Providence
Independent Investment Advisory

WHITE**PAPER**

Lower Longer Term Returns

Contents

1.   Lower Longer Term Returns

This paper contends that long term investment returns from a traditional balanced portfolio are likely to be structurally lower than has been the experience over the past 30 years. Without adjusting return expectations, a more aggressive investment stance would be required to meet previous aspirational goals. The primary drivers behind this conclusion are due to multiple and parallel global imbalances creating headwinds over the longer term, being:

- Demographic changes
- Income inequality
- Excessive debt levels

These structural headwinds feed into the increasing prospect of a sustained period of low inflation and hence low cash and bond yields. As these factors are all interrelated and key inputs to other asset class valuations, the flow-on effects are likely to result in lower returns from all asset classes going forward.

Investors previously seeking returns of 4.5 – 5.5% above CPI for the purpose of meeting actuarial schedules, contractual liabilities or mandatory annual distributions will have to either adjust aspirational goals and income requirements or take on a higher level of risk to meet investment returns. We have worked closely with our asset consultant, Heuristic Investments, to calculate expected returns and drawn on multiple industry references to form our views. It is important to note that an event that results in sudden revaluation of any of these factors would change the outlook and hence our view on long-term asset class returns. The valuation starting point of assets is paramount in determining long-term returns on the assumption of mean reversion.

2. The Global Economy

We believe that there are sufficient structural economic headwinds that will result in lower nominal growth over the long term. A primary contributor to lower growth and thus return expectations are that both population growth and productivity are structurally lower, and hence we can expect a long period of lower trend economic growth.

Potential nominal GDP growth = population growth plus productivity. This provides an anchor or a reference point for bond yields and broad earnings growth assumptions across countries and regions. Given the existence of excess capacity globally, the reluctance to invest due to technological disruption and deficiencies in demand as a result of heavy indebtedness and economic and political uncertainty, the neutral rate of interest that would entice increased investment and spending is now lower than previous levels. As long as this is the case, growth will continue to remain below long-term averages in our view.

Demographic Changes

Most developed economies are now influenced by an ageing population coupled with longer lifespans due to improved health care. The result is a greater percentage of the population over the working age. This in itself is not an issue but coupled with the global decline in the proportion of the population that is below the working age, it inhibits growth. Since WWII, global growth has been propelled in part by a steady increase in the labour force driven by baby boomers. With an ever increasing 'ageing society' and the rising dependency that comes with it, this in turn undermines public finances and potentially inhibits governments' ability to improve demand via fiscal support.

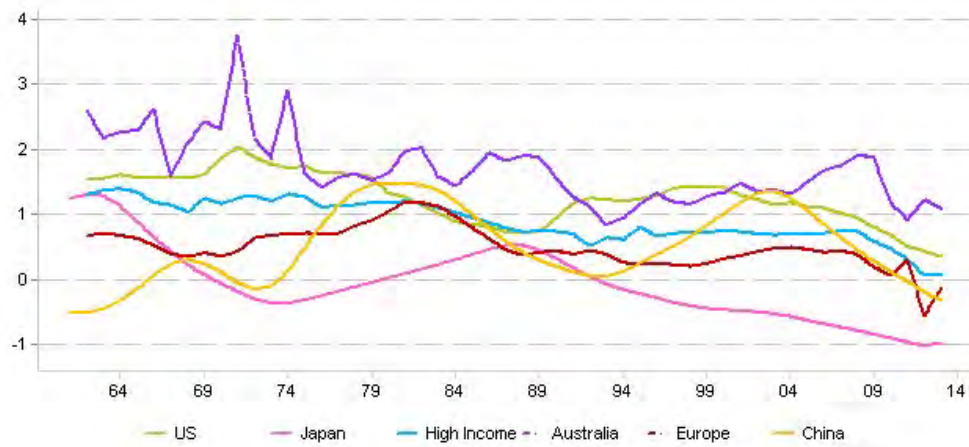**Figure 1: The Incredible Shrinking Labour Force**
Source: BCA Research 2015
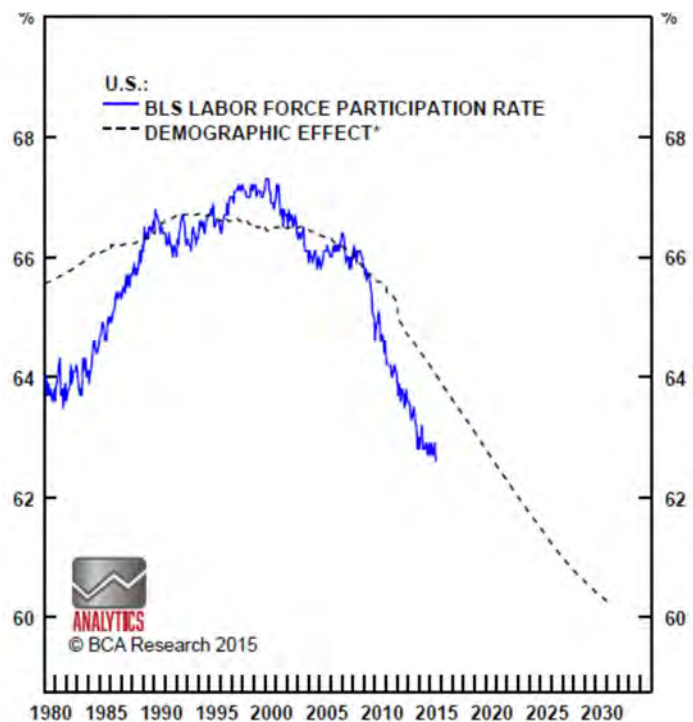
It is expected the labour force participation rate will follow the demographic effect leading to a labour shortfall.

The shrinking working age population growth rate is a global phenomenon.

Income Inequality

It is not a new concept that the wealthiest few earn a far greater proportion of income than the poorest many. It is a fundamental part of a capitalist economy. However, this has significant implications for economic growth given that lower income households have a much higher marginal propensity to consume (MPC). That is, for each additional dollar of income they earn they spend a greater proportion of that additional income than their wealthier counterparts. The OECD explores this concept further, suggesting that growing income inequality is a medium-term economic drag. The OECD in their May 2015 paper "In It Together: Why Less Inequality Benefits All" cited the following:

- Income inequality tends to drag down GDP growth
- The gap between rich and poor is at the highest level in 30 years in most countries
- The rise in income inequality between 1985 and 2005 is estimated to have knocked 4.7 percentage points off cumulative growth between 1990 and 2010 on average across OECD countries
- The difficulty for people in disadvantaged households to access quality education, implying a large amount of wasted potential and lower social mobility
- A high wealth concentration can weaken potential growth.

It is also thought that the Quantitative Easing (QE) policies adopted by central banks since the global financial crisis have largely benefited the owners of assets while the impact on real wages and spending, particularly for the less wealthy, has been more subdued.

High Debt Levels

Historically, debt has contributed significantly to economic growth by bringing forward future projects by funding them today. Unfortunately, this has come to a point where the marginal economic output from each additional dollar of debt has narrowed significantly. For example, in the US, between 1950 and 1980 each additional 1% increase in total debt was associated with an additional 1% nominal GDP growth or 0.6% additional real GDP growth. In the 1990s, each additional 1% growth in total debt was associated with an additional 0.8% in nominal growth and 0.5% real. However, since 2000, this has declined to 0.7% nominal growth and 0.3% real growth. Furthermore, global debt levels are at extremely high levels suggesting that even if there were projects available that produced reasonable economic outcomes, there is limited capacity to take on this debt.

In the developed world although household debt has shrunk since the global financial crisis, government debt has risen from around 70% of GDP to around 110% of GDP. Total debt to GDP has lifted from 215% of GDP in the early 2000s to almost 270% today. In the emerging economies debt has also risen but mainly at the corporate level where it has risen from below 60% of GDP in 2008 to almost 100% of GDP.

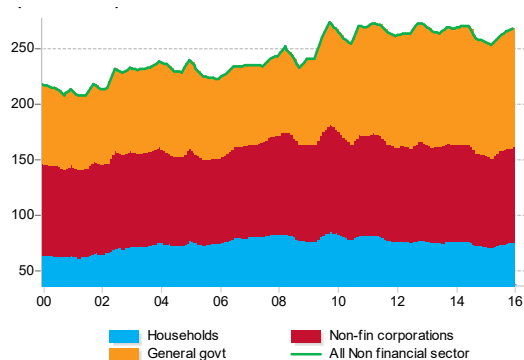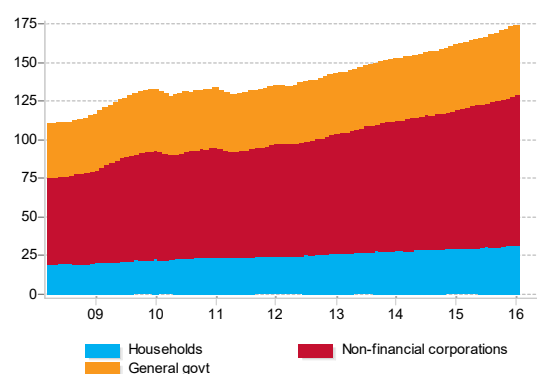**Figure 3: Advanced Economies Debt to GDP by Sector (% of GDP)**
Source: BIS

Figure 4: Emerging Economies Debt to GDP by Sector (% of GDP)
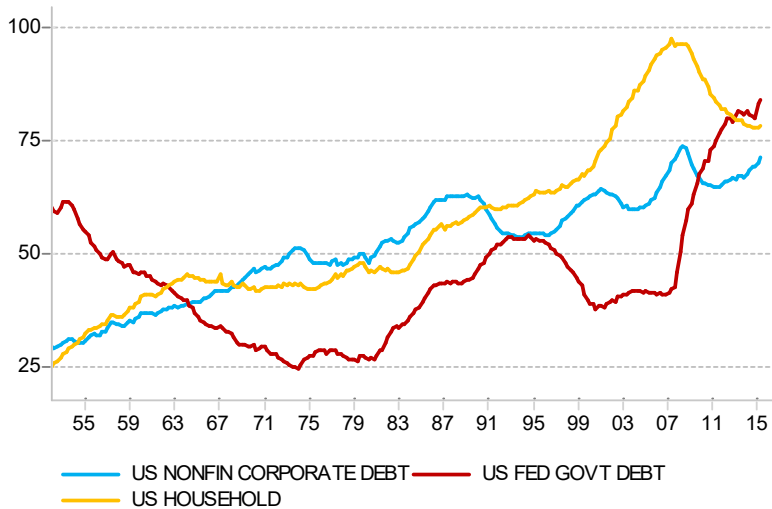Source: BIS

We continue to see increased levels of debt, mainly driven by governments in advanced economies and corporates in emerging economies. High debt levels are likely to have a diminishing effect on GDP growth.

Figure 5: US Household, Corporate & Government Debt (% of GDP)
Source: BEA

Legend:
— US NONFIN CORPORATE DEBT — US FED GOV'T DEBT
— US HOUSEHOLD

These excessive/record debt levels will inhibit the ability of governments to stimulate growth and consumers to leverage.

Low Interest Rates and Corporate Use of Additional Debt

At a certain level of interest rates the relative attractiveness of using debt to invest in projects is outweighed by the attractiveness of purchasing back securities. This goes a long way in explaining the substantial increase in debt - funded share buybacks, especially in the USA. While debt-funded buybacks are a short-term positive for shareholders given price support and improved per share metrics, it is an unproductive use of debt and therefore does not assist in generating economic growth or future returns. Debt funding has been used in part for these buy-backs rather than for long-term investment to improve corporate productivity and ROE.

Figure 6: US Household Sector Debt % GDP & Savings Rate
Source: BEA

Legend:
— US Personal Savings Rate Smoothed (RHS)
— US HOUSEHOLD SECTOR DEBT % of GDP
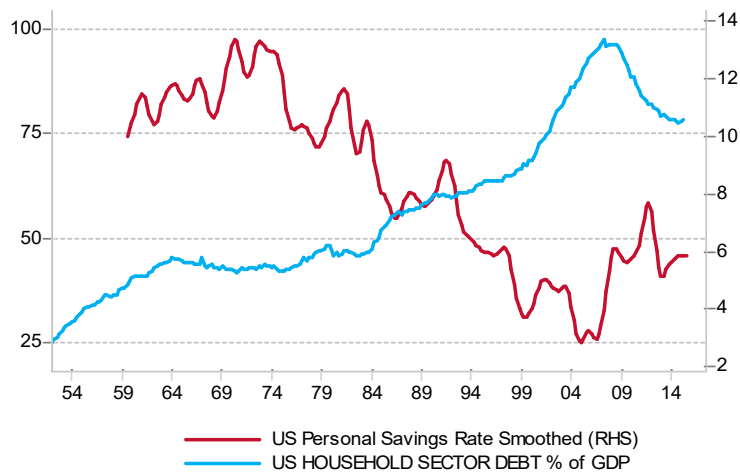
Households in the US continue to deleverage and increase savings. Both outcomes will put pressure on economic growth via reduced capital and retail spending.

High Savings Rates

While in the long run a high level of savings will make an economy productive, it comes at the cost of short-term economic growth from increased spending. **In the USA the level of household indebtedness has dropped since the GFC from almost 100% of GDP to below 80% as households have curtailed spending and lifted the savings ratio from a lowly 2-3% of income to round 6% of income.**

Lower Interest Rates

Supressed levels of global economic growth due to lower productivity, demographic changes and unconventional monetary policy will see inflation remain subdued in the medium term. Cash rates are likely to remain accommodating and bond rates will also reflect this. A return to long-term average interest rates would require trend growth to return back to its long-term average. However real interest rates cannot rise too quickly as that would undermine growth and the ability of governments to manage their own debt to more sustainable levels. While a fiscal response from governments is a realistic option, to date, there is a hesitance as governments attempt to reign in excessive debt.

Global central banks have kicked the can too far down the road and are stuck in unconventional policy that will leave them no option but to keep interest rates lower for longer.

The current extremely easy monetary policy settings and low real interest rates are in part designed to support growth and ease the interest burden on governments and households. A lack of investment overall in advanced economies post-2008 is however undermining productivity and growth prospects.

Across the globe there is an increasing amount of government-issued bonds trading with yields below 0%; US$10trn of bonds providing negative interest rates to be precise. This implies that market expectations are for lower economic growth, deflation or a combination of both. Purchasing a bond with a negative interest rate is ensuring that you will receive less for that bond at maturity than you paid for it.

With bond yields representing the "risk-free rate" and therefore the starting point by which all other asset class expected returns are calculated, it is difficult to calculate returns close to the historical average for any asset class.

3.   Low Credit Returns

Credit issuers generally pay a spread above either an equivalent government bond (if fixed coupons) or above a short-term rate such as BBSW (if floating). Given the current low government bond rates and short-term borrowing rates, the starting rate to which the spread is applied is already low. With low starting yields, absolute returns are well below their average level of the last three decades.

The spreads themselves are a function of the credit worthiness of the issuer and the current state of defaults. With the reference rate (government bond/BBSW) so low, the current level of defaults is also at an extremely low level as the ability to service debt (and therefore avoid a default) is more accommodating.

As mentioned previously, this has had ramifications for corporate use of debt but has also arguably extended the period for which unprofitable assets have continued to produce and thereby made supply and demand imbalances remain for longer than previous cycles.

For the purposes of estimating longer term returns we calculate default losses based on the 10-year cumulative default rate. We have used 30% for high yield and 5% for investment grade, with recovery rates of 40% for high yield and 50% for investment grade. In addition to defaults there is also the risk of changes to bond valuation as a result of ratings changes or rating migration. A downgrade from investment grade to speculative grade would lead to a value adjustment of around -7%. Of course, bond ratings can also be upgraded. We have included a component for rolling down the yield curve over time as well as a valuation adjustment to reflect a 100 basis-point rise in the level of absolute yields (i.e. treasuries).

Table 1: Credit Return Assumptions
Source: Heuristic

CREDIT	Spread	Credit Loss	Roll	Valuation	Total
Investment grade	1.4	-0.25	0.4	-0.5	1.1
High yield	5.25	-1.75	0.5	-0.5	3.5
50% IG/50% HY					2.3
Hedging					1.25
Plus underlying					1.0
Global Return (60%)					4.5
Aus. Credit FRN (40%)					3. 4
TOTAL RETURN					**4.0**

Credit returns are likely to be lower going forward given the expected valuation adjustment over the forecast period. The more we book in gains now, the less we will earn in the form of future income.

4. Equity Returns

We have focused on USA equities in this discussion given their significant weighting to global equities indices. Similar concepts also apply for the Australian equity market.

There is an argument that higher equity valuations are justified as a result of the much lower discount rate that is used in DCF calculations. However, given that bond yields are a function of economic growth and have been manipulated due to unconventional monetary policy, justifying higher valuations based purely on this is dangerous.

Figure 7: US S&P500 & US 10-year Yield
Source: IRES, S&P, using proxy updates

There is a strong relationship between falling bond yields and rising equity prices. This is mainly due to a lower discount rate applied to discounting future cash flows.

In conjunction with the current high valuations, corporate profit margins are at or close to their highest levels as costs have been taken out (lower debt costs, improved efficiency, less staff). As a result, it is difficult to see corporate profit growth without top-line revenue growth, which we believe will follow nominal GDP. As discussed previously, we expect GDP growth to be structurally lower. Therefore, the compounding impact of high valuations and structurally lower earnings growth (due to lower expected revenue growth and a normalisation of the currently high profit margins) suggest that expected returns should be significantly lower than has historically been the case.

Over the next five years, equities will be forced to make do without several tailwinds that have been supporting them for decades. The secular decline in interest rates and inflation has occurred globally over the last 30-plus years. The ageing population as people leave the workforce will also encourage wage pressure due to a tightening of the labour force supply. Equities tend to perform best against a backdrop of modest inflation. Too much inflation is harmful while outright deflation tends to produce a de-rating.

Figure 8: US Profit & Wages Share
Source: BEA, using proxy updates
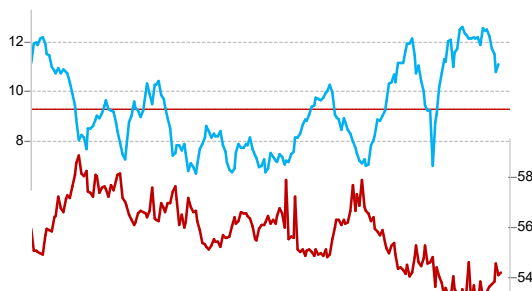
Wages are at low levels as a % of GDP at the same time that profit margins are well above long-term averages. A normalising of this would put pressure on US profit margins.

Figure 9: US Sales & EPS Growth (base = 100 2004)
Source IBES
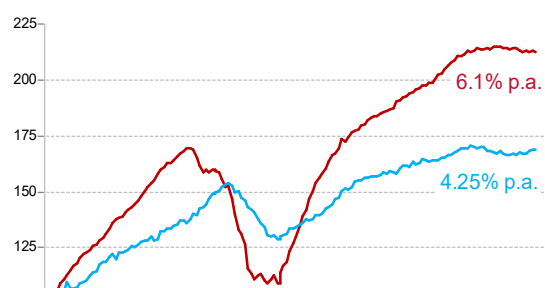
Much of the recent earnings growth in the US has been driven by expanding margins (lower interest costs, share buybacks, low wages). With margins already elevated, sales growth will need to improve to continue the EPS growth trend.

Revenue

Our top–line sales growth projections reflect the nominal GDP growth rates in the countries/regions to which the region is exposed and also reflect average levels. According to IBES data, Australia's sales per share growth has been 3.25% since 2004 compared with nominal GDP growth of 5.7% while in the US sales growth has been 4.25% compared with nominal GDP growth of 3.5% p.a. with the divergence partly explained by offshore sales. In Europe and Japan sales per share growth has been around 1% p.a. while for Emerging Markets it has been 9.3% p.a.

Valuation Adjustments

We incorporate an estimate for valuation adjustments over the longer term. For example, the US equity market is deemed to be relatively expensive with various measures of valuation extended. Of course there is no one valuation method used by market participants and all of them have their drawbacks. A range of valuation measures indicates the US equity market is 15% overvalued while the Australian market is around 5% overvalued.

Equity Return Assumptions by Region

Table 2: Equity Return Assumptions by Region
Source: Heuristic

	US	EU	Japan	Australia	EM
Revenue growth (%)	5.50	4.25	4.00	5.00	7.00
Margins (% of Revenue)	-1.00	1.50	0.00	-0.50	-0.50
Earnings growth (%)	*4.50*	*5.75*	*4.00*	*4.50*	*6.50*
Dilution	-2.00	-2.00	-2.00	-2.00	-2.50
Buybacks	2.00	1.00	1.00	1.00	0.00
EPS Growth (%)	*4.50*	*4.75*	*3.00*	*3.50*	*4.00*
Valuation effect	-1.50	-0.25	-0.25	-0.50	1.25
Price Performance (%)	*3.00*	*4.50*	*2.75*	*3.00*	*5.25*
Dividend Yield (%)	2.25	3.50	2.00	4.25	3.00
TOTAL GROSS RETURN	**5.25**	**8.00**	**4.75**	**7.25**	**8.25**
Inflation	2.00	1.75	1.00	2.25	3.50
TOTAL REAL RETURN	**3.25**	**6.25**	**3.75**	**5.00**	**4.75**

Equity returns are likely to be lower driven by a combination of lower expected revenue growth, margin compression and a normalising of valuations over the forecast period.

5.   Property

Within A-REITS, cash flow yields remain at a reasonable spread to bond yields and currently offer a relatively attractive 5.0% return. Expected cash flow growth is generally a function of inflation and with inflation expectations muted for the foreseeable future, it is difficult to put forth an aggressive cash flow growth assumption. Furthermore, we must assume that the current 20% premium to NAV will revert to actual Net Asset Value, implying a 2.0% reduction in the share price per annum for the next 10 years. Fortunately, A-REITS have remained relatively under-geared which provides flexibility should we see some domestic economic distress.

Table 3: REITs Return Assumptions
Source: Heuristic

	REITS
EPS growth	2.25
Valuation effect	-2
Price performance	0.25
Dividend yield	4.75
TOTAL RETURN	5.0

Once again, the normalisation of valuations is likely to be the biggest detractor of returns for REITs.

There is a correlation between listed and unlisted property, with the key differentiator being the lower volatility of direct property due to the lower number of transactions. With this in mind, the expected returns from direct property are marginally higher.

6. Conclusion: Overall Asset Class Returns

Below is a summary of expected returns from all asset classes. Those categories that cover a number of markets (such as international equities) are weighted to reflect the relevant index (e.g. International equities DM, unhedged represents the MSCI World Index).

Table 4: Long-term Asset Class Return Forecast Summary
Source: Heuristic

Asset Class (next 10 yrs. p.a.)	Nominal
International Equities (DM, unhedged)	6.5
International Equities (DM, hedged AUD)	7.5
Emerging Market Equities (unhedged)	8.0
Australian Equities	7.25
REITs	5.0
Domestic Bonds	2.5
Global Bonds	1.75
Credit	4.0
Cash	3.0
Direct Property	6.75
Diversified Hedge Funds	4. 5
Private Equity	9.25

Overall, we expect all asset classes to exhibit lower returns over the next 10 years.

Investment Implications from BCA research

1. Reduce allocations to sovereign Bonds
2. Favour equities over fixed income
3. Consider long/short equity positions
4. Consider adopting more of a focus on bottom-up analysis
5. Consider initiating or increasing allocations to alternative investments and/or alternative managers
6. Remember that excess returns accrue only to the providers of scarce capital.

7.   Strategic Asset Allocation Returns

Table 5: Balanced Fund – Excluding & Including Alternatives						
Source: Lonsec Strategic Asset Allocation Benchmarks (2016)						

Balanced 60% growth	Excluding Alternatives			Including Alternatives		
	Strategic Weight	Nominal	Real	Strategic Weight	Nominal	Real
Australian Equities	24%	7.25%	5.00%	19%	7.25%	5.00%
International Equities	25%	6.50%	4.25%	20%	6.50%	4.25%
Property	11%	6.25%	4.00%	11%	6.25%	4.00%
Domestic Bonds	35%	2.50%	0.25%	29%	2.50%	1.00%
Cash	5%	3.00%	0.75%	5%	3.00%	0.75%
Alternatives*	NA	NA	NA	16%	5.98%	3.98%
Total	**100%**	**5.08%**	**2.83%**	**100%**	**5.20%**	**3.21%**

Based on the expected lower returns from each asset class, the returns from a standard balanced fund are also likely to be reduced. This will force investors to allocate more to riskier assets or accept lower returns.

*Alternatives consists of an 11% exposure to Diversified Hedge Funds and a 5% exposure to Private Equity.

8. Appendix

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Adjusting to a Low Yield World – AMP Capital, July 2016

Strategy Observations – Long Term Return Assumptions Heuristic Investment Systems, December 2015

Asset Allocation Outlook 2016 – PIMCO

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Special Report: Asset Allocation in A Low-Return World, Part II: Corporate Bonds – BCA Research, Sept 2015

Special Report: Asset Allocation in A Low-Return World, Part I: Sovereigns – BCA Research, July 2015

Reference Charts:

Table 6: Macro Assumptions Source: Heuristic			
Macro Assumptions next 10 years	Real GDP growth	Inflation	Nominal GDP growth
US	2	2	4
Europe	1.5	1.75	3.25
Japan	0.75	1.25	2.0
Advanced Economies	1.75	1.75	3.5
Australia	2.5	2.25	4.75
Emerging Economies	3.5	3.5	7

A Simple Model for Expected Equity Market Returns: US

One way of generating return projections is to use a building blocks approach, using the information we have at hand such as dividend yield, long term EPS growth and inflation. As noted earlier long-term real EPS in the US has been 1.7%, so we use this going forward rather than GDP growth. As also noted earlier EPS growth has traditionally fallen short of GDP growth due to the dilution of existing shareholders through new issuance.

Adding the starting point dividend yield (i.e. at end of the previous decade) plus long term EPS growth and inflation (expected to be the previous decade average) we can generate an expected equity market return, and we have done this in the following table. It gets us part of the way towards estimating what turned out to be actual returns for each decade, but there is one missing ingredient - starting point valuations. By taking into account starting point valuations and returning them to trend to date PE valuations, the estimated or projected return comes closer to actual return.

For example, for the period 2000-10 the starting dividend yield was 1.3% plus 1.6% for EPS growth plus an expected inflation rate of 2.9%, which gave an expected return of 5.75% p.a. for 2000-10. However, once we take into account an expected valuation adjustment, i.e. the starting point PE of 30.5 returning to the trend level of 15.5, the expected return drops to 0.8% p.a., compared with actual of -1% p.a.

Using this simple building blocks model we can project returns from US equities in nominal terms of 5.2% p.a. over the ten years to 2020 and 3.7% p.a. for the next ten years from September 2015. This compares with 9.5% p.a. over the long term.

Table 7: Simple Model for Expected Returns
Source: Heuristic

US EQUITIES	Dividend Yld	Long term real EPS growth	Inflation	Expected equity return	Actual return	PE	PE Trend level	Add Valuation Adjustment	Adjusted Expected return
1900-10	4.3	1.6	1.5			13.5	14.1		
1910-20	5.9	1.6	6.6	7.40	4.4	9.7	8.5	0.4	7.8
1920-30	4.5	1.6	- 0.9	14.10	14.8	13.3	11.0	- 1.2	12.9
1930-40	5.0	1.6	- 2.0	5.20	-0.5	13.9	14.6	- 1.7	3.5
1940-50	6.9	1.6	5.4	4.60	9	7.2	12.0	0.5	5.1
1950-60	3.4	1.6	2.2	13.90	19.3	17.7	11.9	6.7	20.6
1960-70	3.5	1.6	2.5	7.20	7.8	15.9	14.5	- 3.3	3.9
1970-80	5.3	1.6	7.4	7.60	5.9	7.3	13.3	- 0.9	6.7
1980-90	3.3	1.6	5.1	14.25	17.5	15.4	12.8	8.2	22.5
1990-2000	1.3	1.6	2.9	9.95	18.2	30.5	15.5	- 1.7	8.3
2000-10	2.3	1.6	2.5	5.75	-1	21.9	19.3	- 4.9	0.8
2010-20		1.6		6.40				- 1.2	5.2
2010-2020	2.2	1.6	2	5.80		20.8	19.0	- 0.9	4.9
10 yrs from now	2.2	1.6	2	5.8		20.8	16.5	- 2.1	3.7

Table 8: US and Australian GDP, Earning and Dividends by Decade
Source: Heuristic

	US Real GDP	Aus Real GDP	US Real EPS	Aus Real EPS	US Nominal EPS	Aus Nominal EPS	US Div Yld	Aus Div Yld
1900-10							4.3	
1910-20			- 4.3		2.0		5.9	
1920-30			6.6		5.6		4.5	
1930-40	1.0		- 3.7		- 5.7		5.0	
1940-50	5.6		4.3		9.9		6.9	
1950-60	4.3		1.6	2.0	3.9	7.0	3.4	3.1
1960-70	4.4	5.0	2.9	5.8	5.5	8.3	3.5	4.7
1970-80	3.3	3.1	2.4	- 3.1	9.9	6.7	5.3	5.4
1980-90	3.1	3.3	- 1.7	- 1.7	4.4	6.5	3.3	5.6
1990-2000	3.4	3.3	4.7	- 0.7	7.7	1.6	1.3	3.2
2000-10	1.7	3.0	- 1.9	3.1	0.6	8.1	2.3	3.7
CAGR/avge	3.3	3.5	1.6	0.9	5.0	6.0	3.9	4.3
current	2.2	2.0	1.5	1.7	3.5	3.7	2.2	4.0

Table 9: Long-term Growth and Interest Rate Assumptions
Source: Heuristic

Macro Assumptions Next 10 Years	Real GDP Growth	Inflation	Nominal GDP Growth	Neutral Cash Rate	10-year Bond Yield Range
US	1.75	2	3.75	2.5	1.75 - 3.75%
Europe	1.5	1. 5	3.0	2.0	1.0 - 3.5%
Japan	0. 5	1.25	1.75	1.0	0.5 - 2.0%
Advanced Economies	1.75	1. 5	3.25	2. 5	1.5 - 3.5%
Australia	2.5	2.25	4.75	3. 5	2.5 - 4.75%
Emerging economies	3.5	3.5	7	5	N.A.

Table 10: Real Yields Lead Real Returns
Source: BCA

Real Annualised Returns* Over Next 5 Years

	Real Yield	U.S**	EM***	Euro Area****	World*****
High Yield	10.0% and Above	9.30%	n/m^	10.60%	10.60%
	7.5% - 10.0%	6.10%	11.0%	8.50%	7.20%
	6.0% - 7.5%	3.70%	8.10%	6.60%	5.20%
	Below 6.0%	3.90%	3.70%	3.10%	4.60%
Investment Grade	6.0% and above	8.40%	n/m^	n/m^	n/m^
	4.0% - 6.0%	5.80%	6.90%	5.20%	n/m^
	2.0% - 4.0%	3.20%	5.30%	3.20%	3.50%
	Below 2.0%	-1.0%	2.50%	1.60%	2.20%

*   Deflated by smoothed moving average of past inflation
**   US High Yield data from Jan 1987; Investment Grade Data from Jan 1973
***   EM High Yield data from Jan 1997; Investment Grade Data from Jun 2001
****   Euro Area High Yield Data from Aug 2000; Investment Grade Data from Jun 1998
***** World High Yield Data from Jan 1990; Investment Grade Data from Sep 2004
^   Not enough data points to be meaningful

Table 11: Simple Regression Estimates of Annualised 5-Year Forward Returns
Source: BCA

		Nominal Yield	Inflation*	Real Yield	Best-Fit Equation	Estimated Return**
US	IG	3.49%	1.75%	1.74%	$y = 1.71x - 2.5$	0.47%
	HY	7.26%	1.75%	5.51%	$y = 0.94x - 1.89$	3.29%
EMU	IG	1.42%	1.56%	-0.14%	$y = 1.25x - 0.42$	-0.59%
	HY	4.56%	1.56%	3.01%	$y = 0.75x + 0.14$	2.38%
EM	IG	4.16%	3.80%	0.36%	$y = 1.34x + 1.49$	1.96%
	HY	9.00%	3.80%	5.20%	$y = 1.38x - 0.67$	6.50%
World	IG	2.92%	1.75%	1.16%	$y = 1.31x + 0.04$	1.56%
	HY	7.12%	1.75%	5.36%	$y = 0.94x - 0.81$	4.24%

*   Trailing 60-month average of year over year changes in CPI world series US CPI
**   Annualised 5-year forward real return

Table 12: Modelled Future Sovereign Returns, Projected 5-year Annualised Returns for Major-Country Sovereigns
Source: BCA

%	Australia BC^	Australia SG^	Canada BC^	Canada SG^	Germany BC^	Germany SG^	Japan BC^	Japan SG^	UK BC^	UK SG^	US BC^	US SG^	Global BC^	Global SG^
June 30 2015 Yield	2.99	2.99	1.75	1.75	0.81	0.81	0.47	0.47	2.06	2.06	2.32	2.32	1.82	1.82
Dec 31 2020 Yield	2.74	3.66	1.11	1.91	0.20	0.66	0.78	2.09	2.56	4.10	2.48	3.79	1.92	3.12
Dec 31 2020 Price	101.11	97.38	102.84	99.36	102.73	100.66	98.64	93.12	97.99	91.86	99.38	94.09	99.58	94.67
Interest Income*	2.99	2.99	1.75	1.75	0.81	0.81	0.47	0.47	2.06	2.06	2.32	2.32	1.82	1.82
Price Return**	0.20	-0.48	0.51	-0.12	0.49	0.12	-0.25	-1.29	-0.37	-1.53	-0.11	-1.10	-0.08	-0.99
Total Return*	3.19	2.51	2.26	1.64	1.30	0.93	0.22	-0.82	1.69	0.53	2.21	1.22	1.74	0.83

*   Annualised
** Annualised, price assumed to be part at 6/30/2015
^   BC = Base Case; SG = Strong Growth

Table 11: Inflation Then and Now, Major Country Inflation Rates
Source: BCA

	60 - Month Moving Average of Year-Over-Year Change in CPI					
	Australia*	Canada	Germany	Japan	UK	US
12/78	12.9%	9.2%	4.7%	11.4%	16.2%	8.0%
12/79	11.6%	8.9%	4.1%	7.5%	15.7%	8.1%
12/80	10.6%	8.8%	4.0%	6.7%	14.5%	8.9%
12/81	9.8%	9.7%	4.4%	5.8%	13.5%	9.8%
6/12	2.8%	1.9%	1.7%	-0.2%	3.5%	2.2%
6/13	2.6%	1.7%	1.5%	-0.4%	3.2%	1.8%
6/14	2.5%	1.6%	1.5%	-0.1%	3.4%	1.8%
6/15	2.4%	1.8%	1.4%	0.6%	3.3%	1.8%

*   20-Quarter moving average

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