Aspect Capital Limited


10 Portman Square
London W1H 6AZ
United Kingdom

 + 44 20 7170 9700

 info@aspectcapital.com

Aspect Capital Inc.

One Station Place
Stamford, CT 06902
USA

 + 1 203 653 7800

Aspect Capital Limited is authorised and regulated in the UK by the Financial Conduct Authority (FCA), registered as a Commodity Trading Advisor (CTA) and a Commodity Pool Operator (CPO) with the Commodity Futures Trading Commission (CFTC) and a member of the National Futures Association (NFA) and registered as Investment Adviser with the Securities and Exchange Commission (SEC) in the United States. Registration with the SEC does not imply a certain level of skill or training.

Aspect Capital Inc. is registered as a Commodity Trading Adviser (CTA) with the Commodity Futures Trading Commission (CFTC) and a member of the National Futures Association (NFA) in the United States.

CARLYLE

Globalization & Its Discontents

Jason M. Thomas, Ph.D.

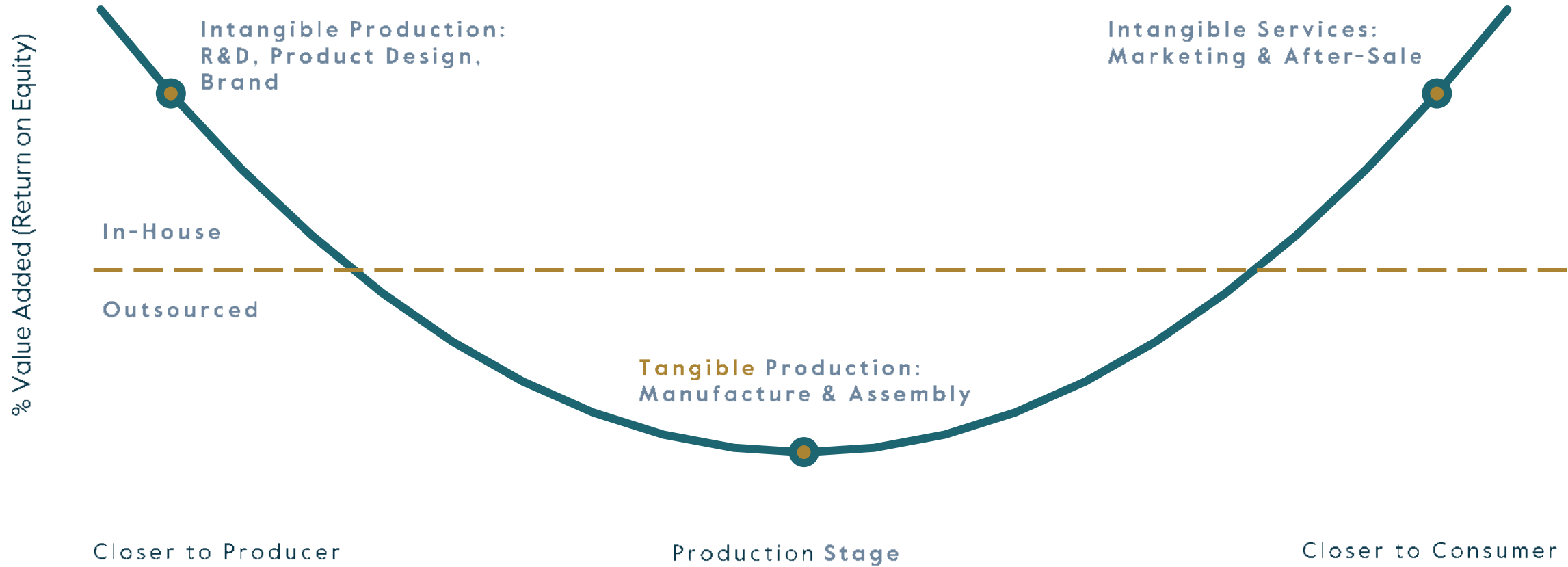
Managing Director & Head of Global Research

February 2023

SECTION 01

Unbundling & Outsourcing

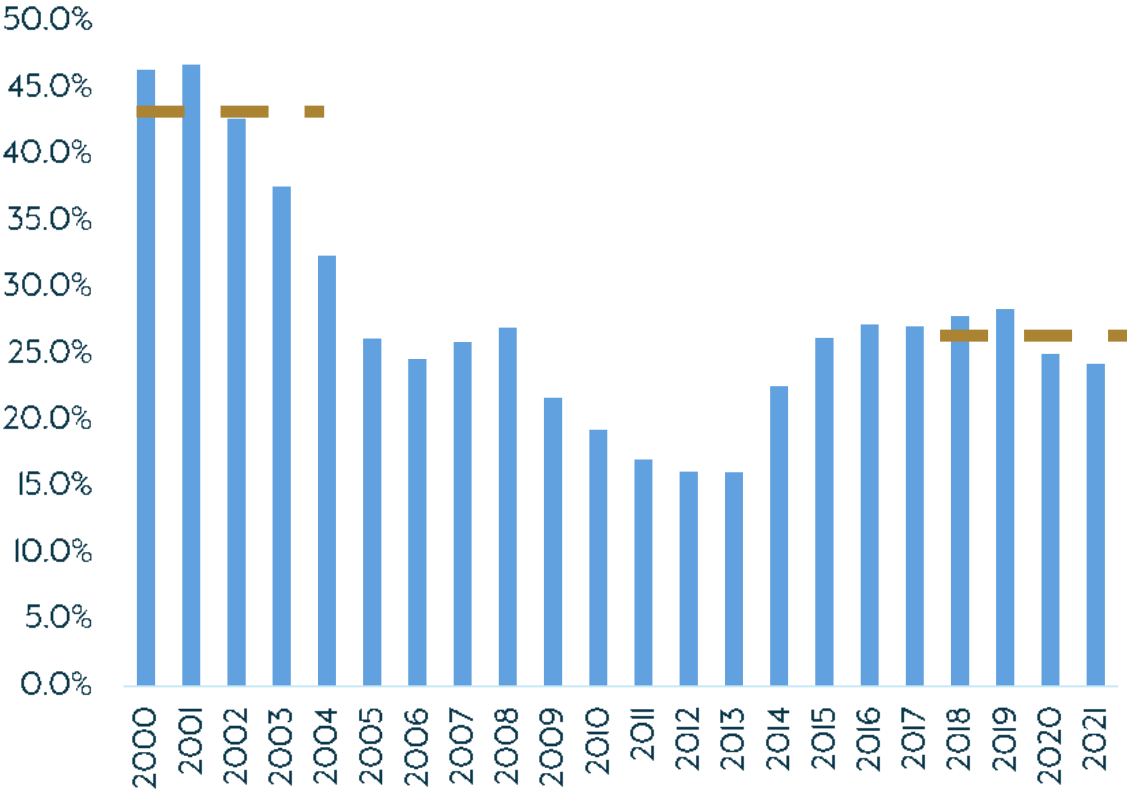
Companies Outsourced Production Processes to Focus on Higher Value-Added Activities



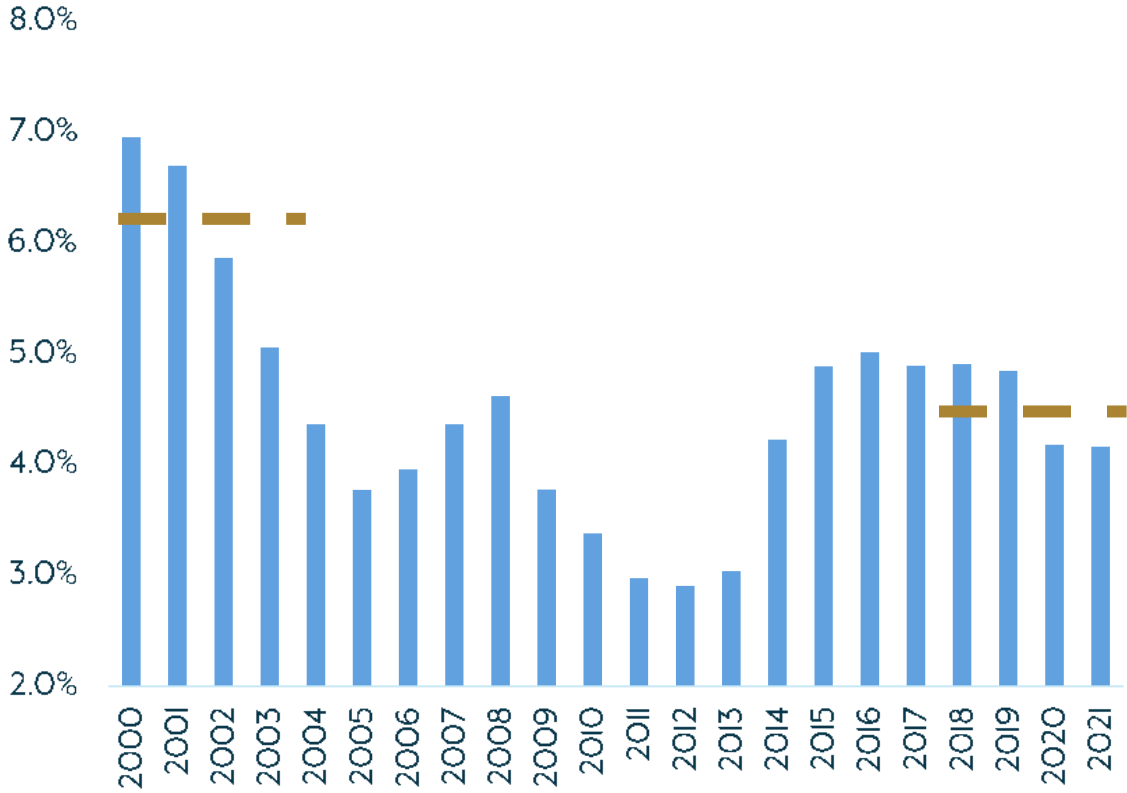
Source: Carlyle, Adapted from WTO, "Recent Trends in Global Value Chains," 2022.

Trend Toward “Virtual” or “Factoryless” Manufacturing Boosted Operating Cash Flow & Return on Equity

Net Capex/Operating Cash Flow

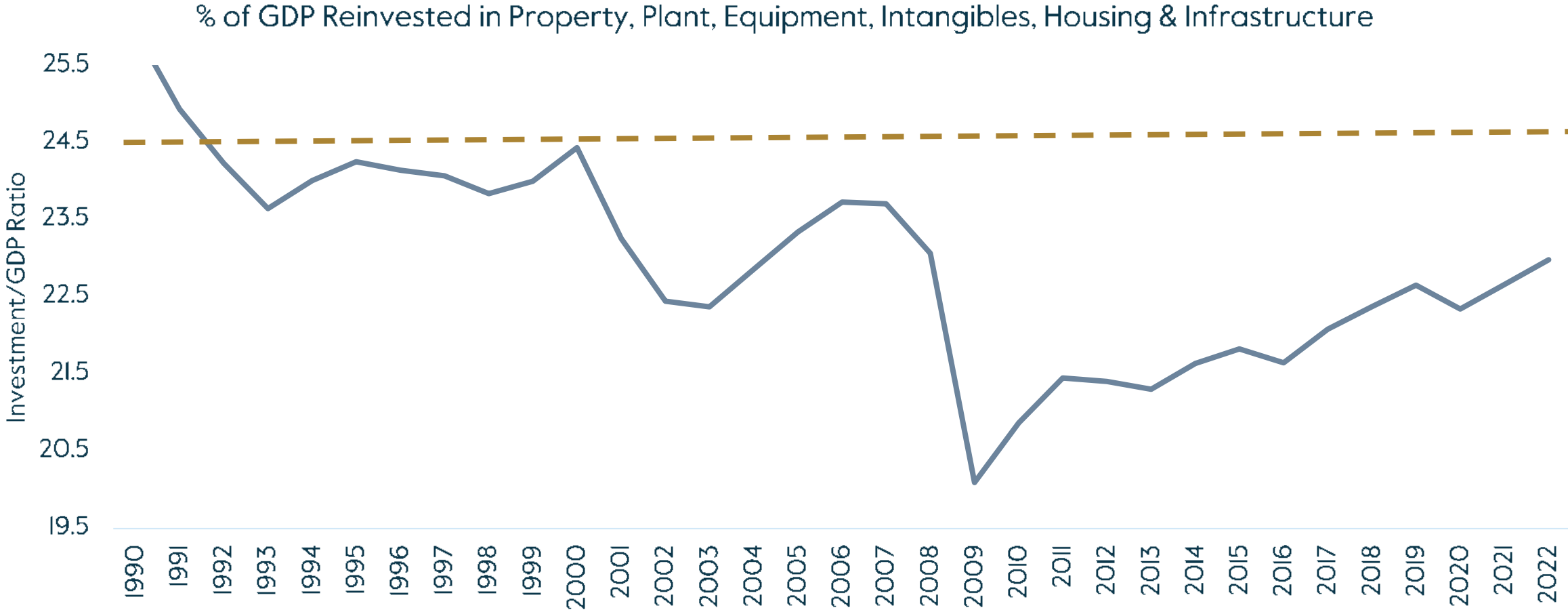


Net Capex/Net Revenues



Source: Carlyle Analysis; Macroeconomic Accounts of the United States.

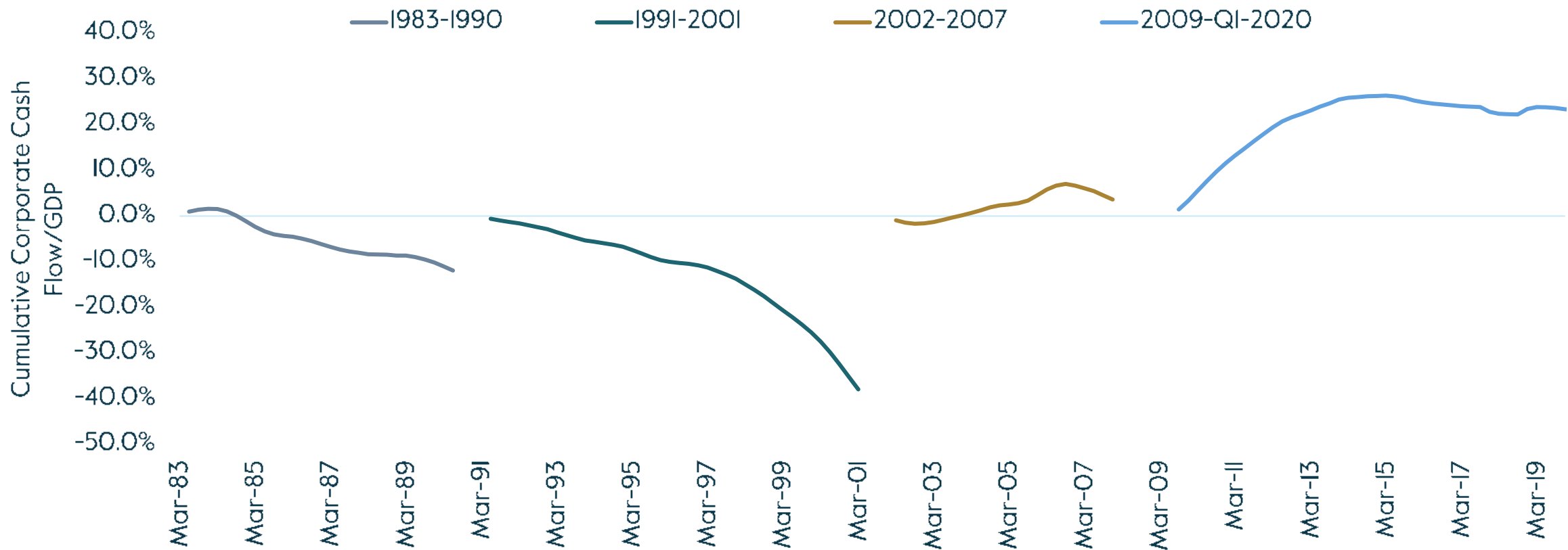
Sharp Decline in Advanced Economies' Fixed Investment Rates, Financing Needs



Source: Carlyle Analysis of 2022 IMF WEO Database. There is no guarantee any trends will continue.

As the Corporate Sector's Cash Flow Deficits Turned into Massive Surpluses

Cumulative Cash Flow Position of the U.S. Corporate Sector

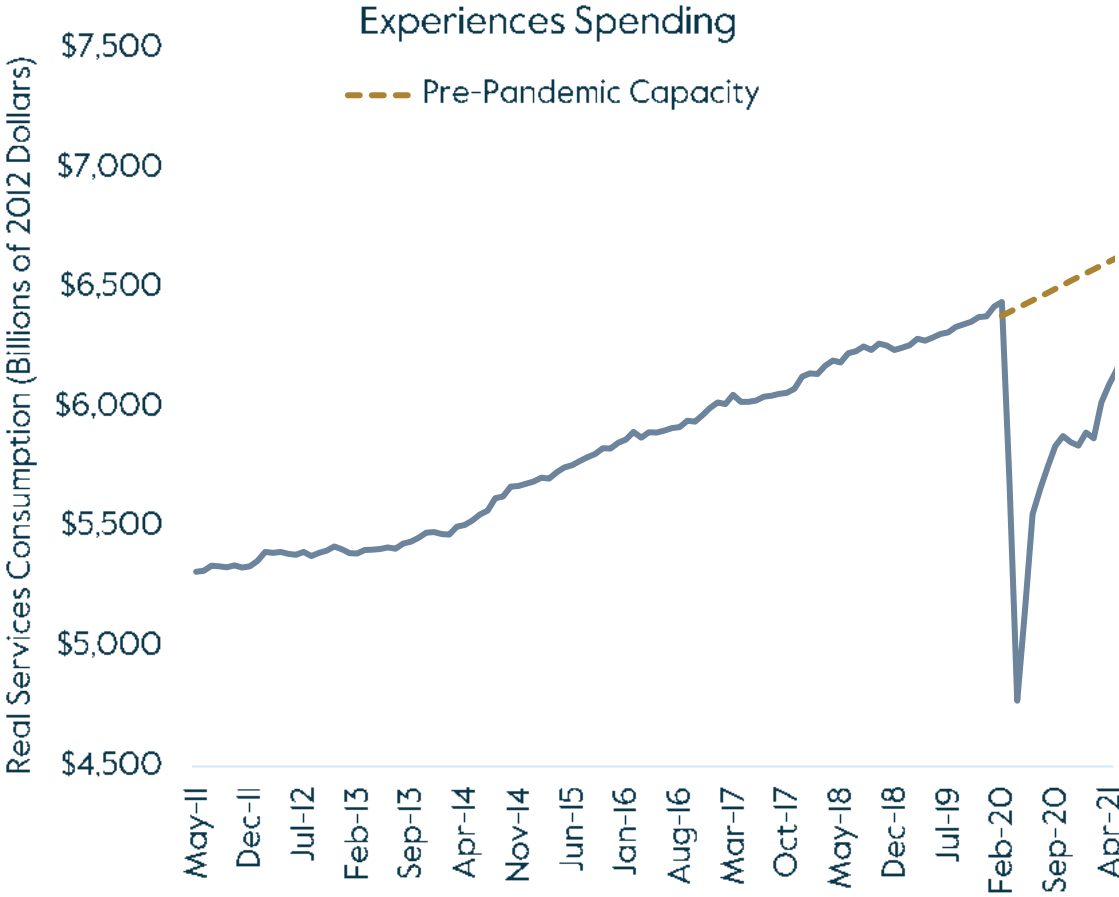
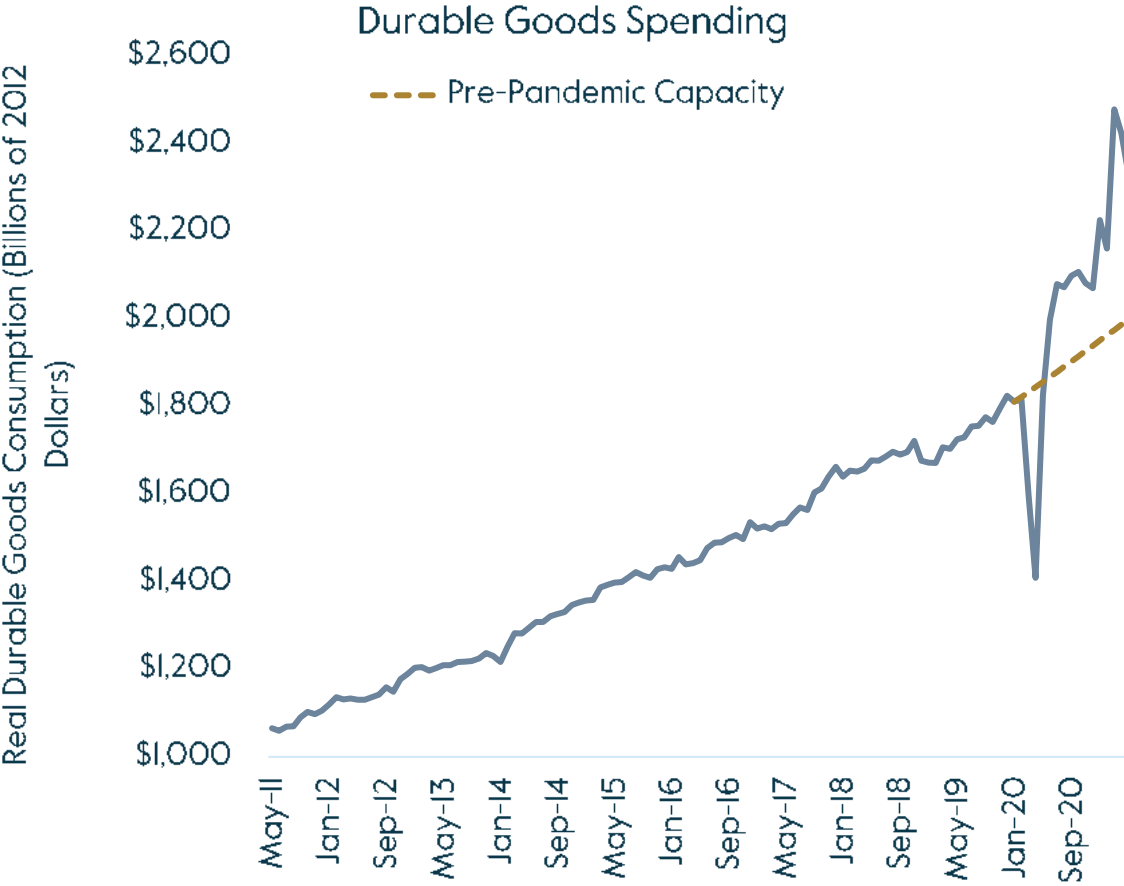


Source: Carlyle Analysis; Federal Reserve Flow of Funds Data, September 2022. There is no guarantee any trends will continue.

SECTION 02

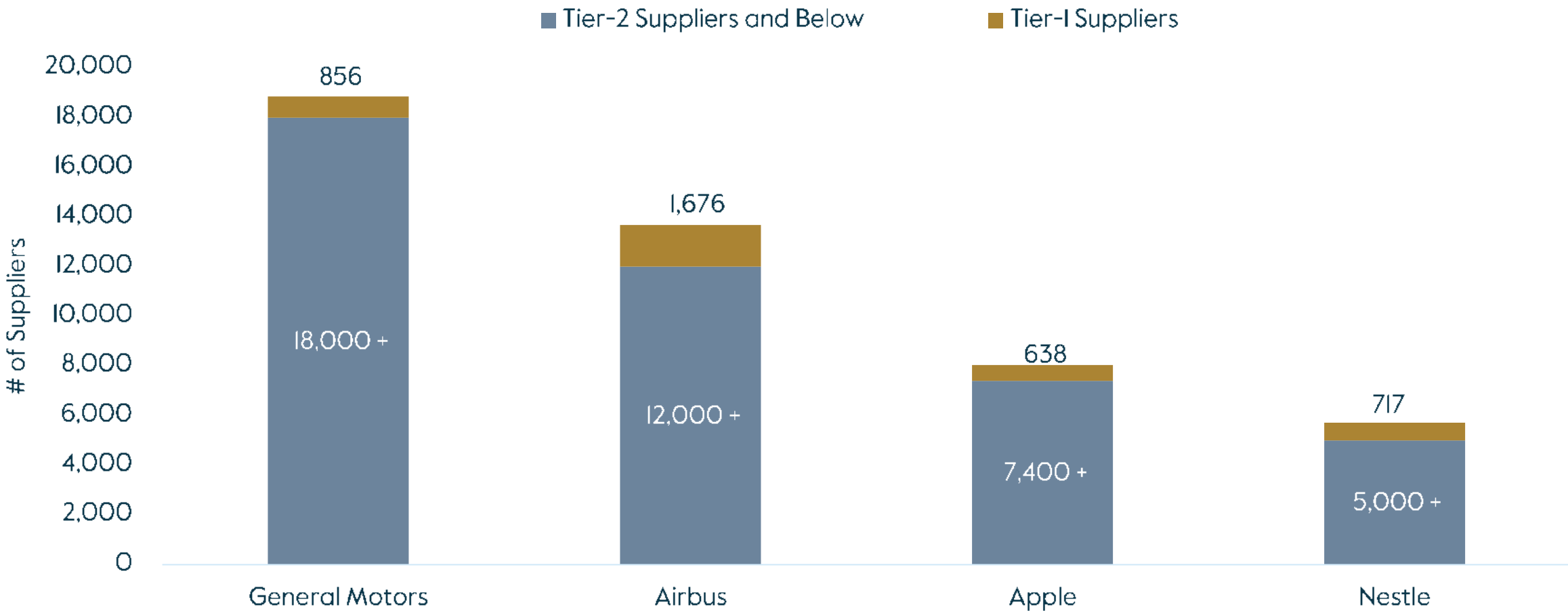
The Pandemic & “Supply Chain Crisis”

During Pandemic, Households Stayed at Home & Spent from Home



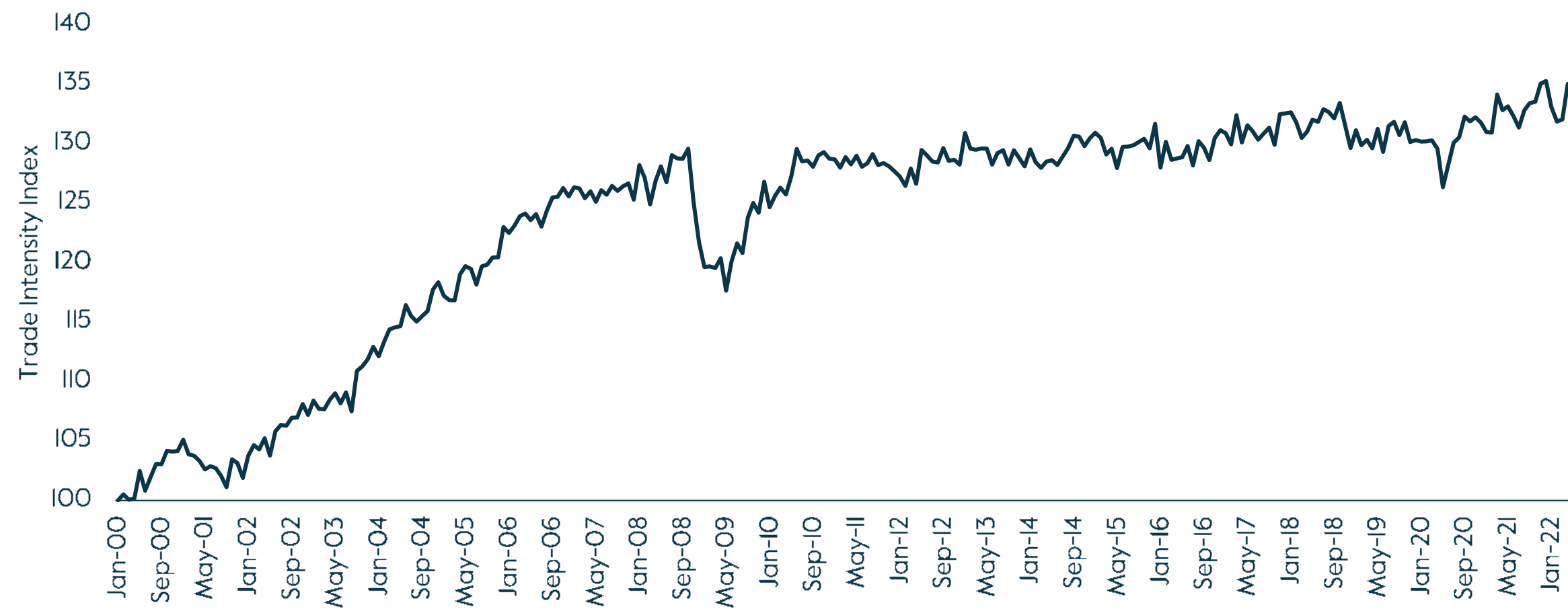
Source: Carlyle Analysis of YipitData, U.S. Bureau of Economic Analysis, January 2023. There is no guarantee any trends will continue.

Unbundled Production Processes Mean Few Tasks Performed Under One Roof, Introducing Coordination Problems



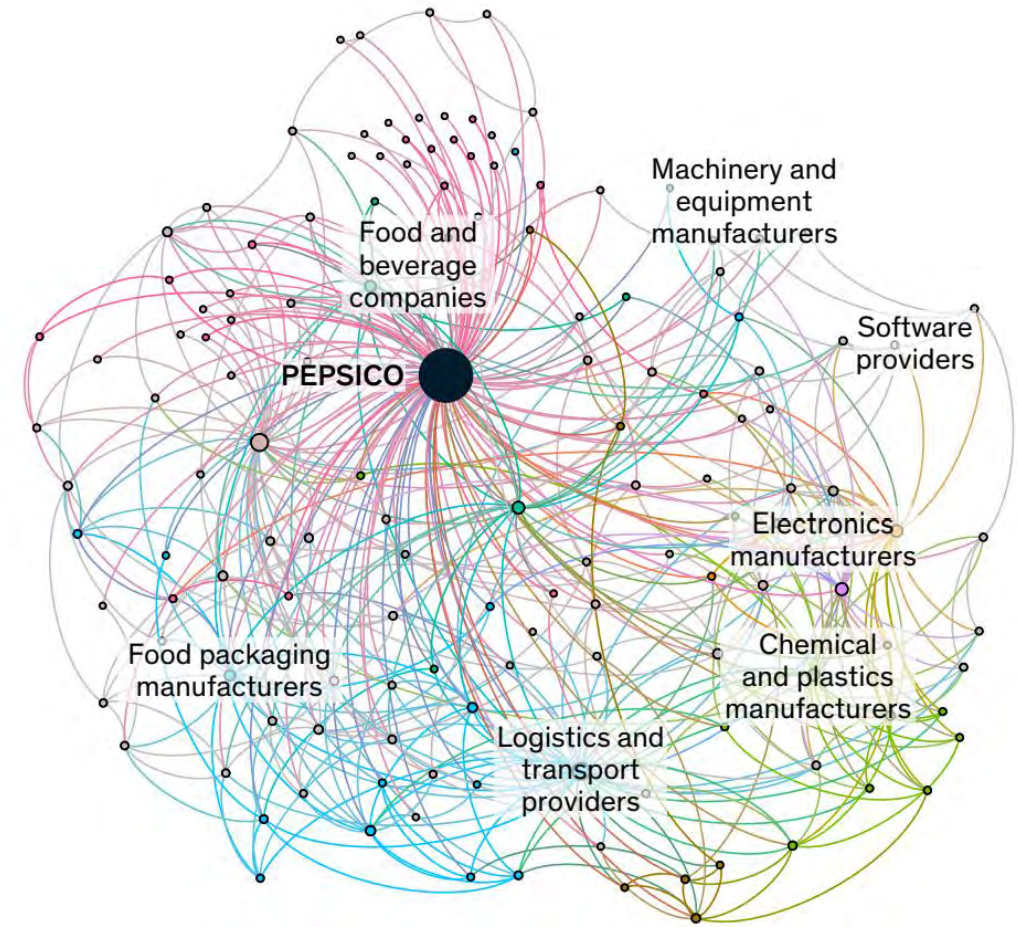
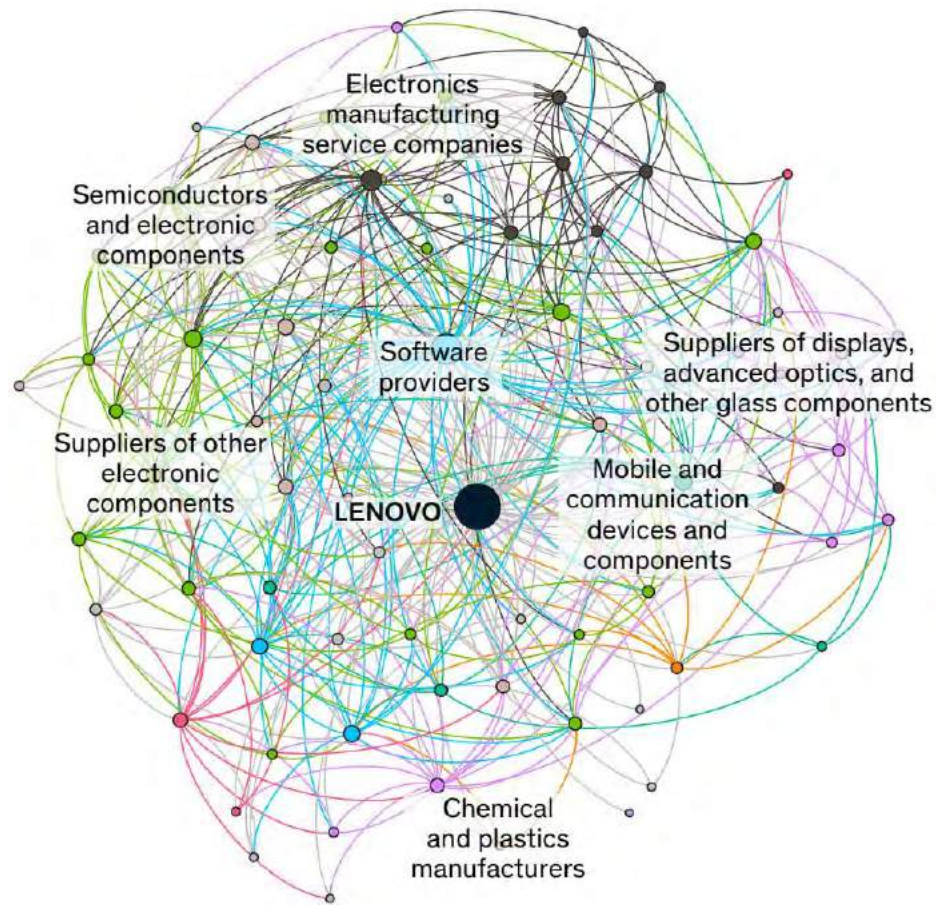
Source: McKinsey, "Risk, resilience, and rebalancing in global value chains," 2020.

By 2021, A Given Amount of Output Required 35% More Cross-Border Trade



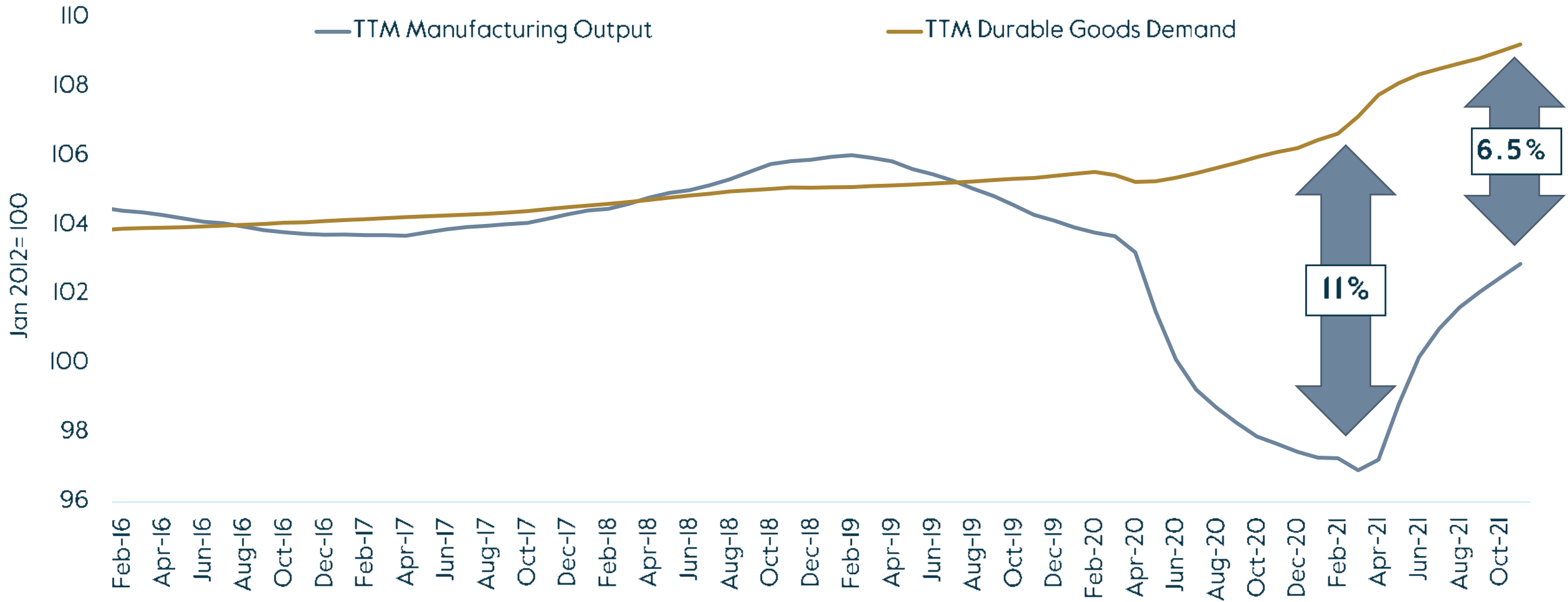
Source: Carlyle Analysis; CBP Database. July 2022. There is no guarantee any trends will continue.

Difficult to Overstate Complexity of Modern Supply Chains



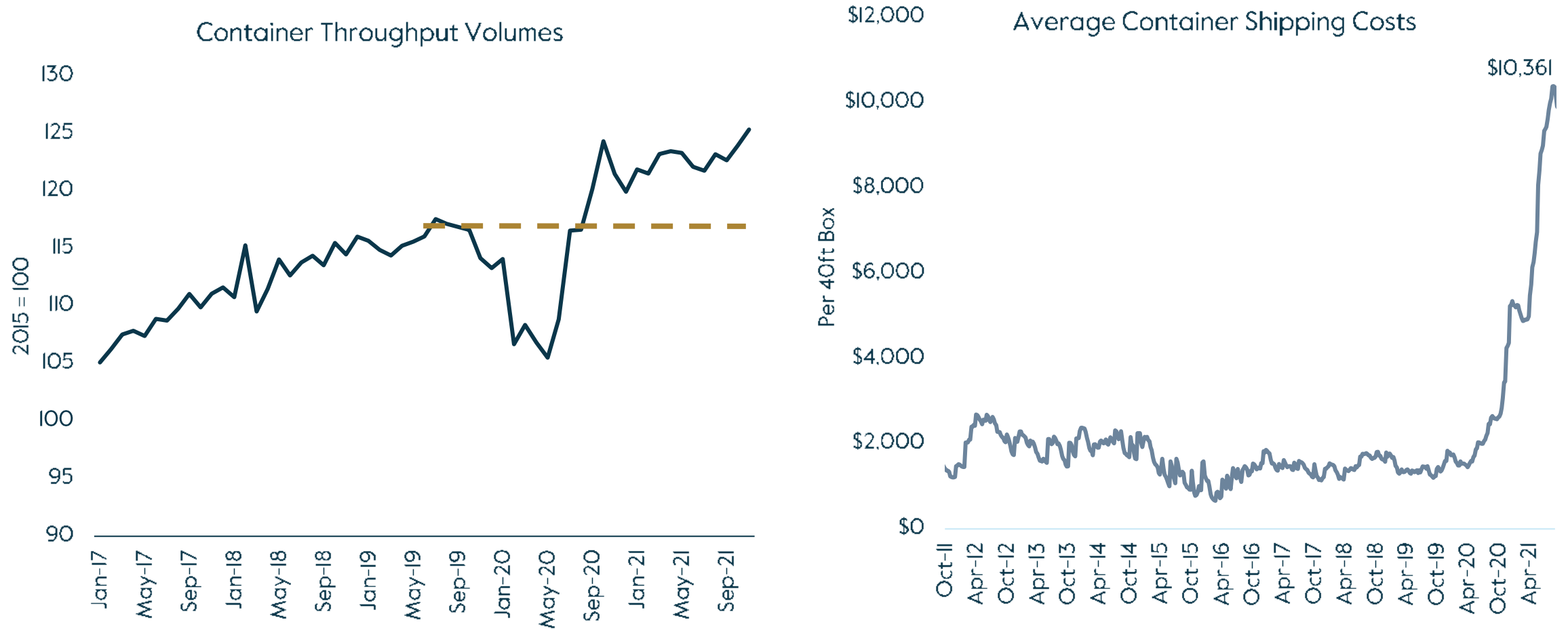
Source: McKinsey, "Risk, resilience, and rebalancing in global value chains," 2020.

Physical Constraints, Supply Chain Bottlenecks Inhibited Closure of Supply-Demand Gap



Source: Carlyle Analysis of Portfolio Company Data; St. Louis Federal Reserve, January 2022. There is no guarantee any trends will continue.

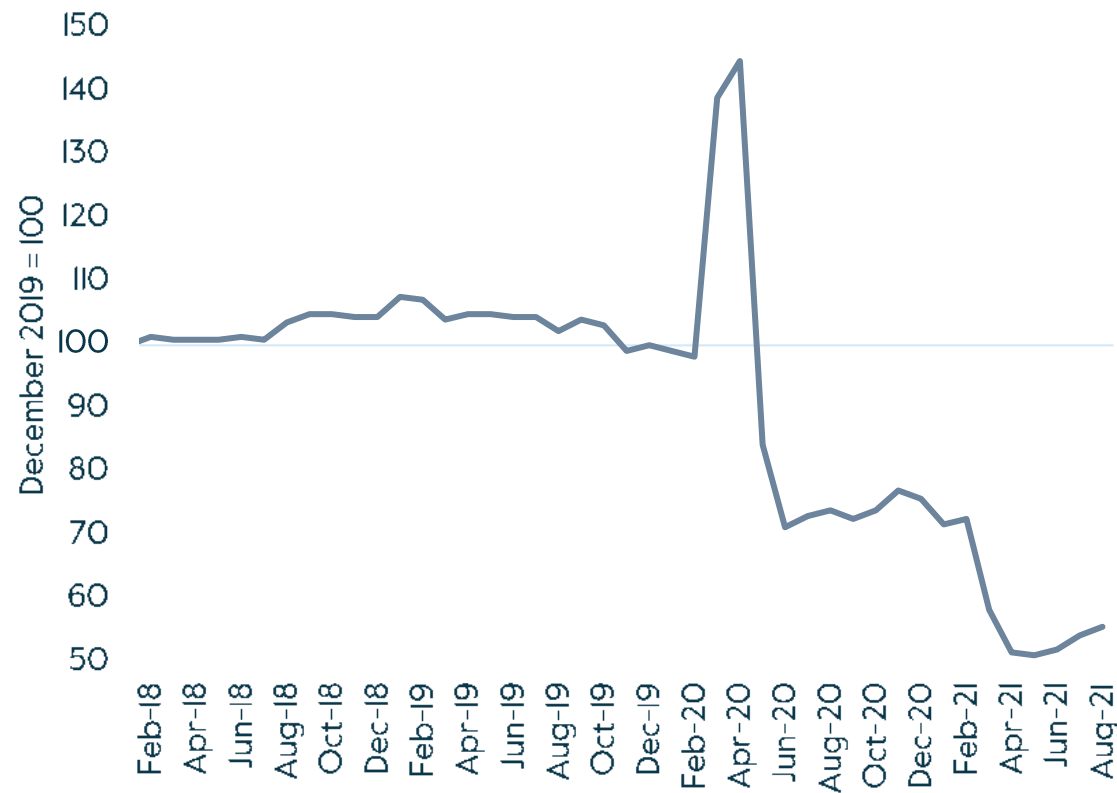
Price Rationing in Logistics: Container Throughput Volumes Rose Well Above Prior Estimates of System Capacity



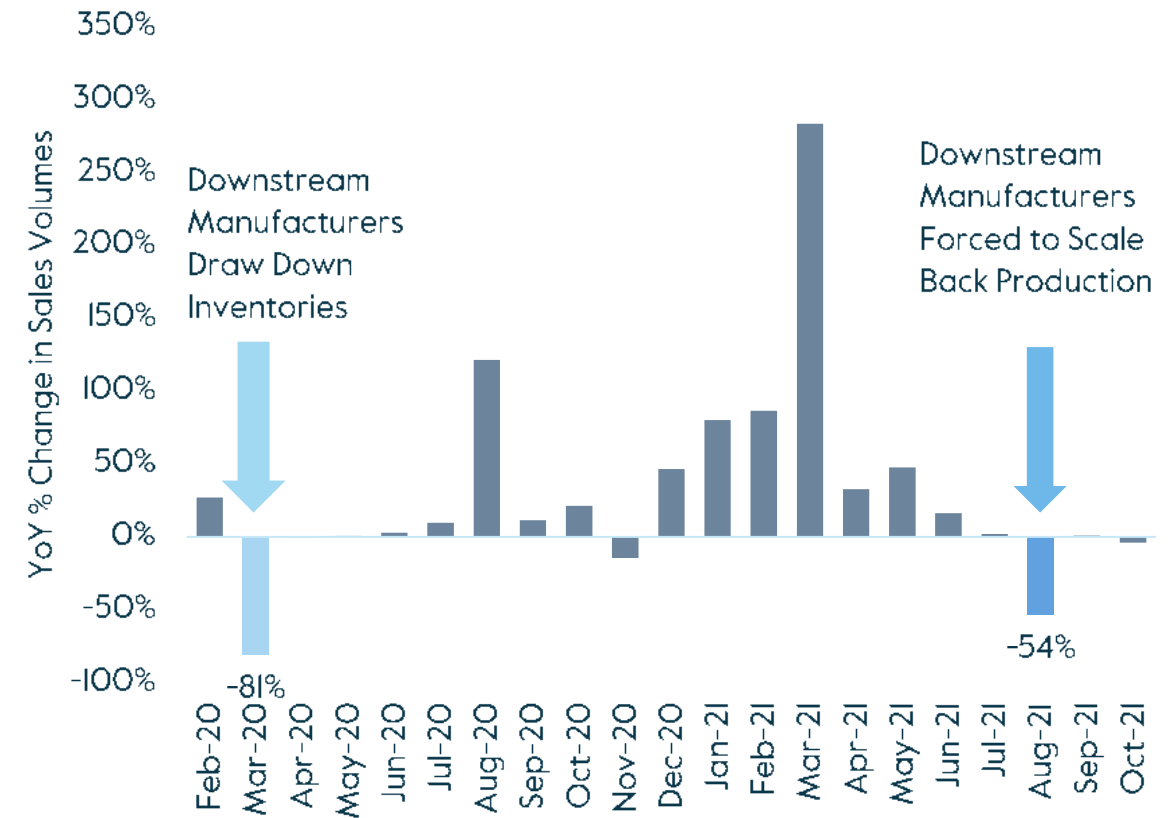
Source: Carlyle Analysis; BEA, Bloomberg, January 2023. There is no guarantee any trends will continue

With Virtually No Inventories, Production Shortfalls or Shipping Delays Impeded All Downstream Production

Inventories of Components, Parts & Inputs Scaled to Current Orders



Asia Manufacturing Value Chain Exports (YoY%)

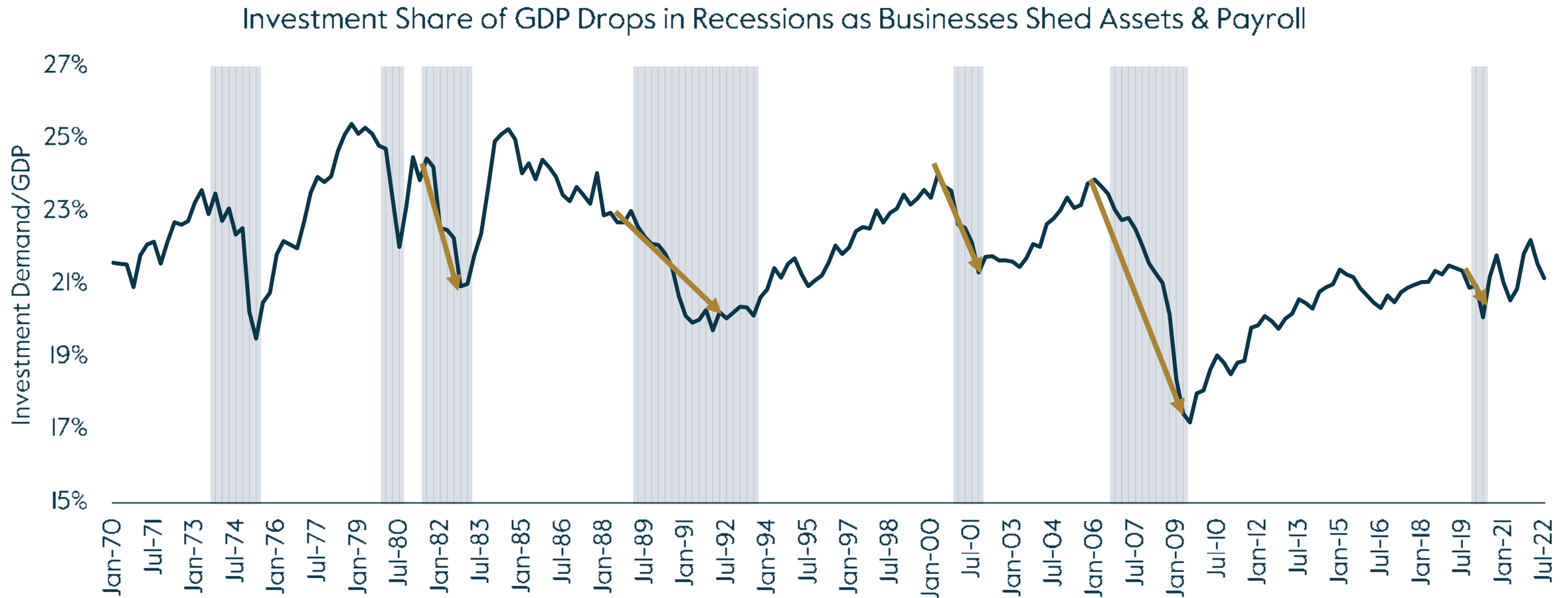


Source: Carlyle Analysis of Portfolio Company Data; Bureau of Economic Analysis.

SECTION 03

Implications for Today

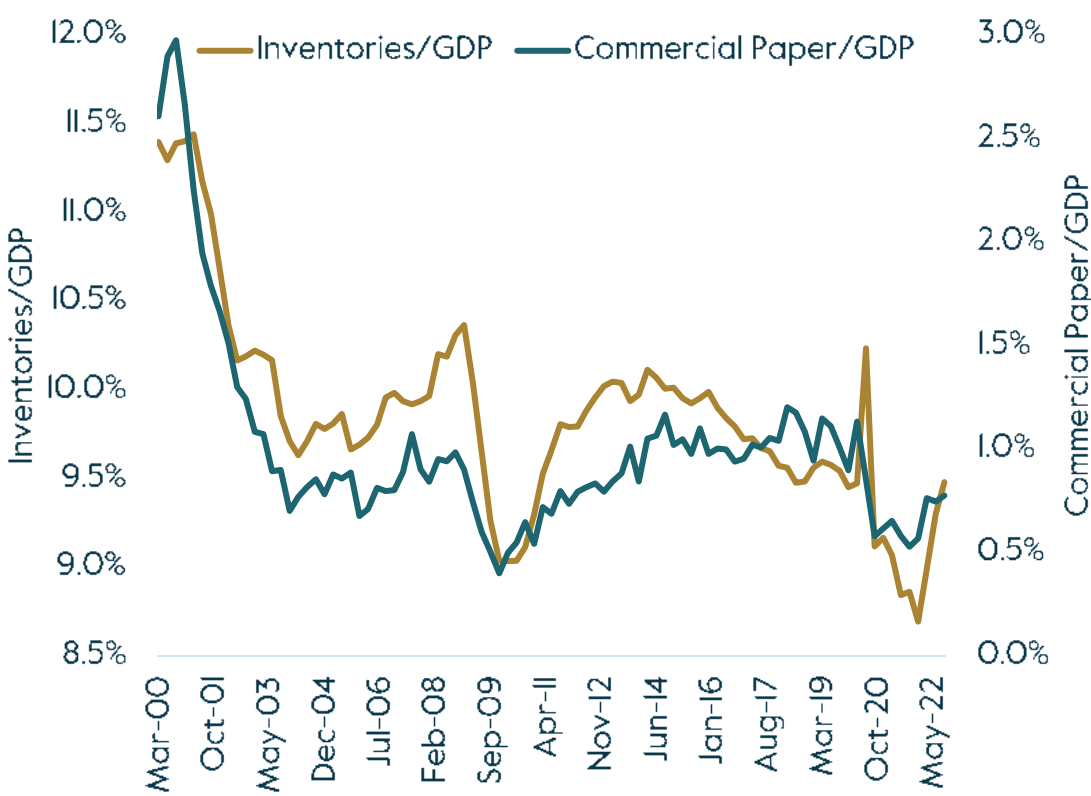
No Signs of Deep, Lasting Downturn



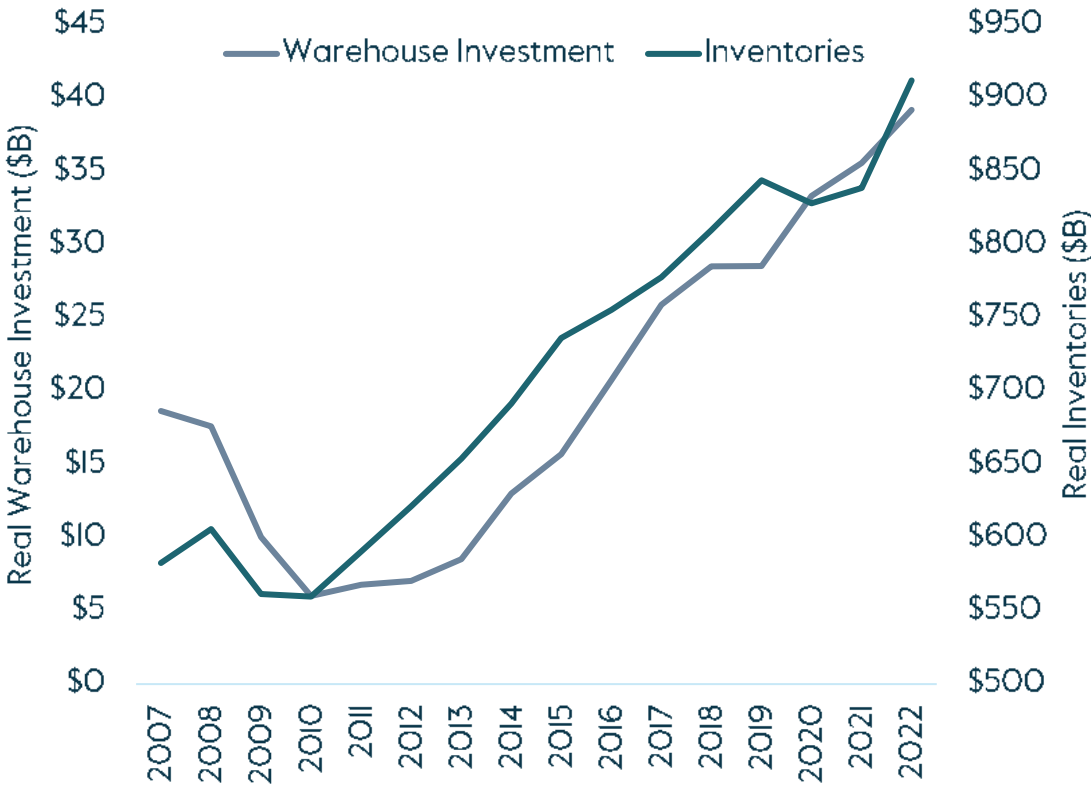
Source: Carlyle; Bureau of Economic Analysis; OECD; January 2023. There is no guarantee any trends will continue.

Businesses to Hold Significantly Larger Inventories of Components, Parts & Other Inputs

Decline in Inventories & Related Finance



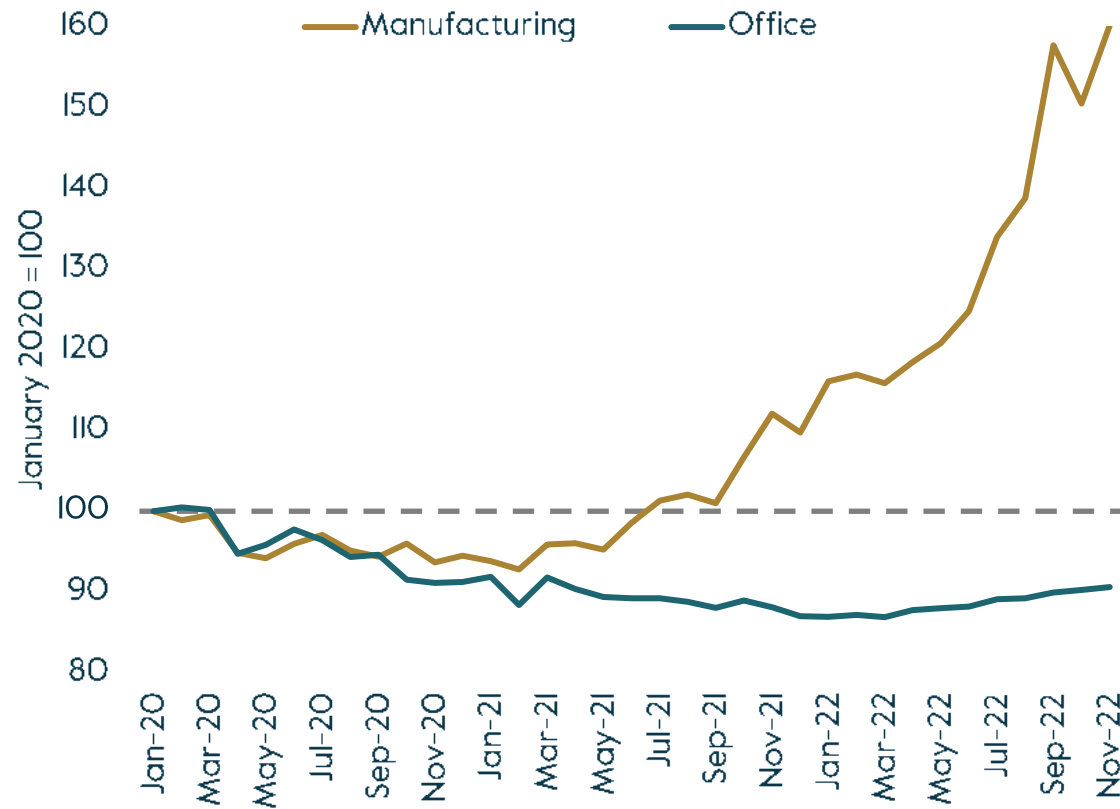
Inventories Drive Warehouse Investment



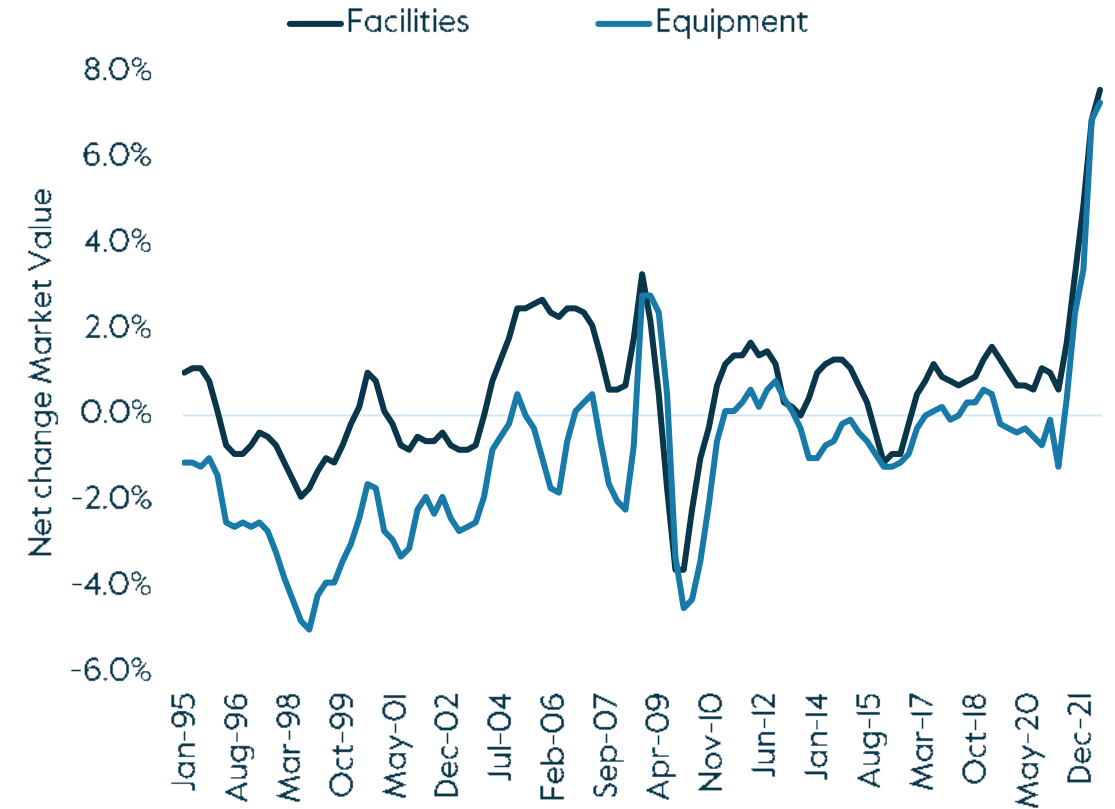
Source: Carlyle Analysis; FRED data, January 2023. There is no guarantee any trends will continue.

Sharp Increase in Domestic Industrial Capacity & Transportation Networks Already Evident

Investment in Manufacturing Plant



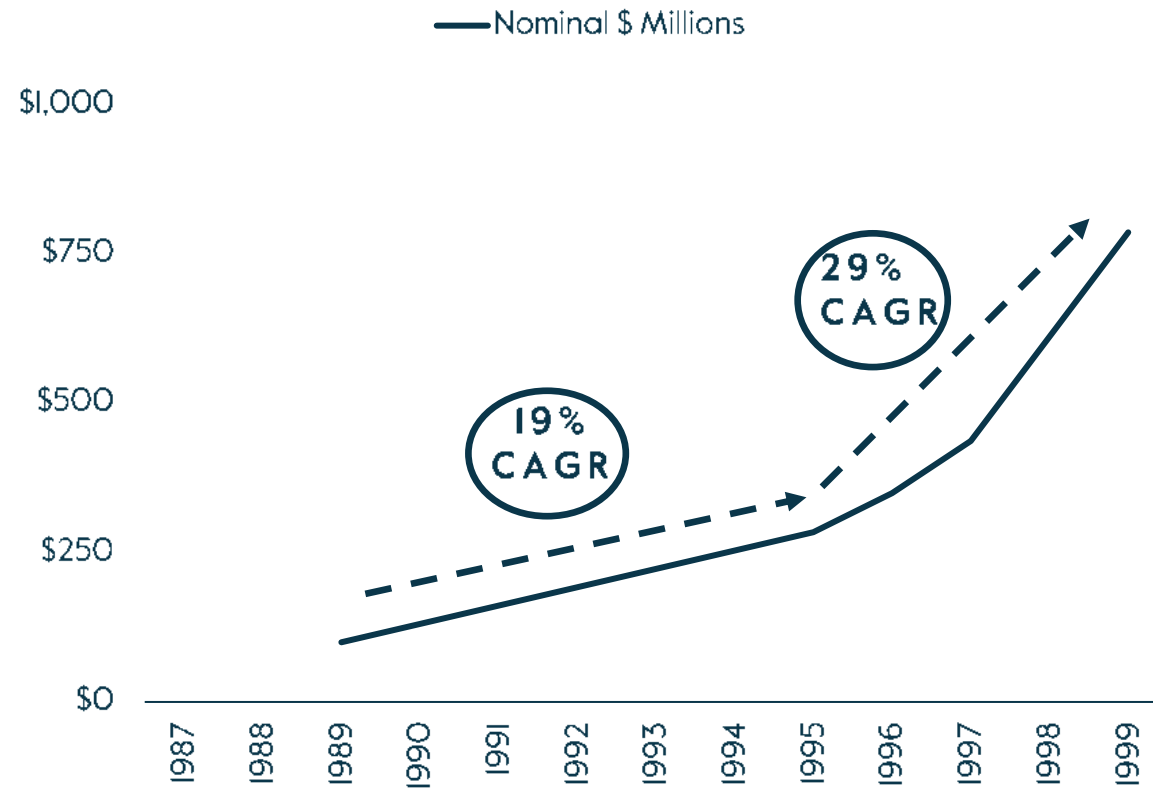
Market Value of Equipment & Industrial Facilities



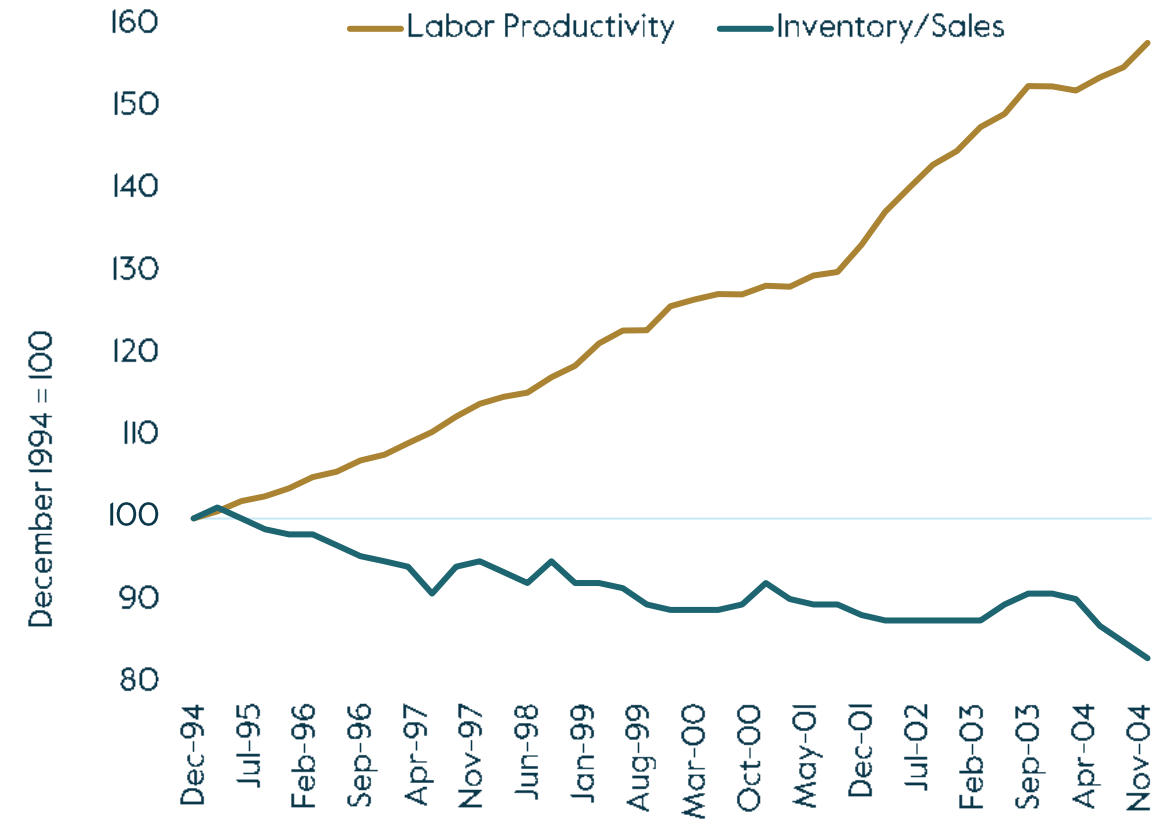
Source: Carlyle Analysis of Census Bureau Data, December 2022. There is no guarantee any trends will continue.

Significant Diffusion of Digital Technologies in Manner Similar to 1990s

Surge in Warehouse Tech Investment...



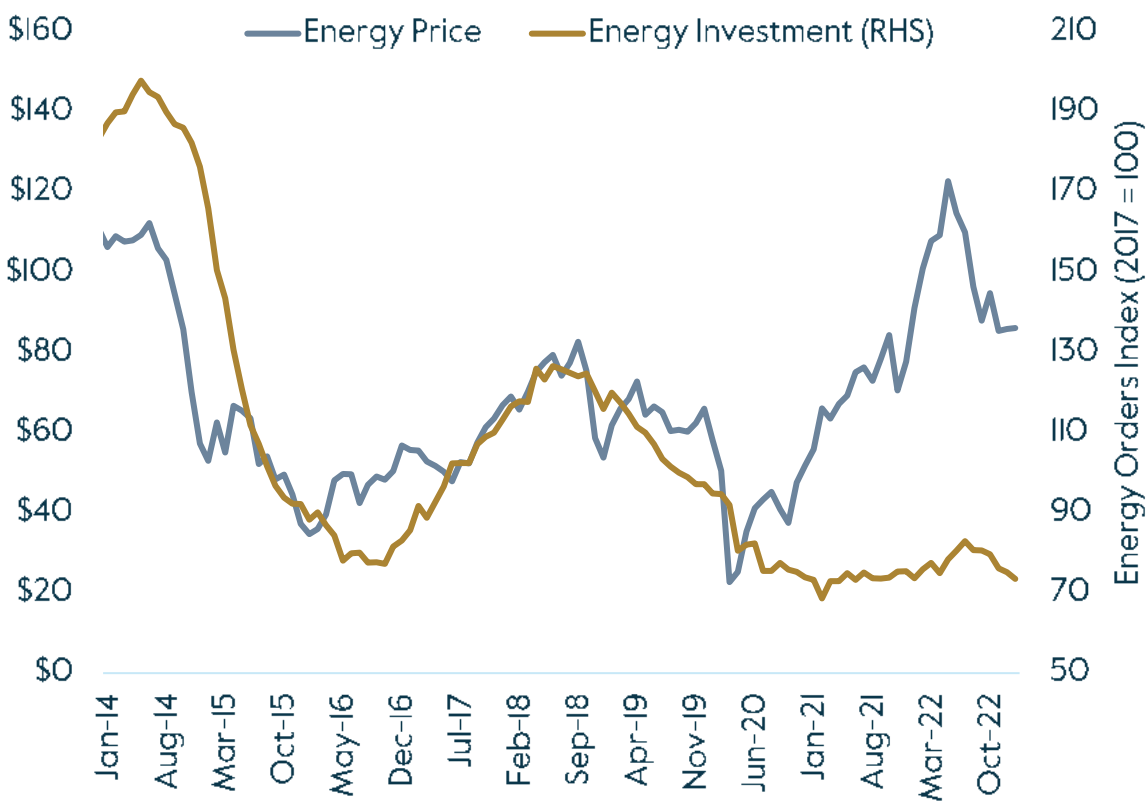
...Drove Massive Efficiency Gains



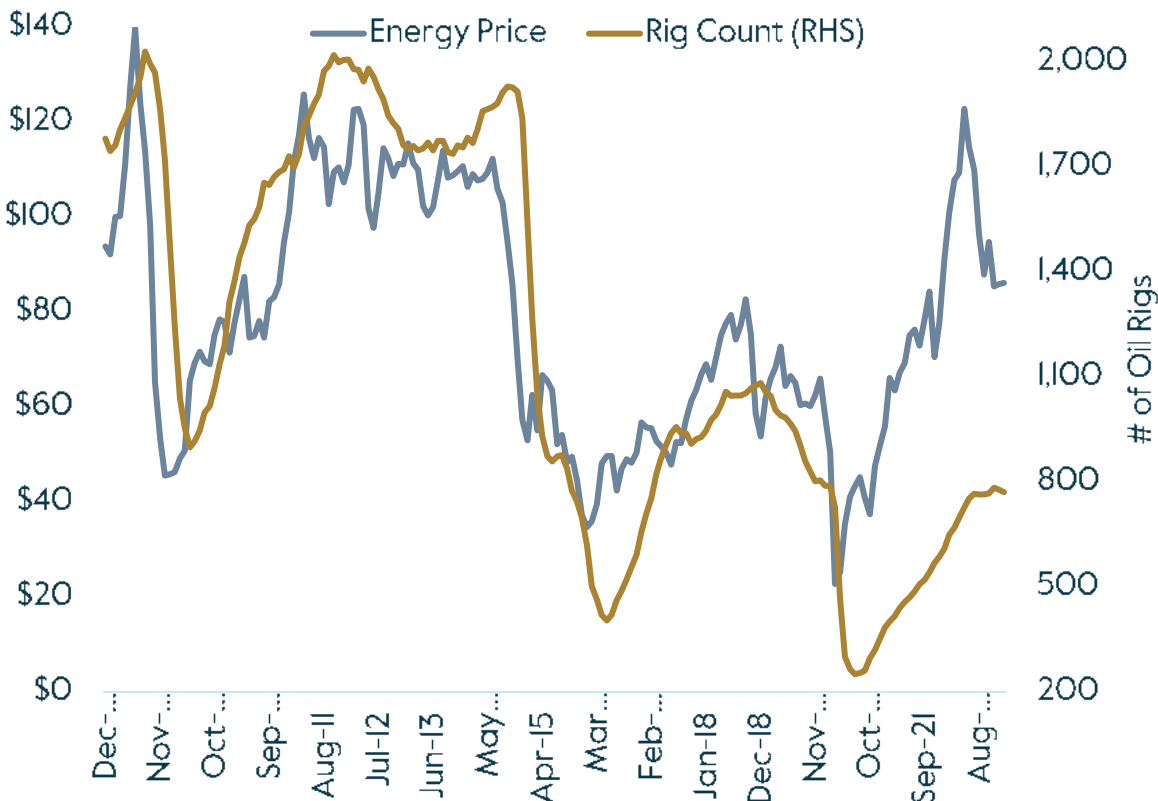
Source: Carlyle Analysis; McKinsey Global Institute, Bureau of Labor Statistics, Bureau of Economic Analysis, 2021.

Energy Investment Hasn't Kept Pace with Price Signals

Energy Fixed Investment vs. Brent Crude Price

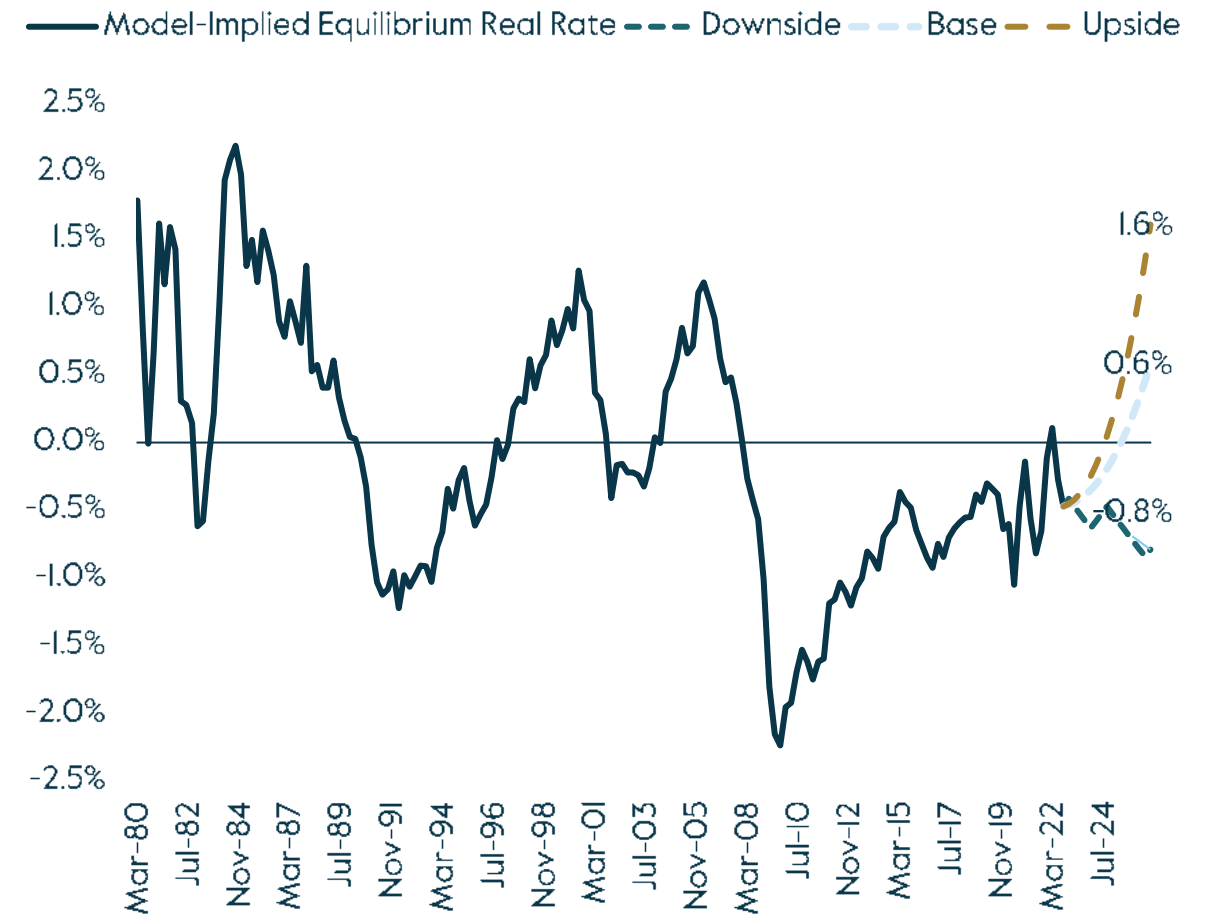
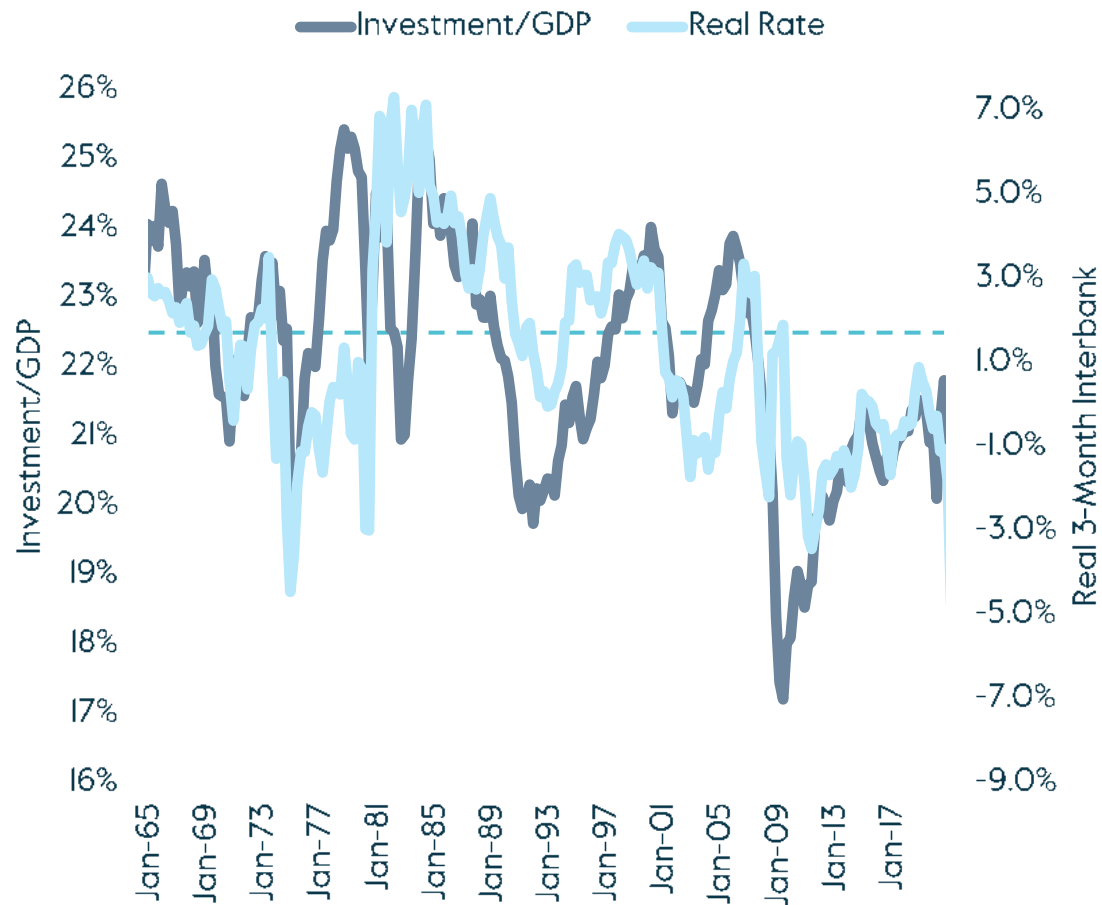


U.S. Oil-Directed Rig Count vs. Brent Crude Price



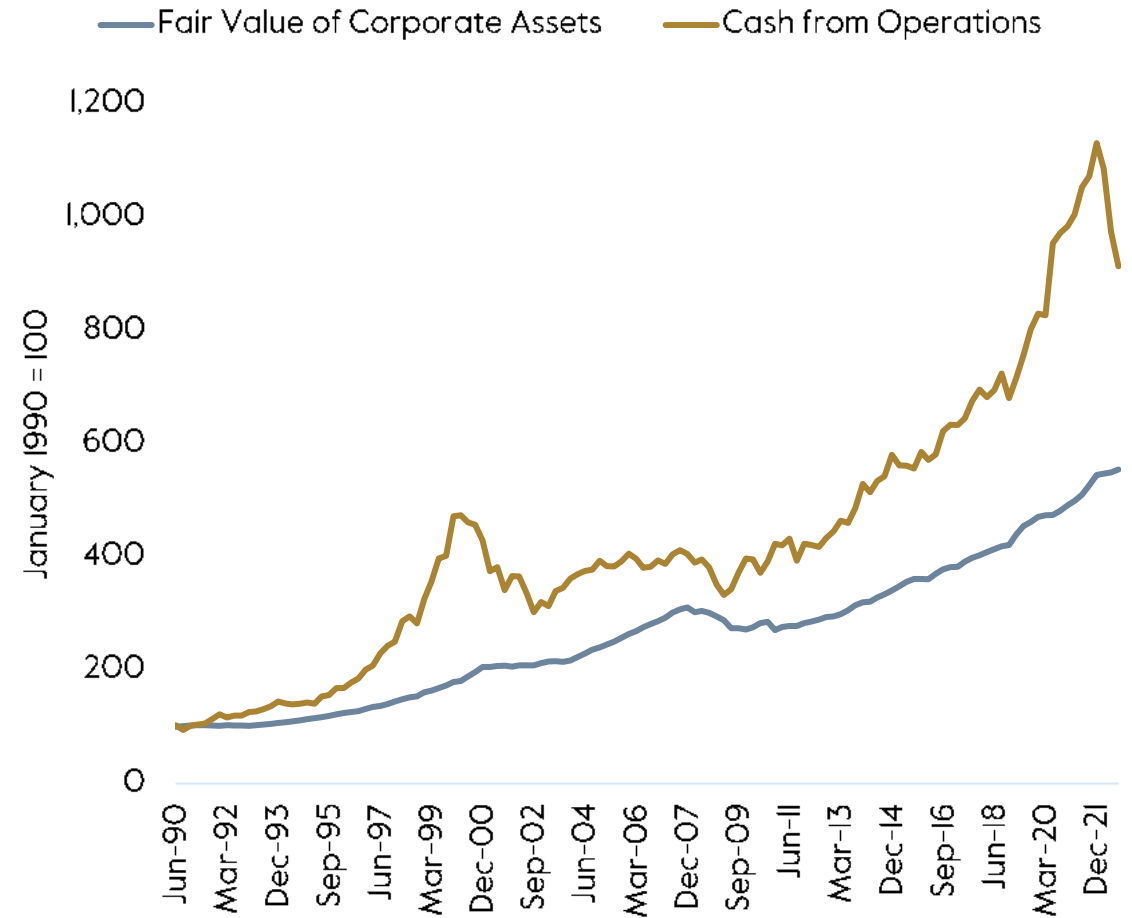
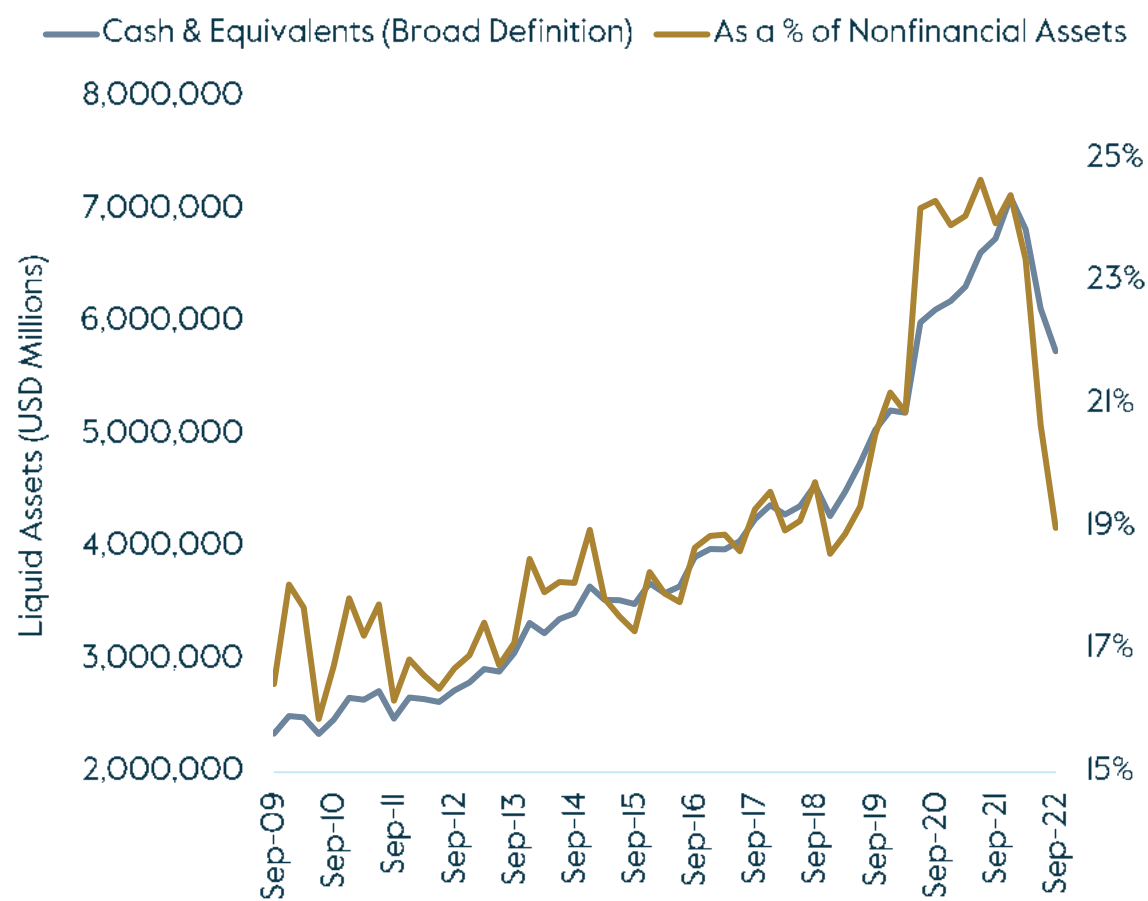
Source: Carlyle Analysis of Federal Reserve Data, January 2023.

Higher Fixed Investment Will Translate to Higher Real Interest Rates



Source: Carlyle Analysis of BEA Data, October 2022. Presented for illustrative purposes only.

And Reduced Corporate Cash Flow & Distribution Yields

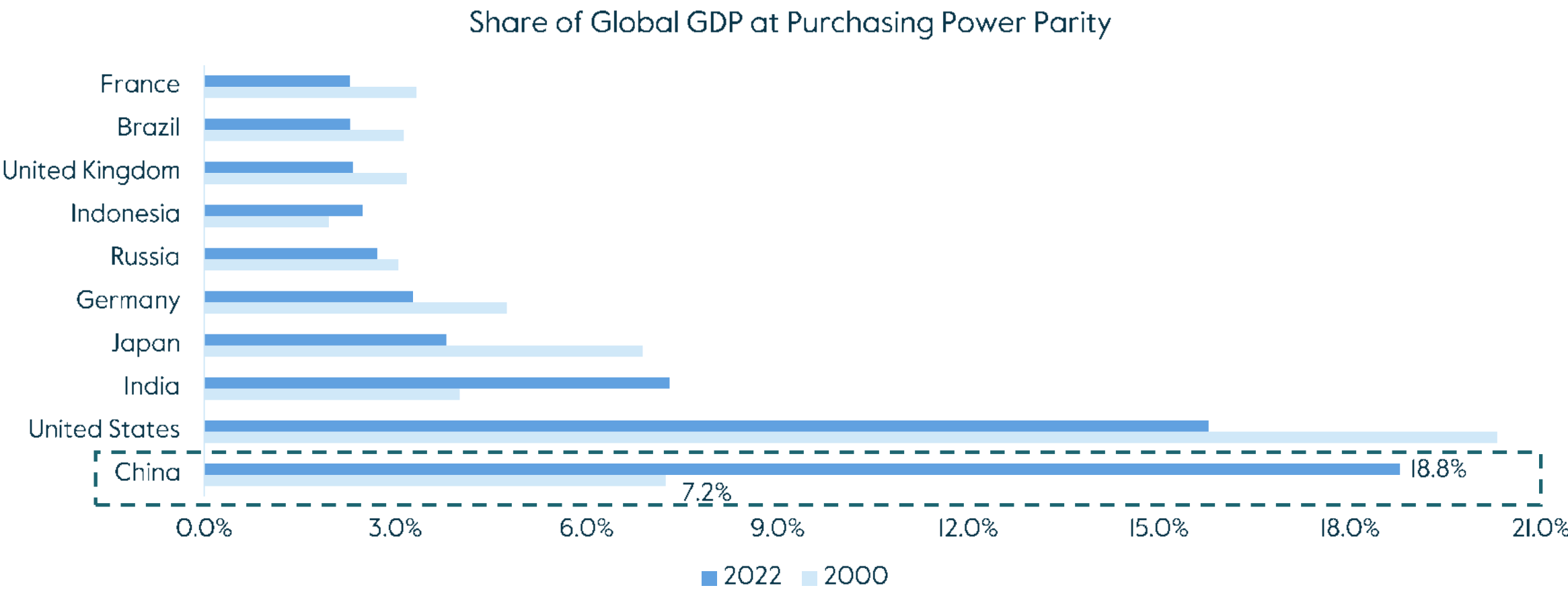


Source: Carlyle Analysis; Federal Reserve Flow of Funds Data. There is no guarantee any trends will continue.

SECTION 04

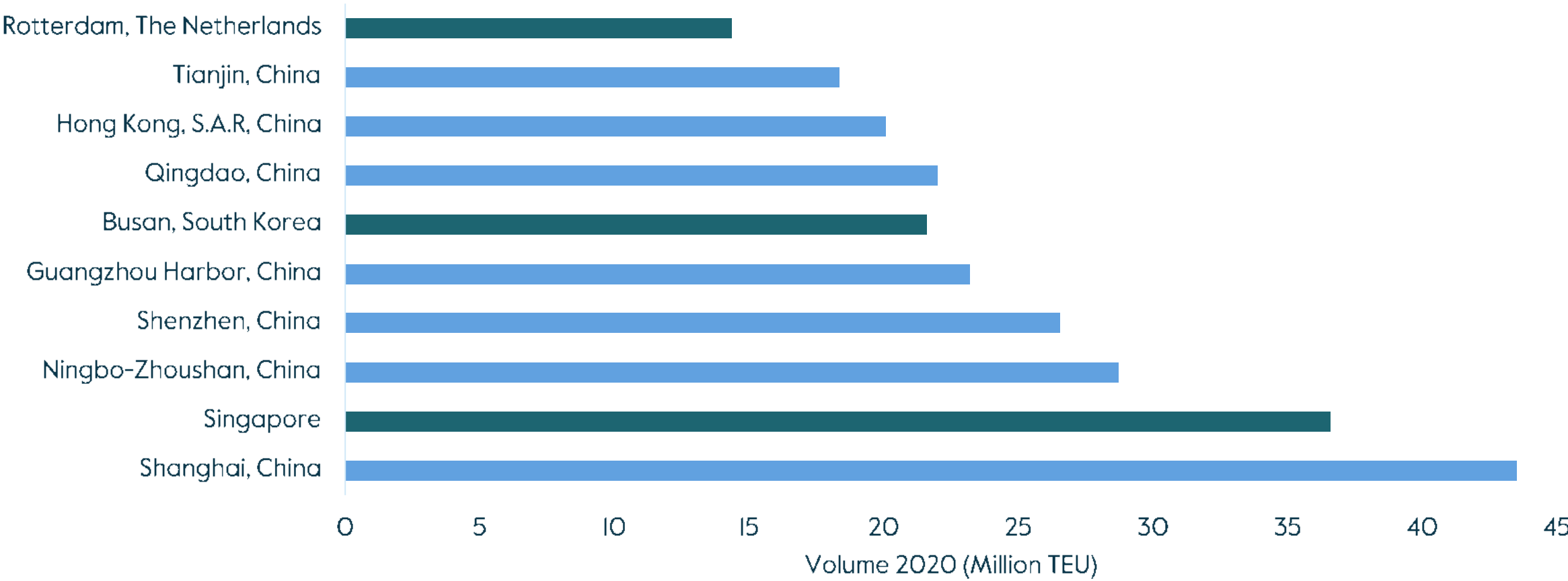
What About China?

Hard to Decouple With Largest Economy in the World (at PPP)



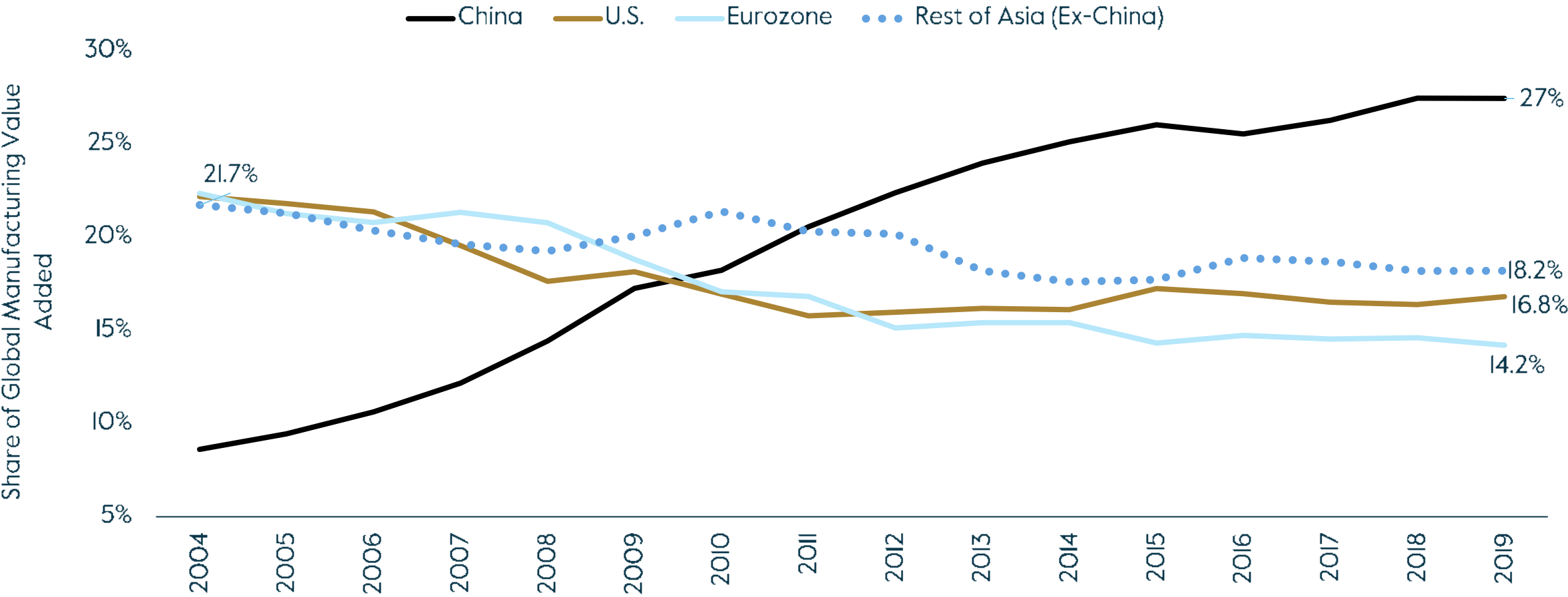
Source: Carlyle Analysis; IMF WEO Database July 2022. There is no guarantee any trends will continue.

7 of the Top 10 Busiest Container Ports Located in China



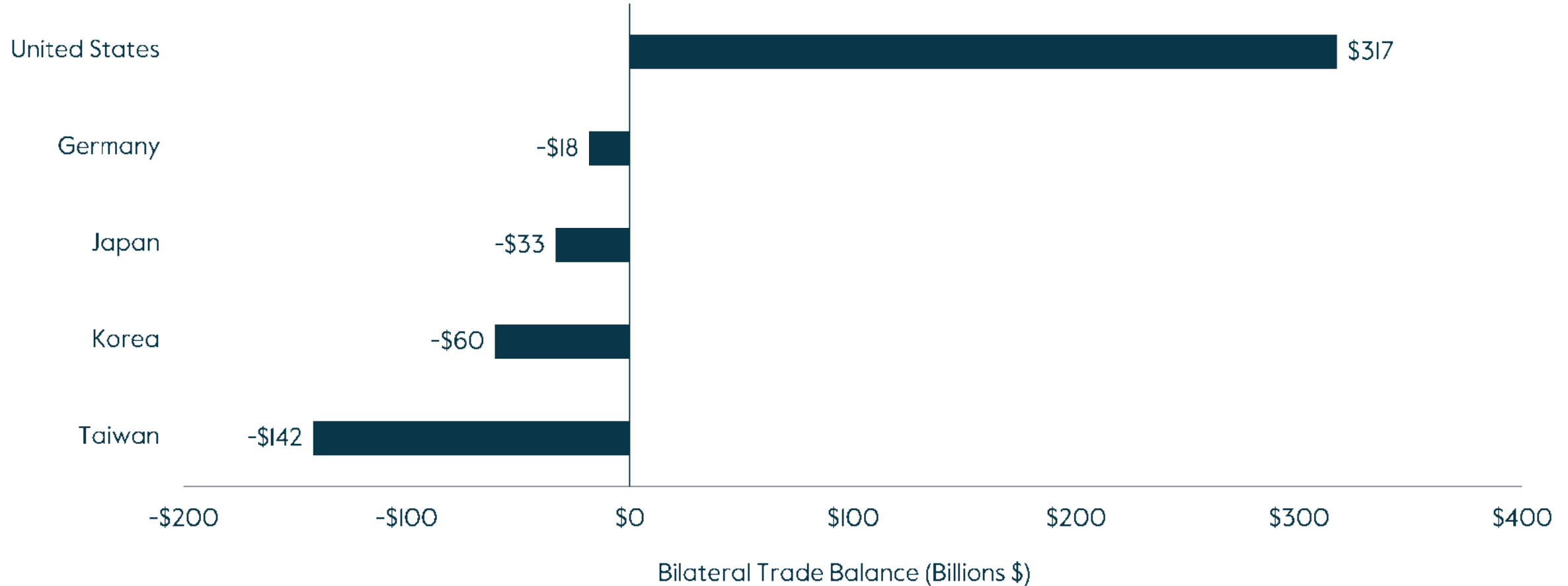
Source: World Shipping Council, November 2021. There is no guarantee any trends will continue.

China's Ports, Airports, Rail, Roads & Factories Accommodate More >50% of Global Manufacturing Trade



Source: Carlyle Analysis of World Bank Data, November 2021. There is no guarantee these trends will continue.

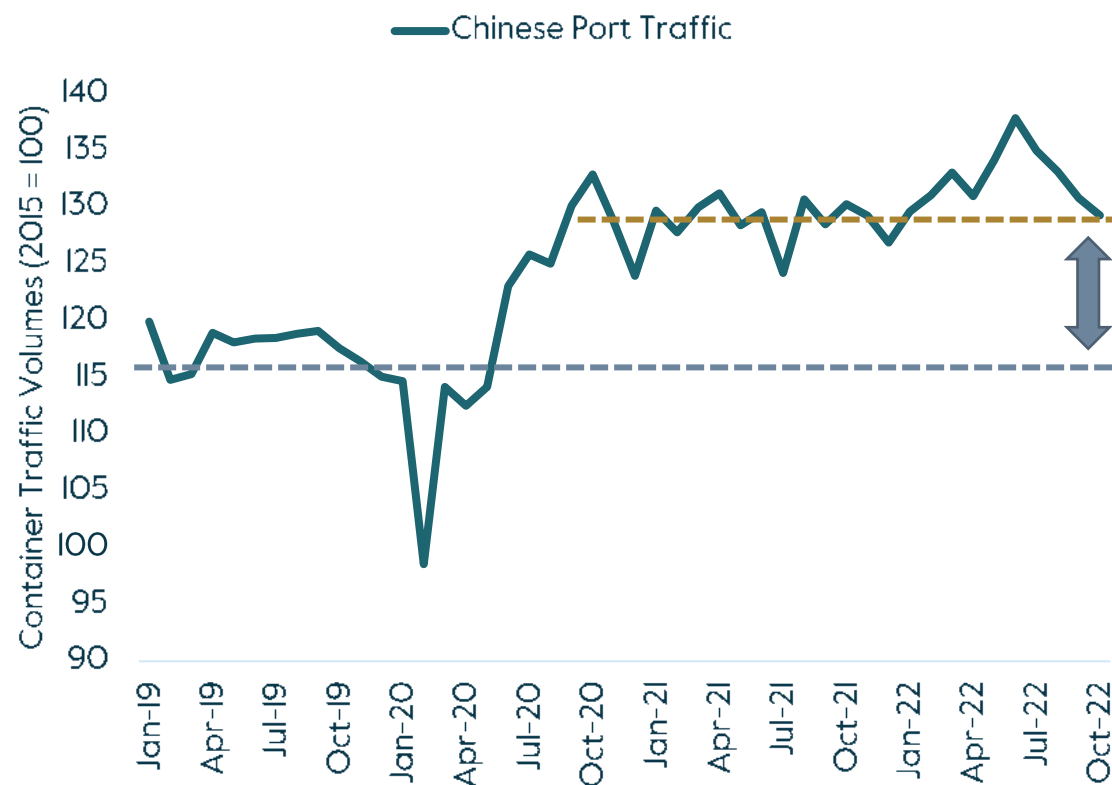
China's Bilateral Surplus with the U.S. is Built on Bilateral Deficits with its Suppliers



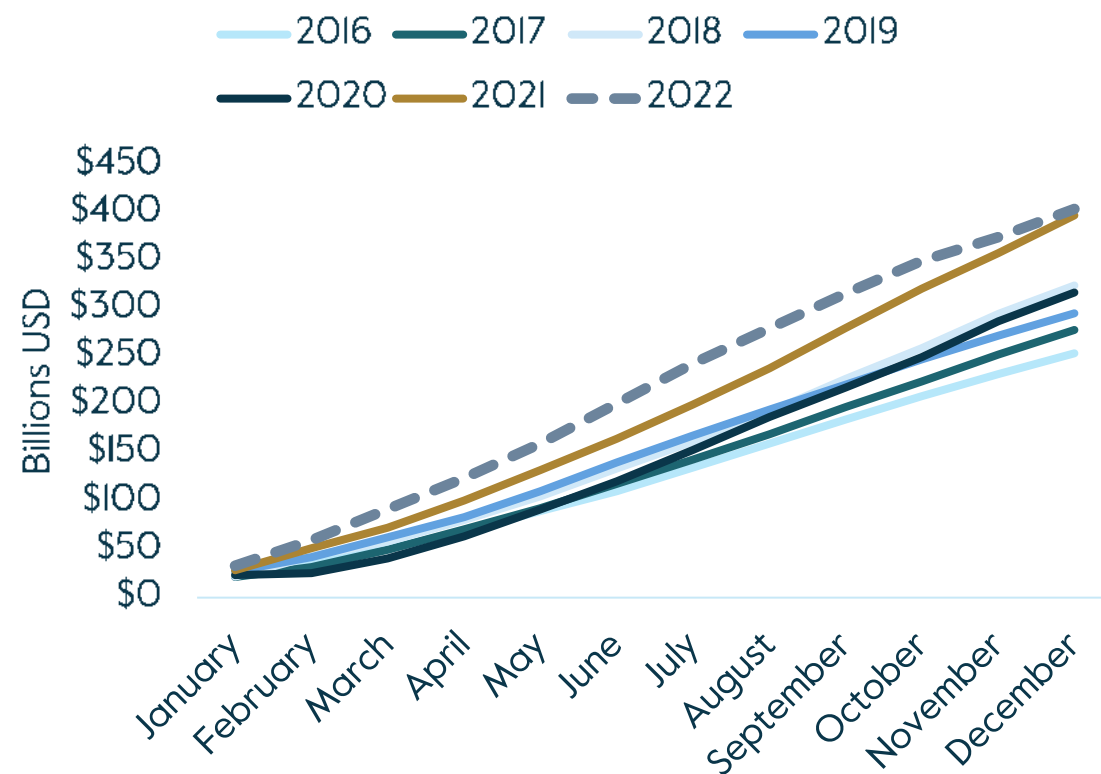
Source: OECD; Bloomberg, November 2021. There is no guarantee any trends will continue.

During Pandemic-Driven Goods Boom, Chinese Port Volumes & Trade Surplus Rose >10% Above 2019 Peaks

China's Ports Operating ~10% Above Capacity



Trade Surplus w/U.S. Soared in 2021 & 2022

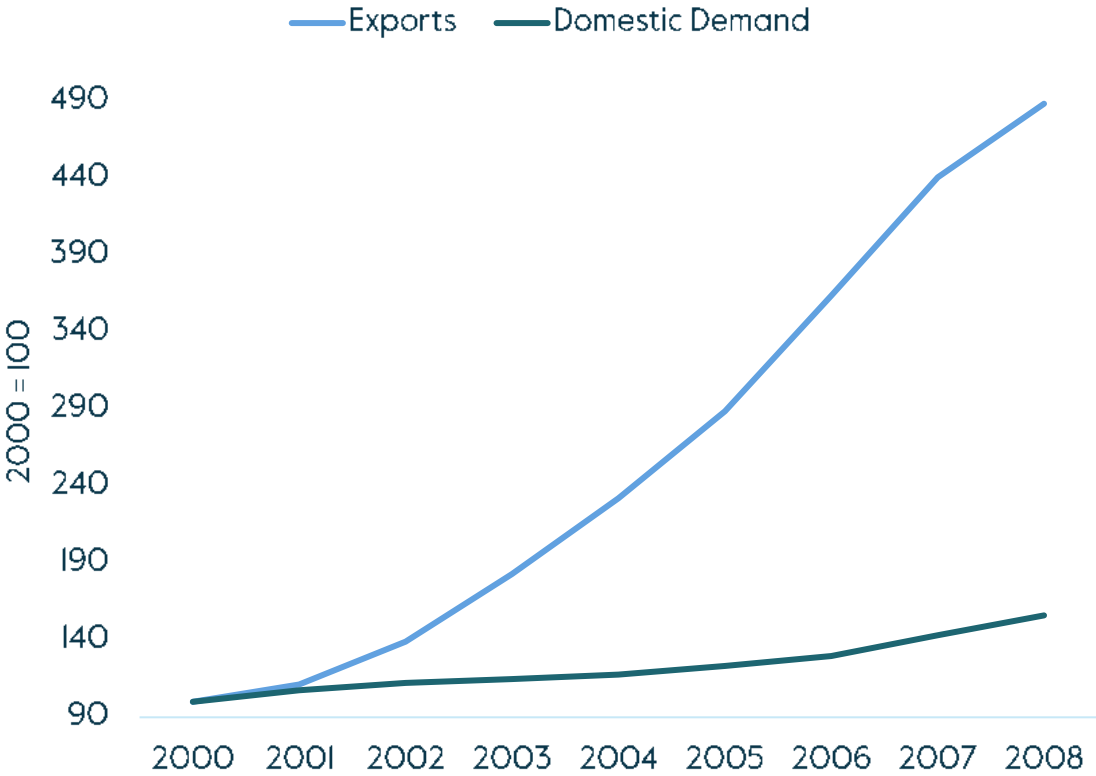


Source: Carlyle, RWI; Bloomberg; China General Administration of Customs; January 2023. There is no guarantee any trends will continue.

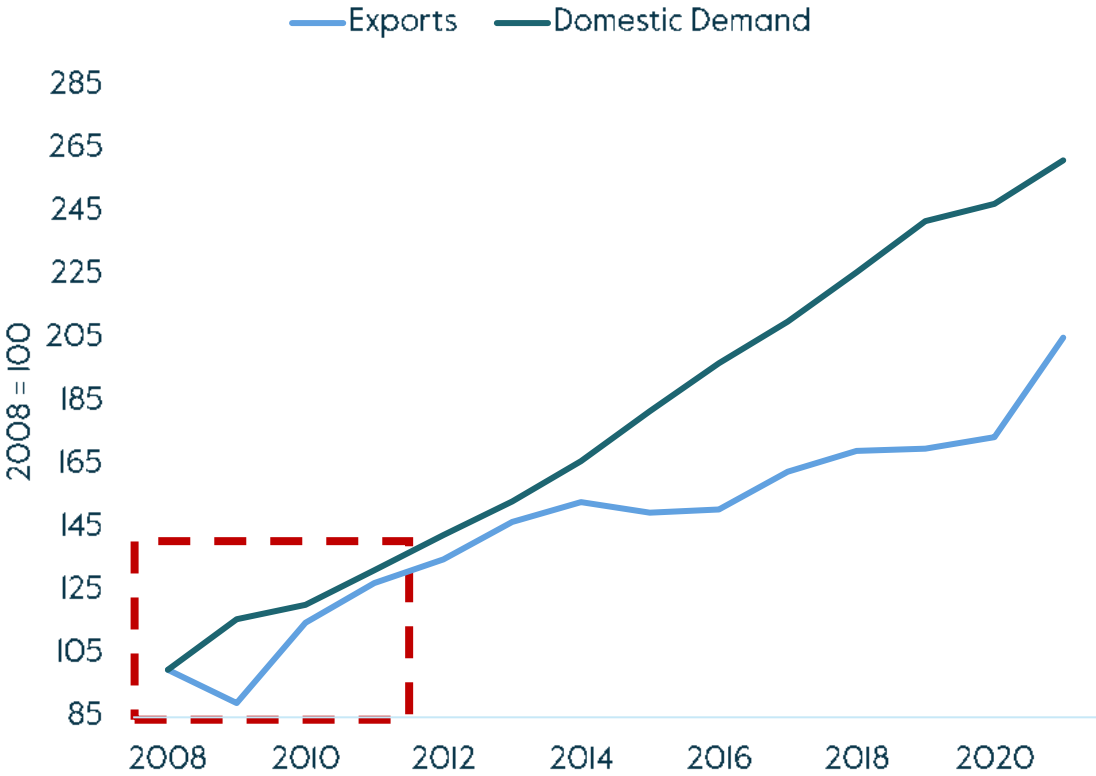
Rise of Domestic Business Sector

Domestic Demand Primary Driver of Growth Over Past Decade

2000 - 2008

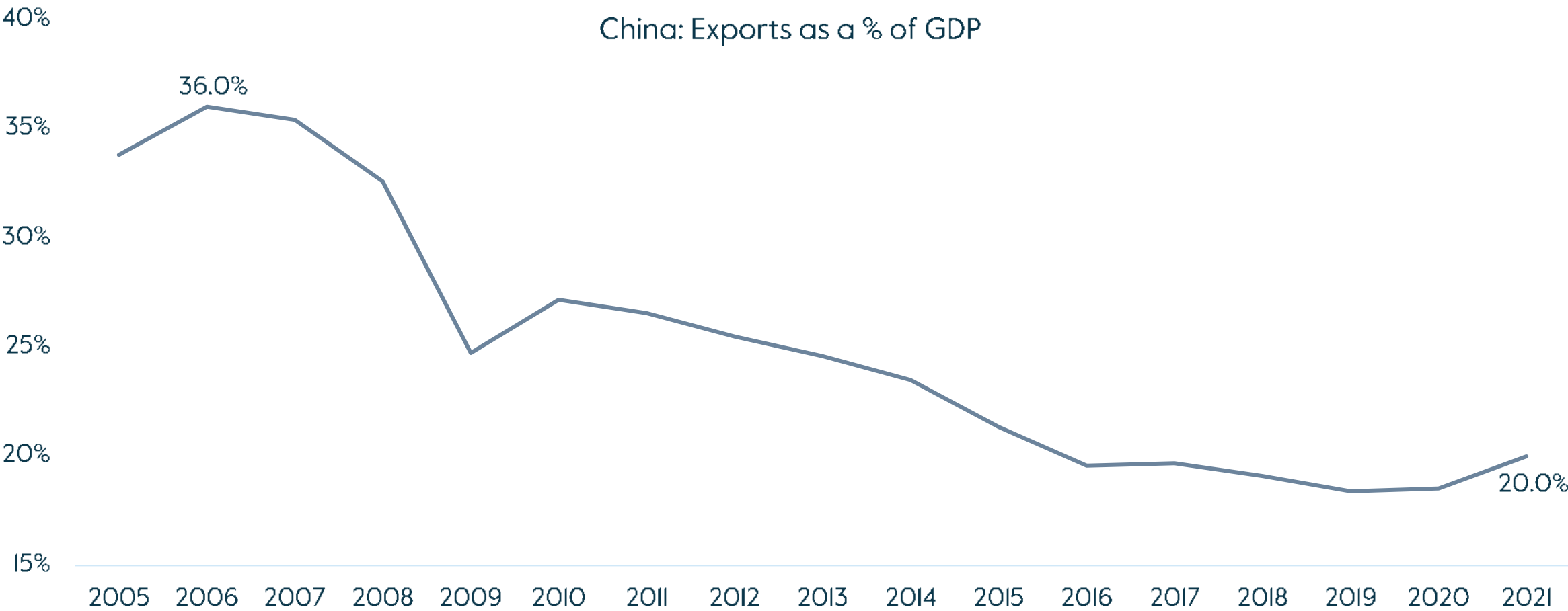


2008 - 2021



Source: Carlyle; IMF WEO Database, 2022. There is no guarantee any trends will continue.

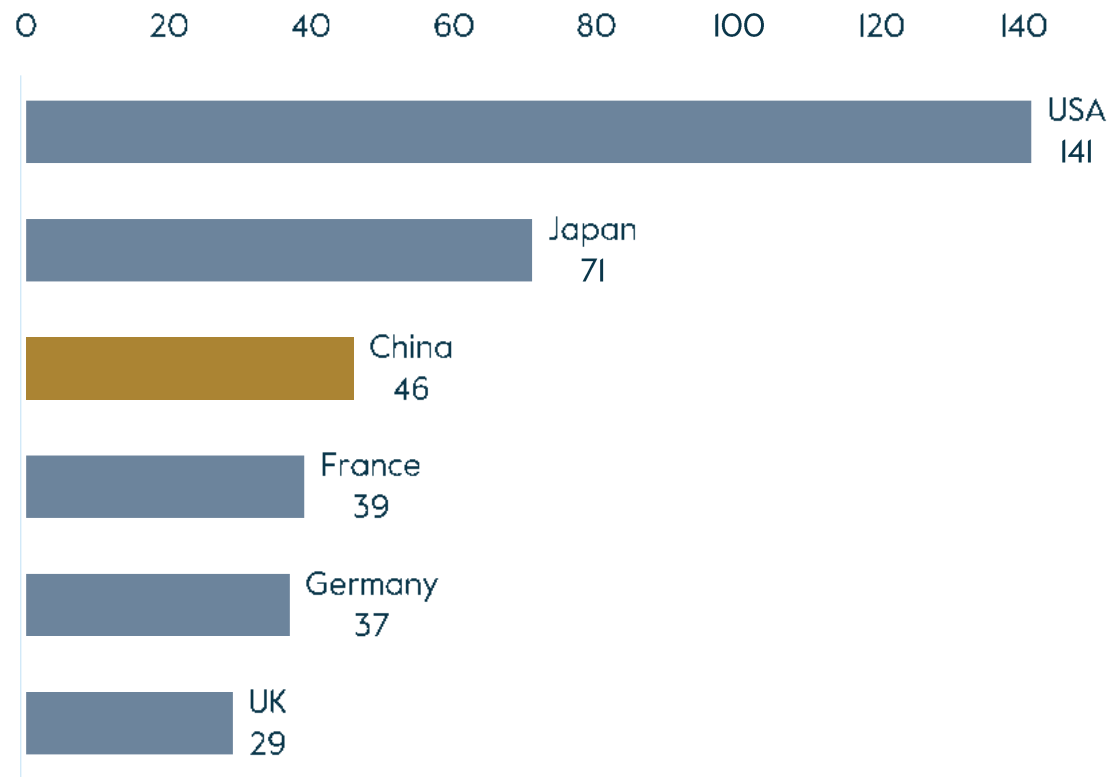
China's Export Dependence Nearly Halves Since GFC



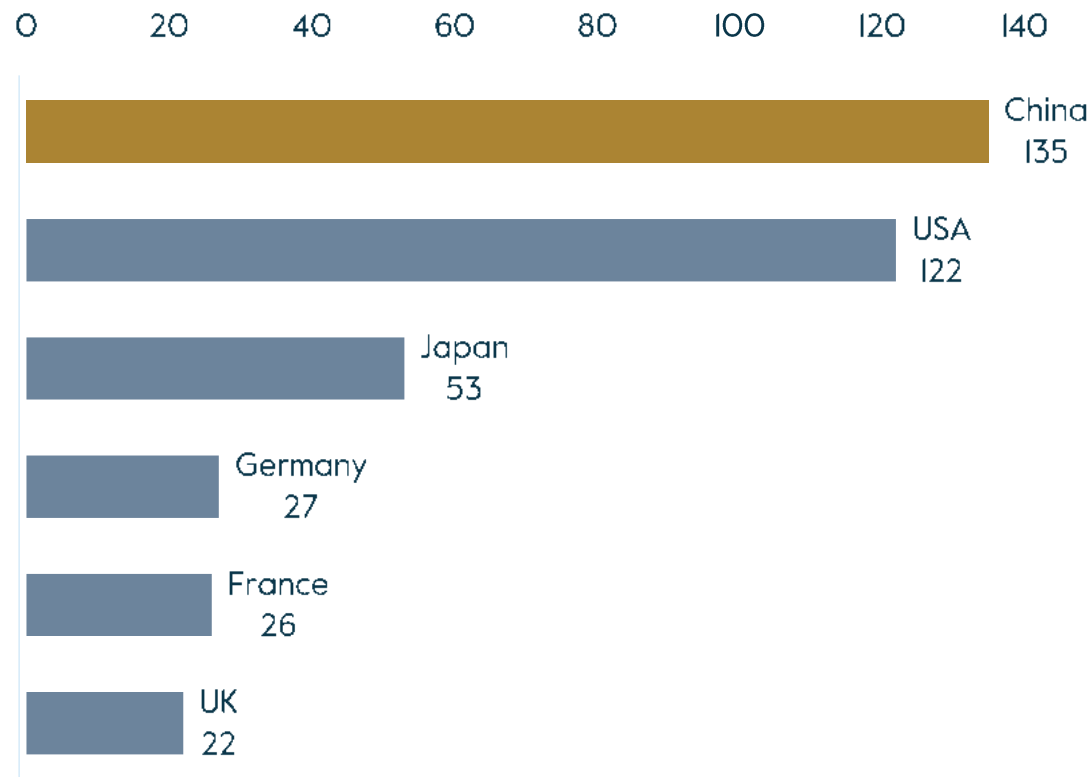
Presented for illustrative purposes only.
Source: Carlyle; World Bank World Development Indicators, accessed July 2022. There is no guarantee any trends will continue.

Maturation of Domestic Business Sector: More Large Corporations in China than U.S.

2010 Fortune Global 500

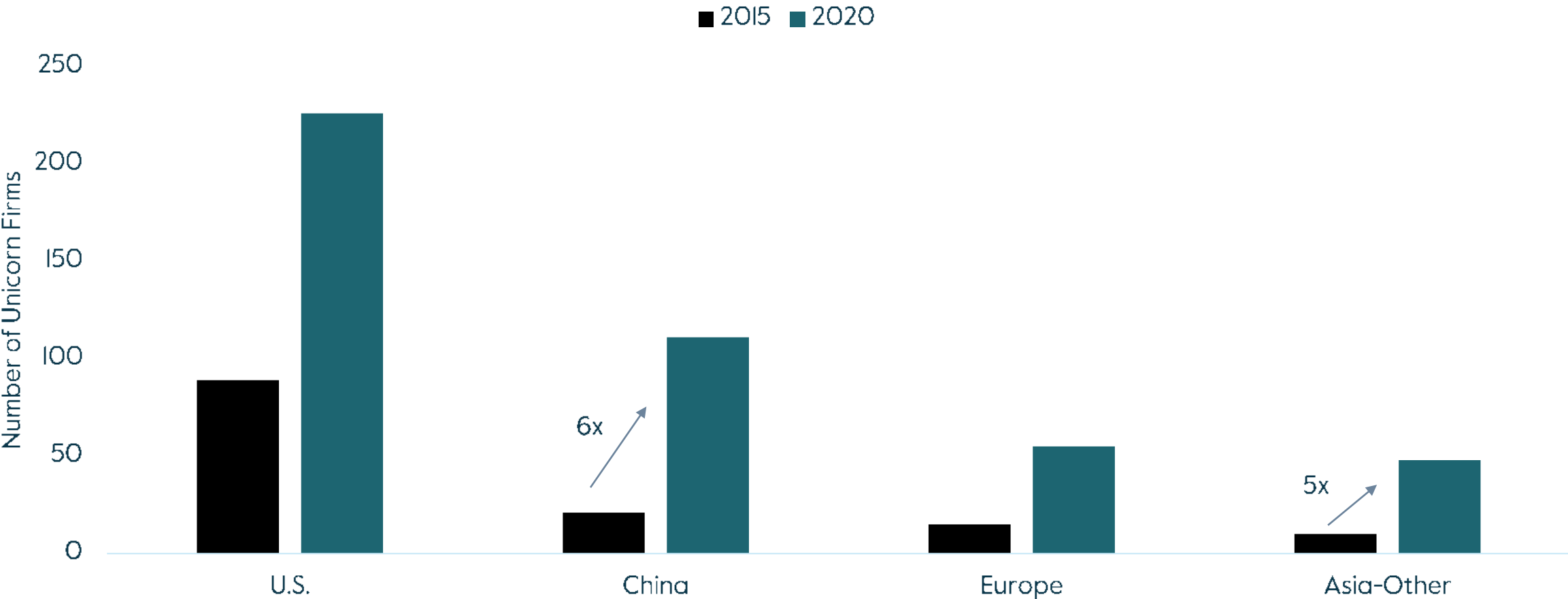


2021 Fortune Global 500



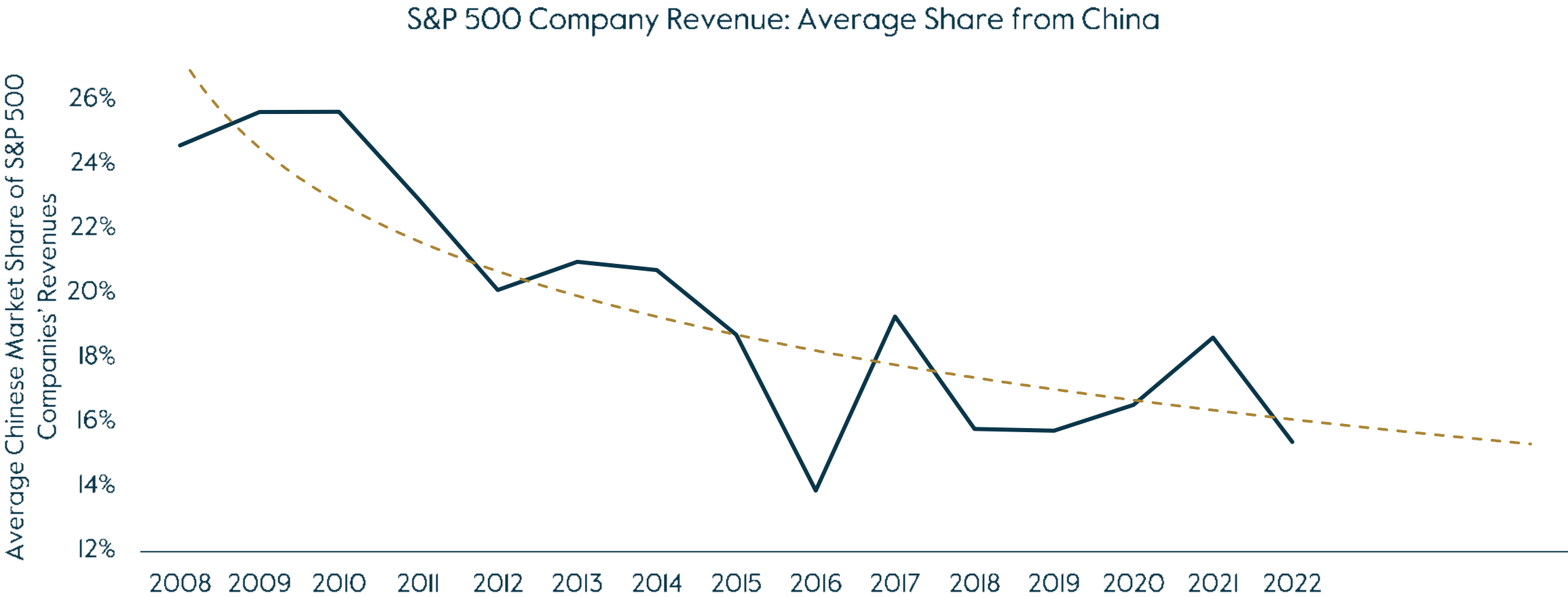
Source: Forbes, July 2022. There is no guarantee any trends will continue.

Rapid Growth in Entrepreneurship: Asia's Share of the World's Largest Private Businesses Doubled Since 2015



Source: Brown, Keith C., Wiles, Kenneth W., "The Growing Blessing of Unicorns: The Changing Nature of the Market for Privately Funded Companies," Journal of Applied Corporate Finance, 2020. There is no guarantee any trends will continue.

Investors Can No Longer Rely on S&P 500/Multinationals for Their Asian Exposure



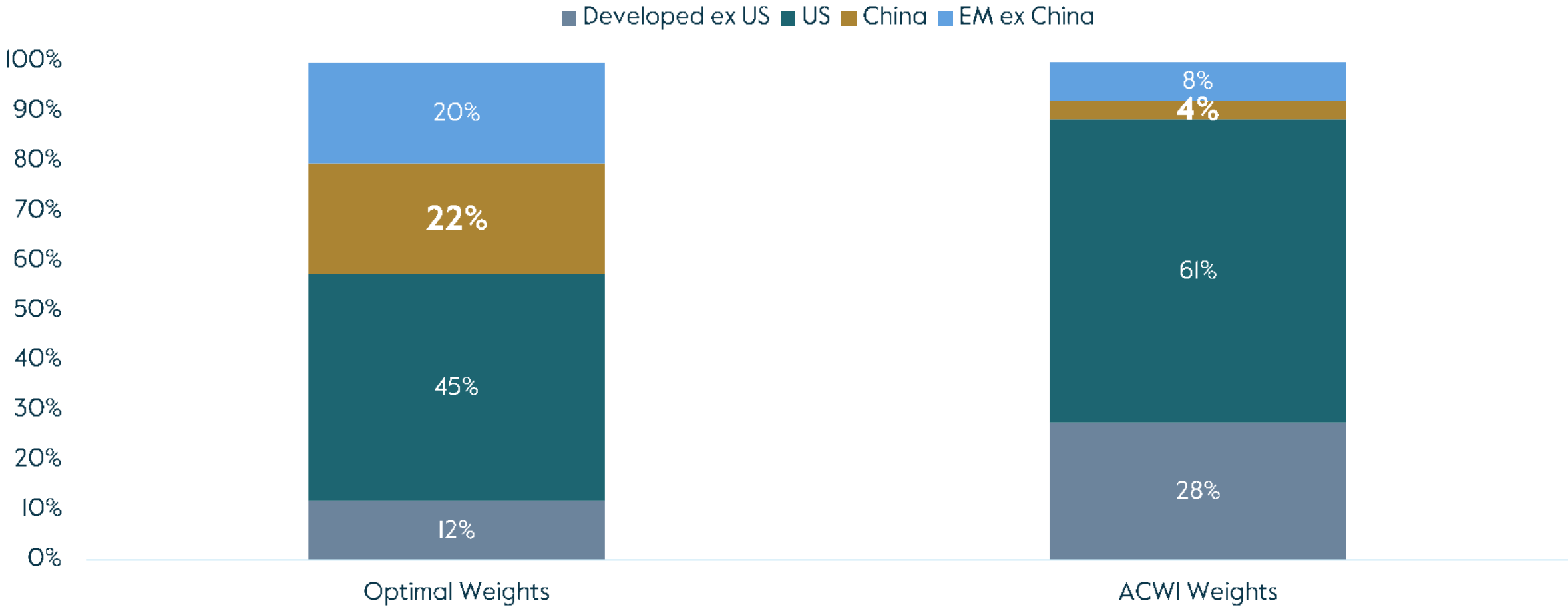
Presented for illustrative purposes only.
Source: Carlyle Analysis; Bloomberg Data, December 2021. There is no guarantee any trends will continue.

Emergence of A Peer Competitor in Technology

	U.S.	China
Business sophistication	Global Ranking	
Knowledge workers	4	2
University/industry research collaboration	3	6
Knowledge absorption	7	9
Knowledge and technology outputs	Global Ranking	
Patents by origin	6	1
High-tech exports as a percentage of total trade	18	1
Intellectual property receipts as a percentage of total trade	1	36
Creative outputs	Global Ranking	
Intangible assets	21	2
Entertainment-and-media market	1	37
Creative-goods export as a percentage of total trade	21	1

Source: The Global Innovation Index (GII) 2021. There is no guarantee any trends will continue.

“Optimal” Global Portfolio for Stylized Global Investor Could Have 5x as Much Exposure to China as Typical Portfolio



There can be no assurance these investment objectives will be achieved. There can be no assurance that target returns will be achieved and actual returns may vary significantly. Please see the "Notice to Recipients" for important information regarding target returns. MSCI ACWI weight calculated by rescaling the country level weights in MSCI ACWI Index as of 12/31/2021. Minimum variance weight calculated by minimizing the variance of a portfolio consisting of MSCI USA, MSCI China, MSCI World ex US and MSCI EM ex China Index. Variance calculated using past 5 years of monthly total return data. For the decoupling scenario, we reduced the correlation of MSCI China with MSCI USA and MSCI World ex US by a factor of 50% and assumed a 20% reduction in China market volatility driven by a maturing market.

Concluding Thoughts

- In the years following the GFC, management teams boosted return on equity by unbundling & outsourcing a large and ever-increasing share of production processes. This resulted in a highly-efficient but fragile “asset light” economy.
- Today, the pendulum swings in the opposite direction as management teams & policymakers build more robust production networks with larger inventories & more redundancies.
- Decoupling with China will be a slow-moving process that happens at the margin as domestic capacity & alternative production networks scale. Decoupling today mainly involves competition in the technology sector.
- As China’s economy increasingly depends on domestic demand met by a maturing domestic business sector, it will become less correlated with the U.S., increasing the diversification value of direct allocations to Asia.

This presentation is made available on a confidential basis to sophisticated investors for the purpose of providing certain information about The Carlyle Group, Inc. and its affiliates ("Carlyle"). This presentation is solely for information purposes and does not constitute an offer to sell or a solicitation of an offer to purchase any security, including in any jurisdiction where such an offer or solicitation would be illegal. Any such offer or solicitation shall only be made pursuant to a confidential private placement memorandum, which qualifies in its entirety the information set forth herein and which should be read carefully prior to investment in any security for a description of the merits and risks of an investment in the security.

The information herein does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual investors. Further, references to portfolio companies should not be considered a recommendation of any particular security or portfolio company. Information about recommendations over the last year is available upon request. It should not be assumed that recommendations made in the future will be profitable or will equal the performance of past recommendations.

Economic and market views and forecasts reflect our judgment as of the date of this presentation and are subject to change without notice. In particular, forecasts are estimated, based on assumptions, and may change materially as economic and market conditions change. Carlyle has no obligation to provide updates or changes to these forecasts. Further, unless otherwise expressly stated herein any analysis discussed herein express Carlyle's views only as of the date of this presentation. Carlyle expressly disclaims any duty to update any of the information provided herein.

Carlyle and others associated with it may have positions in and effect transactions in securities of companies mentioned or indirectly referenced in this commentary and may also perform or seek to perform investment banking services for those companies. Carlyle and/or its employees have or may have a long or short position or holding in the securities, options on securities, or other related investments of those companies.

Certain information contained in this presentation is non-public, proprietary and highly confidential information. Accordingly, by accepting and using this presentation, you will be deemed to agree not to disclose any information contained herein except as may be required by law. In addition, certain information contained in this presentation has been obtained from published and non-published sources prepared by other parties, which in certain cases have not been updated through the date hereof. While such information is believed to be reliable for the purpose used in this presentation, Carlyle does not assume any responsibility for the accuracy or completeness of such information and such information has not been independently verified by Carlyle. Except where otherwise indicated herein, the information provided in this presentation is based on matters as they exist as of the date of preparation and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available, or circumstances existing or changes occurring after the date hereof.

Certain information contained herein constitutes "forward-looking statements," which can be identified by the use of terms such as "may", "will", "should", "expect", "anticipate", "project", "estimate", "intend", "continue," "target" or "believe" (or the negatives thereof) or other variations thereon or comparable terminology. Due to various risks and uncertainties, actual events or results may differ materially from those reflected or contemplated in such forward-looking statements. As a result, investors should not rely on such forward-looking statements in making their investment decisions. No representation or warranty is made as to future performance or such forward-looking statements.

In the United States, these materials have been distributed by TCG Securities, L.L.C., a limited purpose broker/dealer registered with the U.S. Securities and Exchange Commission and member of the Financial Industry Regulatory Authority. Related financial products or services are only available to investors deemed to be "qualified purchasers" as defined in Section 2(a)(51) of the U.S. Investment Company Act of 1940, as amended, and "accredited investors" as defined in Regulation D in the 1933 Securities Act, as amended.

When TCG Securities presents a strategy or product to a prospective investor, TCG Securities does not determine whether an investment in the strategy or product is in the best interests of, or is suitable for, the investor. Investors should exercise their own judgment and/or consult with a professional advisor prior to investing in any Carlyle strategy or product.

CELf Advisors LLP is not acting for you and does not regard you as a customer or a client. It will not be responsible to you for providing protections afforded to clients of the firm or be advising you on the relevant transaction.

SPECIAL NOTICE TO PROSPECTIVE INVESTORS IN THE UNITED KINGDOM: In the United Kingdom, these materials are being distributed to and are only directed at (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"), (ii) high net worth companies, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order, or (iii) any other person to whom it may lawfully be communicated, (all such persons together being referred to as "relevant persons"). Any investment to which this communication relates is only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such investments will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents. Transmission of this information to any other person in the U.K. is unauthorized and may contravene the Financial Services and Markets Act of 2000.

SPECIAL NOTICE TO PROSPECTIVE INVESTORS IN THE DUBAI INTERNATIONAL FINANCIAL CENTRE: These materials have been distributed to you by Carlyle MENA Investment Advisors Limited which is duly licensed and regulated by the Dubai Financial Services Authority. Related financial products or services are only available to wholesale clients with liquid assets of over US\$1 million, and who have sufficient financial experience and understanding to participate in financial markets in a wholesale jurisdiction. These materials are intended for distribution only to persons of a type specified in the DFSA's Rules (i.e., "Professional Clients") and must not, therefore, be delivered to, or relied on by, any other type of person. The DFSA has no responsibility for reviewing or verifying these materials. If you do not understand the contents of these materials, you should consult an authorized financial advisor.