A Letter from Gregory J. Fleming

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January 2015

As we enter a new year filled with opportunities and challenges, we do so cautious that no one has a crystal ball and that global financial markets can often surprise. In the U.S., following the end of the Federal Reserve’s quantitative easing program, the market awaits the seemingly inevitable increase in interest rates. Conversely, Europe’s approach to easing is yet to begin and, although there is some positive economic growth, dispersion exists across the region. The Bank of Japan’s bold approach to propagating economic growth is underway, with a massive monetary expansion it hopes will have a positive and lasting impact upon the nation’s economy, where other initiatives have failed in the past.

Our latest issue of the *Morgan Stanley Investment Management Journal* contains articles in which our authors delve into some notable opportunities offered worldwide, such as the global asset-backed market, and why high quality companies continue to be compelling equity investments. Our investment professionals also draw parallels between China’s current investment bubble and the Asian crisis of the late 1990s, examine the growing interest in emerging manager hedge funds and look at the merits of retaining the potential benefits of private markets, as well as beta stability in U.S. endowment funds.

We think these discussions showcase our firm’s capacity and commitment to add value. As always, Morgan Stanley stands ready to assist you in meeting your investment needs. Thank you for reading our *Investment Management Journal*, and let me close by wishing you good fortune for the coming year.

Sincerely,

Gregory J. Fleming
President, Morgan Stanley Investment Management
President, Morgan Stanley Wealth Management
Asian Crisis Redux?

Global growth deceleration led by Asia, falling commodity prices, disinflation, a strong U.S. dollar, and stubbornly low U.S. bond yields despite strong U.S. growth are eerily reminiscent of the second half of the 1990s. We say eerily because the global economy barely skirted a recession back then and the question is whether it will be as lucky today. Below, we take a closer look at this parallel, and our conclusion warrants caution.

Both back then and now, at the epicenter of the problem is a tremendous misallocation of resources accompanied by a credit boom in Asia. In the mid-1990s, massive overinvestment by chaebols¹ in Korea, overbuilding of infrastructure in Indonesia and excessive speculation in real estate in Thailand were all accompanied by credit booms, in many cases foreign funded. Investment as a percent of GDP for these countries exceeded 40 percent shortly before or around the time of the crisis (Display 1). Likewise, China’s investment reached 50 percent of GDP last year, an extreme level, but activity in that segment has been deteriorating sharply. Fixed asset investment growth has slowed from 25 percent in 2010 to 13 percent year-to-date, the property market is in a downturn with sales currently falling almost -12 percent versus last year (Display 2) and property prices have declined for the past seven months.²

¹ A business conglomerate structure that originated in South Korea in the 1960s, creating global multinationals with huge international operations. The word “chaebol” means “business family” or “monopoly” in Korean.

Past performance is not indicative of future results.

Historically, an inflating investment bubble of similar magnitude has lifted GDP growth to 7 percent per year, on average. When the investment bubble subsequently deflates (after the ratio of investment-to-GDP peaks), GDP growth has tended to halve (Display 3). After reaching nearly 8 percent in the early part of the 1990s, growth in emerging Asia (ex-China) slowed to below -2 percent in 1998. And during the five years following the peak in the investment bubble, emerging Asia’s GDP growth averaged below 4 percent. By comparison, during the post-2008 investment binge, China’s GDP grew at 9 percent per year, on average. If history is any guide, China’s growth during the next five years should slow to 4 to 5 percent, absent a financial panic.

Display 1: China’s excessive investment
Gross Capital Formation as a % of GDP


Display 2: China property market in downturn
China Residential Property Sales (% YoY)


That there won’t be a panic is not a foregone conclusion. The investment booms both then and now were enabled by new forms of financing which came into existence as a result of supposed “liberalisation” or “reform” in financial markets. In the Asian crisis, the deflation of overinvestment bubbles was exacerbated by foreign investor panics in countries which had come to rely on foreign funding. GDP growth in Korea, Indonesia, Malaysia, and Thailand contracted by roughly 10 percent in 1998 amidst sharp currency devaluations. We have written previously about the possibility of a panicky unwind of speculative excesses in the credit system in China (the Minsky Moment we described in our March 2014 Viewpoint). While the probability of a turn in psychology is difficult to forecast, our sense is that it could be significant, given the magnitude of excesses (Display 4).

Display 3: History predicts halving of growth after investment bubble
Average GDP Growth (Ex-China) Relative to Peak in Investment-to-GDP

Source: The Penn World Table, MSIM Global Emerging Markets Equity Team and Global Multi-Asset Team analysis. Data includes all occurrences in emerging markets (10, ex-China) of investment-to-GDP peaks in excess of 40% since 1960. Note: Investment-to-GDP defined as Gross Capital Formation as a % of GDP.

Display 4: History predicts halving of growth after investment bubble
Average GDP Growth (Ex-China) Relative to Peak in Investment-to-GDP

Source: Global Insight, Haver Analytics, MSIM Global Multi-Asset Team Analysis. Data as of October 2014.

Notes:
3 Source: Global Insight, Haver Analytics, MSIM Global Multi-Asset Team Analysis. Data as of October 2014.
4 Source: Global Insight, Haver Analytics, MSIM Global Multi-Asset Team Analysis. Data as of October 2014.
If China’s GDP growth were to slow to 4.5 percent, global growth could decelerate from its current pace of 2.7 percent to 1.5 percent, everything else being equal. Over the past 30 years, global growth has never slowed to this level outside of global recessions. But everything else is never equal, and below we list four clear differences between the Asian crisis and current global conditions. On balance, these considerations do not appear to alter the fundamental case for at least some degree of a decline in global growth.

First, China’s bigger role in global growth relative to Asia’s in the 1990s makes the current situation more impactful. Emerging Asia, including China, accounted for about 20 percent of global GDP growth in 1996-1997, whereas the U.S. contributed a third. Today, China contributes over a third (with the rest of emerging Asia at 15 percent), while the U.S. contributes only 23 percent (Display 5). Thus the deflation of China’s investment bubble would likely have a bigger relative influence on global growth, while the U.S. economy, even if it withstands a China-led global slowdown, would not be large enough to offset it entirely.

Second, the U.S. economy is not only relatively smaller today but also room for policy stimulus is narrower. In response to the Asian crisis, the Fed funds rate was cut by 75 basis points in the fourth quarter of 1998 from 5.5 percent to 4.75 percent. Constrained by the zero bound, monetary loosening, even if quantitative easing were to be rekindled, is unlikely to be as effective today. Needless to say, neither the eurozone nor Japan — where policy rates are at zero and quantitative easing measures are being implemented — is likely to be much of an offset either. Given existing government debt burdens in the majority of advanced economies, fiscal stimulus would have to be an extreme emergency measure.

Third, in the late 1990s the U.S. was experiencing an IT-based productivity boom. U.S. productivity was growing at approximately 2.5 percent, and nonresidential fixed investment was growing at 12 percent in 1996 to 1998. Over the past three years, by contrast, U.S. productivity growth has struggled to exceed 1 percent, and its capex cycle has been relatively subdued (closer to 5 percent growth) and sensitive to global, rather than domestic, growth conditions. Thus U.S. GDP growth has averaged 2.2 percent since 2010, compared

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Source: Global Insight, Haver Analytics, MSIM Global Multi-Asset Team Analysis. Data as of October 2014.

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Ibid.
The deflation of China’s investment bubble is likely to mimic historical patterns in financial markets. As in the late 1990s, lower commodity prices and slower global growth will likely lead to lower inflation in advanced economies, capping nominal bond yields. Commodity users (such as the U.S., Japan, Europe, India, and Turkey) will benefit and may outperform. Weaker commodity prices will lead to lower growth and weaker currencies in commodity-producing economies. The relatively stronger U.S. economy, while unable to counterbalance the overall slowdown, will likely continue to support the U.S. dollar.

In contrast to the late 1990s, we think global corporate profits will disappoint, posing a risk to the equity bull market. If China leads a global growth slowdown more severe than the downturn in 1998, global corporate profits could actually shrink. U.S. equities would be vulnerable in that context. They are expensive, trading at 15.4x forward earnings, or 24 percent above their historical average.\(^7\) Profit margins appear to be near the upper end of their 60-year range and peaked in National Income and Product Accounts (NIPA) terms at the end of last year. Historically, a peak in NIPA profit margins has preceded declines in S&P 500 profit levels by three to four quarters. Moreover, the U.S. listed corporate sector could be more vulnerable today, given that it is more dependent on emerging markets than in the 1990s: emerging economies contribute 15 percent to U.S. profits today versus a de minimis share back then.\(^8\)

In conclusion, we note that, although risky assets have seen a pronounced correction in recent weeks, we believe the above-discussed scenario is more likely to unfold gradually over several quarters. During past years we have seen numerous episodes of mild policy-driven cyclical upswings. While we are confident about the overall direction of growth in China and its implications for global growth, we allow for the possibility of further temporary deviations from this path in the near-term.

\(^7\) Source: Bloomberg LP. Data as of October 2014.

\(^8\) Source: Compustat. Data as of October 2014.
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Executive Summary

Post-financial crisis, central banks across the globe adopted accommodative monetary policies through targeting a reflation of asset prices that they believed would ease financial conditions most in an attempt to stabilize their economies. One of the major beneficiaries of this post-crisis period style of monetary accommodation has been commercial and residential real estate. This condition still exists today and creates a strategic opportunity for investors to invest consistent with central bank policy objectives in the U.S., perhaps even more so in Europe.

Our team believes asset-backed securities (ABS), such as residential mortgage-backed securities (MBS) and commercial mortgage-backed securities (CMBS), currently offer compelling tactical investment opportunities for those institutional investors willing to assume a greater degree of risk than more traditional fixed income investments. We find many of the features of ABS to be very attractive: possible high loss-adjusted yields, short durations, less sensitivity to rising interest rates and structural protections such as overcollateralization.

Today, experienced managers can find legacy ABS that are conservatively priced and trading at a discount to face value. Such discounts seek to provide protection against potential future losses and create positive optionality, meaning that should future losses be lower than market expectations, investors would reap additional returns. Two main scenarios would drive this positive dynamic: a recovery in the underlying assets or lower realized default rates, or possibly a combination of both.

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This white paper is highly technical and you should seek advice from your financial professional prior to making any investment.
Additionally, despite record-low interest rates, we have observed a significant funding gap. While real estate market activity has been picking up, bank lending remains stubbornly low, perhaps due to more stringent bank lending standards. Policymakers, especially in the eurozone, are actively seeking ways to recatalyze and support securitization markets as a means of providing funding to the real economy and transferring risk away from the sovereign to the nonbank private sector. We believe this situation affords nonbank participants the opportunity to provide short-term financing on desirable assets at attractive terms—an investment opportunity for us.

The Strategic Investment Opportunity

The strategic component of this investment opportunity stems from policy actions from central banks to support ABS assets. Functionally, this is also a primary driver of potential returns. Understanding this key driver guides our top-down investment approach and enables us to better understand and anticipate risks and opportunities.

The investment opportunity for global asset-backed securities is intertwined with the policy reaction function from central banks that have been forced to engage in unconventional forms of stimulus as policy rates have moved towards zero percent. When policy rates near this level, also known as zero lowerbound, central banks tend to resort to directing stimulus toward financial assets with the goal of easing financial conditions. One of the ways we measure this policy reaction function is through our Financial Conditions Index (FCI).2 We use our FCI to measure this approach that policymakers use to evaluate their policy actions by quantifying its impact on observable market prices. Since an increase in real estate asset values is an essential part of both an economic recovery and a reduction in systemic risks in both the U.S. and Europe, the policy reaction function from central banks tends to target a reflation of this asset class in order to ease financial conditions. Thus, investing consistent with this policy reaction function presents a potentially great opportunity to investors.

The prices of ABS fluctuate in response to changing interest rates in the general economy and some ABS are subject to the risk that a change in rates may influence the pace of prepayments of the underlying loans, which, in turn, affects yields. Most revolving ABS are subject to early amortization events, also known as payout events or early calls. And all ABS are subject to the risk of default.

Display 1: Unconventional policy support reduces net issuance of bonds creating scarcity value and reflating asset prices

While investing in global ABS may be consistent in terms of the goals and influence that policymakers are trying to exert on asset prices, we must recognize that the U.S. and Europe are at very different points in the post-crisis recovery cycle. For instance, since the crisis, some ABS have recovered more rapidly in the U.S. with the assistance of government support, such as the Federal Reserve’s (Fed) agency MBS purchase program and Term Asset-Backed Securities Loan Facility (TALF). Meanwhile, some ABS have recovered more slowly in Europe with support from the European Central Bank’s (ECB) Long-Term Refinancing Operations (LTRO),3

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2 Financial Conditions Index (FCI) is a measure of the impact of central bank policy on observable financial asset prices, such as equity indices, short-term interest rates, intermediate-term interest rates, credit spreads and the trade-weighted values of the currency. “Investing in a Non-Traditional Policy World: Introducing our Financial Conditions Index,” Jim Caron, Morgan Stanley Investment Management, 2012.

3 The ECB’s long-term refinancing operation is a process by which the ECB provides financing to eurozone banks. The stated aim of the LTRO is to maintain a cushion of liquidity for banks holding illiquid assets, and thus prevent interbank lending and other loan origination from seizing up as they did in the credit squeeze of 2008.


Note: Net issuance is defined as gross supply less maturing debt, less Fed purchases where applicable. F2014 represents forecasted data.
and direct funding programs such as the Bank of England’s (BoE) Funding for Lending Scheme (FLS). The difference in the post-crisis recovery cycle presents diversification opportunities between U.S. and European ABS, which may have the additional portfolio effect of reducing correlation risks without sacrificing yield.4

New policies from the ECB, such as Targeted Long-Term Refinancing Operations (TLTRO), and possibly the initiation of quantitative easing (QE)5 that is thought to target purchases of ABS, may further spur the process of asset reflation across the eurozone, which in many instances has caught up with the U.S. This form of unconventional policy support gains traction by reducing risk premiums and creating scarcity value for certain assets, which is what central bankers refer to as the “portfolio rebalancing effect” (Display 1). We believe there is still great opportunity for some other asset-financing vehicles that may not fit standard asset criteria or credit qualifications and have not yet experienced a similar recovery to those in broader markets. These sectors are often “orphaned,” meaning that there are limited exit opportunities for sellers in the secondary market and an inactive, or broken, new-issue market. Currently, they offer high risk premiums to compensate investors. In addition, risk- and rating-based capital rules have constrained traditional ABS investors and, in some cases, even forced them to liquidate assets.

Underscoring the linkage between policy support and the performance of ABS, including the stated goal for policymakers to have a well-functioning and robust securitization market in Europe, is a joint paper written by the ECB and BoE.6 The conclusion of this paper states the reason to support this asset class is to produce economic stimulus by creating credit for the real economy, creating an efficient funding vehicle for bank assets in order to free up capacity for additional lending and transferring credit risk between the bank and nonbank sectors.7 Since the banking sector is a contingent liability on the sovereign, meaning that a country typically is financially responsible for banks should they default, a transfer of risk away from the bank sector also reduces sovereign risk. As a result, elected officials, policymakers and regulators’ interests are generally aligned to not only support the “high-quality” segment of the securitization market but also support the more junior tranches in order to ensure the overall viability of this asset class.

Display 2: Sovereign risk matters – Peripheral RMBS spreads widened despite low default rates due to rising sovereign risks

European Peripheral RMBS

Source: Citi Bank European Research. Data as of August 1, 2014. We define peripheral Europe in this analysis as Portugal, Italy, Greece, Spain and Ireland.

Valuing Sovereign Risk is Critical

While it is beneficial to securitization markets to have policy and regulatory support, it is also very important to incorporate the risk of the sovereign. In Display 2, we illustrate the performance of peripheral European RMBS from the pre-crisis period to the post-crisis period. For sure, there are idiosyncrasies attached to each RMBS between Portugal, Italy and Spain that stem from banking and financial sector differences in leverage, private investment and economic growth that differentiate these markets. However, a strong common feature these markets share is their connection to sovereign risk.

6 Diversification does not protect an investor against a loss in a particular market; however, it allows an investor to spread that risk across various asset classes.

5 Quantitative Easing (QE) is an unconventional monetary policy in which a central bank purchases government securities or other securities from the market in order to lower interest rates and increase the money supply.


7 Source: Ibid.
During the period of crisis in Europe, sovereign risks were very well correlated, and this correlation dominated the performance of securitized assets, which can be observed in this example by the sharp widening of RMBS spreads. This highlights the significance of the sovereign risk impact on performance because implicit valuations for most European structured finance products remained robust throughout the financial crisis, with low realized default rates. The cumulative default rate on European structured finance assets from the beginning of the financial downturn, July 2007, until Q3 2013 has been 1.5 percent. Some asset classes such as consumer finance ABS, small- and medium-sized (SME) Collateralized Loan Obligations (CLO) and RMBS have experienced default rates well below this average and the performance of European structured finance products has also been substantially better than U.S. peers. By way of comparison, ABS on U.S. loans experienced default rates of 18.4 percent over the same period, including subprime loans.

One segment within the European ABS space that has experienced relatively higher delinquency is CMBS. The majority of the delinquency is attributable to maturity defaults due to the inability of borrowers to refinance the loans rather than to term defaults which are due to the inability of borrowers to service the debt. According to a report by Standard and Poor’s, which we illustrate in Display 3, the maturity defaults were 72 percent of the combined defaults. A large number of the commercial properties backing these loans are generating sufficient cash flow to cover their interest obligations; however, the market oftentimes ascribes overly conservative valuations and, hence, the securities backed by such loans tend to trade at larger than otherwise warranted discounts.

### Display 3: Euro CMBS delinquency led by maturity defaults

<table>
<thead>
<tr>
<th>Delinquency Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maturity delinquencies</td>
<td>72.76%</td>
</tr>
<tr>
<td>Term delinquencies</td>
<td>27.24%</td>
</tr>
</tbody>
</table>

Source: Standard & Poor’s. Data as of March 12, 2014.

Besides the property-specific components, the other key driver for bond valuations is a function of the jurisdiction where the underlying assets are located. To incorporate sovereign risk factors into our investment decision-making process, we use our SPREAD model, which we described in more detail in a white paper we wrote earlier this year, in order to measure sovereign risk through peripheral European spreads. The spread between peripheral eurozone sovereign bond yields and German bund yields (“peripheral spreads”) remained very low since the inception of the euro until the global financial crisis struck in mid-2008. However, peripheral spreads widened sharply in mid-2012 when uncertainty around the exit of Greece from the euro area, the so-called “Grexit,” increased. For this reason, analyzing the drivers of peripheral spreads in the eurozone is a relatively new problem and developing quantitative techniques is potentially critical to making informed investment decisions.

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10 Source: Standard & Poor’s. Data as of March 12, 2014.

11 Sovereign Peripheral Euro Area Dynamic (SPREAD). This a model created by MSIM to measure the value of peripheral spreads versus Germany based on GDP and debt/GDP and deficit/GDP ratios.

SPREAD is a quantitative model that we use to help determine the fundamental value of the spread between peripheral European bonds and benchmark German bund yields and to understand its key drivers. Our model also allows us to reduce the complexity of the problem into a few economic variables that we can easily identify and measure (Display 4). The performance of peripheral spreads provides important information in terms of how the market is pricing sovereign risk, which in turn may have a significant impact on the performance of securitized asset valuations in a country.

Overall, we believe a well-functioning and robust securitized market is a large part of the solution for a sustainable recovery and stability of the eurozone. Policy and regulatory support for securitized products are, therefore, likely to be forthcoming, which may be a tailwind for the performance of this asset class. As commercial and residential real estate continue to recover globally, ABS offers, in our opinion, a potentially attractive return profile. This forms the strategic component of this investment opportunity.

The risk to our view is if policy actions fail to stabilize the eurozone and the crisis starts all over again. The results from our SPREAD model track improvement and deterioration of financial conditions and assigns a fair valuation; it is not a forecast. European ABS performance may be adversely affected if policy makers fail to create stability and economic recovery.

Tactical Investment Opportunities in Global Securitized Products

The need by the real economy13 to access financing creates an opportunity to invest capital through securitized markets in market-based financing vehicles, such as ABS, at potentially attractive returns. This is because a funding gap currently exists due to the low interest rate environment and scarce credit availability. In addition, new regulations have increased hurdles for banks to provide credit and lend capital by forcing these institutions to meet stricter requirements such as risk-weighted capital, leverage and liquidity coverage tests. In response to these requirements and losses experienced during the financial crisis, banks have significantly tightened underwriting standards. These tighter credit conditions have prevented many borrowers from refinancing current loans or obtaining new loans to finance purchases of property.

One natural complement to bank lending is the capital markets, which have played an increasingly important role in companies’ access to financing post-crisis. But market-based financing starts from a comparatively low level, particularly in the EU. Debt securities constitute around 10 percent of the financial liabilities of UK nonfinancial companies; for the eurozone, the corresponding figure is 5 percent. In the U.S., debt securities represent around 14 percent of the liabilities of U.S. nonfinancial companies.14

The funding gap described above exists amid a global economic recovery and improving real estate prices, which, in our view, presents an investment opportunity into market-based financing vehicles such as ABS. The ABS market is backed by a diversified portfolio of hard assets that can offer significant structural protection and discounted

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13 The “real economy” refers to the part of the economy that is concerned with actually producing goods and services, as opposed to the part of the economy that is concerned with buying and selling on the financial markets.

purchase prices. Slicing the recovery into specific sectors, we have identified the following opportunities along with our respective investment rationales:

Non-U.S. Commercial Real Estate (CRE) – Legacy European CMBS
- Small number of underlying loans allowing for granular analysis
- Potential upside from asset price stabilization
- Potential upside from improved asset financing
- A measure of downside protection from subordination

U.S. Commercial Real Estate (CRE) – New CRE Loans
- Fill funding gap left by banks through senior loans on value-add or transitional properties
- Mezzanine loans on potentially strong performing assets\(^{15}\)
- Tighter credit underwriting
- Conservative valuations
- Potential upside as risk premiums converge to norm
- Legacy CMBS: improving asset valuation and collateral credit profile

Residential Real Estate
- U.S. RMBS
  - Non-agency RMBS offer attractive potential yield along with the potential for refinancing as the U.S. housing market continues to recover
  - Securities backed by nonperforming loans provide issuer the opportunity to capture upside on home prices and also offer investors compelling relative values
- Agency Derivatives
  - Agency Interest-Only securities, for example, offer attractive potential yield and a natural hedge against rising interest rates
- European RMBS
  - Delinquencies and loss severities stabilizing in some countries and government-sponsored programs lending support to the market

Keep in mind, these types of investments have risks that investors must consider before investing. Fixed income securities are subject to credit and interest-rate risk. Credit risk refers to the ability of an issuer to make timely payments of interest and principal. Interest-rate risk refers to fluctuations in the value of a fixed income security resulting from changes in the general level of interest rates. In a declining interest-rate environment, the alternative investment may generate less income. In a rising interest-rate environment, bond prices fall, which may cause the total return of the alternative investment to decline. In addition, mortgage- and asset-backed securities are sensitive to early prepayment risk and a higher risk of default and may be hard to value and difficult to sell (liquidity risk). They are also subject to credit, market and interest rate risks. See a more complete description of these risks on page 19.

This represents an investment opportunity set in which we believe that a confluence of constrained bank balance sheets, tight credit conditions, rising asset values and supportive governmental policy has created an opportunity to invest in attractively priced ABS with improving fundamentals.

Potential Mispricings and Opportunities

Europe
Many European CMBS securities appear to be currently priced to materially worse scenarios than both current market outcomes and our future expectations. Solid credit work can, in our opinion, identify untapped value in some of these securities. The majority of existing European CMBS loans were issued between 2005 and 2008, and are now coming due.\(^{16}\) To avoid default, these loans will need to be refinanced. Today, however, the likelihood of these loans being refinanced is low due to tight credit conditions and underwriting standards across most of Europe. More likely, in an attempt to avoid default, these loans will be extended. To account for this, along with other strenuous default and loss assumptions, securities are typically priced at a discount to face value.

We believe, however, that this “amend and extend” practice will soon be ending. An anticipated increase in property transactions should help add transparency to asset values and aid lenders in determining when to make new loans and

\(^{15}\) Mezzanine loans are second mortgages on a property.

\(^{16}\) Source: S&P. Data as of June 2014.
when to decisively liquidate past-due loans. In addition, it is important to note that CMBS bonds often have tight legal maturities, and loans cannot be extended past these maturities without bondholder approval.

It is also essential to not look past the fact that economic conditions are improving across the eurozone, albeit at a slower than hoped for pace, and this trend, in our opinion, is supportive to underlying asset valuations. Asset selection is, nonetheless, important with respect to jurisdiction and the sovereign. The majority of European commercial real estate assets backed CMBS are located in core European countries, with approximately 80 percent of the current market split between the UK and Germany17, which, in our opinion, are the two best jurisdictions from both a macroeconomic standpoint and from a legal framework. Since the crisis, some of these commercial real estate markets (such as in the UK) have staged material recoveries. Improving asset values have begun to have a positive knock-on effect for the credit performance of loans in European CMBS. Similarly, new capital is beginning to flow into continental European commercial property markets. There have been several IPOs of German property companies and increasing interest from private equity investors. Support for the underlying assets will ultimately be a positive for European CMBS securities.

Because European CMBS bonds are typically backed by a small number of loans, we are able to conduct deep-dive credit work to discern value. For example, when we evaluate an investment, we re-underwrite each underlying asset under a number of scenarios. Based on the projected operating cash flow and expected market yield, we can quantify the property’s recovery value. We then assign the bond to a risk bucket based on both broad and local property market dynamics. Based on this information, we can then assess the potential outcomes, or scenario tests, for each loan and its associated probabilities.

Within the European ABS segment, we believe CMBS offers some of the highest-yielding opportunities. We believe that this yield premium is justified by the specialized credit analysis required to evaluate the risk profile as well as the segment’s lower liquidity. We see this as an attractive opportunity on a risk-adjusted basis.

We believe that the improving availability of financing for European CRE assets stemming from a confluence of factors including favorable policy, new entrants in the market and a recovering new issue CMBS market will provide support for refinancing the current delinquent loans backed by performing assets. The new issue market will likely benefit from better underwriting standards and risk-retention rules. Within the CRE investment spectrum we find that the yield premium offered by the European CMBS over European REIT bonds and European sovereign bonds make it an attractive fixed income investment option to take advantage of the recovery in the European CRE space.

Another sector that we monitor closely is peripheral European RMBS. Spreads of these securities have tightened significantly as the euro crisis has dissipated. The recovery is far better and sooner than many have expected, with part of it being fundamental and part technical. While arrears increased in all sectors, this was to a far lesser extent than expected. Government support for borrowers in mortgage arrears also help arrest the situation from worsening. Originators are believed to have supported their securitizations by repurchasing delinquent loans from deals to either maintain ratings for ECB repo eligibility or to preserve market access.18 Both unemployment rate and home prices appear to be stabilizing in Portugal, one of the hardest hit peripherals. The recovery in fundamentals is uneven though, Spain, for example, continues to witness deteriorating mortgage performance as home prices continue to decline and financing remains difficult. On the technical side, returns in the secondary market have been helped by lack of supply in the primary market as investors search for yield.19

As stated at the end of the previous section, the performance of these tactical opportunities in European ABS is predicated upon the strategic success of both the policy and lawmakers to stabilize financial risks and create conditions for an economic

19 The primary markets are where investors can get first crack at a new security issuance. The issuing company or group receives cash proceeds from the sale, which is then used to fund operations or expand the business. Exchanges have varying levels of requirements that must be met before a security can be sold. The secondary markets are where investors can purchase securities or assets from other investors, rather than from issuing companies themselves. The national exchanges, such as the New York Stock Exchange and the NASDAQ, are secondary markets.
recovery across the eurozone. If that scenario doesn’t play out, then we believe economic conditions across the eurozone may deteriorate giving rise to a rise in default rates for credit-sensitive products. This would adversely impact the performance of ABS investments.

**United States**

We believe the continued improvement in CRE fundamentals has positive implications for legacy credit bonds. The increase in property valuation allows the special servicers to liquidate the delinquent loans and realize higher proceeds than previously expected, thus improving the loss profile of the remaining loans in the pools. This phenomenon reduces the uncertainty in the loss distribution and may improve our ability to estimate the cumulative losses in the legacy pools.

The improved availability of financing for CRE assets has been reflected in a higher level of new CMBS origination. The newly originated loans have superior underwriting standards compared to the previous cycle. They are largely based on existing leases and the properties are appraised at a more attractive point in the cycle with cap rates that are above long-term averages relative to the 10-year U.S. Treasury yields. We see a number of opportunities in the new issue segment beginning with the subordinated tranches of the newly underwritten diversified conduit deals, which benefit also from better disclosures and data transparency for the investors. Next, we see attractive opportunities in a number of single borrower and large floater transactions in which the asset quality is high. Finally, the securitization of newly issued mezzanine loans backed by strong assets with moderate all-in leverage levels and typically short duration (two to five years, typically) are providing attractive potential current yields and mitigate prepayment risk.

Another segment within U.S. CRE, transitional properties, may still present an untapped opportunity. A transitional property is a commercial property that has experienced declining occupancy in the past, but following a discounted sale to new owners is now in better financial position to attract new tenants. An example of such a property would be an office building in a mid-size city with a stable job market. The new owner can now refurbish the property and attract new tenants by offering lower rents because its cost basis is lower than that of the previous owner. A loan package would typically include a companion loan to the property financing that is earmarked for the property refurbishment and leasing commission costs to stabilize the property.

At purchase, the new owner is more likely to obtain short-term financing as lenders are unwilling to lend for long periods of time on unstabilized properties. These short-term loans are underwritten using current, unstabilized cash flows and asset valuations (known as “in-place” cash flows and “as-is” valuations). As the assets stabilize, cash flows and valuations should materially improve offering the initial lenders significant improvements in collateral protection. Additionally, the property owners will then typically refinance into longer-term loans with better terms, retiring the transitional loans at a gain to the lenders. This could lead to a virtuous circle that enhances the investment opportunity over time.

We believe that these financing opportunities for transitional commercial properties are quite attractive for several reasons. To begin with, our analysis suggests that investment loan-to-value ratios will be relatively low, on the order of 45 to 70 percent, often based on recent distressed sales. This is a function of the new owners purchasing the properties at a discount. Second, these loans will have short durations, typically one to three years. This is because neither lenders nor borrowers are willing to lock in long-term financing until the property has stabilized. Third, these loans offer relatively high, floating interest rates to compensate lenders for the risk that the property may not rebound. Finally, the typical securitization structure backed by such loans benefits from structural credit enhancement with a thick equity tranche of about 12 to 25 percent retained by the loan originator which incentivizes a discipline of high underwriting standards.

U.S. residential real estate should continue to recover along with an underlying improvement in U.S. economic conditions. U.S. non-agency MBS therefore remains, in our opinion, an attractive opportunity. While fundamentals have picked up materially over the past few years, there still appears to be room for further improvements. Along with higher home prices, we expect to see residential mortgage credit continue to loosen, and that would bring more demand

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for home purchase and refinance. Additionally, home price appreciation should continue to be a positive for credit quality and default recoveries.

Besides legacy non-agency RMBS, we believe bonds backed by pools of non-performing loans offer an attractive investment opportunity for those institutional investors willing to assume the risks inherent in these investments. The risks are that the performance of the collateral and the value of the securities may be largely dependent on the quality of the origination, performance history, servicing of the collateral, and economic and/or market conditions. These bonds are used to finance the liquidation of properties from defaulted loans. They are typically highly enhanced, offering significant downside protection. For example, the senior and mezzanine tranches in a recently issued deal have credit enhancement of about 44 percent and 34 percent respectively by updated broker’s price opinion on the properties.\textsuperscript{23} To incur a loss of invested principal on the securities requires crisis-like home price declines (estimated 30 percent and 20 percent for senior and mezzanine bonds, respectively, assuming liquidation cost is 10 to 14 percent of the property value).\textsuperscript{24}

Additionally, these securities are typically of short maturity and have limited extension risk. All cash flows from property sales are used to pay down bonds first. Additionally, loans are seasoned and some have already completed a significant portion of the foreclosure process. Finally, if the securities are not paid off within the expected redemption date (normally three or four years), the bond coupons will increase significantly (about 3 or 4 percent\textsuperscript{25}), this coupon step-up feature mitigating risk from longer liquidation times.

Risks to ABS strategies in the U.S. are largely tied to global systemic risk conditions. If the risks from the prior financial crisis reawaken due to a systemic financial shock, the performance of these investments may be adversely effected.

ABS Investment Analytics Framework (or Capturing the Opportunity)

The above presents several examples of a tactical opportunity set of investments that are consistent with our strategic outlook of central bank policy stimulus supportive of ABS. Although a different set of tools is employed to approach different types of asset-backed collateral, there is a consistent theme in successful investing in ABS:

1. **Identify ABS structure leverage:** Evaluate bond creation value from the underlying loan
2. **Asset valuation:** Mark to market the underlying property value. In addition, evaluate property intrinsic value from cash flow model
3. **Assess borrower credit and “skin in the game”**

Our goal is to achieve transparency. The scope of information collection and level of diligence to scrub the data differentiate the ability of an investment manager to identify value. When MSIM performs analysis on residential MBS, we estimate property value based on disclosed loan-level information and decide what the realistic or updated loan-to-value ratio is. Such analysis provides a reliable foundation to calculate the security valuation.

Different from residential real estate, the intrinsic value of commercial real estate is driven by operating income and the return requirement.\textsuperscript{26} While it is critical to evaluate the quality of the tenant, lease term and combined outstanding debt of the security, the necessary starting point of analysis is a combination of a developer’s point of view in terms of geography and local market saturation, and a local lease office’s grasp of recent transactions, occupancies and rent trends. Local presence is the key, and a global platform may help to bridge the local platform in a cohesive manner.

In the event that our view proves incorrect we would expect an increase in risk premium (higher capitalization rates and potentially lower property cash flows) with a negative impact to property values, which in turn would have an adverse effect on CMBS prices. While the impact of such a scenario is largely

\textsuperscript{23} Credit enhancement is a method whereby a company attempts to improve its debt or credit worthiness. Through credit enhancement, the lender is provided with reassurance that the borrower will honor the obligation through additional collateral, insurance, or a third party guarantee.

\textsuperscript{24} Source: VOLT 2014-NPL4 Term Sheet. Data as of June 16, 2014.

\textsuperscript{25} Source: VOLT 2014-NPL4 Term Sheet. Data as of June 16, 2014.

\textsuperscript{26} Required rate of return is the minimum annual percentage earned by an investment that will induce individuals or companies to put money into a particular security or project. The required rate of return (RRR) is used in both equity valuation and in corporate finance.
a function of bond-specific parameters, on average we expect to have sufficient cushion built into the structure by virtue of a combination of factors including the credit enhancement of the tranche, the security price discount and the initial coupon that would help absorb the adverse impact in most cases and still generate a small positive yield to maturity.

Post-Crisis Recovery Opportunities for ABS

As post-crisis economies recover, ABS valuations should improve as well. Further, we believe there is ample scope for this market to rebuild itself, which is consistent with the political, policy and regulatory objectives as a means to increase credit availability to the real economy and transfer risk from the bank to the nonbank sector. Note that the global securitization markets grew dramatically in the run up to the crisis, with amounts outstanding peaking at €2 trillion in Europe and US$11 trillion in the U.S. They have contracted sharply since the financial crisis, especially in Europe.

ABS had historically been regarded as a high-quality asset class—often rated AAA by S&P and desired by conservative investors such as insurance companies, pension funds and banks. But the reputation of securitization has been severely tarnished by the financial crisis, reflecting both the prominent role of ABS involving complex structures and poorly underwritten loans in precipitating distress, and an overreliance on a fragile, highly leveraged investor base dependent on short-term wholesale funding. While such practices were particularly prevalent in the U.S., the level of market-placed issuance has remained low in the EU in the aftermath of the crisis.

However, as post-crisis economic conditions recover, so too does the performance of the ABS market, with still more scope for further improvement. Aggregate U.S. issuance has been reasonably strong since the crisis, with US$2.2 trillion issued in 2013, equivalent to around two-thirds of the pre-crisis annual rate. This issuance has been driven predominantly by agency MBS. In Europe, where there is no agency MBS market, aggregate issuance has been notably lower since the crisis, with only €174 billion issued in 2013 (including retained issuance); equivalent to roughly 40 percent of the pre-crisis annual rate. This amount would be significantly lower if retained issuance, which has often been used by banks to access central bank funding, is excluded. The outstanding amount of securitizations in the EU at the end of 2013 was about €1.4 trillion, or around one-fifth of the size of the U.S. securitization market. RMBS represented by far the largest segment, accounting for 59 percent, though new issuance has fallen markedly; SME ABS was the next largest, but accounted for only 8 percent. The jurisdictions with the largest outstanding securitization markets in Europe are the UK, Netherlands, Spain and Italy.

Conclusion

We believe that the current environment offers an attractive entry point for investing in ABS globally. Fundamentals appear to be improving, while securities are still priced at what we believe are levels offering attractive risk-adjusted returns. To confidently navigate this complex asset class, however, investors need significant experience analyzing and predicting asset values, borrower credit and prepayment potential.

To understand the opportunity that exists today in ABS and securitized products during the post-crisis recovery period is to understand the financial crisis itself, which is why valuations are currently attractive for securitized products. Importantly, policymakers want to see further improvements in the ABS markets because it is part of the solution for a self-reinforcing economic recovery. Creating credit availability for the real economy and providing a vehicle to transfer risk from banks to the nonbank sector provides stimulus through an easing in financial conditions and ultimately reduces risk premiums broadly across financial assets and the sovereign alike. Strategically, to invest in the securitized products sector is effectively to invest with the support of policymakers.

29 Source: Ibid.
30 Barclays Research. Data as of May 23, 2014.
32 Source: Ibid.
33 Source: Ibid, paragraph 55.
IMPORTANT DISCLOSURES
The views and opinions are those of the authors as of September 1, 2014, and are subject to change at any time due to market or economic conditions and may not necessarily come to pass. The views expressed do not reflect the opinions of all portfolio managers at MSIM or the views of the Firm as a whole, and may not be reflected in all the strategies and products that the Firm offers. We express no opinion about potential yield on any securities or portfolios that may be discussed herein.

All information provided is for informational purposes only and should not be deemed as a recommendation. The information herein does not contend to address the financial objectives, situation or specific needs of any individual investor. In addition, this material is not an offer, or a solicitation of an offer, to buy or sell any security or instrument or to participate in any trading strategy.

This document should in no way be considered a research report from MSIM, as MSIM does not create or produce research.

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We believe that the term sheets of the deals we cite in footnotes 20-22 and 24-25 are representative of pricing and valuation that reflect various structural elements of the Commercial Real-Estate (CRE) securitization and the non-performing loan (NPL) space. We selected a cross section of deal term sheets whose deal structure is a function of collateral details, property quality, loan covenants, market conditions and size of issuance to fairly represent the market and base our views upon. We believe the referenced deal term sheets capture different structural elements which are key drivers of bond valuations.

Note that valuations are subject to change depending on prevailing market conditions.

RISK CONSIDERATIONS
There is no assurance that a strategy will achieve its investment objective. Portfolios are subject to market risk, which is the possibility that the market value of securities owned by the portfolio will decline. Accordingly, you can lose money investing in this strategy. Please be aware that this strategy may be subject to certain additional risks.

Fixed-income securities are subject to the ability of an issuer to make timely principal and interest payments (credit risk), changes in interest rates (interest-rate risk), the creditworthiness of the issuer and general market liquidity (market risk). Mortgage- and asset-backed securities are sensitive to early prepayment risk and a higher risk of default and may be hard to value and difficult to sell (liquidity risk). They are also subject to credit, market and interest rate risks. Some U.S. Government securities are not backed by the full faith and credit of the U.S.; thus these issuers may not be able to meet their future payment obligations. High yield securities ("junk bonds") are lower rated securities that may have a higher degree of credit and liquidity risk. Public bank loans are subject to liquidity risk and the credit risks of lower rated securities. Foreign securities are subject to currency, political, economic and market risks. The risk of investing in emerging market countries are greater than risks associated with investments in foreign developed countries. Sovereign debt securities are subject to default risk. Derivative instruments may disproportionately increase losses and have a significant impact on performance. They may also be subject to counterparty, liquidity, valuation, correlation and market risks. Restricted and illiquid securities may be more difficult to sell and value than publicly traded securities (liquidity risk). Real estate investments, including real estate investment trusts, are subject to risks similar to those associated with the direct ownership of real estate and they are sensitive to such factors as management skills and changes in tax laws. Collateralized mortgage obligations can have unpredictable cash flows can increase the risk of loss. CMBS risk includes the possibility that borrowers may default on their mortgage obligations or the guarantees underlying the MBS will default or otherwise fail and that, during periods of falling interest rates, MBS will be called or prepaid, which may result in having to reinvest proceeds in other investments at a lower interest rate. During periods of rising interest rates, the average life of an MBS may extend, which may lock in a below-market interest rate, increase the security’s duration, and reduce the value of the security. Enforcing rights against the underlying assets or collateral may be difficult, or the underlying assets or collateral may be insufficient if the issuer defaults. The values of certain types of mortgage-backed securities may be extremely volatile.

OTHER CONSIDERATIONS
There is no guarantee that any investment strategy will work under all market conditions, and each investor should evaluate their ability to invest for the long-term, especially during periods of downturn in the market.

The material contained herein has not been based on a consideration of any individual client circumstances and is not investment advice, nor should it be construed in any way as tax, accounting, legal or regulatory advice. To that end, investors should seek independent legal and financial advice, including advice as to tax consequences, before making any investment decision.
Investing in Emerging Manager Hedge Funds: Strategies for Assessing and Addressing Risk

Introduction

Institutional investors have recently shown increased interest in emerging manager hedge funds due to their potential to generate alpha and provide access to new and diverse talent. The universe of emerging manager hedge funds, which are defined as managers with under $500 million in assets and/or a track record of less than three years, comprised over 3,000 funds as of December 2013. From 2007 to December 2013, these managers have, on average, generated superior risk-adjusted performance relative to more established hedge funds. We believe this trend is likely to continue. The shutdown of bank proprietary trading desks has created more investment opportunities for hedge funds in general and has forced highly talented proprietary traders to strike out on their own.

We attribute the general success of emerging managers to their ability to
• exploit less efficient markets and opportunities without sacrificing liquidity
• pursue more opportunities on the short side
• implement more nimble trading and risk management strategies
• harness their drive and passion to prove themselves

In addition to attractive returns, investors in emerging managers may enjoy additional benefits including the ability to negotiate attractive fees and investment terms, improved transparency, ongoing access to future industry stars and exposure to a different segment of the market to complement or complete their hedge fund portfolios.

1 “Impact of Size and Age on Hedge Fund Performance,” Evestment April 2014.

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In 2009, Morgan Stanley Investment Management launched a program dedicated to identifying and investing in best-in-class emerging and Minority and Women-Owned Business Enterprises (MWBE) managers. Our experience in this space in subsequent years has helped us gain a solid understanding of the risks associated with investing in emerging managers and potential ways to mitigate these risks. In this paper we outline what we believe are the most important issues investors in emerging managers need to consider. Two major themes emerge repeatedly throughout our discussion. The first is the central importance of a strong, expansive network of industry relationships to the investment and operational due diligence processes. This is because when investing early in a fund manager’s life cycle, an investor does not have the benefit of a long track record or pattern of behavior to guide performance expectations. By establishing relationships with managers and firms prior to them even launching a new fund, investors may develop confidence in the fund’s prospects. The second is the need and the ability to step beyond the role of fund investor and provide managers with the help and guidance they need to build sustainable businesses. We will conclude with a discussion of two case studies that highlight both of these themes.

Short Track Records

One of the biggest challenges one faces when selecting an emerging hedge fund manager is being able to adequately evaluate the skill of a manager using a short track record. Many emerging manager principals have track records that can be referenced from prior firms dating back longer than three years; however, a verifiable track record may not be portable or fully representative of their current strategy.

Without data it is impossible to determine a manager’s patterns of behavior using quantitative techniques. Consequently, the investment due diligence process centers upon gathering reliable and insightful qualitative information. There are a number of ways to do so. Among the most effective methods is to cultivate relationships with emerging managers before they emerge. Maintaining a list of promising traders and portfolio managers and tracking their careers over time may help one establish key details about their

- Background, training and pedigree
- Degree of autonomy and actual level of contribution to their firm’s results
- Investment universe
- How they generate returns (alpha vs. beta)
- Compensation history, net worth and level of personal investment in their fund

Having a deep network of industry and personal relationships is invaluable. Interviewing the principals’ current and former colleagues, prime brokers, counterparties, clients, service providers, peers and friends may enable one to construct a mosaic of information about their strengths and weaknesses as traders and managers and their likelihood of success independent of their prior firm.

Finally, interviewing the principals themselves can help one understand standard due diligence-related issues such as the details of their proposed investment strategy, how they generate ideas, how they conduct research, the repeatability of their process and key differentiators from competitors. Understanding the manager’s proposed investment universe can help one estimate their fund’s likely level of volatility and potential return. Differences between the manager’s current investment universe and the investment universe they operated in at prior firms may be cause to raise a red flag. It is not uncommon for new and established managers to stumble when they move into unfamiliar areas of the market or employ different trading strategies. Cross-checking answers provided by the principals themselves versus the information gathered from industry contacts can shed light on their character, reputation and aptitude.

Key-Person Risk

While most hedge fund managers have some level of key-person risk, it is magnified at the emerging manager level since they are generally thinly staffed. We often find that only one or two key investment professionals are responsible for all aspects of the investment process and fund performance. Loss of a principal can have a dramatic impact on the firm’s ability to keep their doors open and generate alpha. Unfortunately, there is no way to fully mitigate this risk. Understanding the controls and procedures around principal departures, such as key-man clauses, the liquidity of the assets traded and directors and officers liability insurance, are critical issues in emerging manager operational due diligence. If the manager does not have a succession plan in place, interceding to help
them develop and implement one is enormously important. Investing in a portfolio of emerging managers, however, provides a measure of protection against an idiosyncratic occurrence that adversely affects an individual manager.

Start-Up Risk

At the most basic level, emerging asset managers are new businesses and subject to the same types of risks as most start-up ventures. Investors should seek to understand the details of the emerging manager’s assets, liabilities, income stream, profitability and breakeven point to assess whether their business is ultimately viable. Since many emerging managers are small, they may not be able to generate sufficient revenue from their asset base to remain profitable—particularly during periods when their performance lags. Issues that contribute to start-up risk include:

- Manager’s overhead costs: These expenses, which are not typically covered by the manager’s fund investors, include compensation, rent, insurance, systems and outsourced resources (i.e., compliance consultants) among other items.
- Seed capital arrangements: While they may provide stability in the early stages of an emerging manager’s lifecycle, seed capital arrangements can have a material impact on the manager’s breakeven point. It is important to understand the percentage of revenues paid to outside parties, the length of the relationship (fixed term or in perpetuity) and the liquidity terms. Over the last three years, multiple hedge fund failures were precipitated by the withdrawal of seed capital at inopportune times.
- Investor base concentration: We believe the biggest factor in determining an emerging manager’s breakeven point is assets under management (AUM) and the stability of those assets. Cultivating a broad and diverse investor base, in our view, should be a key objective of all emerging managers. This effort, however, must be approached in a measured and controlled manner. Emerging managers that seek to gather assets too quickly may encounter a different set of problems. Returns may suffer and they may not have the proper client service or operational infrastructure in place to support their rapid growth.

Some of the approaches that we have used to help mitigate some of the issues associated with start-up risk while also helping emerging managers build stable businesses include:

- Agreeing to pay management and performance fees above seed capital rates upon initial investment, with step-down provisions tied to the manager’s growth in overall AUM.
- Requiring our approval for future fee breaks provided to other investors.
- Requiring our approval for future seeding arrangements with other investors.
- Capping the size of the fund within a specific time frame.
- Working with the managers and their external counsel to develop terms that are market standard and to better align investor-base liquidity with the underlying asset liquidity.
- Capping noninvestment related expenses paid by the fund and restricting the pass-through of emerging manager related expenses.
- Obtaining full position transparency to detect potential style drift that may accompany increases in AUM.

Alignment of Interest

In our experience, most emerging managers invest a lower percentage of their personal net worth alongside external investors relative to larger, established managers. As a result, emerging managers may have a positive incentive to take on more risk than they would if they had more skin in the game. This is especially true early in a manager’s lifecycle when they may try to stretch for returns in order to attract additional investors and create a name for themselves. We address this by clearly establishing our risk parameters in advance and obtaining full holdings transparency so that we can monitor their behavior.

To gauge alignment of interest, we strive to gain a detailed understanding of the manager’s background. Emerging managers may not be able to afford to make a large investment in their funds for a number of reasons: short tenure in the industry, high start-up costs and other outside investments or business interests. Further to the last item, the existence of numerous outside business interests is often a red flag because it indicates that the manager may not be able to spend a material portion of their time managing the assets entrusted to them.

To help mitigate the risks associated with misalignment of interest, we require the managers that we partner with to reinvest a percentage of their earnings from performance fees into their fund and lock-up this capital for several years. When
determining the appropriate percentage that an emerging manager should reinvest into their funds, one needs to be cognizant of the amount of capital an emerging manager needs to continue to build their business and retain their employees. This is typically done after our operational due diligence team gains a full understanding of what the emerging manager’s breakeven point is at different return profiles and what their future business needs are as assets grow.

Limited Resources

Lack of scale can present both investment and operational challenges to emerging managers. From an investment perspective, emerging managers may not be able to afford to conduct the deep research that is often necessary to gain an investment edge. Due to low assets under management, commission dollars paid to Wall Street brokers may not result in the same level of service and attention enjoyed by larger peers, which may limit access to leading sell-side analysts. Similarly, because emerging managers often don’t own a large percentage of a company’s stock, access to the management teams of those public companies may be limited. Founders of the emerging hedge fund businesses, who are often the portfolio managers, have to split their time between investment, marketing and business management responsibilities. These additional duties may limit their ability to generate investment ideas and conduct analysis—ultimately to the detriment of performance. Attracting talented investment professionals in a highly competitive market to reduce some of the research burden on the founders, however, can significantly raise a firm’s expense base.

From an operational perspective, many emerging managers cannot afford to invest in institutional-quality infrastructure. A key component of the emerging manager operational due diligence process is determining whether there are systems in place to handle the intricacies of the manager’s strategy and trading style. Another concern is that employees of emerging managers may be required to perform multiple roles and do not always have the expertise they need in each of the areas they cover. To satisfy SEC requirements, we often see employees given the title of Chief Compliance Officer that have little to no compliance background. Understanding the roles and expertise of the manager’s employees is key to determining whether there is appropriate segregation of responsibilities and adequate resources to handle both the day-to-day business activities of their firm and the ever-changing hedge fund investment and regulatory environment.

To help ensure that an emerging manager has the resources needed to manage their business while achieving the appropriate levels of segregation between businesses areas we recommend that managers

- Hire dedicated back-office resources
- Engage independent third-party administrators and compliance consultants to provide middle-office, back-office and compliance support
- Hire independent directors
- Require additional levels of approvals on all cash movements leaving the funds (i.e., payment of fund expenses), including the use of a third-party administrator or independent director as a second signature
- Have the independent administrator provide transparency reporting on a monthly basis

Second-Tier Service Providers

Top-tier service providers often turn away smaller managers in favor of larger, higher-revenue-generating hedge funds. Emerging managers, therefore, may have to rely on less well-known or established administrators and auditors. When analyzing risks associated with second-tier service providers we conduct due diligence meetings onsite with the service providers to understand the services being offered, the type and number of clients serviced, quality of staff, assets administered, ownership and the overall level of financial stability. It can also be beneficial to perform reference calls with current and past clients of the service providers.

Understanding the resources that a service provider has in place helps to identify weaknesses in controls, level of independence and potential conflicts of interest. Second-tier service providers may be prone to delivering inaccurate information to both emerging managers and their investors, which could result in both investment and operational burdens.

To help mitigate the risks associated with second-tier service providers, AIP provides recommendations on alternative service provider options that may be able to better meet the needs of the emerging manager.
Counterparty and Custodial Risk

Emerging managers typically cannot generate enough business to support multiple prime brokers and custodians, which is considered best practice in the industry. After the 2008 crisis, as prime brokers were experiencing cut backs, many reduced the support, service and technology they provided to smaller managers to better focus on the larger managers. This trend has continued as we have seen prime brokers terminating relationships with managers that they determine are not a profitable business partner.

Understanding the terms of the counterparty agreements can help an investor assess the risk that the emerging manager will not have access to needed funding during times of market stress. During the financial crisis we saw financing dry up across the industry and managers who did not have the appropriate financing lines in place were forced to sell assets at distressed prices to meet margin calls and redemptions.

To help mitigate counterparty and custodial risk we
• Discuss the terms of the emerging managers' counterparty agreements (prime brokers custodians and ISDA)
• Review the financing agreements in place, confirm where assets are being held (including the use of sub-custodians)
• Review the credit ratings and CDS spreads of the custodians and counterparties

Case Studies

When investing in emerging managers, we generally seek to form early partnerships with them to help mitigate key risks and foster their success. We do not, however, take equity stakes in these firms. Rather, we seek to share our understanding of best practices that we have gained through our extensive experience investing in best-in-class hedge funds. The following case studies highlight our approach to emerging manager due diligence and some of the recommendations we have made to help these managers build strong, sustainable investment businesses.
Case Study One: Minority-Owned Long/Short Equity Manager

1. MANAGER OVERVIEW
   - Minority-owned manager, focused on small-capitalization financial services companies, specifically banks and thrifts not well covered by Wall Street
   - Strategy seeks to exploit inefficiencies through disciplined fundamental analysis
   - Team demonstrated consistent performance in a different environment
   - Highly developed investment research, portfolio management and risk management
   - Proven ability to generate alpha in both long and short investments

2. DUE DILIGENCE PROCESS AND RISK ASSESSMENT
   - Due diligence process included numerous calls, on-site visits, quantitative analysis and operational due diligence
   - Four members of the Hedge Fund Team covered due diligence on the manager in addition to Investment Committee review/approval
   - Team believed the GP to be a "best-in-class" equity long/short manager and committed to helping grow and institutionalize its business
   - Team worked closely with the manager to improve its operational and compliance capabilities prior to any AIP investment and in order to attract further institutional capital

3. IMPLEMENTATION
   - Several crucial operational and business risks were identified during the due diligence process. The AIP Hedge Fund Team helped the manager implement changes, which were required before an AIP investment, which included:
     - Hiring a qualified Chief Operating Officer
     - AIP helped direct potential candidates and local resources to the firm.
     - Developing back-office workflow processes
     - AIP's Operational Due Diligence team ensured separation of the trading and reconciliation process and the implementation of appropriate cash disbursement controls
     - Improving compliance capabilities
     - Increasing staffing and resources
     - Implementing an order management system and risk system

4. RESULTS
   - After implementing key operational changes, the manager was approved for funding
   - AIP invested in the manager through a wide range of our client vehicles in addition to our emerging manager mandates
   - Both AUM and the size of the manager’s staff have increased substantially

<table>
<thead>
<tr>
<th>PRE-AIP INVESTMENT</th>
<th>SIX MONTHS POST-INVESTMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Full Time Employees</td>
<td>2</td>
</tr>
<tr>
<td>Investment Resources</td>
<td>2</td>
</tr>
<tr>
<td>Dedicated Back-Office Resources</td>
<td>None</td>
</tr>
<tr>
<td>Asset Liability Management</td>
<td>30-day Notice Period</td>
</tr>
<tr>
<td>AUM</td>
<td>$79.8mm (February 2013)</td>
</tr>
</tbody>
</table>

These case studies are being provided for illustrative purposes only. They have been selected solely to demonstrate the team’s views and the type of analysis used in implementing their process. They are not intended to imply that the team’s investment process, including due diligence, risk assessment and implementation will always lead to positive investment performance or guarantee favorable results. Past performance is no guarantee of future results.
Case Study Two: Minority-Owned Long/Short Equity Manager

1. MANAGER OVERVIEW
   • Minority-owned manager, focused on thematic, long/short investments across all sectors in the U.S.
   • Targets low to moderate net market exposure (0 - 40% net) with gross exposure between 150 - 200%. The fund has low correlation to peer group hedge funds and benchmark
   • AIP believed net market exposure combined with moderate position concentration and high thematic concentration could result in equity-like returns with significantly lower volatility and drawdown risk
   • Manager was re-launching after separating from the firm’s initial seed investor

2. DUE DILIGENCE PROCESS AND RISK ASSESSMENT
   • Due diligence process included conference calls, on-site visits and quantitative analysis
   • Performed reference checks with the manager’s previous partners, employees and investors
   • Obtained and reviewed all offering documents and financial statements from the manager’s prior funds
   • Obtained and reviewed all legal documents relating to the manager’s arbitration with the initial seed investor
   • Held conference calls and on-site visits with the emerging manager’s service providers

3. IMPLEMENTATION
   • The due diligence process revealed that the legal arbitration with the manager’s seed investor was paid by the funds’ external investors through their investment in the funds
   • AIP required the following changes of manager:
     – Drafting language around indemnification, incentive fees, management fees, expense pass-through, reportable events (lawsuits), and audit holdbacks. AIP worked with the manager and their external counsel to craft market standard, and in some cases more favorable than market standard, language
     – Creating a new master fund and offshore feeder fund as the agreement with the seed investor and the seed investor’s investment was directly with the previous master fund
     – Hiring an additional back-office resource within six months of reaching $25 million AUM
     – Hiring of an independent director to provide additional oversight and governance over the funds and the firm
     – Obtaining Directors and Officers Insurance (D&O)
     – Engaging a third-party compliance consultant
     – Obtaining, directly from the fund’s administrator, full portfolio transparency on a monthly basis

4. RESULTS
   • After implementing key operational changes, the manager was approved for February 1, 2014 funding
   • AIP invested in the manager through a wide range of our client vehicles in addition to our emerging manager mandates

EXHIBIT II. PRE-AIP INVESTMENT VS. SIX MONTHS POST-INVESTMENT

| Dedicated Back-Office Resources | None | Hired New Controller
| Fund Terms/Offering Documents | Standalone Onshore L.P. | ✓ Launched Master Fund and Offshore Feeder
| | Offshore Fee Rate | ✓ Converted Existing Onshore L.P. into Onshore Feeder
| | No Independent Director | ✓ 3-5% Audit Holdback
| | 10% Audit Holdback | ✓ Market Standard Fee Calculation Language
| | Off-Market Fee Language | ✓ One Independent Director
| | No Independent Director | ✓ Investor-Friendly Indemnification Language
| AUM | $9.8mm (January 31, 2014) | $73mm

These case studies are being provided for illustrative purposes only. They have been selected solely to demonstrate the team’s views and the type of analysis used in implementing their process. They are not intended to imply that the team’s investment process, including due diligence, risk assessment and implementation will always lead to positive investment performance or guarantee favorable results. Past performance is no guarantee of future results.
Conclusion

The AIP Hedge Fund Team believes that emerging manager hedge funds can offer an attractive value proposition despite the potentially heightened investment and operational risks. Investing in a portfolio of emerging manager hedge funds — appropriately diversified by strategy, investment style, stage in their lifecycle and demographic characteristics of the founders — can complement and enhance an existing hedge fund allocation.

As highlighted in the case studies, it is important for an institutional investor’s due diligence process to include an assessment of the manager’s controls, infrastructure and service providers. As part of our process, we also work closely with emerging managers to institutionalize their businesses and utilize a consultative approach to foster long-term growth and success. AIP is committed to partnering with emerging and MWBE managers and providing initial institutional capital in order to develop relationships with industry leaders of the future.
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Alternative investments are speculative and include a high degree of risk. Investors could lose all, or a substantial amount, of their investment. Alternative instruments are suitable only for long-term investors willing to forgo liquidity and put capital at risk for an indefinite period of time. Alternative investments are typically highly illiquid—there is no secondary market for private funds, and there may be restrictions on redemptions or the assignment or other transfer of investments in private funds. Alternative investments often utilize leverage and other speculative practices that may increase volatility and risk of loss. Alternative investments typically have higher fees and expenses than other investment vehicles, and such fees and expenses will lower returns achieved by investors.

Funds of funds often have a higher fee structure than single manager funds as a result of the additional layer of fees. Alternative investment funds are often unregulated, are not subject to the same regulatory requirements as mutual funds, and are not required to provide periodic pricing or valuation information to investors. The investment strategies described in the preceding pages may not be suitable for your specific circumstances; accordingly, you should consult your own tax, legal, or other advisors, both at the outset of any transaction and on an ongoing basis, to determine such suitability.

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The Equity “Compounders”: The Value of Compounding in an Uncertain World

Executive Summary

The global macroeconomic and geopolitical outlook remains in a state of considerable flux, suggesting primarily an environment of lower growth with equities at raised valuations. This uncertainty presents a challenge for investors looking for assets with the potential to generate attractive returns, while still offering a measure of capital preservation during more difficult economic and market conditions.

Given the lack of clarity that exists, we believe that investors should focus on the fundamentals — assets with the potential to generate stable, consistent returns and offer potential capital protection. In our view, this involves investing in high quality companies that can consistently compound shareholder wealth at a superior rate over the long-term, while offering relative downside protection.

Our research shows that these “compounders,” which exhibit characteristics such as strong franchise durability, high cash flow generation, low capital intensity and minimal financial leverage, have generated superior risk-adjusted returns across the economic cycle. Despite strong equity performance over the last few years, these compounders, or high quality franchise stocks, still offer attractive valuations relative to their long-term intrinsic value and relative to the broad market. This makes it an opportune time, in our view, for investors to adopt a “back to basics” approach to portfolio management that should help generate superior risk-adjusted returns throughout varying market conditions.
What Do We Mean by “Compounders”?

We define compounders as companies with high quality, franchise businesses, ideally with recurring revenues, built on dominant and durable intangible assets, which possess pricing power and low capital intensity. When evaluating these companies, we focus on franchise quality and durability, financial strength, industry position, and management quality.

In our experience, relatively few companies have been able to consistently compound shareholder wealth at superior rates of return over the long term. Instead, we have found that most companies are erratic or inferior creators of long-term wealth. We believe that companies with strong franchise quality have a sustainable competitive advantage by virtue of their intangible assets, which competitors generally have difficulty re-creating or duplicating. These dominant and durable intangible assets may include strong brand recognition, which tends to be driven by innovation, customer loyalty, copyrights and distribution networks. In contrast, dominant assets that are physical are more easily replicated and often lead to price competition and erosion of a company’s return on capital.

The key financial characteristic of compounders is that they enjoy sustainable, high return on invested capital (ROIC), which is generated by a combination of recurring revenues, high gross margins and low-capital intensity. This combination helps support strong free cash flow generation that, crucially, must be either reinvested or distributed to shareholders. Any M&A activity should be fully justifiable on ROIC grounds rather than “strategic” or “accretive” grounds at the expense of eroding overall ROIC. The financial strength of these compounders tends to come from the innovation-driven intangible assets that the companies possess, which, in turn, provide pricing power.

Compounded also tend to be relatively robust in economic downturns, with steady operational cash flows and no excess leverage. Profits are typically less sensitive to economic conditions given repeat purchases at high growth margins. This, combined with low cyclicality of top-line demand (a result of the nondiscretionary nature of products and strong brand loyalty), help insulate compounders from the negative cyclical impacts on operational cash flow. These characteristics, coupled with modest top-line growth, have helped ensure that the intrinsic value of compounders grows over time.

Display 1 highlights the difference in share price growth between companies in the MSCI Europe Index universe with a high ROIC and those with a low ROIC. As Display 1 illustrates, companies with a strong ROIC substantially outperform their peers over the long term.

When seeking compounders, we believe that the relative strength of a company within its industry is more important than market capitalisation. In terms of industry structure, we typically find compounders enjoy high relative market share in monopolistic or oligopolistic markets. These companies generally enjoy high barriers to entry, usually as a result of the intangible assets they possess and their ability to continually innovate. In our experience, such an industry position provides a company with strong pricing power and organic growth potential. However, it is important to stress that the quality of growth remains a crucial consideration; in our view quality sustainable growth is preferred to both high growth of a short-term nature—which might boost earnings per share (EPS) but which does not typically create long-term value—and growth driven by a low ROIC.

In assessing industry structure, we believe that the markets in which a company does business is of greater importance than where the company is listed, especially when considering exposure to emerging markets. Generally, we would prefer...
to own a high quality global franchise business that sells to the emerging market consumer rather than own a potentially lesser quality company listed in an emerging market index to gain the exposure to these developing markets. While we are not opposed to direct emerging market investments, we believe the high current relative valuations and the corporate governance issues that tend to exist generally make indirect exposure to the asset class more attractive at this point.

Another characteristic of a compounding relates to the quality and focus of its management. We believe is crucial to invest in companies whose management has demonstrated a history of disciplined and efficient use of free cash flow. When evaluating the quality of a management team, we seek evidence of disciplined capital allocation and distribution practices.

Franchise or brand abuse is also an important consideration. It is vital that management not be distracted from the long-term task of building and improving the company’s intrinsic value by the temptation to meet short-term targets. Cuts to advertising and promotion spending, or research and development budgets, either in absolute terms or as a percentage of sales, can have devastating long-term consequences to brand strength and recognition. As a result, we favour companies whose remuneration and incentive policies foster the compounding that is in shareholders’ long-term interests.

A good example of a compounding, in our opinion, is a European coffee and chocolate company with strong long-term historical based on well-managed intangible brand assets. Demand for the company’s products has been consistent rather than cyclical, which has contributed to steady top-line growth. Add in high gross margins and a capital-light operating model, and the result has been a resilient, and steadily growing, cash flow stream over time.

This same company has shown steady organic revenue growth over the last 23 years, averaging around 5 percent per annum, and never going negative, while using innovation to edge up its trading margins (Display 2). While this operational performance may not look spectacular, the high ROIC compounding model means that the EPS has risen fivefold, from CHFr0.66 to CHFr3.14, and the dividend tenfold (CHFr0.20 to CHFr2.15) over the period. This consistent growth in EPS and dividends has helped drive a long-term compounding of the share price, which has risen from CHF6.91 (year-end 1990) to CHF77.1 (year-end 2013). As illustrated by this company, compounders do not require spectacular growth to outperform over time. In this case 5 percent annual revenue growth has driven 7 percent EPS growth and a 12.7 percent annual total shareholder return.

When searching for compounders, investors must avoid traps in the form of fading companies or acquisitive companies. By fading companies, we mean those where patents or licenses are soon to expire, where new technology or a change in fashion or new regulation can disrupt a franchise. Companies that are overly dependent on a single brand or product are more vulnerable to disruption.

Poor or greedy management is also a risk. A franchise can be eroded by management that cuts advertising and promotion spending or research and development activities to meet short-term earnings targets, that sets poor pricing policies, or is not disciplined in its capital allocation.

Acquisitions may be especially damaging for compounders. For example, a company generating a 30 percent ROIC may damage its long-term compounding potential if it acquires a company in a deal that generates 5 to 10 percent ROIC in an effort to boost EPS. Accretion of EPS does not necessarily equate to value creation and instead can result in significant value destruction, even if the target company is itself a compounding company.
In the next section, we examine consumer staples, the sector where, in our experience, the greatest proportion of franchise stocks exists, helping contribute to the sector’s superior long-term risk-adjusted returns.

Uncovering Franchise Stocks

As previously mentioned, our experience is that it is not easy to find compounders with the requisite franchise quality and financial strength in many sectors of the market.

We have observed that strong resilient franchises are rare in capital-intensive industries such as telecommunications, utilities, oil and gas exploration and production, commodities, chemicals and transportation. In our view, capital intensive or strongly cyclical business do not ordinarily generate sustainably unlevered returns on invested capital or alternatively, have weak pricing power in the case of many commodity producers. Likewise, we have found that financial institutions and transportation companies commonly earn low returns on an unleveraged basis. Further, we believe that growth businesses are vulnerable to rapid product or patent obsolescence and seldom generate the repeat consumer business that we believe is vital to generating long-term shareholder wealth.

Instead, we have observed that compounders are most likely to be found in industries where relatively capital-light innovation can create new demand and help support pricing power. In particular, we believe that business-to-consumer industries are best. In our experience, while there are some franchise companies in the pharmaceutical, media/publishing and information services sectors, the strongest franchise stocks are typically companies producing branded consumer goods (i.e., food and beverages, tobacco, household products, cosmetics and personal care products). While we examine the consumer staples sector in some detail in this paper, in our view, there are many consumer staples companies that are not compounders.

Over the last 10 years, strong equity performance has been associated with those companies exhibiting pricing power. During this time, the consumer staples sector has generated the highest annual returns amongst the MSCI World Index sectors, a result, we believe, that can be attributed to the

pricing power differentiator that is a particular attribute of compounders (Display 3). While the energy sector has also enjoyed strong returns over this period, we believe that the increase in prices enjoyed by this sector may not be sustained, as it reflects a jump in demand combined with the rising cost of supply. In contrast, we believe that the pricing power of the consumer staple sector is more sustainable, as price increases are driven by innovation, advertising and brand loyalty, rather than cyclical forces.

Display 3: Pricing power: The differentiator in returns between sectors in the MSCI World Index

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>10 YEARS (%)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Staples</td>
<td>10.53</td>
<td>Pricing power</td>
</tr>
<tr>
<td>Health Care</td>
<td>9.83</td>
<td>Pricing power</td>
</tr>
<tr>
<td>Energy</td>
<td>8.62</td>
<td>Increasing marginal cost of new supply</td>
</tr>
<tr>
<td>Information Technology</td>
<td>8.37</td>
<td></td>
</tr>
<tr>
<td>Consumer Discretionary</td>
<td>8.20</td>
<td></td>
</tr>
<tr>
<td>Industrials</td>
<td>7.80</td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>7.45</td>
<td>Increasing marginal cost of new supply, China demand</td>
</tr>
<tr>
<td>MSCI World</td>
<td>7.12</td>
<td></td>
</tr>
<tr>
<td>Telecommunication Services</td>
<td>7.06</td>
<td>Price deflation</td>
</tr>
<tr>
<td>Utilities</td>
<td>6.87</td>
<td>Higher energy costs passed on</td>
</tr>
<tr>
<td>Financials</td>
<td>2.14</td>
<td>Low return on assets, high leverage, left side tail-risk</td>
</tr>
</tbody>
</table>

Source: Factset, MSCI. Data as September 30, 2014.

Interestingly, the consumer staples sector has delivered significantly lower volatility over the last decade than major developed equity indices, in addition to relatively high returns (Display 4). One would typically expect such a narrow focus on one sector to raise diversification risks, but as Display 4 illustrates, the consumer staples sector, with a high number of compounding companies, has generated historical returns that are substantially less volatile than the traditional benchmarks.
One subset of the consumer staples sector in which we have found a high concentration of compounds that possess dominant intangible assets, is the tobacco industry. Globally, tobacco is an extremely concentrated industry with the four largest manufacturers responsible for over two-thirds of the world’s total sales, excluding China, which is a government monopoly. These companies’ primary competitive advantage is their strong brand loyalty. We have found that customers are willing to pay a premium for certain brands and this, combined with low price sensitivity, historically has translated into high repeat business for the companies. Profits are high relative to invested capital and cash flow generation is exceptional. In addition, barriers to entry are high, with strict government regulations on tobacco advertising deterring potential entrants, and weak bargaining power from tobacco growers and distributors helping ensure strong pricing power.

Compilers may also offer attractive returns in both inflationary and deflationary environments. In a low inflation environment, where there is nominal GDP growth, compilers are attractive for several reasons. In our experience, these companies can still grow earnings and deliver a relatively high return on capital in more difficult environments, as their pricing power, and therefore their earnings, remains resilient.

For investors concerned about rising inflation, we believe that compilers possess exceptional pricing power, allowing them to at least match inflation and provide an effective hedge against inflationary conditions. In our opinion, this compares favourably to other investments, such as bonds, which are exposed to inflationary environments.

Why Invest in Compilers?
High Quality Assets for Tougher Times Ahead

In our view, the challenge for equities for the next five years will be more about keeping the lights burning than shooting the lights out. Markets are at high levels despite the assorted macroeconomic and political risks on the horizon. The strong equity performance of 2011 to 2014 has been driven not by significant earnings growth but by re-rating or multiple expansion, arguably a consequence of unorthodox monetary policies.

Unwinding these policies could lead to a more sustained fall in equity markets if multiples fall back. Secondly, earnings may be vulnerable. If there is no sustained recovery, companies may struggle to deliver top-line growth. If there is a recovery, higher wages could squeeze margins.

While pressure on multiples and earnings would surely be painful for the broader market initially, such a normalization would open the door to more attractive entry points down the road. Further, business fundamentals would start to matter again.

In this context, we believe that high quality companies with robust balance sheets, resilience and high profitability, strong free cash flow generation and disciplined capital allocation remain attractively valued compared to lower quality companies and the market more broadly.

Display 5 shows that currently the relative performance of high quality stocks to low quality stocks is back to 2008 and 2011 lows. S&P issues “quality” ratings for equities based on...
factors such as earnings and dividend growth and stability and balance sheet robustness. The chart illustrates the ratio between high and low quality indices for top and bottom quality tranches of the S&P 500.

Display 5: **S&P 500 high versus low quality indices performance**

![Chart showing performance comparison between S&P 500 high and low quality indices from 1997 to 2014.]


While we concede that valuations are not as attractive, on an absolute basis, as they were in 2011, we believe that the type of high quality companies we focus on will more likely be able to keep compounding in a tougher environment. Caught short will be lower quality companies, those leveraged both financially and operationally, those lacking pricing power, those that squander shareholders’ money on irrational acquisitions at the top of the cycle and those that carry valuations far from their fundamentals.

When assessing valuation, we believe there is an inherent risk of overpaying for a high quality franchise stock. In our opinion, the most accurate manner in which to measure value is on an absolute basis, rather than a relative basis, by using the equity free cash flow yield. At current valuations, an investor can buy outstanding franchise stocks at a free cash flow yield of 5 to 6 percent. In absolute terms, given the quality of the assets, we believe this is attractive when compared to other investments, such as a sovereign bond offering around 2.5 percent, which does not have pricing power, inflation protection or an ability to compound investor wealth. Compounders also offer the potential for long-term real growth in the free cash flow they are generating, as opposed to a flat nominal cash flow from a sovereign bond.

**Conclusion**

Against an uncertain backdrop of lower growth and less liquidity, we believe that, more than ever, investors should focus on the fundamentals when making asset allocation decisions. That is, they should seek out high quality businesses built on recurring revenues, high gross margins and low capital intensity, with the potential to help preserve capital in down markets. In addition, we believe that franchise stocks, given their quality, remain attractively priced relative to their long-term intrinsic value and relative to the broad market. The fair valuations still on offer by these franchise companies, and the risks of holding lower-quality equities at inflated values, make such a decision, in our view, even more compelling.
DEFINITIONS

Consumer Price Index (CPI): An index that is designed to measures the price of a fixed basket of market goods bought by a typical consumer.

Dividend: A distribution of a portion of a company’s earnings, decided by the board of directors, to a class of its shareholders.

Earnings per share (EPS): The portion of a company’s profit allocated to each outstanding share of common stock. Earnings per share serves as an indicator of a company’s profitability. The general equation is net income less dividends on preferred stock divided by average outstanding shares.

Equity free cash flow yield: An overall return evaluation ratio of a stock, which standardizes the free cash flow per share a company is expected to earn against its market price per share. The ratio is calculated by taking the free cash flow per share divided by the share price.

Free cash flow: A measure of financial performance calculated as operating cash flow minus capital spending, working capital growth, interest and taxes.

FTSE All Shares Index: A index representing 98% to 99% of UK market capitalization, the FTSE All-Share index is the aggregation of the FTSE 100, FTSE 250 and FTSE Small Cap Indices.

MSCI EAFE Index: An index designed to measure the equity market performance of developed markets (Europe, Australasia, Far East), excluding the U.S. & Canada.

MSCI Europe Index: A capitalization index designed to measure performance of the developed equity markets in Europe.

MSCI World Index: An unmanaged, free float adjusted, market capitalization weighted index composed of stocks of companies located in countries throughout the world. It measures equity market performance in global developed and emerging markets. The index includes reinvestment of dividends, net of foreign withholding taxes.

MSCI World Consumer Staples Index: The MSCI World Consumer Staples Index is designed to capture the large and mid cap segments across 23 Developed Markets (DM)* around the world. All securities in the index are classified in the Consumer Staples sector as per the Global Industry Classification Standard (GICS®).

Return on invested capital (ROIC): A calculation used to assess a company’s efficiency at allocating the capital under its control to profitable investments. Our definition is earnings before interest and taxes/property plant and equipment and trade working capital.

S&P 500 Index: A broad based index, the performance of which is based on the performance of 500 widely-held common stocks chosen for market size, liquidity and industry group representation.

Important Disclosures

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Illiquid Investing for Defined Benefit Pension Schemes

Introduction

It is a popular notion that the trustees of defined benefit (DB) pension schemes should not limit their investment opportunities to traditional equities and bonds. Instead, a combination of liquid and illiquid investments can be considered to enhance the expected outcome by taking advantage of schemes’ long-term time horizons.

However, two forces currently restrict their tolerance for illiquidity. Firstly, almost all UK DB pension schemes are closed to new entrants and a large proportion are closed to future accruals, which means the long-term horizon of DB schemes is set to trend downwards and the profile is set to evolve as active and deferred members are replaced with pensioners. Secondly, strong performance from traditional asset classes in recent years has moved the average UK pension scheme’s funding level up to 87 percent\(^1\). In this improved environment for pension schemes, retaining the flexibility to make asset allocation changes in the future is increasingly important, as attention is beginning to turn to de-risking, and in some cases, scheme wind up. However, such investors need not forego the potential benefits of private markets altogether; instead, investments in illiquid opportunities should be structured in a way that is sensitive to these important dynamics.

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\(^1\) JLT’s Pension Scheme Deficits Latest Monthly Update June 2014 estimates that private sector UK pension schemes have an average funding position of 87 percent.
Identifying the Trade-Off

The relatively extended time horizon of DB pension schemes could be considered to be a competitive advantage that could be utilised by allocating to less liquid strategies offering 1) niche opportunities with potentially differentiated returns, 2) an expected return premium earned by investors willing to sacrifice liquidity (liquidity premium), 3) exposure to less efficient markets in which investors can engage in more effective active management, and 4) implementation structures that can improve efficiency, such as co-investing alongside investment teams to reduce management fees.

However, DB pension scheme management involves decision making over multiple periods:

- Schemes periodically review their investment strategy in the context of changes to funding levels, the investment environment or regulation.
- When allocating to private markets, investors typically cannot simply buy existing private market investments; rather, they periodically commit capital to private funds, gain exposure as they fund capital calls and realise investments as distributions are returned to the portfolio.

In these examples, investors need to make investment decisions over time and the decisions made in the current period may constrain the scheme’s ability to make changes in the future. For example, commitments to illiquid investments with long lock-up periods could restrict a scheme’s ability to de-risk the overall asset allocation if the funding level improves while capital is “trapped.” Also, overcommitments to illiquid investments may lead to higher than intended private market allocations. We consider two important factors in relaxing this trade-off; firstly, we consider the liability profile as part of the liquidity decision and, secondly, we introduce a framework to manage decisions across multiple time periods.

Liquidity is Not Binary

Investors tend to categorise investments into two buckets— liquid and illiquid. However, such a binary distinction can mean pension schemes either make unsuitable allocations to private strategies or make none at all. We feel it is important to recognize the large number of opportunities in the three to seven year duration range that fills the liquidity gap between traditional equities and bonds (daily dealing), hedge funds (a few months) and traditional private equity (fund lives of 12 years or more)

In this section, we have focused on the typical duration of various private market strategies. Investors should also consider the expected economic duration, which is a function of the investment cash flows rather than the life of the investment vehicle. The economic duration of strategies can vary significantly, and is particularly sensitive to the attribution of returns to income versus capital appreciation. While it is important to consider economic duration, its reliance of future cash flows creates a degree of uncertainty, so we have focused on duration for the purpose of providing a simplified spectrum of illiquidity.

Display 1: Spectrum of liquidity across yield focused investments

<table>
<thead>
<tr>
<th>Investment</th>
<th>Grade Credit</th>
<th>Agency MBS</th>
<th>High Yield</th>
<th>Mezzanine Debt</th>
<th>Whole Loans / NPLs</th>
<th>Asset Linked Securities</th>
<th>Royalties</th>
<th>Private Real Estate</th>
<th>Infrastructure</th>
<th>Natural Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>Liquid Yield</td>
<td>2 to 7 Years</td>
<td>7 to 15 Years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


2 In this section, we have focused on the typical duration of various private market strategies. Investors should also consider the expected economic duration, which is a function of the investment cash flows rather than the life of the investment vehicle. The economic duration of strategies can vary significantly, and is particularly sensitive to the attribution of returns to income versus capital appreciation. While it is important to consider economic duration, its reliance of future cash flows creates a degree of uncertainty, so we have focused on duration for the purpose of providing a simplified spectrum of illiquidity.
Incorporating the Liability Profile

A central consideration for setting the appropriate investment strategy is the expected timing of a pension scheme’s liabilities. With the full spectrum of illiquid investments to consider, a scheme can construct a private market investment program such that the expected portfolio cash flows are suitable for the scheme’s projected liability profile. A pension scheme that attributes the majority of its liabilities to active and deferred members might consider an allocation to traditional private equity in order to target relatively high expected growth in asset values over the long-term to match its longer dated liabilities. However, a mature pension scheme with existing emphasis on deferred members (with a high average age) and pensioners might consider medium duration private investments to be more appropriate for their circumstances. Of course, in some circumstances a combination is warranted to reflect a balanced attribution of liabilities to actives, deferred and pensioners.

Display 2 illustrates this point by comparing the annual liabilities of a hypothetical mature (members are mostly deferred with high average age or pensioners) DB pension scheme (grey line) with the investment distributions from two private market strategies; a traditional private equity program committed over three years (light blue) and a program of medium duration yield focused private market investments committed over three years (dark blue). For this hypothetical pension scheme, there are three advantageous aspects of the medium-duration private market portfolio when incorporating the scheme’s liabilities, relative to the traditional private equity approach:

- **Distribution of income**: The income yield can assist the scheme in accommodating the projected growth in annual cash outflows in the short and medium term.
- **Duration of distributions**: The shorter-duration investments can achieve liquidity ahead of the projected peak in annual liabilities, not only assisting with meeting benefit obligations but also increasing future optionality for strategy changes (for example, pension fund buy-out).
- **Speed and certainty of exit**: The private market portfolio can focus on opportunities with relatively predictable exit profiles, in terms of the timing and value of cash flows received upon realization, again enhancing future optionality.

Accounting for Multiple Time Periods

The evolution of a DB pension scheme’s funding level also has a material impact on the future investment strategy and hence the willingness to accept illiquidity. A survey by Aon Hewitt suggests that more than 20 percent of DB schemes currently have a formal trigger strategy in place either through monitoring funding levels or bond yields. For this reason, we believe investors need a framework that accounts for decision making over the entire investment horizon. In our view, there is a need to understand the cost of today’s decisions in future periods and account for this cost when constructing a portfolio. The risk is that investors base today’s commitment decision on today’s circumstances, without considering the likely impact of these decisions (and previous decisions) in the future. By incorporating their knowledge of the future into today’s decisions, though, pension schemes can retain a larger set of investment opportunities to target better outcomes. For example, an investor could use its past experience of private market investing to develop forecasts of the timing of future cash flows, allowing the investor to estimate the interaction between past, current and future allocations.

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3 Source: Aon Hewitt’s UK Pensions Scheme Triggers Survey 2013.
This challenge can be addressed through a multi-period optimization that explicitly considers the future costs of an investor’s current decisions. This would allow investors to relax the time trade-off by considering the full investment opportunity set while maximizing the ability to make decisions in the future as the pension scheme’s status evolves over time.

We show this in a graphical example in Display 3 in which a hypothetical pension scheme has a starting funding level of 87 percent\(^1\) and its governing body has approved the transition from return-seeking assets, starting at 50 percent of the portfolio\(^4\), to liability matching investments as the scheme reaches fully funded status (10 percent of assets are transitioned at 95 percent, 100 percent and 105 percent funding levels). The light blue line shows the funding level of the scheme (as a percentage of the value of the liabilities) and the dark blue line shows the allocation to return-seeking assets (as a percentage of the value of the assets).

In this example, a program of 10 to 15 year private market investments with a static target allocation to illiquid investments might be considered inappropriate as the scheme is expected to implement significant de-risking before long dated private investments would be expected to distribute capital, potentially putting pressure on other funding sources. However, a program of medium duration strategies, underpinned by a dynamic target allocation to illiquid investments, could be constructed such that the cash flows back to the portfolio (shown in the chart by the grey line) would be expected to provide a liquidity source when the scheme expects to reallocate to less risky or liability matching investments. The allocation to illiquid investments subsequently would decline to complement the wider asset allocation changes.

Display 3: Hypothetical DB pension scheme funding level changes and scheduled de-risking of asset allocation

For illustrative purposes only.

Conclusion

We believe it is critical that DB pension schemes recognize the full spectrum of liquid and illiquid investment opportunities when deciding upon the appropriate investment strategy. Institutions have the opportunity to construct and manage private market allocations that are suitable in the context of the liability profile and implemented over time in a way that minimizes the trade-offs of illiquid investing. We believe this approach enhances the expected outcomes as pension schemes converge on their long-term objectives.

\(^{1}\) Mercer’s Asset Allocation Survey European Institutional Marketplace Overview 2014 suggests UK pension schemes have allocated approximately 50% of assets to equities and other return seeking asset classes.
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Portfolio Strategy: Beta-Instability in Endowment Fund Allocations

This report examines the beta-stability — and instability — in the asset allocations of U.S. endowment funds over the fiscal years 2000 to 2013. Using Cambridge Associates data for the average endowment with assets greater than $1B, we analyzed three distinct time periods: 1) the build-up of alternatives and non-U.S. equity from 2000 to 2007, 2) the 2008 to 2009 crisis period of market-driven declines, and 3) the relatively stable asset allocations that prevailed from 2009 to 2013.

In round numbers, on June 30, 2000, the average endowment over $1B had an allocation of 35 percent U.S. equity (USE) and 20 percent bonds and cash (FI) for a combined USE/FI total of 55 percent. The remaining 45 percent was invested 15 percent in non-USE and 30 percent “alternatives” — private equity, real estate and hedge funds. Over the 2000 to 2007 period, the weight of alternatives increased a full 30 percent increment to reach an allocation level of 55 percent. While the non-USE weight increased modestly to 20 percent. These allocation shifts were funded by reducing the USE/FI mixture from 55 percent to 25 percent.

In the course of the 2008 to 2009 crisis virtually all assets fell, but the net effect was to leave the allocation essentially unchanged.

The allocations then remained surprisingly stable from 2009 to 2013, so that for the entire 2007-2013 period the average large endowment more or less maintained a structure comprised of 25 percent USE/FI, 15 percent non-USE, and 60 percent alternatives.

Asset classes can also be characterized broadly in terms of their beta sensitivity to equity movements. For example, USE has a beta of 1.00 and FI has a generally low beta. In 2013, the average endowment USE-to-FI ratio was close to 50/50 so that the combined USE/FI beta was about 0.5 — a -10 percent equity decline would engender about a -5 percent loss. More importantly, this normal beta

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value of 0.5 would be little changed under a much more severe market move. For example, even with a -30 percent equity decline, the same 0.5 beta would apply so that the 50/50 USE/FI combination would incur a -15 percent decline.

In contrast, virtually all the other assets—non-USE, private equity, real estate, hedge funds—have unstable betas that vary within a moderate range in normal markets, but can become highly vulnerable to extreme equity movements.

For example, in FY09, the equity market dropped by 26.2 percent, and the overall fund declined by an estimated 24.6 percent. The beta-stable assets fell by 14 percent, which was reasonably expected given their average beta value of 0.54. However, during this period, the diversifying-assets component fell by 28.0 percent, i.e., even more than the decline in U.S. equities! Thus, at this critical point, these normally diversifying assets actually became “de-diversifiers,” greatly exacerbating the deleterious impact of the adverse market on the overall portfolio.

In 2000, the beta-unstable assets as a group comprised 45 percent of the portfolio. The unstable beta allocation rose steadily in the next seven years, reaching a high level plateau of 75 percent in 2007. Surprisingly, this 75 percent level has been essentially sustained both during the 2008-2009 crisis and throughout the post-crisis period from 2010 until 2013. It may be worth pondering whether an unstable-beta component on the order of 75 percent may represent, for some funds, an underlying potential vulnerability to another adverse market event.

However, this hypothetical analysis should be tempered by acknowledging that much has changed since the 2008 crisis. Post 2009, the large endowment funds have maintained a relatively low overall beta in the 0.4 to 0.5 range. They have also become far more sensitive to maintaining sufficient liquidity, more careful in controlling their forward commitment pipelines, and are generally far better integrated with their university’s fiscal planning.

It should also be recognized that these beta-unstable assets have historically been a source of considerable alpha-like return over many years. Moreover, even after the stress beta problems, they have proved to be quite resilient in their participation in the market rebound. Thus, these beta-unstable assets may be viewed as a source of incremental alpha return by long-term investors who can deal with the turmoil of stress events that they presume to be relatively short-lived, free from permanent impairments, and ultimately followed by rebounds.

Summary

We thank Dr. Stanley Kogelman (who is not a member of Morgan Stanley’s Research Department) for his important contributions to the development of the mathematics and the research in this report. Unless otherwise indicated, his views are his own and may differ from the views of the Morgan Stanley Research Department and from the views of others within Morgan Stanley.

This report examines the beta-stability and beta-instability in the asset allocation of U.S. endowment funds over the fiscal years 2000 to 2013. Using Cambridge Associates data for the average endowment with assets greater than $1B, one can identify three distinct periods of allocation shifts: 1) the build-up of non-U.S. equity (non-USE) and alternatives from June 30, 2000, to June 30, 2007, 2) the 2008-2009 crisis period of market-driven declines, and 3) the relatively stable asset allocations that prevailed from June 30, 2009, to June 30, 2013.

In round numbers, on June 30, 2000, the average endowment over $1B had an allocation of 35 percent U.S. equity (USE) and 20 percent bonds and cash (FI) for a combined USE/FI total of 55 percent, 15 percent in non-USE, and 30 percent in “alternatives”—private equity, real estate and hedge funds. Over the 2000-2007 period, the USE/FI weight of 55 percent was reduced to 30 percent to fund increases in non-USE and alternatives to weights of 20 percent and 50 percent, respectively.

In the course of the 2008-2009 crisis, virtually all assets fell, but the net effect was to leave the allocation essentially unchanged. The allocations then remained surprisingly stable from 2009 to 2013, so that for the entire 2007 to 2013 period the average large endowment more or less maintained a structure comprised of 25 percent USE/FI, 15 percent non-USE, and 60 percent alternatives.

The allocations can also be characterized broadly, if somewhat crudely, in terms of the beta sensitivity to equity movements and the stability of those beta values to stress conditions. For example, USE has a beta of 1.00 and FI has a generally low beta sensitivity to equity movements. In 2013, the average endowment USE-to-FI ratio was close to 50/50 so that the combined USE/FI beta was about 0.5—a -10 percent equity decline would engender a -5 percent loss. More importantly, this normal beta value of 0.5 would be little changed even under a much more severe market move. For example, even with a much more severe -30 percent equity decline, the same
0.5 beta would apply so that the 50/50 USE/FI combination would incur a -15 percent decline.

In contrast, virtually all the other assets—non-USE, private equity, real estate, hedge funds—have unstable betas that vary within a moderate range in normal markets, but can become highly vulnerable to extreme equity movements. For example, in FY09, the equity market dropped by 26.2 percent, and the overall fund declined by an estimated 24.6%. The beta-stable assets fell by 14 percent, which was reasonably expected given their average beta value of 0.54. However, during this period, the diversifying assets component fell by 28.0 percent, i.e., even more than the decline in U.S. equities! Thus, at this critical point, these normally diversifying assets actually became “de-diversifiers”, greatly exacerbating the deleterious impact of the adverse market on the overall portfolio.

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Display 1: Historical mean aggregate asset allocations and nominal returns for U.S. endowments > $1B

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. EQUITY</th>
<th>GLOBAL EX U.S. DEVELOPED MKTS</th>
<th>HEDGE FUND</th>
<th>DISTRESSED SECURITIES</th>
<th>VENTURE CAPITAL &amp; PRIVATE EQUITY</th>
<th>REAL ASSETS &amp; INFLATION LINKED BONDS</th>
<th>CASH</th>
<th>OTHER</th>
<th>NUMBER OF INSTITUTIONS</th>
<th>MEAN RETURN</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>14.6</td>
<td>10.2</td>
<td>7.2</td>
<td>6.9</td>
<td>20.0</td>
<td>3.9</td>
<td>17.5</td>
<td>16.4</td>
<td>27.0</td>
<td>11.6</td>
</tr>
<tr>
<td>2012</td>
<td>13.3</td>
<td>8.6</td>
<td>6.7</td>
<td>8.1</td>
<td>20.1</td>
<td>41</td>
<td>19.3</td>
<td>17.2</td>
<td>22.0</td>
<td>12.0</td>
</tr>
<tr>
<td>2011</td>
<td>13.4</td>
<td>9.6</td>
<td>7.0</td>
<td>7.9</td>
<td>20.3</td>
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<td>18.4</td>
<td>16.4</td>
<td>21.0</td>
<td>20.6</td>
</tr>
<tr>
<td>2010</td>
<td>12.0</td>
<td>9.3</td>
<td>6.4</td>
<td>9.1</td>
<td>22.3</td>
<td>47</td>
<td>17.5</td>
<td>15.5</td>
<td>28.0</td>
<td>12.3</td>
</tr>
<tr>
<td>2009</td>
<td>12.1</td>
<td>9.3</td>
<td>5.6</td>
<td>9.4</td>
<td>22.3</td>
<td>46</td>
<td>16.0</td>
<td>15.8</td>
<td>40.0</td>
<td>-21.0</td>
</tr>
<tr>
<td>2008</td>
<td>15.1</td>
<td>12.5</td>
<td>6.1</td>
<td>8.0</td>
<td>23.2</td>
<td>31</td>
<td>14.1</td>
<td>16.3</td>
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<td>20.2</td>
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<td>6.1</td>
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<td>21.5</td>
<td>2.3</td>
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<td>2006</td>
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Source: Endowment data as reported to Cambridge Associates LLC.
It should also be recognized that these beta-unstable assets have historically been a source of considerable alpha-like return over many years. Moreover, even after the stress beta problems, they have proved to be quite resilient in their participation in the market rebound. Thus, these beta-unstable assets may be viewed as a source of incremental alpha return by long-term investors who can deal with the turmoil of stress events that they presume to be relatively short-lived, free from permanent impairments, and ultimately followed by rebounds.

**Historical Endowment Allocation**

This study is based on Cambridge Associates data on historical allocations and performance for endowments with assets greater than $1B (*Display 1*).

*Display 2* separates the assets of the largest U.S. endowments into 3 categories—equities, bonds + cash, and alternatives—and plots their allocations over time. *Display 2* shows that the most significant allocation shifts occurred prior to the 2008 crisis. These changes consisted of higher alternative allocations funded by reduced weightings in equity and fixed income. Total alternatives moved from 31 percent to 57 percent over 2000 to 2008 and then remained in the 60 percent range post-crisis. The weights in both total equities and bonds+cash declined prior to the crisis, and they also remained essentially stable post-crisis.

*Display 3* focuses specifically on equities. Pre-crisis, total equities declined from 48 percent to 42 percent over the eight-year period 2000-2007. Over this same period, U.S. equities declined from 34 percent to 20 percent but this decline was offset somewhat by modestly higher increases in Global ex-U.S. Developed Equity (12 percent to 15 percent) and Emerging Market Equity (3 percent to 6 percent.) Post-crisis, this distribution among U.S., Developed and Emerging Market equity has generally remained stable.

*Display 2: Asset allocation by three categories for U.S. endowments > $1B*

![Asset Allocation Chart](source.png)

Source: Endowment data as reported to Cambridge Associates LLC, Morgan Stanley Research.

The alternatives category has also undergone some interesting changes over time. From 2000 to 2005, the allocation to hedge funds and real assets increased substantially while Venture Capital and Private Equity decreased. From 2006 to 2008, as the hedge fund allocation stabilized in the low-mid 20% range, there were continued higher allocations made to Real Assets, Venture Capital and Private Equity. Post-2008, the weight in Real Assets stabilized at 16 to 17 percent, Hedge Funds declined from 23 percent to 20 percent and Venture Capital and Private Equity moved even higher into the 18 to 19 percent range. Thus, these three main categories within alternatives have moved to each having a weight of approximately 18 percent.
Endowment Returns and Betas

As indicated in Display 5, the subportfolio of alternatives significantly outperformed equities over 2003 to 2007. This visible outperformance of alternatives may well have played a role in the drive toward their increased weightings over this period. However, post-crisis, with the robust recovery in U.S. equities, the alternatives portfolio has underperformed the equity portfolio.

In order to perform a more robust analysis of returns and risk measures, a higher-frequency return series is needed. By linearly interpolating the fiscal-year ending weights, a model portfolio with quarterly allocations was developed. Returns for this model portfolio were then estimated by using the index performance data for the various asset classes (listed in Display 7). This model portfolio can be thought of as a passive endowment portfolio that does not take account of any of the actual funds’ active decisions or alpha generation.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Display 7: Indices used to estimate quarterly returns

<table>
<thead>
<tr>
<th>ASSET CLASS</th>
<th>INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Equity</td>
<td>S&amp;P 500</td>
</tr>
<tr>
<td>Global ex U.S. Equity - Developed Mkts</td>
<td>MSCI EAFE</td>
</tr>
<tr>
<td>Global ex U.S. Equity - Emerging Mkts</td>
<td>MSCI Emerging Markets</td>
</tr>
<tr>
<td>Bonds</td>
<td>Barclays U.S. Aggregate</td>
</tr>
<tr>
<td>Hedge Funds</td>
<td>HFRX Global Hedge Fund</td>
</tr>
<tr>
<td>Distressed Securities</td>
<td>HFRX ED: Distressed Restructuring</td>
</tr>
<tr>
<td>Venture Capital &amp; Private Equity</td>
<td>Cambridge Private Equity</td>
</tr>
<tr>
<td>Real Assets &amp; Inflation-Linked Bonds</td>
<td>Cambridge Real Estate</td>
</tr>
</tbody>
</table>

Source: Endowment data as reported to Cambridge Associates LLC, Morgan Stanley Research.

Display 8 compares the actual annual returns versus the returns for our hypothetical model portfolio. The returns track closely to one another, with most years having the actual returns exceeding the model portfolio returns.

Display 8: Model endowment portfolio returns vs mean actual endowment returns

The quarterly returns for the model portfolio are plotted versus the S&P 500 returns for FY00-FY13 in Display 9. The regression line yields a beta of 0.53

Display 9: Model endowment portfolio returns vs S&P 500 returns: FY00-FY13

Display 10 shows our model portfolio’s beta over time based on trailing eight-quarter returns. While eight quarters are insufficient for reliable statistical significance, the need to have contemporaneous beta values mandated this compromise.

Display 10: Model endowment portfolio betas over time

It can be seen that the model portfolio betas in Display 10 have considerable variation around Display 9’s regression-based beta of 0.53.

Source: Endowment data as reported to Cambridge Associates LLC, Morgan Stanley Research.
The beta values in the above analysis were estimated using the performance data for the asset class benchmarks described in Display 7. An alternative approach to estimating betas is to use a standard covariance matrix. Display 11 shows the 2000-2013 model portfolio betas using values derived from the covariance matrix. It is again quite striking to see how stable these covariance-based betas have been despite the significant changes in allocation over time.

Display 11: Covariance-based betas

Source: Endowment data as reported to Cambridge Associates LLC, Morgan Stanley Research.

Display 12 adds the non-U.S. equity and alternatives beta to Display 10. From 2002 to 2005, the portfolio beta rose from 0.4 to 0.8. This was driven by increasing beta values in both non-U.S. equity and alternatives. Between 2006 and mid-2008, the portfolio beta remained in the 0.7-0.8 range. During the 2008 to 2009 financial crisis, the model portfolio experienced a beta surge to 0.94 from the 2007 beta value of 0.68. In the years following the crisis, both the alternatives and non-U.S. equity beta have trended lower, leading to an overall portfolio beta between 0.4-0.5.

Display 12: Beta values over time: Model portfolio, alternatives, and non-U.S. equity

Source: Endowment data as reported to Cambridge Associates LLC, Morgan Stanley Research.

Beta-Stable and Beta-Unstable Components

The analysis thus far has characterized the asset classes in a more or less standard fashion. The allocations can also be separated into terms of their beta-stability. Beta-stable assets would include USE/FI — equity, bonds and cash. Beta-unstable assets would include all other asset classes as a group.

The beta stability of the USE/FI assets can clearly be seen in Display 13’s plot of the quarterly returns of the model USE/FI returns vs the S&P 500. The regression line shows a beta value of .54 with a very high R-square. The lack of scatter indicates that the beta-stables’ return is primarily driven by USE.
**Display 13: Quarterly returns: Beta-stable USE/FI vs S&P 500**

Display 13 plots the quarterly returns of the beta-stable USE/FI group compared to the S&P 500. The regression line equation is given as: $y = 0.5444x + 0.005$ with $R^2 = 0.9842$. The beta value of 0.54 indicates a moderate sensitivity to equity movements. Source: Endowment data as reported to Cambridge Associates LLC, Morgan Stanley Research.

**Display 14: U.S. equity/FI beta values over time**

Display 14 plots the rolling USE/FI betas derived from the trailing eight quarterly returns. With USE having a beta of one and fixed income having a generally low beta sensitivity to equity movements, it is not surprising to see that a roughly 50/50 mixture exhibits a beta of around 0.5. Moreover, this beta value varied little over the entire 2000 to 2013 period—even including the financial crisis. Source: Endowment data as reported to Cambridge Associates LLC, Morgan Stanley Research.

**Display 15: Quarterly return: Beta-unstable asset group vs S&P 500**

Display 15 plots the quarterly model returns for the “beta-unstable” cluster vs the S&P 500. While the overall regression-line beta of 0.51 is close to the USE/FI beta of 0.54, the unstable beta exhibits much more scatter around Display 15’s regression line. With the beta-stable and the beta-unstable having 2000-2013 average betas of 0.54 and 0.51, respectively, it is hardly surprising that the 2000-2013 average beta for the overall portfolio was found to be 0.53 in Display 9.

The beta-unstables’ variability is even more evident in Display 16’s time series of rolling eight-quarter beta values. All of these assets—non-U.S. equity, private equity, real estate, hedge funds—have betas that are highly vulnerable to extreme equity movements. In normal markets, these beta-unstable assets can act as “diversifiers” with moderate betas. However, in the depths of the 2008-2009 crisis, these beta values—as a group—surged to stress levels that exceeded 1.0.

**Display 16: Rolling eight-quarter beta values**

Source: Endowment data as reported to Cambridge Associates LLC, Morgan Stanley Research.
Allocation Trends Based on Beta-Stability

*Display 17* shows trends in the percentage allocation of the beta-stable and beta-unstable groups. Graphic representations of asset class percentages over time are quite commonplace. However, one does not usually see these allocation trends with all the asset classes segregated into two groups based on their degree of beta-stability. Yet it is just this admittedly non-standard categorization that leads to the striking pattern in *Display 17*, with the beta-unstable weights rising relentlessly from 45 percent in 2002 to 75 percent in 2008, and then remaining at virtually this same level until 2013.

One curious observation from *Display 17* is that the weight distribution between the two asset clusters did not change significantly during the financial crisis. In FY09, the equity market dropped by 26 percent, and the overall fund declined by an estimated 25 percent. The beta-stable assets fell by 14 percent, which could have been reasonably expected given their average beta value of 0.54. However, during this period, the beta-unstable assets component fell by 28 percent! One might be tempted to think that these radically disparate declines would result in a major change in the allocation percentages. However, as shown in *Display 18*, because of the beta-unstables’ dominating 75 percent weight, their 28 percent drop played a large role in the 25 percent decline in the fund itself. The market-driven moves of -28 percent and -14 percent in the beta-unstables and beta-stables would have led—by themselves—to a surprisingly modest allocation shift to 72/28. From this point, only minimal rebalancing would have then been required to achieve the 75/25 ratio that actually prevailed on June 30, 2009.
Weighted Beta Contributions

Displays 14 and 16 displayed the beta values for the two groupings, but a more useful explanatory variable is the “beta contribution” of each component—the beta value weighted by the respective percentage allocation. Display 19 combines the beta values in Displays 14 and 16 with the allocation weights from Display 17 to compute the beta contribution of each group to the overall fund beta. Not surprisingly, the beta contribution from the beta-unstable group has been much more volatile, both because of its intrinsic beta variability, but also because of its increasing allocation.

During the financial crisis period, it can be seen that the unstables’ beta rose to over 1.00 (Display 16). This peak “stress beta” combined with the beta-unstables’ 75 percent weight to generate the 0.78 beta contribution level show in Display 19. At this time of extreme market stress, the overall portfolio beta of 0.92 was largely due to this 0.78 contribution from the beta-unstables. The beta-unstables’ beta contribution has declined post-crisis, reaching 0.30 in 2013.

A Hypothetical Stress Beta Analysis

A natural question is how the FY13 allocation might respond to a market situation that drove each asset class to the stress beta levels experienced in FY08. Display 20 attempts to address this hypothetical question.

The left side of Display 20 displays the 2008 weights and stress betas for each individual asset class. The right side of Display 20 applies these FY08 stress beta values to the June 30, 2013, allocations. Between 2008 and 2013, there were some significant changes in the asset class weights, e.g., Hedge Funds declining from 23 percent to 20 percent, and Venture Capital/Private Equity rising from 14 percent to 18 percent. Using the actual beta values, the 2013 portfolio had an overall beta of 0.48. However, when the 2013 stress betas are applied to the 2013 asset weights, the portfolio’s hypothetical stress beta surges to roughly the same 0.94 level as seen in 2008.

Display 21 takes this hypothetical analysis a step further and applies the 2008 stress betas for each asset class to the model portfolio allocations for each quarter from 2000 to 2013. It is quite surprising that in spite of the allocation shifts, the estimated stress betas have been remarkably consistent at the portfolio level.
Conclusions

It may be worth pondering whether an unstable-beta component on the order of 75 percent may represent, for some funds, an underlying potential vulnerability to another adverse market event.

However, this hypothetical analysis should be tempered by acknowledging that much has changed since the 2008 crisis. Post 2009, the large endowment funds have maintained a relatively low overall beta in the 0.4-0.5 range. They have also become far more sensitive to maintaining sufficient liquidity, more careful in controlling their forward commitment pipelines, and are generally far better integrated with their university’s fiscal planning.

It should also be recognized that these beta-unstable assets have historically been a source of considerable alpha-like return over many years. Moreover, even after the stress beta problems, they have proved to be quite resilient in their participation in
the market rebound. Thus, these beta-unstable assets may be viewed as a source of incremental alpha return by long-term investors who can deal with the turmoil of stress events that they presume to be relatively short lived, free from permanent impairments, and ultimately followed by rebounds.

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Jim Caron
Managing Director
Jim is a portfolio manager and senior member of the MSIM Global Fixed Income team and a member of the Asset Allocation Committee focusing on macro strategies. He joined Morgan Stanley in 2006 and has 22 years of investment experience. Prior to this role, Jim held the position of global head of interest rates, foreign exchange and emerging markets strategy with Morgan Stanley Research. He authored two interest rate publications, the monthly Global Perspectives and the weekly Interest Rate Strategist. Previously, he was a director at Merrill Lynch where he headed the U.S. interest rate strategy group. Prior to that, Jim held various trading positions. He headed the U.S. options trading desk at Sanwa Bank, was a proprietary trader at Tokai Securities and traded U.S. Treasuries at JP Morgan. Jim received a B.A. in physics from Bowdoin College, a B.S. in aeronautical engineering from the California Institute of Technology and an M.B.A. in finance from New York University, Stern School of Business.

Christian Derold
Managing Director
Christian is a portfolio manager for the London-based International Equity team. He joined Morgan Stanley in 2006 and has 22 years of investment experience. Prior to joining the firm, Christian was director of research at Millgate Capital, a long/short equity hedge fund. Prior to this, he worked at the State of Wisconsin Investment Board where he managed the Board’s international equity portfolio. Christian received an M.A. in business administration from the University of Economics and Business Administration in Vienna, Austria.

Cristian Ghiuvea, Ph.D
Executive Director
Chris is a member of the Fixed Income team. He joined Morgan Stanley in 2005 and has 12 years of investment experience. Prior to joining the firm, he was a quantitative research analyst at Banc of America Securities and a quantitative analyst at Zurich Capital Markets. Chris received a B.S. in Mathematics from Bucharest University, an M.S. in Statistics from the University of Texas and a Ph.D. in statistics from Carnegie Mellon University.
Carla Harris  
Vice Chairman

Carla Harris is vice chairman of global wealth management, managing director and senior client advisor at Morgan Stanley. She is responsible for increasing client connectivity and penetration to enhance revenue generation across the firm. She formerly headed the Emerging Manager Platform, the equity capital markets effort for the consumer and retail industries and was responsible for Equity Private Placements. Ms. Harris has extensive industry experience in the technology, media, retail, telecommunications, transportation, industrial and healthcare sectors. In August 2013, Carla Harris was appointed by President Barack Obama to chair the National Women's Business Council.

For more than a decade, Ms. Harris was a senior member of the equity syndicate desk and executed such transactions as initial public offerings for UPS, Martha Stewart Living Omnimedia, Ariba, Redback, the General Motors sub-IPO of Delphi Automotive and the $3.2 Billion common stock transaction for Immune Corporation, one of the largest biotechnology common stock transactions in U.S. history. Ms. Harris was recently named to Fortune Magazine’s list of “The 50 Most Powerful Black Executives in Corporate America,” U.S. Bankers Top 25 Most Powerful Women in Finance (2009, 2010, 2011), Black Enterprise’s Top 75 Most Powerful Women in Business (2010), Black Enterprise Magazine’s “Top 75 African Americans on Wall Street” (2006 – 2011), and to Essence Magazine’s list of “The 50 Women Who are Shaping the World,” Ebony’s list of the Power 100 and “15 Corporate Women at the Top” and was named “Woman of the Year 2004” by the Harvard Black Men’s Forum and in 2011 by the Yale Black Men’s Forum.

Ms. Harris began her career with Morgan Stanley in the Mergers & Acquisitions department in 1987. Prior to joining Morgan Stanley, Carla received an MBA from Harvard Business School an MBA, Second Year Honors, and an AB in economics from Harvard University, Magna Cum Laude. Carla has also received Honorary Doctorates of Laws, Humanities and Business from Marymount Manhattan College, Bloomfield College, Jacksonville University, Simmons College, the College of New Rochelle and Fisk University respectively. Carla Harris is actively involved in her community and heartily believes that “we are blessed so that we can be a blessing to someone else.”

She is the Chair of the Board of the Morgan Stanley Foundation and sits on the boards of the Food Bank for NYC, The Executive Leadership Council, The Toigo Foundation, Sponsors for Educational Opportunity (SEO), A Better Chance, Inc., The Apollo Theatre Foundation, Mt. Sinai Hospital, Xavier University, and is an active member of the St. Charles Gospelites of the St. Charles Borromeo Catholic Church and the Mark Howell Singers. Ms. Harris is co-chair of the National Social Action Commission of Delta Sigma Theta Sorority, Incorporated and was a member of the Board of Overseers’ Committee on University Resources, Harvard University. She has received the Bert King Award from the Harvard Business School African American Alumni Association, the 2005 Women’s Professional Achievement Award from Harvard University, the Pierre Toussaint Medallion from the Office of Black Ministry of the Archdiocese of New York, the Women of Power Award given by the National Urban League, the Women of Influence Award from The Links, Incorporated, and many other awards. In her other life, Carla is a singer, and has released her third gospel CD “Unceasing Praise” (2011). Her second CD, a gospel album entitled, “Joy Is Waiting,” was featured on BET Nightly News while her first CD entitled, “Carla’s First Christmas,” was a bestseller on Amazon.com in New York and in record stores, and was featured on the CBS Evening News with Dan Rather in his “American Dream” segment. She is also the author of the newly released book, Expect to Win (Hudson Press).

Mustafa Jama  
Chief Investment Officer

Mustafa Jama is head and chief investment officer of Morgan Stanley Alternative Investment Partners Hedge Fund group; he is also a member of the AIP Hedge Funds Investment Committee. He joined Morgan Stanley AIP in 2004 and has 19 years of industry experience. Prior to joining the firm, Mustafa was a managing director and head of manager sourcing for Glenwood Capital Investments and was a director and portfolio manager at Deutsche Bank Absolute Return Strategies; both are fund of hedge funds managers. Previously, he managed client capital at Bankers Trust / Deutsche Bank, utilizing option strategies in equities, fixed income, currencies and commodities and also managed Deutsche Bank’s proprietary capital. Mustafa received a B.S. in civil engineering from Southern University and an M.S. in civil engineering from the University of Southern California. He received an M.B.A. from Harvard Business School.
Martin Leibowitz
Managing Director

Martin L. Leibowitz is a managing director with Morgan Stanley Research Department’s global strategy team. Over the past eight years, he and his associates have produced a series of studies on such topics as asset allocation, policy portfolios, rebalancing strategies, asset/liability management and duration targeting in bond portfolios.

Prior to joining Morgan Stanley, Mr. Leibowitz was vice chairman and chief investment officer of TIAA-CREF from 1995 to 2004, with responsibility for the management of over $300 billion in equity, fixed income and real estate assets. Previously, he had a 26-year association with Salomon Brothers, where he became director of global research, covering both fixed income and equities, and was a member of that firm’s Executive Committee.

Mr. Leibowitz received both A.B. and M.S. degrees from The University of Chicago and a Ph.D. in mathematics from the Courant Institute of New York University.

He has written over 200 articles on various financial and investment analysis topics, and has been the most frequent author published in both the Financial Analysts Journal (FAJ) and the Journal of Portfolio Management (JPM). Ten of his FAJ articles have received the Graham and Dodd Award for excellence in financial writing. In February 2008 an article written by Mr. Leibowitz and his associate Anthony Bova was voted Best Article in the 9th Annual Bernstein Fabozzi/Jacobs Levy Awards by the readers of JPM.

In 1992, Investing, a volume of his collected writings, was published with a foreword by William F. Sharpe, the 1990 Nobel Laureate in Economics. In 1996, his book Return Targets and Shortfall Risks was issued by Irwin Co. In 2004, two of his books were published: a compilation of studies on equity valuation, titled Franchise Value (John Wiley & Co.), and a revised edition of his study on bond investment, Inside the Yield Book (Bloomberg Press). The first edition of Inside the Yield Book was published in 1972, went through 21 reprints, and remains a standard in the field. A second edition was published in 2008 with a foreword by Henry Kaufman, and a third edition was issued in 2013 with a major new section on Duration Targeting. In 2008, Mr. Leibowitz co-authored a book which focused on active equity strategies, Modern Portfolio Management (John Wiley & Co.). Another

volume, The Endowment Model of Investing, co-authored with Anthony Bova and Brett Hammond of TIAA-CREF, was published in 2010, also by John Wiley & Co. Peking University Press has published a Mandarin edition of The Endowment Model, released in March 2012.

Mr. Leibowitz has received three of the CFA Institute’s highest awards: the Nicholas Molodowsky Award in 1995, the James R. Vertin Award in 1998, and the Award for Professional Excellence in 2005. In October 1995, he received the Distinguished Public Service Award from the Public Securities Association, and in November 1995 he became the first inductee into The Fixed Income Analyst Society’s Hall of Fame. He has received special Alumni Achievement Awards from The University of Chicago and New York University, and in 2003 was elected a Fellow of the American Academy of Arts and Sciences.

Mr. Leibowitz serves on the investment advisory committee of Singapore’s GIC, the Harvard Management Corporation, the Carnegie Corporation, the Rockefeller Foundation, and the Institute for Advanced Study in Princeton, NJ.

Joe McDonnell, CFA
Managing Director

Joe is head of Morgan Stanley’s Alternative Investment Partners’ Portfolio Solutions Group in EMEA & senior portfolio manager for Alternative Investment Partners’ Diversified Alternatives. He joined Morgan Stanley in 2008 and has 19 years of investment experience. Prior to joining the firm, Joe was senior investment manager (pensions) at Shell International Limited. Previously, he was head of fixed income at IBM Retirement Funds EMEA. Joe received an M.A. in economics and finance from the University of Sheffield, and a B.A. in economics and history from the University College Dublin. He holds the Chartered Financial Analyst designation and is a Trustee Director of the Morgan Stanley Pension Fund (UK).
Cyril Moullé-Berteaux
Managing Director

Cyril is head of the Global Multi-Asset team at MSIM. He re-joined the firm in 2011 and has 23 years of financial industry experience. Before returning to Morgan Stanley, Cyril was a founding partner and portfolio manager at Traxis Partners, a multi-strategy hedge fund firm. At Traxis Partners, Cyril managed absolute-return portfolios and was responsible for running the firm’s quantitative and fundamental research effort. Prior to co-founding Traxis Partners, in 2003, he was a managing director at MSIM, initially running Asset Allocation Research and ultimately heading the Global Asset Allocation team. Previously, Cyril was an associate at Bankers Trust and worked there from 1991 to 1995 initially in corporate finance and eventually as a derivatives trader in the emerging markets group. He received a B.A. in economics from Harvard University.

Sergei Parmenov
Managing Director

Sergei is a senior member of the Global Multi-Asset team at MSIM. He re-joined the firm in 2011 and has 18 years of investment experience. Before returning to Morgan Stanley, Sergei was a founder and manager of Lyncean Capital Management, a macro hedge fund. Between 2003 and 2008, Sergei was an analyst and a portfolio manager at Traxis Partners, a multi-strategy hedge fund. From 2002 to 2003, Sergei was an analyst at a European mid-cap equities hedge fund at J. Rothschild Capital Management in London. Prior to this, he was a vice president in the private equity department of Deutsche Bank and from 1999 to 2001, Sergei was an associate and subsequently vice president at Whitney & Co, focusing on European private equity investments. Sergei started his career in Morgan Stanley Investment Management in 1996. He received a B.A. in economics from Columbia University.

Bruno Paulson
Managing Director

Bruno is a portfolio manager for the London-based International Equity team. He joined Morgan Stanley in 2009. Prior to joining the firm, Bruno worked for Sanford Bernstein in London, where he was a Senior Analyst covering the financial sector, particularly banks and insurers, for eight years. Previously, he was a manager at the Boston Consulting Group where he focused on the financial services industry. Bruno has an MBA from INSEAD where he received the Ford Prize for graduating top of class. He was also a Research Fellow in Political Economy at Nuffield College, Oxford, and received a B.A. in politics, philosophy and economics with 1st Class Honors from Keble College, Oxford.

Eric Stampfel, CFA, CAIA, CMT
Executive Director

Eric Stampfel, CFA, CAIA, CMT is a portfolio manager for the Morgan Stanley Alternative Investment Partners Hedge Fund group, focusing on long/short equity and emerging manager strategies; he is also a member of the AIP Hedge Fund Investment Committee. He joined Morgan Stanley AIP in 2010 and has 18 years of industry experience. Prior to joining the firm, Eric was vice president and global head of long/short equity at Ivy Asset Management. Previously, he was senior equity analyst at Cambium Capital Management and senior equity analyst at Kingdon Capital Management where he focused on long/short stock selection. Eric received a B.S. in accounting from Villanova University. He is a member of the New York Society of Security Analysts and the Market Technicians Association. He holds the Chartered Alternative Investment Analyst, the Chartered Financial Analyst and Chartered Market Technician designations.
Steven Turner, CFA  
Senior Associate  
Steven is a senior associate for Morgan Stanley’s Alternative Investment Partners’ Portfolio Solutions Group. He joined Morgan Stanley AIP in 2013 and has five years of industry experience. Prior to joining the firm, Steven was an analyst for Mercer Investment Management where he was involved in the construction of alternative investment portfolios for large UK pension funds. Steven received a B.Sc in economics from the University of Southampton and an M.Sc in investment management from the ICMA Centre at the University of Reading. He holds the Chartered Financial Analyst designation.

Peter Vasiliadis, CPA  
Managing Director  
Peter Vasiliadis, CPA, is head of the Operational Due Diligence team for the Morgan Stanley Alternative Investment Partners Hedge Fund group, focusing on evaluating and monitoring hedge fund investments from an operational risk perspective. He joined Morgan Stanley AIP in 2004 and has 18 years of industry experience. Prior to joining the firm, Peter was an audit manager for the assurance and business advisory services group of PricewaterhouseCoopers, where he specialized in the alternative investment management industry. Previously, he was an auditor at Tait, Weller & Baker and an accountant at the Delaware Group of Funds. He also worked as an implementation analyst at Prudential Investments. Peter is a Certified Public Accountant (license currently inactive). He received a B.S. in accounting from the University of Delaware.

Oliver Zeng  
Executive Director  
Oliver is a member of the Fixed Income Team. He joined Morgan Stanley in 2012 and has 17 years of investment experience. Prior to joining the firm, Oliver was a director of portfolio valuation at Duff & Phelps, where he worked on structured products and residential whole loan portfolio valuation. Previously, he provided valuation and risk management of distressed RMBS investments for Adventure Capital Management, which he co-founded, and was a vice president on the mortgage teams at Paulson & Co. and Lehman Brothers. Oliver received a B.S. in computer science from Changsha Institute of Technology (China), an M.S. in computer science from Xiamen University (China) and a Ph.D. in computer science from Syracuse University.