Bitterroot
CAPITAL ADVISORS

Q4 2022 Capital Markets Review

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Capital Markets

Equity markets rallied sharply in USD terms by 9.8% during Q4 2022 (ACWI Index) but ended 2022 down 18.4% for the full year.

The rally in Q4 was primarily driven by international markets, especially Europe. The MSCI EAFE Index was up 17.5% in USD terms and benefitted from a) optimism regarding China's reopening potential as European companies are heavy exporters to China and b) much milder than expected weather which assuaged fears of a winter energy crisis for Europe.

Globally, inflation reports were also promising with US inflation slowing faster than expected and European inflation also slowing sequentially from peak levels.

The range of outcomes for public equities performance in 2023 is unusually high given the uncertainties regarding ultimate interest rate peaks, prospects for economic slowdown or recession, and magnitude of potential corporate earnings declines.

Markets have rallied strongly to start 2023 and are up 4% YTD through Jan 11, 2023.

Government and investment-grade bonds appreciated in the quarter but remain attractive from a risk/reward standpoint.

The Barclays US Aggregate Index increased by 1.9% during Q4. However, rapid interest rate hikes throughout the year led to full year 2022 declines of 13.0%.

With inflation having peaked, it appears increasingly likely that central banks are close to ending interest rate hikes. With nominal bond yields at attractive absolute levels, bonds are well-positioned if either a) interest rates remain near these levels or b) interest rates fall should economies swiftly enter into recession.

With US treasuries generally yielding 4%+ and IG bonds yielding 5.0%. safe fixed income is likely to generate mid-single digit returns in 2023 and over the medium-term.

High-yield bonds and leveraged loans (riskier corporate credit) performed well in Q4. However, FY 2022 performance was quite divergent across these credit asset classes.

High yield bonds and leveraged loans were up 4.2% and 2.7% respectively during Q4 (-11.2% and -0,6% for FY 2022).

The YTD decline in HY bonds were driven more by base rate increases than spread widening, whereas positive and rising interest rates benefitted leveraged loans with performance offset by rising spreads.

Absolute yields are presently attractive (driven by high base rates) and enhance the prospect for positive returns in 2023 and above-average mid-term returns.

Capital Markets (Continued)

Hedge funds and private assets continued to demonstrate resilience in Q4, with strong 2022 relative performance

Hedge funds delivered flat performance for Q4 and were down -4.4% for FY 2022 (far better than -18.4% for equities and -13.0% for bonds)

Private equity buyout fund performance was generally stable and down low-single digit for FY 2022.   However, venture capital funds were down 15.2% YTD.

Private equity and venture capital strategies report performance with a one-quarter lag (as such, latest data is of 9/30/22 valuations).

Private credit and private real estate generally performed well through Q3 2022 (latest available data)

The Cliffwater Private Credit Index was up 4.1% YTD through Q3 as floating rate loans benefitted from rising rates offset somewhat by valuation markdowns. The near-term outlook for existing funds is mixed. On the positive side, increases in SOFR base rates has led to unlevered current yields of north of 10%. However, defaults are likely to increase and offset some of this return.

The NCREIF Index was up 9.6% YTD driven by sharply appreciating rental income growth somewhat offset by declining asset values. However, transaction volume has declined significantly as cap-rates and borrowing costs have increased and property valuations have declined in recent months. Additionally, rental rate growth is likely to decelerate substantially in 2023 and return to more historical levels in 2024.

The outlook for new private investment funds (currently raising money for 2023 vintage) is bright as valuations are lower, leverage utilized in deals is lower, and in certain cases like private credit, there is less capital chasing opportunities.

We are incorporating these views into portfolio positioning by:

- Increased allocation to US Treasuries and US investment-grade bonds (especially at shorter maturities)
- Continued allocations to new private strategies

Strategic Asset Allocation View (7-years)

The next seven-year forecast period is highly likely to experience regime change with several elements diverging from the previous seven years.

Interest rates are at multi-decade highs and will likely remain elevated for longer (with averages over the next seven years well higher than the ultra-low rates seen over the previous seven years).

Shortages in labor (especially in service industries) are likely to remain and may constrain margin expansion.

Energy security is a key issue with potential for structural supply shortages and disruptions.

Geopolitical uncertainty with potential for military conflicts is increasing.

The expected regime change has critical implications for our outlook across asset classes.

With equity valuations having declined significantly in 2022, we now expect mid-to-high single digit nominal pre-tax annual equity returns (6.5%-8.0%) over a seven-year forecast period.

We expect greater convergence between US and International equity market returns.

While we expect quality and growth stocks to outperform value stocks over the forecast period, the rate of outperformance is likely to be lower.

We still anticipate significant volatility over the next 6-12 months as interest rates are yet to peak and many economic indicators appear to be slowing rapidly. However, inflation clearly seems to be in retreat and China's reopening should lend support to global growth.

Furthermore, geopolitical volatility may also rear its head at inopportune times.

The risk of policy mistakes (central banks hiking for too long) leading to a more severe recession or triggering a market crisis has increased as well.

"Safe" fixed income is now attractive for the first time in several years

US and Canadian 1-2-year Treasury bond yields are now yielding roughly 400-460bps and US Investment Grade corporate bonds are yielding 5.0%

Historically, over a 7-year period, starting Treasury and IG bond yields have proved to be a good proxy for total expected returns for those bond indexes (intermediate duration of 6-7 years). As such, safe bonds are now quite attractive from a risk / reward standpoint (barring a significant further spike upwards in inflation).

Strategic Asset Allocation View (7-years)

On a risk-adjusted basis, safe fixed income is attractive relative to equities.

Riskier credit assets (high-yield bonds and leveraged loans) are also attractive over a mid-term time frame (and on a relative basis to equities)

US high-yield bonds are now yielding 8.2% with 7-year forecasted annual returns of 7.1% (slightly lower than US equities). Leveraged loans are currently yielding 10.5% (based on 3-year takeout convention) with expected mid-term annualized returns in the 7.5% range. However, on a nearer-term basis (next 12 months), high yield bonds and leveraged loans may experience further declines if credit spreads widen further were a deeper than expected recession to occur.

For new private market strategies (i.e., private equity, private credit, real asset funds) we continue to forecast higher returns relative to public markets (over a multi-year timeframe).

Asset Class: Strategic Outlook (7-Year Timeframe)

	Negative – Neutral – Positive	Average annual return
Equities		
US Large Cap (S&P 500)		Mid-High Single-Digit
US Small Cap (Russell 2000)		Mid-High Single-Digit
MSCI Intl. Developed Markets		Mid Single-Digit
MSCI Emerging Markets		Mid Single-Digit
Fixed Income		
US Treasury		Mid Single-Digit
US Corp Investment Grade		
US Corp High Yield		Mid-High Single-Digit
US Corp Levered Loans		
Alternatives, Private Equity and Real Estate		
Real Estate (Private)		Mid/High Single-Digit
Alternatives (Hedge Funds)		Mid Single-Digit
Private Credit (New Funds)		Low DD / Mid DD
Private Equity (New Funds)		Mid-Teens+

Inflation

2022 witnessed unprecedented increases in inflation on a global basis (especially in Western economies).

Pent-up consumer spending of significant excess savings coupled with disrupted supply chains and extremely tight labor markets caused prices to soar far more than expected. Inflation became widespread across several categories and headline CPI peaked at 9.1% YOY in June in the US and 10.6% YOY in Europe.

Clear signs are emerging that inflation has peaked in the US and in Europe. Encouragingly, inflation data has generally been weaker than expected (positive surprise) over the last few months.

On a YOY basis, US headline CPI growth declined to 6.5% in December vs. the 9.1% peak experienced in June. On a MOM basis, US CPI declined by 0.1% (the first monthly decrease in 14 months).

US Core CPI increased by 5.7% YOY in December (down from a 6.6% peak) and 0.3% MOM. The Fed's preferred Core CPE inflation gauge increased by 4.7% YOY in November (down from a 5.4% peak) and increased 0.2% MOM.

In fact, over the past 3 months, core CPI has averaged 3.2% on an annualized basis (a clear deceleration from the 6.0% annualized level average vs. the preceding 3-month period)

Core goods prices have registered MOM declines for three straight months while monthly services inflation is decelerating but remains stickier.

However, even services inflation is artificially high due to the 9.6% annualized YOY increase in shelter inflation (which is based on lagged rental data measurement as opposed to real-time lease data).

Leading indicators such as new rental lease rates, commodity prices and producer prices paid are all showing swiftly decelerating inflation rates. Supply chains have largely returned to normal and should continue to improve as China reopens more fully.

Given the trajectory of leading indicators, we would not be surprised if both US headline and core inflation fall faster than expected in H1 2023.

However, labor markets continue to remain very tight in the US and Canada.

The US economy added 223,000 jobs in December (well above the pre-pandemic average monthly level of 190,000). The unemployment rate remains at historically low levels at 3.5%.

On a positive note, however, wage inflation slowed to 4.6% YOY and 0.3% MOM in December. The November initial report of 5.1% YOY increase was revised downward to 4.8% as well.

Inflation (Continued)

Unfilled job vacancies remain at abnormally high levels in the US at near 10.5 million (vs. 6mm job seekers).

Layoffs have been relatively limited thus far to predominantly white-collar jobs at technology companies. Labor is much tighter across service industries such as hospitality, restaurants, and health care.

Canada's unemployment rate of 5.1% remained at historically low levels.

Both the Fed and the Bank of Canada are closely watching the labor market and wage growth. These central banks need to see better balance between labor demand and supply to avoid the potential of wage/price spirals leading to entrenched inflation.

While inflation is decelerating, its pace of deceleration and ultimate trajectory remains highly uncertain.

The Fed is currently forecasting Core PCE to decelerate from 4.7% YOY currently to 3.6% for 2023 and 2.4% for 2024 (vs. its 2% long-term target).

While goods inflation has certainly proven transitory (and is now experiencing clear deflation), services inflation is stickier and broadened throughout 2022.

With consumers still sitting on healthy accumulated pandemic savings with high levels of pent-up demand and labor tight, wage growth at 4.7% YOY continues to be well higher than the 2.5%-3.5% necessary to drive inflation back towards 2% annual growth.

China's abandonment of its Zero COVID policy represents a key wildcard for global inflation in 2023.

On the one hand, supply chains should continue to normalize even faster as Chinese factory workers increasingly return to work, which should lead to even further goods deflation.

On the other hand, oil prices and other commodities may rise significantly from current levels if China's economy surges in a post COVID world.

Central bank policy response (especially the US Fed) remains uncertain as well.

The Fed has forecast peak rates of 5.1% in 2023 and anticipates maintaining that level for several quarters.

Conversely, financial markets are presently forecasting that the Fed will raise rates to 5.0% in early 2023, but then cut rates towards the end of the year.

As of now, Fed speakers seem resolute that a) rates will peak somewhere at or above 5.0% and b) they will be maintained there

Inflation (Continued)

throughout 2023 and perhaps into 2024. However, the Fed may face complicated tradeoffs if the economy or labor market were to begin slowing faster than expected. Financial markets remain highly volatile and will be prone to oversized reactions to potential changes in Fed policy.

Inflation expectations are well anchored for now. US 5-year and 10-year break-evens (inflation forecasts) have declined and are now at 2.2% (in-line with Fed's 2% target).

Macroeconomic Conditions

US economic growth rebounded in H2 2022 but is decelerating entering 2023.

The Manufacturing PMI Index dipped modestly into contractionary territory in November and December (below 50), with new orders showing steeper declines.

The Services PMI Index abruptly dipped into contractionary territory in December (part of that may have been weather driven).

This is the first instance since May 2020 where the Services PMI has been below 50. If Services PMI continues to show contraction in the early months of 2023, US economic growth will likely slow rapidly. On the other hand, inflation may also fall faster than expected.

Consumer spending remains strong with consumer balance sheets still having over $1 trillion of excess pandemic-driven savings (relative to $2.5 trillion at the peak).

Most economists forecast this savings buffer to be depleted by H2 2023 or early 2024.

Signs of bifurcation between higher-income and lower-income consumers increasingly emerged during H2 2022.

While consumer credit quality remains very strong, defaults are picking up and credit card balances are at record highs.

The savings rate has declined to 2.7% (levels seen near the GFC). If layoffs start to become more widespread, consumer spending may decelerate more rapidly than expected and defaults may intensify sharply.

Canada's economic growth also expanded in H2 2022 but faces mounting headwinds for 2023.

Economists have lowered consumer spending forecasts by 0.7% for 2023 with larger declines in goods spending and more pronounced slowing in services expected.

Given much higher household leverage levels relative to the US, Canadian consumers are more sensitive to rising interest rates.

Canada's total employment is 2.7% above pre-pandemic peak levels (in contrast to the US). As such, unemployment may rise at a faster level in Canada relative to the US should a deeper recession prevail.

On the positive side, non-residential investment continues to surprise to the upside, buoyed by healthy commodity prices and a robust pipeline of infrastructure projects.

Europe may experience a mild recession in 2023 but has thus far avoided a feared near-term energy crisis and deep recession.

Macroeconomic Conditions (Continued)

Mild winter weather has resulted in ample gas storage which has reduced the need for businesses to further ration energy consumption.

Manufacturing PMI surveys have modestly improved from October lows (although still indicating contraction) while German business sentiment has improved in recent months. Services PMI surveys also modestly improved in December and have generally remained relatively stable since August (no further worsening).

European governments have announced significant household and business support in the form of subsidies and price caps for energy. Furthermore, the NextGeneration EU recovery plan should also ramp up in 2023.

European companies should also benefit from China's reopening (especially auto, industrial machinery, and luxury consumer goods companies).

On the negative side, while headline inflation has continued to decline (9.2% YOY in December vs. 10.6% peak in October), core inflation increased to a peak of 5.2% YOY in December.

China is well positioned for above-trend growth in 2023

The abandonment of the Zero-Covid policy should result in a significant pent-up consumer spending.

Additionally, the government is actively applying policy support measures for the troubled property development sector (which should lead to increased completions in projects under development – again positive for economic activity).

Finally, government regulatory posture towards the internet, technology, and ecommerce sectors is becoming more friendly. This should benefit companies such as Alibaba and Tencent .

In Western economies, consumer spending and balance sheets have remained strong while business spending has begun exhibiting weakness (and will likely experience further pullback in 2023).

Shorter-term View

With slowing inflation data, markets are now questioning a) where do rates peak, b) how long do they stay there, and c) how will recessionary conditions impact corporate earnings.

In the US, there is uncertainty whether short-term interest rates will peak at 5% (vs. 4.4% today) or if they need to rise to 6% in order for inflation to return towards the Fed's 2% target.

Paradoxically, in the near term, bad economic news is good news for equity markets (to a certain degree) as weakening economic data increases the odds of pauses in central bank rate hikes or even pivots to easier monetary policy.

Markets are likely to cheer any gradual weakness in labor markets (i.e. orderly increases in layoffs and further progressive slowing in annual wage gains).

Investors have already priced in mild recessions occurring in H2 2023 or H1 2024.

Leading indicators in both the US and Europe have been slowing and have reached contractionary territory.

While consumer spending remains strong, excess savings built up during the pandemic appear to be roughly half depleted (in the US). Most economists are forecasting that this savings pool will be fully depleted by H2 2023 or early 2024.

Financial markets are forward looking and tend to price in recessions and the recoveries that follow 9-12 months ahead of actual data.

While many outcomes are still possible, a relatively mild recession for the US and Europe seems most likely given strong consumer and corporate balance sheets coupled with healthy banking sectors (especially in the US) and no obvious systemic bubbles that could cause large scale disruption to financial systems.

The next major question involves the trajectory for corporate earnings: How much do earnings fall vs. peak levels and when do they begin to recover?

In past recessions, earnings have declined by 10%-30% from peak levels.

While several uncertainties exist, we believe that earnings declines will be more muted this cycle (likely towards the lower end of the range).

Similarly, the snap back in earnings to begin the next upcycle may not be as large as those typically experienced in the initial years of economic recoveries.

China's reopening may also lead to different earnings trajectories for different geographies.

Shorter-term View (Continued)

China itself is likely to experience upside to projected earnings as companies benefit from pent-up demand coupled with operational leverage resulting from cost cuts undertaken over the past couple of years.

Europe's cyclical (autos, industrial machinery) and luxury goods companies may benefit from increased China consumer and business spend.

US companies will benefit least from China's reopening (relative to other regions)

We continue to see multiple potential paths for equity returns over the next 12 months (with reference to the S&P 500 which stands at 3,969 as of January 11, 2023).

Scenario A: (Optimistic Case) – Inflation moderates much faster than expected with a soft landing and a mild earnings recession. Fed pauses rate hikes in early 2023 and cuts by year-end 2023.

Under this scenario, we see goods inflation reaching firmly negative territory and services inflation starting to decelerate. The S&P displays earnings resiliency and investors price in that 2023 earnings represent trough earnings (with ~5% S&P 500 earnings declines vs. 2022) and look forward to resumption of earnings growth in 2024 with interest rates remaining stable / gradually declining. Equity markets may be near trough levels already (potential for another 5% declines) and could rally low DD to mid-teens over the next 6-12 months and end 2023 in the 4,200-4,500 range.

Scenario B: (Base Case) - Moderation in inflation and rate hikes in line with expectations coupled with a modest corporate earnings recession.

Under this scenario, goods inflation declines or moves to deflation while services and shelter inflation remain higher than desired. The Fed continues hiking rates with a Fed Fund terminal rate of roughly 5.0% reached in 2023. The US economy enters a mild/ moderate recession with 2023 S&P 500 corporate earnings down 7%-12%% vs. 2022. Under this scenario, the S&P 500 could likely decline 10%-13% from present levels to a trough. We expect markets to remain relatively range bound with periodic bouts of rallies and sell-offs as the ultimate path of rate hikes remains unclear. In this scenario, the market may end 2023 in the 3,800-4,200 range.

Most forecasters believe this scenario to be most probable in the range of outcomes. Again, most investors believe that H1 2023 may see declines of 10% or more for the S&P 500 followed by rallies to end to the year. We would not be overly surprised if the inverse happened where the S&P rallies 5%-10% to start the year as inflation drops more swiftly than expected and initial

Shorter-term View (Continued)

corporate earnings guidance is better than feared. However, the market may then give back gains later in the year as a) the lagged effects of rate hikes work their way through the economy resulting in significantly weaker H2 2023 earnings YOY and b) the rate of inflation slowdown stalls and markets worry that the Fed may restart rate hikes or keep rates higher for longer.

Scenario C: (Pessimistic Case) – Core inflation remains high or increases, leading to a repricing for higher Fed Funds terminal rate hikes and continued USD strengthening. A severe global recession with faster equity market declines followed by a sharp rebound once Fed policy pivots.

Under this scenario, investors begin to reprice Fed Funds terminal rates of 5%+. The chances of a global shock and severe recession increases. Under this scenario, S&P 500 earnings may decline 15%-20% and equity markets may decline by 20%+ from current levels over the next 6-9 months. However, such events also increase the chance for an ultimate swift Fed pivot with declining interest rates which would ultimately lead to sharp equity rallies. It is very conceivable under this scenario for the S&P 500 to fall to 3,000-3,200 level over the next 6-9 months followed by a sharp rally, ending 2023 at 3,500-3.800.

At this stage, outcomes are highly uncertain and may be influenced by a large number of external variables including China reopening, Fed and other central bank policies, and developments in the Russia / Ukraine conflict.

With regards to legging into equities, for investors with a mid-term (5-year+ framework), we would continue looking to begin adding to equities around the 3,500-3,600 S&P 500 level while becoming more constructive at the 3,200-3,300 range.

Equity Markets – Performance

Equity markets appreciated by 9.7% in USD terms during Q4 2022 (ACWI Index) and finished 2022 down 18.4%.

Global markets rallied 14.3% from 9/30 through November-end, before retreating 3.9% in December. Markets have further rallied 4.1% thus far in 2023 through Jan. 11th.

International markets significantly outperformed US markets during Q4 with international developed markets up 17.3% and emerging markets up 9.7% (vs. the S&P 500 up 7.4%).

European cyclical stocks benefitted significantly from China's shifting COVID policy (expected to lead to significant China re-opening growth in 2023) and from a mild European winter which greatly alleviated concerns regarding energy shortages.

The MSCI China Index appreciated by 13.7% during Q4 as investors cheered a) the change in COVID policy, b) leadership statements affirming policy support for the embattled property development sector and c) more positive governmental rhetoric towards the large ecommerce and Internet companies.

US stocks underperformed on a relative basis due to continued hawkish rhetoric from the Fed and because US companies have less exposure to China from an earnings standpoint.

Value stocks (+14.1% for Q4 and -7.5% for FY 2022) trounced growth stocks (+5.2% for Q4 and -28.6% for FY 2022).

Energy, industrials and materials sectors significantly outperformed during Q4 (up 16.0%-17.7%) while consumer discretionary, communication services, and technology sectors underperformed (down 0.5% to +5.2%).

Q4 corporate earnings season kicks off in earnest over the next few weeks. 2023 guidance will be heavily scrutinized in terms of a) revenue growth assumptions and demand outlooks and b) margins – input and labor cost outlooks.

Just as in Q3, cyclicals may continue to experience short-term gains post earnings season as many of these stocks are still trading at lower valuations with investors already discounting the potential for upcoming declines. However, certain cyclicals across industrial and materials sectors have already rallied sharply in Q4 in anticipation of a China recovery story.

Travel-oriented companies such as airlines and cruise lines may experience rallies as these companies should benefit from robust pent-up demand and operating leverage.

Large-cap technology companies may continue to face near-term pressure. Revenue guidance is likely below consensus expectations as corporations are increasingly scrutinizing IT budget spend. Additionally, margins may be squeezed as companies anniversary heavy headcount additions during 2022. Valuations are still at absolute multiples of 20x+ forward P/E, even if those multiples are well lower than 12 months ago.

Equity Markets - Performance (Continued)

For investors with a mid-term time frame, we continue to believe that stocks of high-quality companies will outperform given their strong business models, superior earnings growth and strong returns on capital.

Current valuations have significantly decreased for these companies relative to peak valuations at the beginning of 2022. However, there may be some near-term stock price weakness for these quality stocks (especially in the technology sector) as 2023 earnings estimates likely need to come down and valuations are not screamingly cheap on an absolute level.

In the near term, value stocks may continue to outperform growth stocks until investors gain confidence that a) interest rates are likely to decline or b) growth stock fundamentals are close to bottoming and analyst expectations are reset.

For the first time in many years, emerging markets may outperform US equities, largely driven by expected strength in Chinese equities.

Chinese equities (MSCI China Index) declined 60% from peak-to-trough (Feb 15, 2021 through Oct. 30, 2022) as China adopted a stringent Zero Covid policy, its property development sector came under increasing stress with highly publicized defaults of real estate developers, and the government adopted increasingly harsh regulations against internet and e-commerce companies (under a common prosperity framework)

In Nov. 2022, the government abruptly pivoted away from its Zero Covid approach. Predictably, infections soared and activity dropped rapidly over the next two months.

However, recent mobility data is trending upwards and China seems to be closer to herd immunity. As such, it is highly likely that China will experience a period of snap-back above-trend post-pandemic growth (similar to that experienced in 2021 for western nations)

Chinese equities should continue to benefit from a trifecta of positives in 2023 including a) earnings upgrades driven by better-than-expected top-line growth coupled with operating leverage, b) loose monetary policy with support extended to real estate developers, and c) more favorable regulatory approach towards the ecommerce and technology sectors.

While the market has already priced in a significant amount of the anticipated COVID rebound (MSCI China index up 48% and the China Internet ETF up 83% from Oct. 2022 troughs), the MSCI China Index still remains 45% below prior peak levels.

Equity Markets - Performance (Continued)

Equity Indices (as of 12/31/2022)

Total Returns (%) – USD

	YTD 1/11/2023	Dec-22 Qtr	Annualized Returns 1Y	3Y	5Y	7Y
US Large Cap (S&P 500)	3.4%	7.4%	-18.7%	7.1%	8.9%	11.0%
US Small Cap (Russell 2000)	4.7%	6.2%	-20.4%	3.1%	4.1%	7.9%
MSCI EAFE	4.5%	17.3%	-14.4%	0.9%	1.5%	4.5%
MSCI Emerging Markets	6.4%	9.7%	-19.5%	-2.7%	-1.4%	5.2%
MSCI ACWI	4.1%	9.8%	-18.4%	4.0%	5.2%	8.1%
<u>US Style Factors</u>						
MSCI US Quality	3.2%	9.2%	-23.0%	6.2%	9.9%	11.6%
Russell 1000 Growth	3.4%	2.2%	-29.5%	7.8%	11.0%	12.9%
Russell 1000 Value	3.7%	12.4%	-7.4%	6.0%	6.7%	9.1%

Equity Markets - Valuation

Equity markets are generally fairly valued to modestly undervalued relative to historical averages.

The S&P 500's forward P/E multiple has compressed from 21.5x at the beginning of 2022 to 17.5x today (modestly above historical averages).

International developed markets are trading at 12.6x forward earnings (roughly 10% below historical averages) while emerging markets are trading at 12.3x forward earnings (modestly above its 11.8x historical average).

However, confidence in forward earnings is much lower than normal given the backdrop of high interest rates, inflation, geopolitical tensions, and higher potential for a recession.

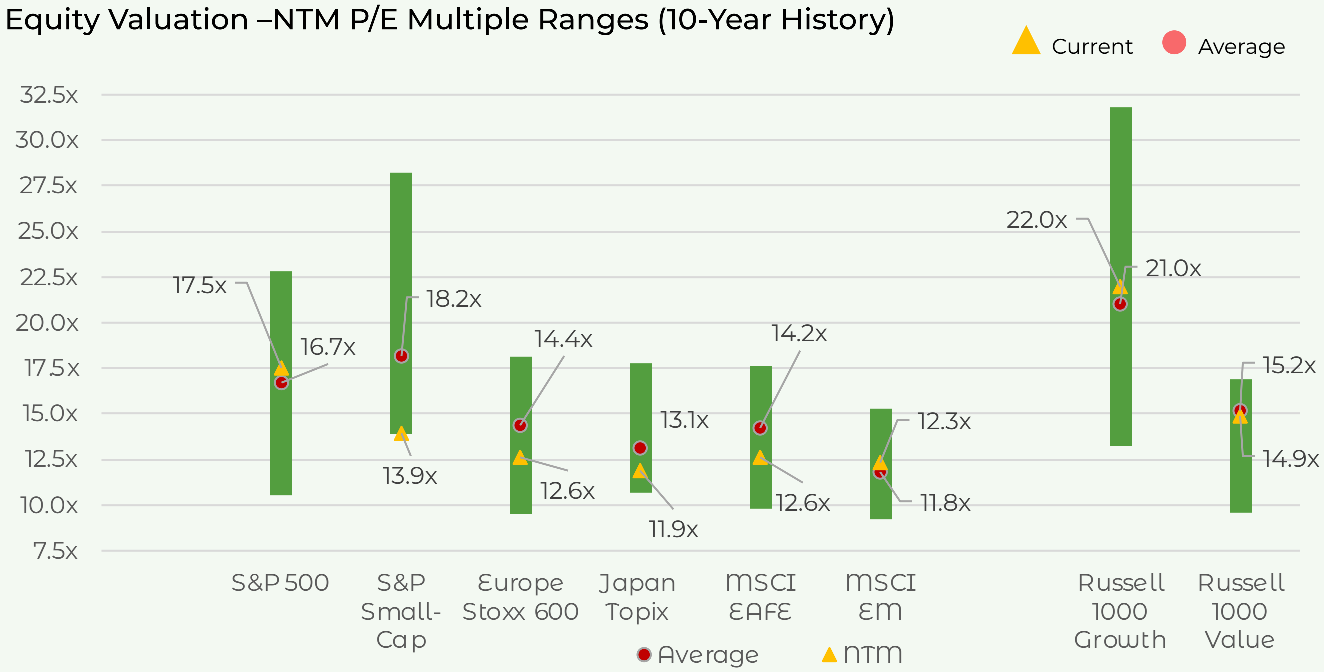
The China reopening story also represents a significant wildcard and may lead to disparate earnings growth for different markets.

Equity market valuations are no longer cheap compared to bonds.

The S&P 500 presently trades at 17.5x consensus NTM earnings (which are likely too high). Historically, the S&P 500 earnings yield (inverse of multiple) has averaged 250-350bps over 10-Year Treasuries. Based on that metric, a 14.5x-16.5x forward EPS multiple is "fair" for the S&P 500.

Additionally, our mid-term return outlook for credit (high yield bonds and leveraged loans) is similar to that for equities, with lower risk.

Equity Valuation –NTM P/E Multiple Ranges (10-Year History)



Fixed Income Markets - Performance

Safe fixed income (government bonds and corporate investment grade bonds) appreciated by 1.9% in Q4 as interest rates declined modestly and spreads tightened.

Central banks hinted that interest rate hiking cycles were nearing completion. The frequency and magnitude of hikes anticipated in 2023 is much less than in 2022.

Inflation data came in lower than expected across multiple reports while manufacturing data continued to weaken. As such, the yields along the interest rate curve from 2-to-10-year maturities declined as investors surmised that the Fed was closer to pausing rate hikes and that the economy may tip over into recession (which would necessitate rate cuts in the future).

Both high yield bonds and leveraged loans appreciated in Q4 (albeit for different reasons).

HY bonds appreciated 4.2% in Q4 (-11.2% for FY 2022). During Q4, HY bonds benefitted from declines in base rates (mid-term Treasuries) coupled with spread tightening of 80bps.

Leveraged loans appreciated by 2.7% in Q4 (-0.6% for FY 2022) and benefited from increases in the SOFR base rate (which increased form 3.0% at the end of Q3 to 4.3% by the end of Q4). Additionally, leveraged loans benefitted from high current income and stable spreads over the course of Q4.

Fixed Income Indices – Characteristics and Performance in USD

(as of 12/31/2022)

	% Ret YTD 1/11/23	% Ret Dec-22 Qtr.	Annualized Returns 1Y	3Y	5Y	7Y	Duration (yrs)
US Treasury	1.9%	0.7%	-12.5%	-2.6%	-0.1%	0.4%	6.2
US Corp. IG	2.8%	3.6%	-15.8%	-2.8%	0.5%	2.1%	7.3
US Corp HY	3.2%	4.2%	-11.2%	0.0%	2.4%	5.5%	4.1
US Corp Lev. Loans	1.5%	2.7%	-0.6%	2.5%	3.3%	4.3%	NA
Barclays US Aggregate	2.3%	1.9%	-13.0%	-2.7%	0.0%	0.9%	6.3
Barclays Canada Agg. *	2.0%	0.3%	-11.3%	-2.2%	0.3%	0.8%	7.4

** Barclays Canada Aggregate Index returns in CAD*

Fixed Income Markets - Valuation

Safe fixed income (government bonds and investment grade corporate bonds) yields remained at high levels during Q4.

US Treasuries are yielding roughly 4.0%-4.6% for 1-to-2-year maturities and 3.6% for 10-year maturities.

US corporate investment grade bonds are now yielding 5.0% (with risk of default very low).

Corporate spreads (investment grade and high yield) tightened during the quarter.

IG spreads tightened significantly from 160bps at 9/30 to 130bps at 12/31, while high yield bond spreads tightened from 552bps at 9/30 to 460bps at 12/31 (and have further tightened to 420bps as of 1/11/23).

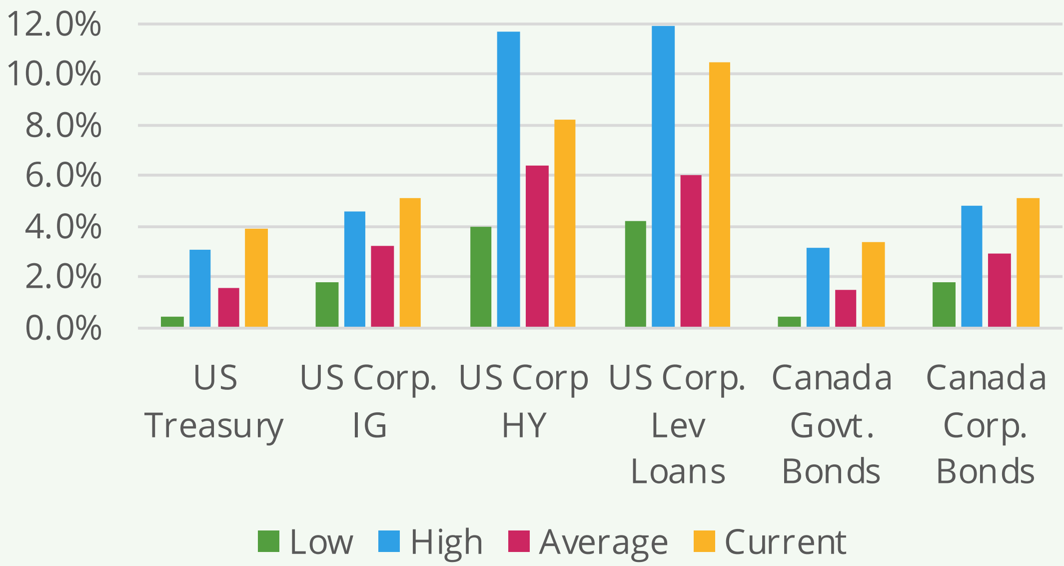
In prior recessions, high yield spreads generally increased to 800bps and briefly reached 1500bps during the GFC. However, the quality of the high yield index is much stronger now than in previous periods. When coupled with today's high base rates, it is unlikely that spreads will widen to those experienced in previous recessions (even if economic activity slows substantially).

Credit performance remains generally strong with default rates well below historical levels. However, signs of stress are starting to emerge with default rates and bankruptcy filings increasing (off very low base levels).

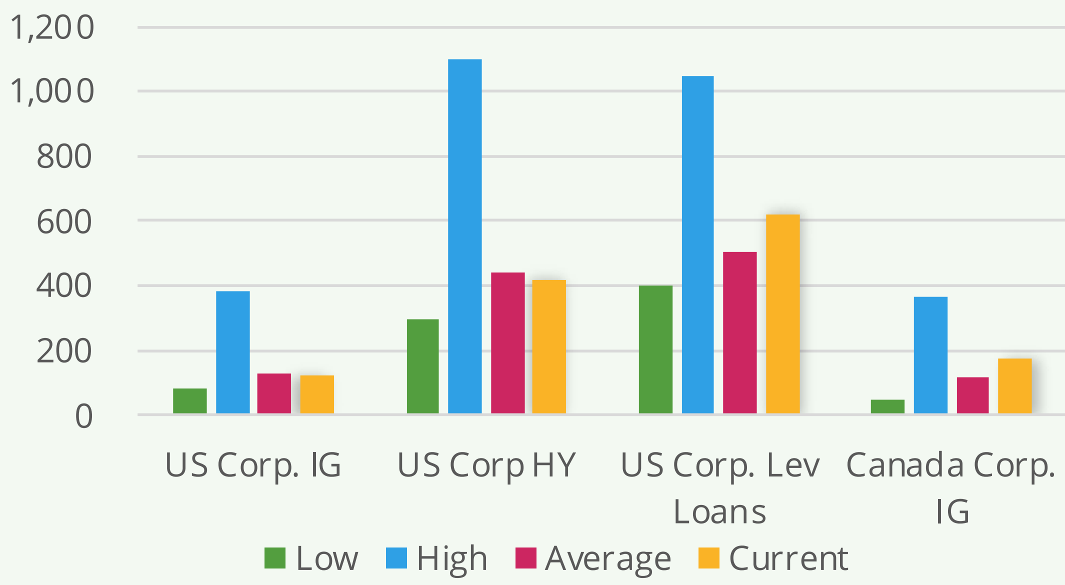
Defaults are likely to increase in 2023 and 2024 as economic growth slows, corporate earnings decline, and companies with weak balance sheets or nearer-term refinancing obligations face capital raising challenges. We expect that the default severity will be much lower than that experienced during the GFC.

Fixed Income Markets - Valuation (Continued)

Fixed Income **Yields** – 10-year History



Fixed Income **Spreads** – 10-year History



Alternatives and Private Investments

The HFRX Hedge Fund Index was up 0.2% during Q4 and -4.4% for FY 2022.

Equity hedge and credit strategies performed best in Q4 (+1.7% and +2.4%) while event driven and macro / trend following strategies performed worst (-2.0% and -2.2%).

For FY 2022, global macro and merger-arbitrage strategies performed best (+3.7% and 0.3%) while credit strategies (-11.5%) performed worst.

Private real estate fundamentals remain reasonably strong (especially in apartment and industrial properties) but are showing signs of moderating growth with rental rate growth having peaked.

On a YOY basis., multi-family rents increased by low DDs.   However, rents have started to decline on a sequential basis. As such, YOY rental growth should slow to the mid-SD range for 2023. Industrial properties are still experiencing 20%+ rental growth increases for new leases.   However, industrial lease terms are longer at 4-5 years and provide multi-year visibility of mid-SD rental growth for industrial portfolios.

Cap-rates have risen given the sharp increase in debt funding costs.

Multi-family cap-rates have risen from mid 3% levels in US sunbelt cities to roughly 4.25%-4.5%.

Real estate continues to be an attractive hedge to inflation given the ability for rental resets.

However, sales volumes were down materially in 2022 as cap rates rose and property valuations declined.

Refinancing risk is an area to closely monitor as substantial commercial real estate debt matures over the next few years.

Private equity 2022 performance (on a pooled basis for existing funds) has remained relatively flat to modestly down. Deal activity and exits remained muted in Q4 with FY 2022 activity well below 2021 record levels

According to Prequin, US buyout deal activity slowed to roughly $50 billion per quarter in Q3 and Q4 (similar to pre-pandemic levels but well below the $120 billion per quarter average from Q4 2020 through Q2 2022).

On average, middle market deal valuations have modestly compressed (although sponsors remain willing to pay higher multiples for high-quality, recession-resistant businesses).

Leverage levels on deals have reduced by 1.0x-1.5x turns thus far and on occasion, sponsors are completing deals on an all-equity basis.

Alternatives and Private Investments (Cont.)

US PE dry powder remains robust at $1 trillion which should support deal valuations.

Existing venture capital funds (pooled return) has delivered a -15% YTD decline through Q3 (latest date available). Venture capital deal activity declined significantly in 2022 and exits plunged. However, fundraising for FY 2022 remained at record-high levels.

Thus far, valuation declines have been limited to public positions mark-to-market and write downs of later stage assets. Valuations for earlier stage (Seed through Series B) have remained relatively flat as most of these companies are well funded, still growing robustly, and are able to utilize last funding round valuations.

2022 deal value declined to $238 billion vs. $345 billion in 2021 while exit activity declined dramatically to $71 billion in 2022 vs. $753 billion in 2022. In fact, Q4 2022 exit value of less than $10 billion was the lowest since 2013.

Actionable Investment Opportunities

"Safe" fixed income is offering attractive absolute yield levels.

4%+ yields to maturity for US and Canadian Treasury bonds (for short maturities of 1-2 years).

Investments in shorter-duration Treasury / government bonds can also serve as cash substitutes for funds held in anticipation of other higher-return investments or other needs in this window.

Similarly, investment grade corporate bonds are now offering 5% yields to maturity.

Public market high-yield bonds and leveraged loans are also interesting, especially for those investors with longer time horizons, and who are able to tolerate mark-to-market volatility.

We project 7-year annualized high-yield bond returns of 7.0%-7.5% (attractive vs. equities on a risk-adjusted basis).

Leveraged loans are now yielding 10.5% based upon the 3-year takeout convention. Even with losses from defaults expected to rise over the next two years, we expect 7%-8% annualized returns over a multi-year period. However, high-yield bond and leveraged loan spreads may widen further in a recession, which may make short-term performance more volatile.

Certain esoteric parts of the market (high-yield structured finance) are now yielding high-single digits to low-teens with very limited risk of permanent losses (the securities could certainly have mark-to-market volatility)

European credit markets (both public and private) remain highly dislocated.

Private credit strategies are also highly appealing (offering potential returns from low double-digits to mid-to-high teens).

Private direct lenders are increasingly taking share from traditional syndicated markets. With syndicated leveraged loan new issuance volumes declining (due to recessionary fears), private lenders should be able to increase pricing and demand better covenant protection.

Opportunistic credit funds should benefit from a wider range of higher-returning potential investments including a) dislocated publicly-traded bonds and loans and b) opportunities to provide bespoke bi-laterally negotiated credit solutions such as rescue financing or balance sheet restructuring to corporations.

Venture debt is increasingly interesting as the borrower universe has expanded (larger, more-established borrowers), expected yields have increased, and terms have become tighter and stricter.

Actionable Investment Opportunities (Cont.)

The loans also have an attractive amortization component which leads to an attractive de-risking element.

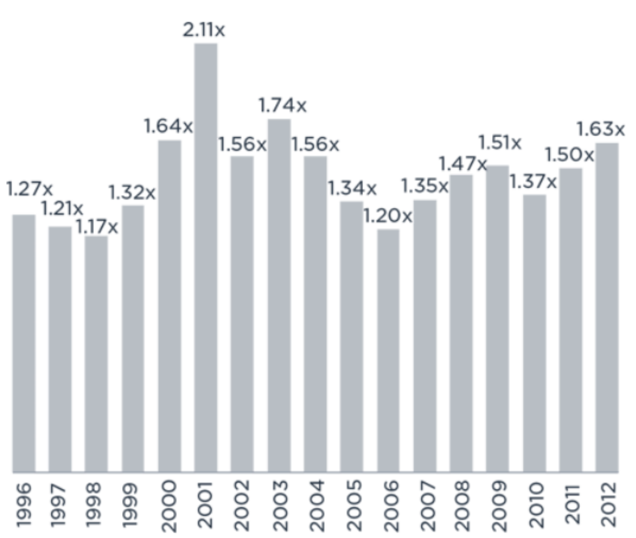
New allocations to private equity are also becoming more interesting (especially across certain segments).

The secondary market is likely to yield attractive opportunities later this year. Several institutions are overallocated to PE and Venture Capital versus their Investment Policy Statements (as a result of the decline in public equities and fixed income). As such, these institutions may increasingly sell portions of their private holdings through the secondary market.

The significant public market valuation declines for high-growth companies should filter through to private growth equity and venture markets, resulting in more attractive investment opportunities for funds currently raising capital

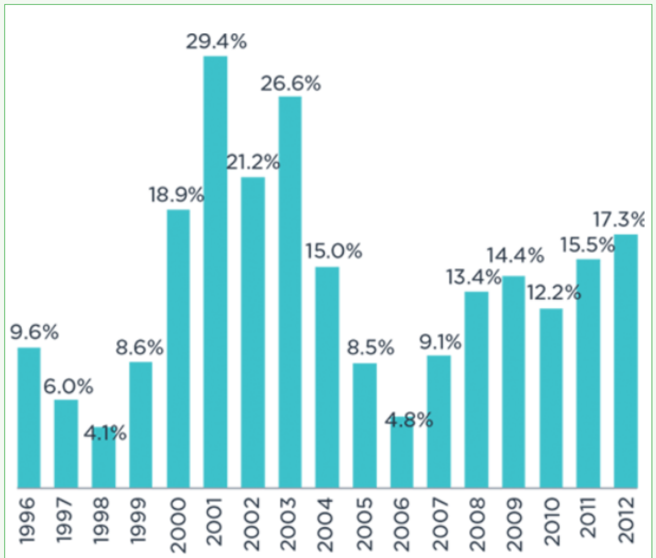
Historically, private equity vintages launched in or just after recessionary periods have exhibited the highest returns over time.

Pooled TVPI seven years since inception by vintage year



Source: PitchBook | Geography: Global
As of June 30, 2019

Pooled IRRs seven years since inception by vintage year



Source: PitchBook | Geography: Global
As of June 30, 2019

Professional Sports as Investments

Investments in professional sports teams have delivered attractive absolute returns over the past twenty years while also outpacing market indexes on a relative basis.

From 2002 through 2021, the average NBA team's price appreciated 1,057% cumulatively while MLB, NHL, and NFL teams increased by 669%, 558%, and 467% percent vs. the S&P 500's cumulative price return of 441%.

As seen in the chart below, sports valuations have exhibited lower volatility than public markets and have proven to be relatively uncorrelated to financial markets as well.

Sports franchises valuations are supported by lucrative assets and sources of recurring revenue (mainly long-term contractual rights to broadcasting and streaming live games).

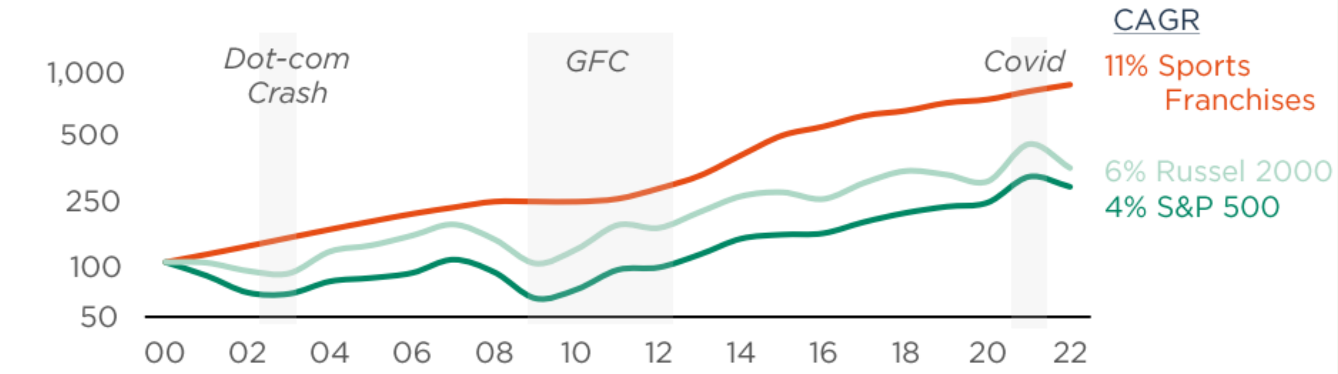
Sports is one of the few entertainment forms that consumers demand experiencing in a "live format."

As such, media rights packages and advertising deals continue to become more lucrative for teams.

Sports teams are limited in terms of supply and therefore benefit from a scarcity premium.

Additionally, access to new investors was highly limited (especially in the US) and restricted. Over the past several years, leagues are gradually relaxing ownership restrictions which has led to significant investment interest.

Valuation Growth of Sports Franchises vs S&P 500 Companies



Source: Forbes, Capital IQ; franchises includes all NBA, NFL, MLB and NHL teams; log scale, as of Jun 22

Professional Sports as Investments (Continued)

Institutional investment from private equity has increased dramatically over the past 5 years.

Historically, club ownership was restricted to ultra-high net worth families and individuals. Teams had little need for institutional capital and therefore little incentive to reduce barriers to entry by relaxing restrictive league ownership rules.

However, a sea change occurred from 2019-2021 whereby most American sports leagues (MLB, NHL, MLS, and NHL) all changed their ownership rules to allow select PE funds to make minority investments in one or more teams.

The teams and leagues wanted fresh sources of liquidity and growth capital to take advantage of evolving opportunities in content monetization.

Rather than being viewed as a hobby for ultra-wealthy individuals, teams are increasingly seeking business-like financial and operational management.

Teams are turning to private equity partners that can help them control more aspects of their intellectual property and increasingly monetize their content.

PE deal activity has exploded to $12.5 billion over the past two years (equivalent to levels experienced over the prior six years).

Transaction types include minority stakes in teams, rights assets purchases, and multi-asset holding companies.

Leading institutional PE firms with a sports investing specialty include Arctos (largely minority stakes in teams) and Redbird (minority stakes in teams, creation of de-novo content monetization companies).

The proliferation of billionaires with expanded family offices coupled with increasing private equity demand should help support healthy demand for highly scarce assets.

Actual transaction values for sports teams have often well exceeded most recent appraisal values (Forbes is the leading appraiser). Notable recent transactions include the following:

- In 2022, the Denver Broncos sold for $4.65 billion (a record for a North American sports franchise) and the Phoenix Suns / Mercury were sold for $4 billion.

Professional Sports – Revenue Sources

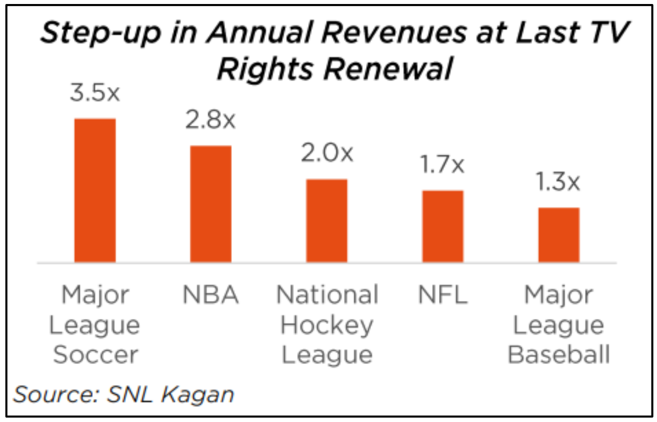
Professional Sports teams generate revenues from the following sources:

Media rights and sponsorship (65% of revenues): These revenues are recurring and backed by long-term contracts (7-10 years with price escalators). Given the allure of live sports and the increasing number of media participants (traditional broadcasters, cable companies, Amazon, Apple), sports media rights revenues have increased by a 20% CAGR over the past 5 years driven by massive step-up increases in revenues from new rights packages upon expiration of old agreements.

Ticketing (25% of revenues): This revenue source is highly sticky. For top-teams, ticket sales are generally oversubscribed with a greater than 80% renewal rate (fans fear of wait lists). Ticket demand has generally been inelastic with sports teams having a high degree of pricing power.

Real estate and ancillary revenues (10% of revenues): Many teams own real estate that can be utilized for non-sporting revenues as an example (shows and concerts). Other ancillary revenues include merchandising.

In addition, several new monetization areas are emerging including sports betting, internationalization (US teams foreign revenues are underpenetrated at 16% for the NBA and 6% for the NFL vs. 46% for the English Premiere League).



US teams are becoming increasingly profitable driven by above-average revenue growth coupled with effective cost control (collective bargaining agreements and salary caps have steadily reduced player costs as a % of revenues).

Today, almost all franchises across the four major US sports leagues are profitable and over half had operating margins greater than 20% (vs. only 15% of teams ten years prior to that).

Professional Sports – Institutional Investors

There are a variety of institutional investors increasingly investing in sports teams and related assets. However, relative to other sectors, there are still a fairly limited number of participants with roughly 20 firms actively investing in the space.

PE firms with a specialty in sports investing including Arctos, Dyal Homecourt Partners and Redbird.

Arctos and Dyal Homecourt have generally taken minority positions in sports teams. In addition to taking minority interest positions in sports teams, Redbird has successfully developed de-novo companies aimed at monetizing content or other revenue sources for teams and leagues.

Larger PE firms such as Ares and KKR have also participated on a much lesser scale.

BCA is actively researching the industry and carefully considering its opportunities and risks.

The sector is intriguing given the revenue visibility and growth profile, lack of correlation versus the broader equity markets.

There are increasing opportunities to invest in specialty PE funds, though the segment remains relatively inefficient and less-trafficked.

However, this institutional investor sector is relatively immature with a short history of realizations through exits thus far.

The PE firms investing in the space have funds that are earlier in their lifecycle with ultimate track records still to be determined.