# From Quantitative Easing to Quantitative Tightening

TINA* was a distortion caused by policy makers. A global tightening cycle is underway and markets are already in transition to a different asset pricing regime.

**Philip Higson, Carlyon AG**
Club b family office conference
Marbella, 7th November, 2018

Carlyon AG

TINA*

# If the bull market is ending, what happens next?

FT, 11. Oct 2018

(…) Wall Street has also outstripped the rest of the world by a stunning margin in performance terms this year, a divergence that has worried investors in recent weeks and spurred some rotation away from US equities and towards Japan and other markets. US equities and, in particular, fast-growing tech companies had benefited from a 10-year Treasury yield camped below 3 per cent.

**Lower long-term yields make stocks look attractive, an approach best summed up by the term Tina — "there is no alternative" — which was distinctly fashionable until yields started slowly climbing this year.** (…)

# Index

# Our analysis

Areas of focus:

- Decomposition of debt and equity growth post QE by geography and sector
- Examination of key market metrics, Fed funds, term premium, equity volatility, and sources of inflation/deflation
- Effect of low rates on debt sustainability and quality for Sovereigns and corporates
- Analysis of available listed/unlisted assets including effects of M&As / buybacks
- Flows into alternatives by sovereign wealth funds, pension funds, insurance companies and family offices
- Analysis of asset pricing vs history

Process:

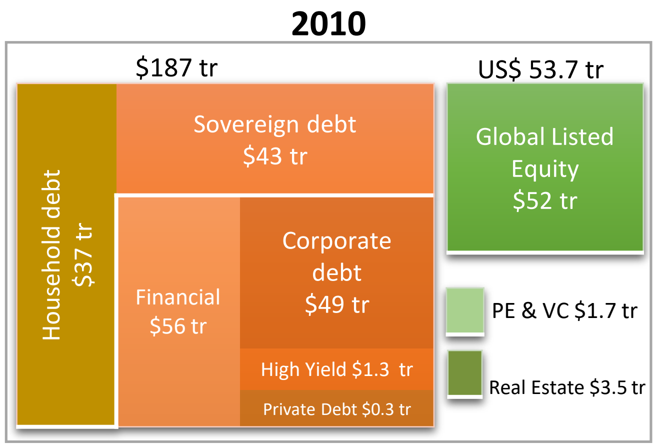
- Dialogue with Club b members over a period of several months
- Extensive data driven analysis with intensive use of Bloomberg data sets
- Wide range of sources including BIS, IIF, World Bank, Prequin, PWC, Pitchbook, and numerous academic papers and market research articles
- Primary research discussion with asset managers, family offices, and multi-asset trading groups

# Key take-aways

- **How we got here**
  - QE changed everything. Extreme policies stimulated debt and equity growth, distorted risk taking, and permitted unsustainable debt across multiple borrowers. Debt sustainability tested by higher rates. 12% of globally listed companies ex China, characterized as zombies
  - Negative real rates, negative term premium, and low volatility are reflected in abnormal asset valuation vs history
  - Technology, globalization and migration held down inflation and perpetuated ‘lower for longer’ rates
- **No shortage of investible assets**
  - Huge appetite from Sovereign Wealth Funds, Pension Funds, FOs, Endowments for longer dated real assets & private market exposure
  - Evidence of crowding in assets with higher expected returns, now QT alters the opportunity set (e.g. T-Bills back on menu)
  - Low rates stimulated buybacks and M&A reducing the number of shares outstanding and number of quoted companies particulary in developed markets, but this pattern not evident in Asia and EM
  - Equity increased in value from $54 tr to $80 tr and global debt (inc all cash securities) from $187 tr to $241 tr, since 2010
- **Assets mis-priced**
  - Compared with long-term averages, real yields and credit spreads are too low in DM and fair/too high in EM. Equities based on EV to sales ratios, look expensive in North America and cheap in Spain, Japan, Korea, Russia
  - Private equity and US public equity, recent returns (horizon IRR’s) significantly exceeds long-term (18 year) history
  - Debt market quality deteriorated significantly in the final phase of QE
- **Implications for FOs**
  - Risks: expect different equity and debt valuations. Debt sustainability concerns increasing for sovereigns and corporates. Populist spending plans have implications for future tax rates. Political risks and end of QE, suggests that a soft landing  is unlikely
  - Opportunities:. Sufficient liquidity to participate in bargain hunting as value investing back on radar. Squeeze from debt sustainability must provide new ideas e.g. public infrastructure projects offered with higher returns, distressed asset pool to become much larger

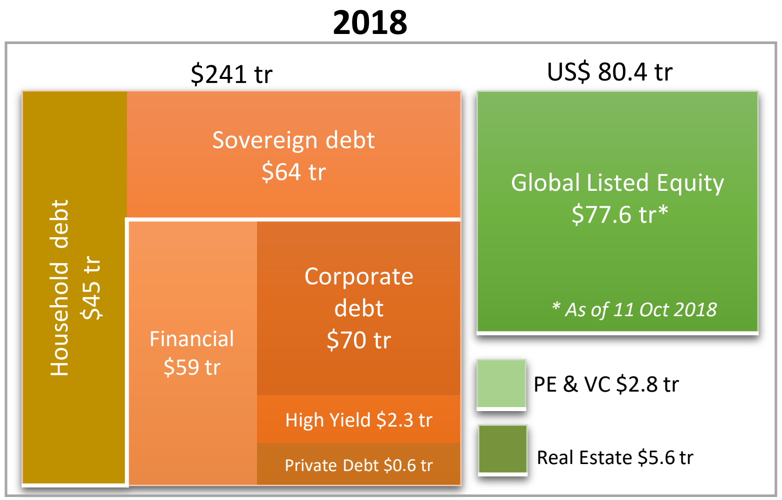
# How we got here

# Response to crisis measures stimulated significant debt and equity growth

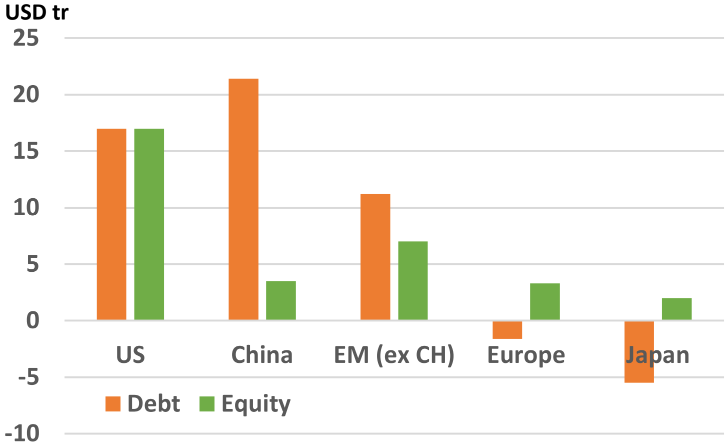



Debt +USD 54tr (+29%)

Equity +USD 27tr (+50%)




Change in debt and equity USD tr, 2010 - 2018




Source: Institute of International Finance, May 2018
Bloomberg market data, End 2010 – End Sept 2018
Prequin data, BIS data

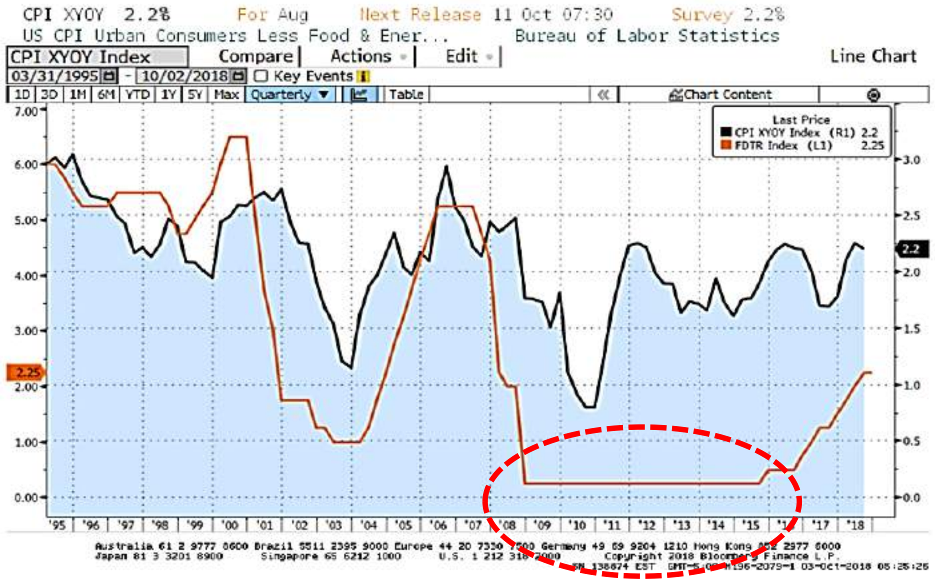
**Global debt** – net change includes the effect of QE, of USD 7 tr of net purchases by central banks. China main driver of debt growth across all sectors, Japanese corporate de-leveraging reducing total debt by more than USD 5tr.

**Global equity** – includes effect of stock buyback worth approx. USD 3tr over the period. Equity growth twice debt growth with US contributing 50% of change in equity dollar value.

**Valuations** Compared with long-term averages real 10yr yields and credit spreads are low, EV to sales ratios are high. Asset valuation metrics are clearly differentiated between developed and emerging markets (see separate slide for details).

# Technology, globalization & migration held down inflation and perpetuated ‘lower for longer’

**US core inflation of 2.2% should = Fed funds rate > 4.0%**




Fed funds rate 2.25%

US core inflation 2.2%

## Amazon Might Help Explain the Inflation Mystery

Online retailers look like they're keeping a lid on prices.

By Mark Whitehouse
16. Oktober 2017, 13:00 MESZ


For all its efforts, the Federal Reserve can't seem to get inflation up to its 2 percent target – a situation that Chair Janet Yellen has called a "mystery." If she's looking for clues, she might want to ask Amazon.com Inc. founder Jeff Bezos.

## With Official Unemployment This Low, Why Are Wages Rising So Slowly?

By Servaas Storm

FEB 26, 2018 INCOME & WEALTH EMPLOYMENT & JOB STRUCTURE

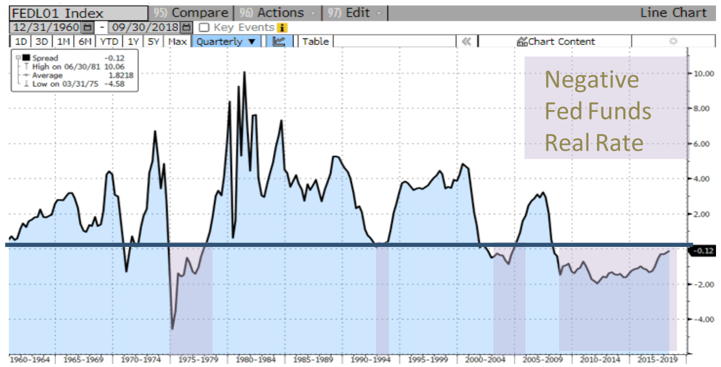
By pushing workers into precarious, part-time work, "Third Way" governments of the past 20 years helped to create the disturbing economic trend that's vexing orthodox economists

Source: Bloomberg

# QE distorted risk taking and risk measurement

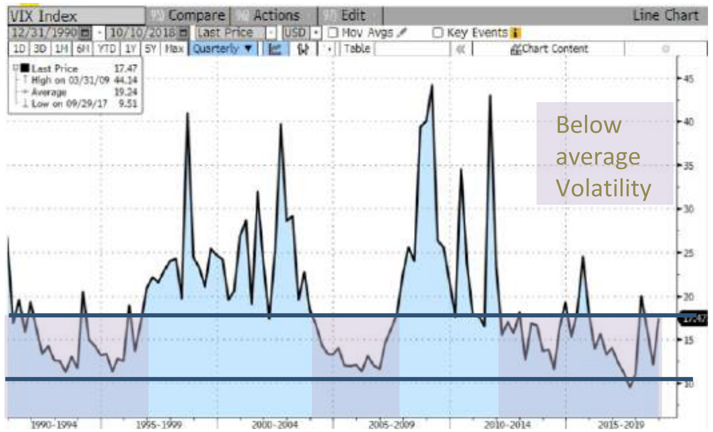
## Real Fed funds sub zero for 10 years

- Negative Fed Funds real rates for longest period in history. Previous episodes short, e.g. 2002-2004 and 1974-1977
- Global real rates still distorted by BOJ and ECB policy as Fed first in, first out




## Volatility below average for 6 years

- Option implied volatility below average for extended period compared to previous episodes
- Lowest VIX levels observed during 2017, caused by continuous signaling by Central banks on gradual nature of QE exit and short VIX structured notes selling premium




## Term premium negative for 3 years

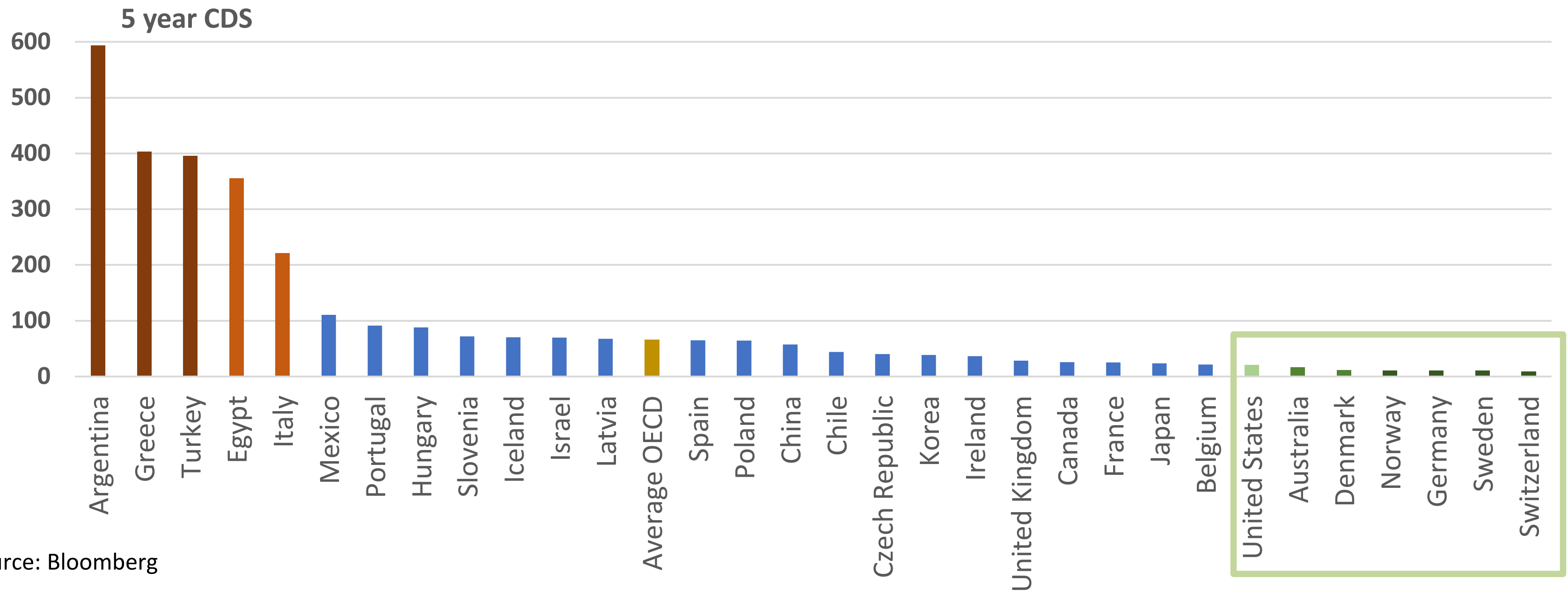
- Term premium negative first time since 1961
- BOJ and ECB QE cause substitution by global bond investors to search for yield via Treasuries.


Source: Bloomberg

# Debt sustainability

# Debt sustainability tested by higher rates

Sustainability subject to current account balance, fiscal balance, duration of government debt, proportion of non-local currency debt, direction of monetary policy globally and locally, price inflation and political stability. Current wave of debt sustainability concerns triggered by long standing imbalances, e.g. Argentina, Greece, Turkey, Egypt, Italy. Safe havens, as defined by low CDS spreads, on the right hand side. Vulnerability to unfavourable shocks remains for countries facing high share of FX denominated debt (ARG, TUR) and high post-crisis debt burdens (Greece, Italy, Portugal). US twin deficit offset by reserve currency status and growth from tax cut / spending positive effect.




Source: Bloomberg

# Italy reaches the limits of debt sustainability

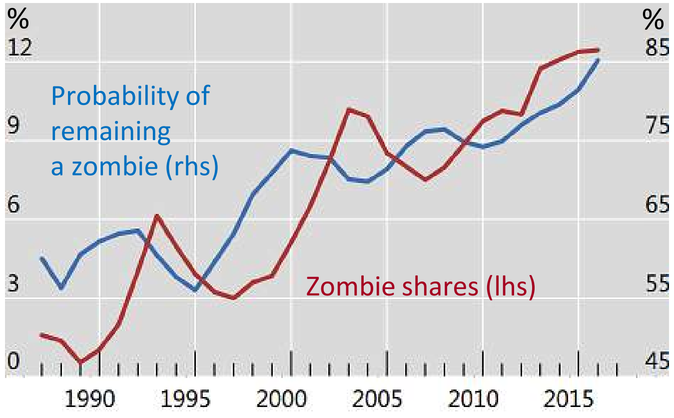
# Low rates create future defaults

By Molly Smith and Christopher Cannon
October 11, 2018, 5:00 AM EDT

Bloomberg News delved into 50 of the biggest corporate acquisitions over the last five years, and found:

- By one key measure, more than half of the acquiring companies pushed their leverage to levels typical of junk-rated peers. But those companies, which have almost $1 trillion of debt, have been allowed to maintain investment-grade ratings by Moody's Investors Service and S&P Global Ratings.
- The vast majority of the 50 deals–valued at $1.9 trillion collectively–were financed with debt.
- This M&A-fueled leveraging of corporate balance sheets contributed to a surge in debt rated in the bottom investment-grade tier and now represents almost half of the outstanding market, Bloomberg Barclays index data show.

**Listed global Zombie firms 1987 - 2016**




Source: BIS

Zombie firms, meaning firms that have an interest coverage less than 1 for 3 consecutive years and older than 10 years.

FINANCIAL TIMES

## Europe's stressed junk bonds are of a recent vintage

Looming end to central bank stimulus crimps demand

**Robert Smith** JULY 6, 2018

A third of Europe's junk bonds that are trading at stressed levels were issued in the past year, showing how quickly a crop of riskier debt deals sold at the top of the market have deteriorated.

Demand for European high-yield bonds — debt from companies with credit ratings below investment grade — reached a peak towards the end of 2017. The yield on a major index of these euro junk bonds dropped below 2 per cent for the first time last November, as the European Central Bank's buying of investment-grade bonds pushed more and more investors into riskier debt.

This trend has been thrown into reverse this year, however, as increased volatility, coupled with looming end of central bank stimulus, has crimped demand for riskier assets. European high-yield indices have delivered negative returns so far in 2018.

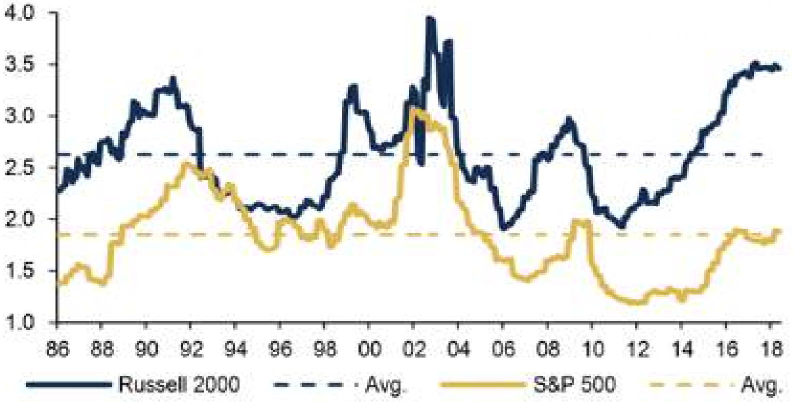
Seven of the 22 bonds in ICE Bank of America Merrill Lynch's European currency high-yield index trading at "stressed" levels were issued in the past 12 months.

# 60% of Russell 2000 names rated below investment grade

Proportion of Russell 2000 names with negative earnings risen to levels only seen during recessions. High leverage and weak interest coverage ratio resulting in ~60% of firms being rated below investment grade.

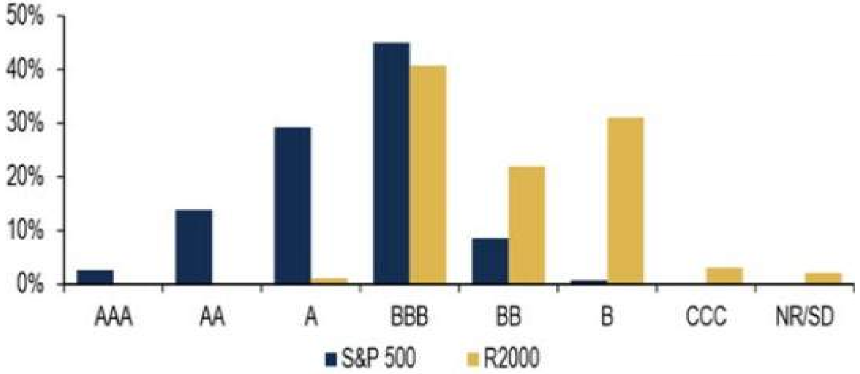
% of non-earners (negative earnings) in the Russell 2000


Small cap leverage (Net debt/EBITDA) near all-time highs




Small cap's interest coverage ratio at levels last seen '07


60% of Russell 2000 debt below investment grade

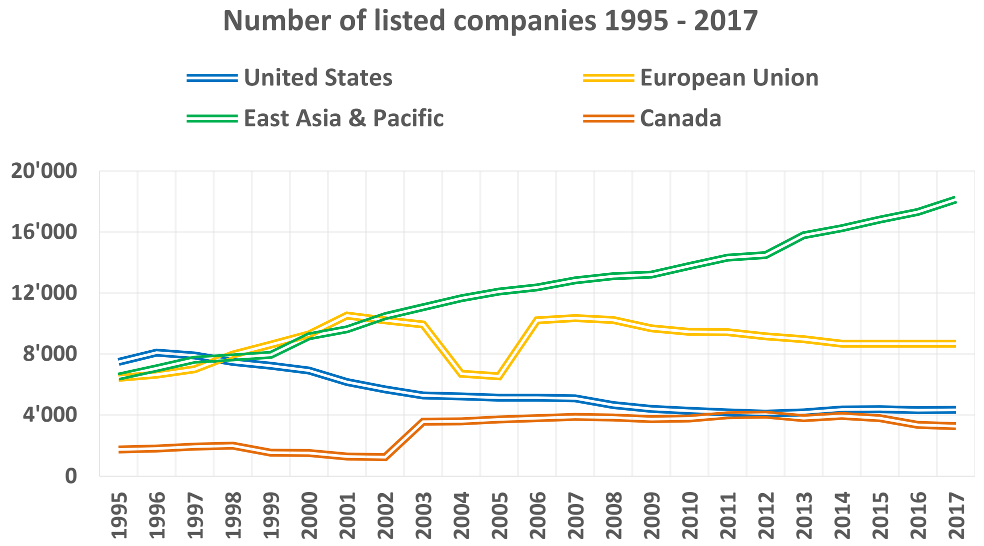


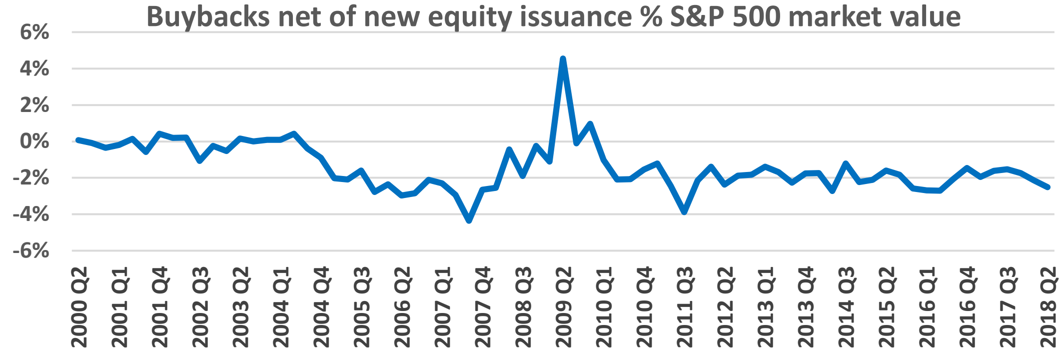

Source: BofAML US Equity & Quant Strategy, FactSet

No shortage of investible assets

# Not enough companies and stocks to buy?

Over the period of 2010-2018, public equity increased in value from USD 52tr to 78tr and private equity and venture capital increased from USD 1.7tr to 2.8tr. Real estate increased from USD 3.5tr to 5.6tr. Private debt increased from USD 0.3tr to 0.6tr.



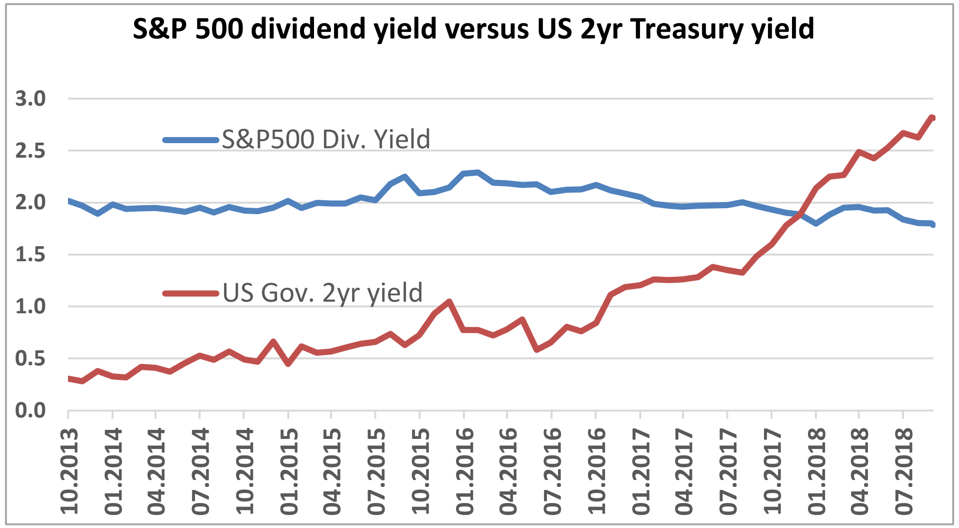

| Number of companies in 2017 | | |
|---|---|---|
| | Public * | Private ** |
| East Asia & Pacific | 18'145 | 2.7m |
| EU | 8'681 | 2.0m |
| US | 4'336 | 7.3m |
| Canada | 3'278 | 0.2m |
| Other | 8'596 | n/a |
| Total companies | 43'036 | 12m |

* World Bank
**Based on companies with more than 50 employees

Source: Private companies Pitchbook, public companies Russell 3000, KFF, Prequin report, Bloomberg, World Bank

# Rising short term yields change supply of available assets with ‘sufficient return’

US 2yr Treasuries provide alternative to buying US dividend stocks




Source: Bloomberg

FINANCIAL TIMES 11. Oct 2018

## If the bull market is ending, what happens next?

The catalyst for pushing the ground-floor button has arrived in the form of stronger US data and more hawkish chatter from Federal Reserve officials. It is a combination that finally punched the 10-year Treasury yield well north of 3 per cent to its highest level since 2011, an outcome that has particularly hit tech shares — long Wall Street’s leadership group.US equities and, in particular, fast-growing tech companies had benefited from a 10-year Treasury yield camped below 3 per cent. Lower long-term yields make stocks look attractive, **an approach best summed up by the term Tina — “there is no alternative” — which was distinctly fashionable until yields started slowly climbing this year** .

# Flows into longer duration real assets & private markets

Sovereign Wealth Funds, Pension Funds, FOs, Endowments have increased allocation to longer dated real assets and private markets. Family Offices stand out with largest increase in allocation.

## Alternatives asset stock 2010 - 2017

| All investors | 2010 | 2017 | Change in USD tr. | Change |
|---|---|---|---|---|
| Real Estate | 3.5 | 5.6 | 2.1 | +60% |
| Oil & Gas | 3.3 | 3.8 | 0.5 | +15% |
| Hedge Funds | 1.9 | 2.9 | 1.0 | +53% |
| PE / VC | 1.7 | 2.8 | 1.1 | +65% |
| Private Debt | 0.3 | 0.6 | 0.3 | +100% |
| | | | | |
| **Total** | **10.7** | **15.7** | **5.0** | **47%** |

- These groups all have chosen to allocate more to alternatives. Higher valuations also increased asset values. Largest allocation is in real estate. Oil and gas is the foundation stone of the sovereign wealth funds the original source of capital.
- PE / VC / PD with strongest growth, but still relatively small in comparison to larger portfolio building blocks in liquid securities.

## % of total AUM allocated to PE, VC, Private debt, Real Estate

| Investor breakdown | 2010 | 2017 | Change in allocation |
|---|---|---|---|
| SWF | 10% | 12% | +2% points |
| Insurance Co | 2% | 2% | Unchanged |
| Pension Fund | 6% | 8% | +2% points |
| Family Offices | 26% | 39% | +13% points |

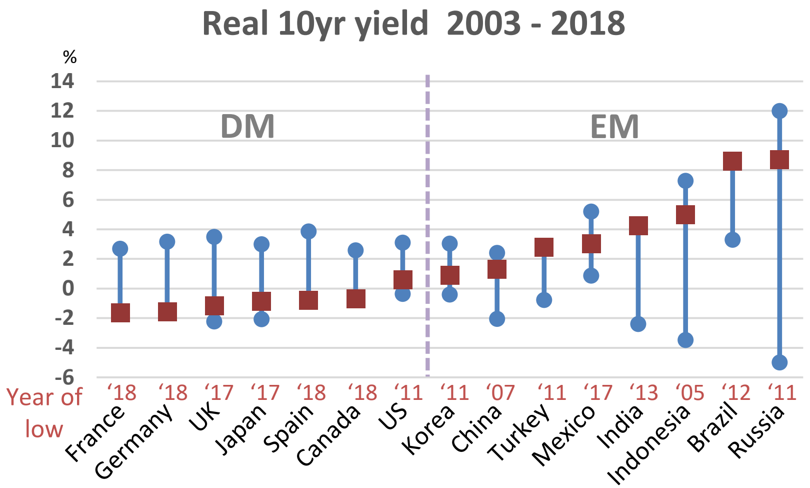
- FOs significantly increased allocation to alternatives, specifically illiquid longer term assets.

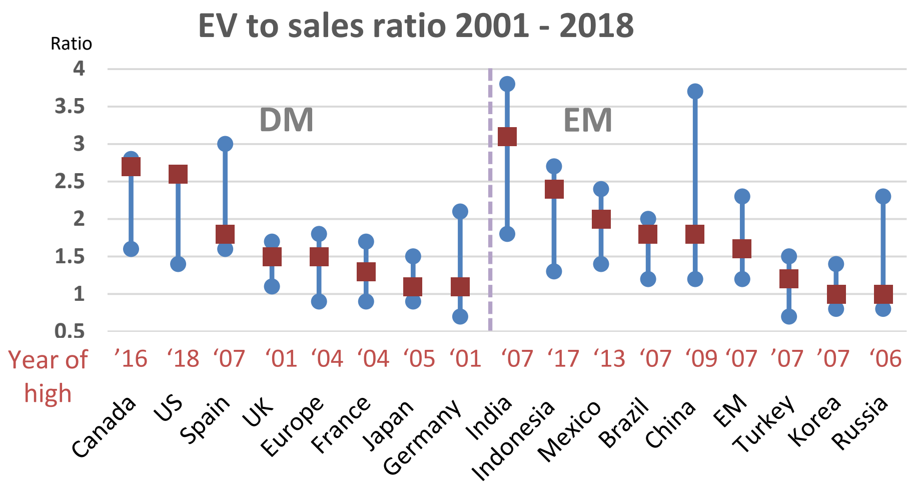
Sources: PWC, Camden Family Office Report, Bloomberg, Prequin, Carlyon estimates

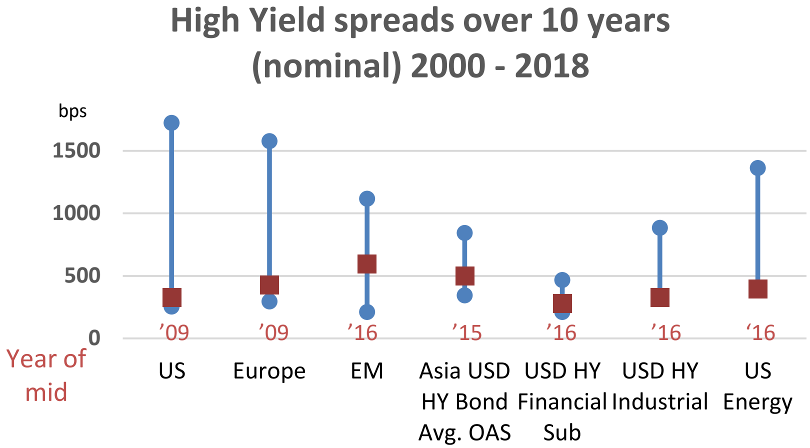
Assets mis-priced

# Mis-pricing depends on context of historical valuation ranges (I)

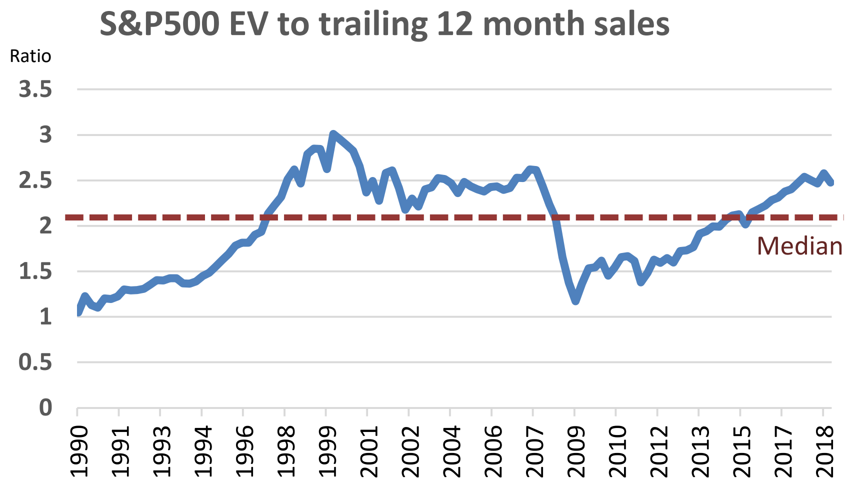
Compared with long-term averages, real yields and credit spreads are too low in DM and fair/too high in EM. Equities, based on EV to sales ratios, look expensive in North America, becoming cheap in Germany and already cheap in Spain, Japan, Korea, Russia.




From 2012 to 2018 for Asia, financials, industrials, energy




***Note:*** *Numbers shown in orange, indicate the year in which min, max, mid data points occurred.*

Source: Bloomberg data, September 2018

# Mis-pricing depends on context of historical valuation ranges (II)

Post 2010, lower volatility, lower rates, lower term premium and lower inflation influenced valuations.
A decomposition of index returns shows that on average 60% from the change in value can be explained by a change in underlying earnings and 40% from PE multiple expansion. It is interesting to see the regional variance.

Decomposition of returns: 40% of asset returns post 2010 from PE multiple expansion

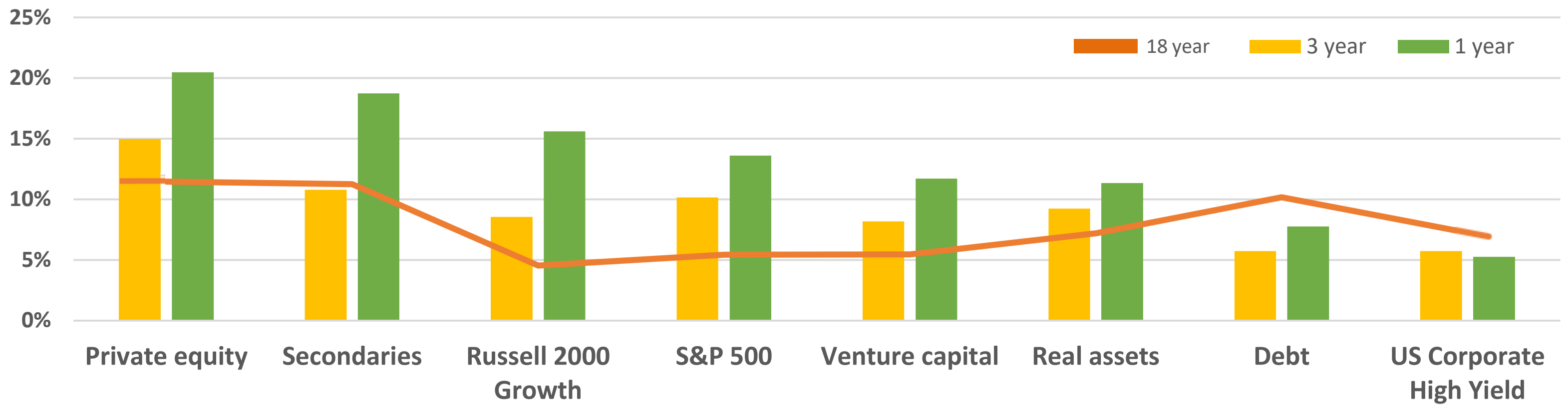
| Public Equity Indices | Mkt Cap in USD tr | Change in Valuation | Weighted | Change in Earnings | Weighted | Change in Market Value | Weighted | Change in valuation as % of return |
|---|---|---|---|---|---|---|---|---|
| S&P 500 | 23.7 | 5.3% | 2.6% | 5.3% | 2.6% | 10.6% | 5.2% | 50% |
| MSCI EM | 10.4 | 1.8% | 0.4% | 2.0% | 0.4% | 3.8% | 0.8% | 46% |
| Japan Topix | 6.0 | -0.2% | 0.0% | 7.1% | 0.9% | 6.9% | 0.9% | -3% |
| China CSI 300 | 4.6 | -1.3% | -0.1% | 10.3% | 1.0% | 9.0% | 0.9% | -13% |
| Euro Stoxx 50 | 3.5 | 5.0% | 0.4% | -0.4% | 0.0% | 4.6% | 0.3% | 109% |
| Total | 48.2 | | 3.2% | | 4.9% | | 8.1% | |
| | | | 40% | | 60% | | 100% | |

Source: Carlyon AG, Bloomberg Data end 2010 to end 2017

Market indicators pre/post crisis

| US data | 1998 – 2007 | 2010 – 2018 |
|---|---|---|
| Average Volatility | 20.5 | 16.3 |
| Average Fed Fund rate | 3.7% | 0.4% |
| Average Term Premium | 1.3% | 0.4% |
| Average Inflation | 2.2% | 1.8% |

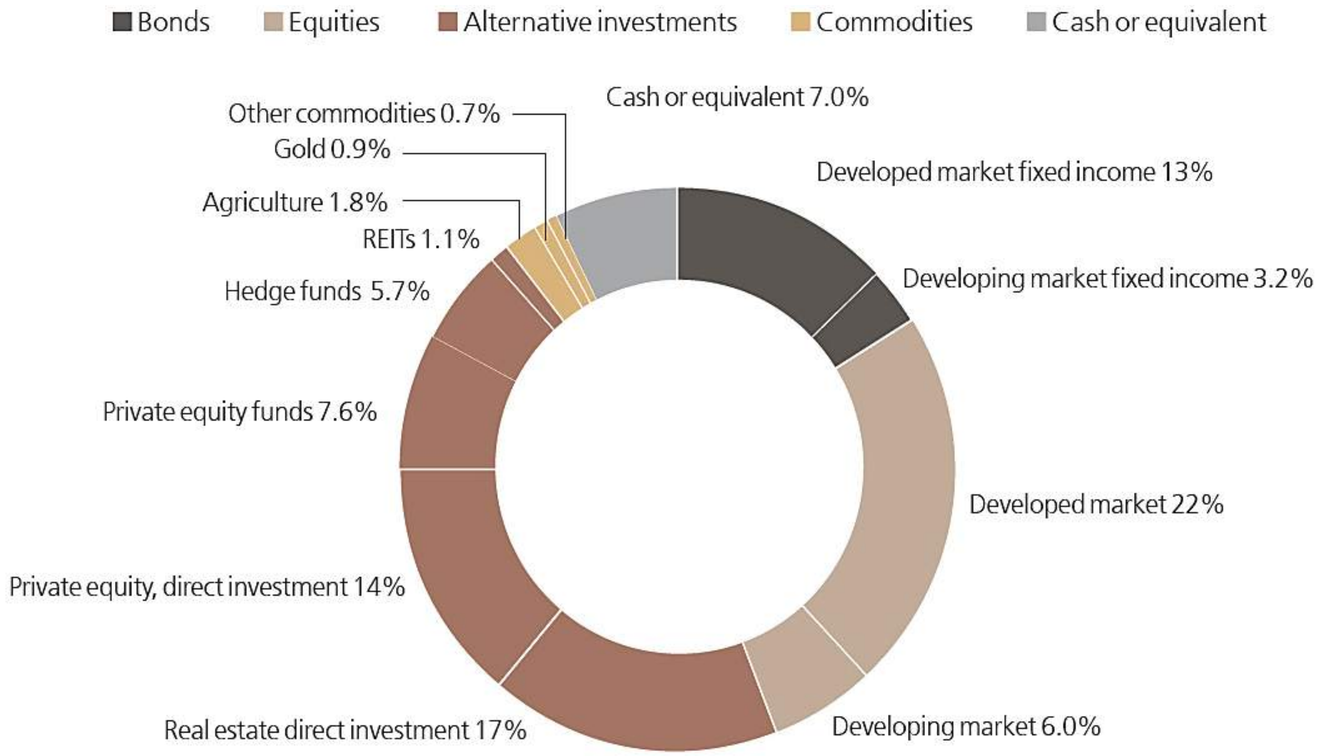
6 out of 8 asset groups, mainly exposed to North America, have 1 and 3 year horizon IRR's well above 18 year historical returns.




Source: Pitchbook

# Implications for family offices

# Average family office portfolio in 2018




Source: The UBS / Campden Wealth Global Family Office Report 2018
Note: Figures may not total 100% due to rounding

# Implications for FO portfolios

- Normalisation of rates will materially alter equity and debt valuations
- Higher real interest rates may have consequences for gold positions
- Long maturity illiquid positions have a higher risk profile going forward under QT conditions
- Debt sustainability concerns will increase for specific countries, industries and companies
- Asset quality question marks e.g. 30% of European junk bonds were only issued as high yield paper in 2017
- Russell 2000 more at risk given high share of unprofitable / highly leveraged constituents
- Higher tax rates may be triggered by combination of populism and high level of government debt
- Insufficient portfolio liquidity may limit participation in bargain hunting
- Value investing likely back on radar after extreme divergence with momentum
- Squeeze from debt sustainability might provide new investment ideas e.g. public infrastructure projects offered with higher returns, distressed asset pool to become much larger

# Bibliography (I)


**Debt sustainability**

- IIF Quarterly Global Debt Monitor May 2018, https://www.iif.com/system/files/iif_gdm_may_2018.pdf
- BIS debt securities statistics, https://www.bis.org/statistics/secstats.htm?m=6%7C33%7C615
- Global Debt and the New Neutral, https://global.pimco.com/en-gbl/insights/viewpoints/in-depth/global-debt-and-the-new-neutral
- The walking dead? Zombie firms and productivity performance in OECD countries. Working paper https://www.oecd-ilibrary.org/docserver/180d80ad-en.pdf?expires=1539769097&id=id&accname=guest&checksum=49A4820C9CA9A256D1FDF0491A267520
- Leverage – A Broader View, IMF Working Paper, https://www.imf.org/en/Publications/WP/Issues/2018/03/19/Leverage-A-Broader-View-45720
- Junk bonds can cause pain even if they don't default, https://www.businessinsider.com/the-no-default-fallacy-of-ccc-corporates-2017-1

**Inflation**

- Global Inflation hits four-year high on rising energy prices https://www.wsj.com/articles/rising-energy-prices-see-global-inflation-hit-four-year-high-1533204001
- More Amazon Effects: Online Competition and Pricing Behaviors https://www.kansascityfed.org/~/media/files/publicat/sympos/2018/papersandhandouts/825180810cavallopaper.pdf?la=en
- Understanding Weak Capital Investment: the Role of Market Concentration and Intangibles https://www.kansascityfed.org/~/media/files/publicat/sympos/2018/papersandhandouts/824180810eberlycrouzetpaper.pdf?la=en
- Why an unpleasant inflation surprise could be coming https://www.wsj.com/articles/why-an-unpleasant-inflation-surprise-could-be-coming-1519833146
- Why is inflation so low? Federal Reserve Bank of St. Louis https://www.stlouisfed.org/publications/regional-economist/first-quarter-2018/why-inflation-so-low

# Bibliography (II)


**Flow of funds**

- Sovereign Investors 2020. A growing force
  https://www.pwc.com/gx/en/sovereign-wealth-investment-funds/publications/assets/sovereign-investors-2020.pdf
- Flow of funds for the second quarter of 2018, Research and Statistics Department Bank of Japan, https://www.boj.or.jp/en/statistics/sj/sjexp.pdf
- OECD Sovereign Borrowing Outlook 2018. Sovereign borrowing outlook for OECD countries.
  https://www.oecd.org/daf/fin/public-debt/Sovereign-Borrowing-Outlook-in-OECD-Countries-2018.pdf
- The Rundown of Runoff. Goldman Sachs, Global Macro Research, https://www.ssc.wisc.edu/~mchinn/GS_topofmind_endQE.pdf

**Valuations**

- Preqin Investor Outlook: Alternative Assets H1 2018, http://docs.preqin.com/reports/Preqin-Investor-Outlook-Alternative-Assets-H1-2018.pdf
- The rise and rise of private markets. McKinsey Global Private Markets Review 2018
  https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/the-rise-and-rise-of-private-equity
- PitchBook Benchmarks. Private markets, data through 4Q 2017, https://pitchbook.com/news/reports/pitchbook-benchmarks-as-of-4q-2017
- Equity Market Risk Premium – Research Summary July 2018. KPMG Advisory
  https://assets.kpmg.com/content/dam/kpmg/nl/pdf/2018/advisory/equity-market-risk-premium-july-2018.pdf
- Private Equity Deal Value Rises in a Crowded Market
  https://www.forbes.com/sites/baininsights/2018/03/22/private-equity-deal-value-rises-in-a-crowded-market/#f12a52635379

# Disclaimer

The information in this presentation was compiled from sources believed to be reliable for informational purposes only.

The information contained herein is not intended to be a source of credit or investment advice with respect to the material presented, and the information and/or documents contained do not constitute investment advice by Carlyon AG. All information herein should serve as a guideline, which you can use to create your own judgement.

We trust that you will review the information to reflect your own conclusion and believe that these may serve as a helpful platform for this endeavor.

Any and all information contained herein is not intended to constitute legal or financial services advice. You should not take, or refrain from taking action based on its content.

We do not guarantee the accuracy of this information or any results and further assume no liability in connection with this publication including any information contained herein. Moreover, this presentation cannot be further distributed to third parties without the accordance of Carlyon AG.

This presentation is provided on a strictly private and confidential basis for information purposes only.

By attending or reading this presentation, you will be deemed to have agreed to the obligations and restrictions set out below:

Without the express prior written consent of Carlyon AG, the presentation and any information contained within it may not be (i) reproduced (in whole or in part), (ii) copied at any time, (iii) used for any purpose other than your own evaluation or (iv) provided to any other person.

This presentation does not constitute or form part of, and should not be construed as, an offer, invitation or inducement to purchase or subscribe for securities nor shall it or any part of it form the basis of, or be relied on in connection with, any contract or commitment whatsoever.

This presentation does not constitute either advice or a recommendation regarding any securities.

No representations or warranties, express or implied are given in, or in respect of, this presentation. To the fullest extent permitted by law in no circumstances will Carlyon AG, or any of its respective subsidiaries, shareholders, affiliates, representatives, partners, directors, officers, employees, advisers or agents be responsible or liable for any direct, indirect or consequential loss or loss of profit arising from the use of this presentation, its contents, its omissions, reliance on the information contained within it, or on opinions communicated in relation thereto or otherwise arising in connection therewith. The information contained in this presentation has not been independently verified.

Recipients of this presentation are not to construe its contents, or any prior or subsequent communications from or with Carlyon AG or its representatives as investment, legal or tax advice.