Economic & Capital Markets Outlook

BNY INVESTMENT STRATEGY & SOLUTIONS GROUP

FOURTH QUARTER 2016

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Executive Summary

ISSG CMC SUMMARY ASSET ALLOCATION

	Current	Benchmark
Global Equities	50.50%	50%
Global Bonds	46.75%	50%
Cash	2.72%	0%

• Steady quarter-on-quarter outlook has equities on hold near benchmark.

• Slight increase to fixed income for downside protection as global risks persist.

FIVE THINGS TO WATCH IN Q4 2016

1) Bond vs. equity market correlation reducing diversification benefits.

2) Impact of US election outcome on trade and monetary policy outlook.

3) Year-end Fed rate hike effect on risk assets and global carry trades.

4) Post "Brexit" negotiation progress related to regional trade and UK financials.

5) Banking sector stresses in Germany and Italy as indicators of systemic contagion.

FIG. 1: GLOBAL ASSET PERFORMANCE

% change over 3 months to 30 SEPT 16



Source: Thomson Reuters Datastream & ISSG. Please see pages 12 and 13 for a description and definition of the index representing each asset class listed above. Past performance is not indicative of future results.

ABOUT THE INVESTMENT STRATEGY & SOLUTIONS GROUP

BNY Investment Strategy & Solutions Group (ISSG) designs, develops and manages asset allocation strategies to help clients achieve their specific investment objectives. We combine a multi-faceted approach to risk with a forward-looking, long term perspective on economic and markets to identify opportunities while harnessing the broad and deep expertise of a global network of specialized investment affiliates to deliver sophisticated investment solutions.

The ISSG Capital Markets Committee (CMC) provides baseline, global asset allocation policy and assesses the market outlook for the global multi-asset strategies and solutions managed by ISSG.

What we are watching

Theme	ISSG View	Asset Class Impact	Risks to View	Recent Considerations For
Global Growth	DM growth prospects remain lacklustre, as productivity levels continue to languish and political uncertainty and geopolitical tensions will continue to weigh corporate spending plans. Broader EM growth momentum continues to improve as supportive domestic and DM policy together with some improvement in the commodity complex outlook provide a more supportive backdrop into 2017.	Corporate sector challenges continue to weigh on the outlook as top line growth remains elusive and demand growth limited despite improvements in DM labour markets. Sensitivity to economic and political news flow will continue to fuel bouts of volatility, with focus on changes to policy direction and mix playing a larger role in asset class performance in coming months.	Risk of DM policy mistakes will remain elevated into 2017, with US presidential elections, the UK departure from the European Union and a changing political landscape across Europe amongst the potential sources of sharp changes to policy expectations. Additional policy adjustments in energy sensitive economies could also provide further headwinds to growth.	ISSG View Accommodative DM policy should remain in place into 2017 as downside risks to growth remain the focal point in the continued absence of significant inflationary pressures. Consumer sector continues to hold up relatively well, but an improvement in the corporate sector will be required for a sustained improvement in growth prospects in 2017.
Global Inflation	With US inflation continuing to tick towards target, policy makers will face increasing pressure to take action in Q4 2016. Energy prices likely remain range bound into 2017, while disinflationary risks persist in Europe and Japan.	The absence of inflationary pressures should continue to support the search for yield and fixed income assets more generally. In EM, the inflationary picture remains mixed, but inflationary pressures should be manageable for most major economies into 2017.	Another round of currency wars unleashes further disinflationary pressures, clouding the inflation outlook in DM countries. Unresolved battles for energy market share could also see a less constructive picture for energy price inflation into 2017.	FX policies continue to be a source for disinflationary pressures, with GBP weakness and the possibility of a sharp RMB move areas to watch in Q4 2016. Base effects from oil prices may see inflation tick higher in coming months, but should wash out of the numbers in H1 2017.
Monetary Policy	Focus is back on US policy as a one-and-done rate rise for 2016 looks the most likely scenario in monetary policy space in Q4, while the pace of tightening into 2017 likely to remain gradual. DM policy makers are likely to maintain a more cautious footing as markets increasingly focus on any signalling around changes in the size of central bank balance sheets.	Carry trades and yield pickup plays will come under review in Q4 following the US election and an increasingly likely rate rise towards the end of the year. Policy makers increasingly conscious of the impact of negative rates and flatter yield curves on rate sensitive sectors of the economy.	With DM policy rates already at record lows and efficacy of further monetary policy action diminishing, central banks' ammunition to stave off further downturns looks increasingly limited. Risk of "taper tantrum" rising across DM as central bank monetisation of debt a key issue in coming months.	Questions around the ongoing form of monetary policy support and how this may ultimately be scaled back without upsetting growth will form the basis of policy discussions into 2017. EM policy makers may see further space for monetary policy stimulus into 2017 while supportive capital flow trends continue.
Fiscal Policy	Increasing pressure in DMs to deliver growth in the face of shifting political landscapes and challenges identifying suitable projects, with the backdrop of budget deficits and elevated debt/GDP levels looming in the background. Improvements in selected EM markets providing more fiscal space into 2017.	Progress in DM fiscal policy responses should provide much needed support to top line growth and risk assets generally, though deteriorating fiscal positions could add further pressures to bond and FX markets, particularly in the event that they result in rising risks of debt rating downgrades.	Rising nationalist and protectionist sentiment will continue to weigh on the design of incremental fiscal projects as governments remain under pressure to support domestic industries, raising the risks of policy mistakes. Upcoming elections in major DM and EM economies may see some delay in launching programs.	US likely to ramp up fiscal stimulus plans after Q4 2016 elections as major DMs look set to pursue fiscal policy avenues more rigorously into 2017. Possibility of "helicopter money", a permanent financing of government spending by the central bank, making the changing size of central bank balance sheets an important indicator to watch going forward.
Emerging Markets	Improvements in EM fundamentals should continue to pick up into Q4 2016, with a more stable outlook for China the cornerstone of the recent improvements. However, any signs of China policy uncertainty, particularly in RMB space, could see capital outflows reaccelerate.	Though EM assets remain attractive vs DM on a relative valuation basis, the Q3 rally has seen this gap narrow. We believe divergences in the prospects for EM countries will continue into 2017, advocating the need for a more selective approach to allocating to EM assets. Vulnerability to shifts in DM demand and capital flows may persist.	The increasingly likely US rate rise in Q4 2016 and possible adjustment of US policy path thereafter could see the return of volatility to the EM asset classes. EM FX is particularly prone to the risk-off trade and an important consideration for the ongoing yield pickup trade. Watching for signs of post-UK referendum impact on EM European economies.	Rising geopolitical and protectionist headwinds could see a rapid deterioration in sentiment towards EM, with political stresses and poor policy choices possible catalysts. Counter cyclical central bank policy to stabilise currencies in more vulnerable countries could also prompt shifts towards more populist policies, and ultimately weigh on global demand.
"Tail Risk Monitor"	Political and economic risks remain elevated going into Q4 2016, as the form of the new UK- European relationship becomes clearer, a new US president is appointed and political strains rise alongside protectionist sentiment, endangering both planned and existing global and regional trade deals.	Whilst prevailing accommodative policies remain supportive for risk assets and the carry trade, rapidly shifting policy expectations could drive sharp drawdowns as markets shift their focus from policy to fundamentals, resulting in prolonged periods of elevated volatility.	A rapid or miscommunicated pivot away from monetary policy support could weigh on both equity and fixed income markets. Financial sector risks are more apparent in Europe, creating a potential rise in global systemic risk – watch for impact on less liquid asset classes.	Record global debt taken together with the rising nationalist and protectionist tone in DM politics may create an environment in 2017 in which the impact of policy miscalculations could be rapidly magnified, with material implications for risk assets and global trade.

Key Charts: Economics and Markets

Throughout the recent cycle, we have advanced the thesis of the US consumer as the key pillar of support for continued economic growth and equity market performance. Medium and heavy trucks play a key role in servicing that consumer activity and moving goods through the supply chain. As an upstream indicator of demand for finished goods, declines in truck production have historically been associated with economic weakness. Thus, it gives us cause for concern to see falling truck production rates, and it's one of many indicators we continue to monitor.

Fig. 2: US consumer demand weakens



Fig. 3: The financial health of a US consumer is improving

On a brighter note however, the financial position of the US consumer continues to moderate to more sustainable long-term levels, in terms of a lower debt service ratio and higher net worth. The ratio of US household debt to disposable income continues to fall to what may be steady-state levels (yellow line), while household net worth (blue line) is still rising after falling off dramatically in the aftermath of the global financial crisis.



March 2007-June 2016

Fig. 4: The outlook for global trade is deteriorating



Source: Bloomberg December 2013-September 2016

Globalism—one of the dominant themes of the past two decades—has recently come under scrutiny from working voters and some politicians embracing a more populist view. They cite evidence that global trade has displaced workers and the benefits extracted from trade have not been shared fairly across all socioeconomic levels. Thus, we are seeing the rise of nationalistic and protectionist forces at work in the political landscape in the US and Europe. Beyond rhetoric, these effects are starting to manifest themselves in currency dynamics and global trade activity overall, albeit with a pick-up in some of the most recent

September numbers.









December 2007-June 2016

0.012 1.5 0.011 1.45 0.01 1.4 **USD** GBP | USD 1.35 0.009 Ч 0.008 1.3 0.007 1.25 0.006 1.2 Jul-16 Jan-16 Mar-16 May-16 Sep-16 GBP | USD (LHS) JPY | USD (RHS)

Fig. 7: Limits of the central banks' policy

Retail and office vacancy rates within US real estate have not changed significantly since the post-crisis recovery. Indeed they still remain far above the pre-crisis levels. The cause for this is two-fold. On a cyclical level, business appetite remains tepid for hiring, capex, business expansion, and taking on new space. On a secular level, trends toward e-commerce and telecommuting present a long-term headwind for real estate. With the asset class at relatively high valuations on historically low rates, the outlook for real estate is challenging.

Much-debated quantitative easing (QE) programs have been adopted by most major central banks as low rates in and of themselves have proven insufficient to spur economic growth. The experience of Japan, however, has shown that even a massive QE program is not sufficient on its own to spark growth or inflation. As the US has generated some modicum of growth with a much smaller-scale QE plan, Japan's leadership may eventually reconsider the risk/reward limits of further QE or explore alternative policies to spur much needed growth.

Central banks' policy action and jawboning has been increasingly ineffective at achieving the intended objectives in the midst of skeptical, risk-averse markets addicted to years of accommodative policy. The JPY is strengthening despite ongoing attempts by the BoJ to weaken the currency, while the GBP is exhibiting the opposite dynamics post-Brexit. In other unusual behavior, some of the EM currencies such as MXN & RUB have been reacting in-part as proxies for US election probabilities and the policy effects the outcome may have on their respective countries.

Source: Bloomberg January 2016-September 2016

Economic Outlook

Following a volatile first half in the markets, the third quarter of 2016 was beset by a case of the summer doldrums, with (mostly) low volatility and overall repair in asset prices following the shock of the June "Brexit" vote. Economic indicators around much of the world posted lackluster readings, while a majority of investor attention was focused on the political events in the US and the anticipation of a Fed rate hike that never was.

Recent remarks from UK PM Theresa May suggest a "hard Brexit" or an absolute disconnect with the EU which would rein in immigration and business activities, but also limit the reach of London's financial influence. The Continent, however, faces widespread political, economic and banking challenges of its own. This December's constitutional referendum in Italy is likely to further stir the nationalist and populist sentiment sweeping both sides of the north Atlantic. Non-performing loans and negative rates continue to plague the banking sector. Germany, the powerhouse of EU growth, is suffering a dual blow to its critical enterprises, Deutsche Bank and Volkswagen, facing punitive US fines. Meanwhile in the US, healthy consumer activity along with nearly full employment has made the US the global driver of equity market strength. Maintaining that dominance will be challenging, however, given lofty valuations and a multitude of economic and political headwinds. These include: a Fed bias to tighten, a divisive presidential election, stagnant earnings growth, meager appetite for capex or fiscal spending, and anecdotal observations of softer economic activity.

We believe the final three months of 2016 will see at least some of these risks play out. Given these asymmetric risks to the downside, our positioning remains relatively neutral with a cautious view on risk assets. Despite the lackluster experience of the past few quarters, expectations for growth (Fig. 8) appear to be finding their footing. The 12-month forward expectation for global GDP growth has ticked up modestly to around the 2.5% level (markedly above the critical 2% level) with revisions slightly less negative. Expectations for global inflation (Fig. 9) are ticking up too, but still below 2%, but continued negative revisions should keep a lid on any rapid increases.

Turning to the regional view (Fig. 10), GDP revisions are on the rise in all global regions except for the US, where they are deteriorating slightly. Revisions are highest in the EM BRIC markets which have been experiencing mixed levels of weakness over the past few years. Similarly, inflation revisions are ticking up across all regions except for the BRICs where depressed commodity prices have eased inflationary pressures posed by long-cycle development and demographic fundamentals.





Fig. 9: Expected Global Inflation and Inflation Revisions





Fig. 10: Quarterly Regional Revisions For Growth and Inflation Forecasts

Source for Fig. 8,9,10: Consensus Economics, ISSG

Fig. 11: Global Headline Hotlist

Financial Sources Headline Hotlist	What's in the News? (07-Jul-16 to 29-Sep-16)
Populism	
US as Global Police	
Terrorism	
Global Trade Tensions	
Immigration Policy	
US Racial Tensions	.lt
Campaign finance	
Russian Economy and Politics	
Chinese Geopolitics	destables
Cybercrime/Cyber warfare	h Altana

The above graphic shows the top ten most mentioned themes that are relevant to financial markets in order of their ranking on September 29, 2016. The bar height shows the frequency of the coverage of each theme in the news for each of the last 13 weeks, with the furthest right bar representing the most recent ranking. The color of the background denotes the average intensity over the past quarter. Using financial media and influential blogs identified by multiple teams at BNY Mellon, those stories are used to highlight the hottest topics each week across over 3,000-6,000 news items. Story summaries are classified using a Bayesian classifier which is trained on stories from the last six months. Training stories are manually tagged and classified by a senior strategist.

Fig. 12: RBAA* Regime Probabilities



*Regime Based Asset Allocation (RBAA) is a proprietary asset allocation model created by the ISSG which considers asset returns in the context of regimes created by underlying changes in growth and inflation expectations. Contact the ISSG for detailed information on this research. Please see appendix for information regarding regime categories. In our proprietary analysis of news flow – the ISSG Global Headline Hotlist (Fig. 11) – we continue to see a steady stream of news about growing populist political movements around the globe, most notably in US, UK, and Europe. While terrorism, trade, and US foreign involvement are ongoing top categories, Russian economic and political news has jumped from low levels to the top ten this quarter. Chinese geopolitics has seen more episodic variability in its news flow throughout the quarter. Finally, stories around cyber crime and cyber warfare have slowed somewhat over the quarter. Expect to see this topic come to the fore again, especially in the policy messaging following the US presidential election.

Finally, our Regime Probability Outlook (Fig. 12) indicates "Cooling" has overtaken "Warming" as the most likely regime in our model. The probability of the "Too Hot" regime also receded in concert. The cooling regime is typically associated with falling growth expectations and a stable inflation environment. Indeed, much of the observed data is consistent with this, such as slowing leading economic indicators and a very cautious Fed. Inflation revisions, which stabilized throughout the year, have reduced some of the evidence for a warming regime. Growth revisions are flat to slightly downward trending. Earnings revisions halted after being on an upward trend for the past several months. The yield curve has been flattening since the middle of 2015. Corporate spreads have come down slightly after trending generally upwards for over three years. Additionally, VIX remains below its long-term average. Under these softer growth conditions, inflationary risk is reduced and equities can perform well, however, caution is advised and our positioning reflects that.

Asset Class Outlook

Slobal Equit	y Markets:			
	ISSG CMC View	Valuation Model	Momentum Model	RBAA Model
	Overweight	Favorable	Favorable	Favorable
US Equity	relative bright spo support consumer	ot. While continu activity, global gr	remains as the US of led strength in em owth concerns and ed tightening cont	ployment should the headwind of
	U/W	Favorable	Unfavorable	Favorable
Europe ex- UK Equity	slowing fundamer us to U/W. Grow	ntals casts doubt in ing concerns in the ms undermining	ponses from the n the Eurozone's fu ne health of the bai government stabi	ture and pushes nking sector and
	Neutral	Favorable	Favorable	Favorable
Pacific ex- Japan Equity	Chinese economi actions by region being seen as	c growth and res al central banks o a "safe haven" ive countries, alth	ion continues to k ulting currency imp or expectations the currency could a ough that may be sket.	acts from policy reof. The dollar dd pressure to
	U/W	Favorable	Unfavorable	Unfavorable
Japan Equity	search of yield a	broad. The BOJ elow target despit	ows are leaving the remains in a diffic e policy efforts and efforts to do so.	cult position with
	U/W	Favorable	Unfavorable	Favorable
UK Equity	from the BOE in t implications of ex	he shadow of "Breat it from the Eurozo	IK despite strong p exit" and the uncert ne might be. Inflat epreciation in the St	ainty of what the tion expectations
	Neutral	Favorable	Neutral	Favorable
EM Equity	reignited the "sea outflow from EM	arch for yield" an countries despite evelopments, we	ations for rate hike nd eased the pres the recent streng remain neutral give rica and China.	ssure on capita gth in the USD.
	Neutral	Favorable	Favorable	Favorable
REIT Equity	Treasuries remain sounding more do tailwind as invest	ns at more normal wish, the asset cla cors search for yie	the yield spread ized levels. With L ss should benefit fr eld once again. A nich are already at h	IS policy makers om a momentum Ithough, such a
Global Natural Resource Equity	commodities durin going forward kee complex has be members and ca strengthening dol	ng this market cyo p us at neutral. C en rationalized apacity coming o lar from a hawkis ng is not a recipe f	Unfavorable nain attractive give cle, the supply / de apacity across the e given agreement ff line or not beir h fed combined wi or strong commodit	emand dynamics entire commodity between OPEC og renewed. A th global growth

Fig. 13: ISSG CMC Global Asset Class Views

ASSET CLASS	ISSG VIEW
Global Equities	+0.5%
U.S.	O/W
Europe Ex U.K.	U/W
Pacific Ex-Japan	Neutral
Japan	U/W
U.K.	U/W
EM	Neutral
REITS	Neutral
Global Natural Res.	Neutral
Global Bonds	-3.25%
U.S. Sovereign Debt	Neutral
U.K. Sovereign Debt	Neutral
Japanese Sovereign Debt	U/W
German Sovereign Debt	U/W
Inflation Linked Bonds	O/W
High Yield	U/W
U.S. IG Corp. Bonds	Neutral
EM Local Cur. Debt	Neutral
EM USD Sovereign Debt	Neutral
Cash	+2.75%

Fig. 14: Global Equity Index Performance % change vs MSCI AC World Index over 3 months to 30 Sep 16



Fig. 15: Country Index Performance % change over 3 month to 30 Sep 16



Fig 14, 15 Source: Thomson Reuters Datastream & ISSG Past performance is not indicative of future results

Fig. 16: Fixed Income Performance % change over 3 months to 30 Sep 16



Fig. 18: FX Currency Pairs % change 3 months to 30 Sep 16



Fig 16, 17, 18 Source: Thomson Reuters Datastream & ISSG Past performance is not indicative of future results

Global Bond	Markata			
Giobal Bond	ISSG CMC	Valuation	Momentum	RBAA
	View U/W / Neutral	Model Unfavorable	Model Neutral/Unfav	Model Unfavorable
Developed Sovereign	Significant portion	ns of global sover	eign debt have mo	oved into negative
Bonds	risk reduction.	We remain neutral	in US treasuries as	s part of a portfolio
Inflation	Overweight		Neutral	Neutral
Linked Bonds	to nominal bonds		d bonds and contine adjusted capital pre nomic cycle.	
	U/W	Favorable	Favorable	Unfavorable
High Yield Bonds	going forward glol growth remains q	bally. While oil priduestionable at this	bonds given the ur ces appear to have s point in the credi ncerns of policy un	stabilized, overall it cycle and credit
Investment	Neutral	Unfavorable	Favorable	Unfavorable
Grade Corporate Bonds	saturate markets at a time where	at underwhelming there is little to	grade bonds. Issu yields. This further op line growth or erage ratios going f	leveraging comes room for margin
Emerging	Neutral	Favorable	Unfavorable	Neutral
Markets – Local Currency Bonds	remained stable. despite a strengt	Capital flows pres	Brexit" storm relatives Bure appears to have to the source of the source	e sector for yield.
	Neutral	Unfavorable	Favorable	Neutral
Emerging Markets – USD Bonds	to exhibit positive "Brexit" market la	e momentum as ndscape which wil	sed debt. The dolla a safe-haven curr I be supportive of be a concern in the	rency in the post EM hard currency
	Overweight	N/A	N/A	N/A
Cash	of capital remain	ns paramount an cash remains a	eight since last qua Id given negative good liquid preser	yields in many
Commodities	:			
	Neutral			
	picture for the as capacity reduction the complex but of	set class remains are helping to a	dity complex as th opaque. As mer alleviate the supply h sustainability in C picture.	tioned previously, v overhang across
Currency:				
	Underweight			
EUR/USD	Union, we believ	e the Euro will con	UK played in the E tinue to come unde ner countries in the	er pressure due to
	Neutral			
JPY/USD	and a currency t	hat is trying to be	omy between a "saf weakened by poli is reason we remai	cy makers to spur
	Neutral			
EM: Asia/USD	EM Asia currence remains at its low	ies, but also the A	s to dominate the ssia/Pacific region b currency basket pe ng dollar.	oroadly. The RMB
EM: LATAM/USD	economic condit concern as it ren yield will provide	ions continue to nains elevated nea e near term suppo	ight more certainty improve. Inflation ir double digit level ort to the region, mmodity heavy cou	still exists as a s. The search for but there are still

global downturn.

ISSG Global Heatmaps

Global Macroeconomic Heatmap (Last 3 years as of 29-Sep-16)	Inflation	Inflation Revisions	Growth (PMI)	Growth Revisions	Monetary Policy	Surprise vs. Consensus	Company Earnings
United States	۰. 1. 1% ۲. ۱. ۱%	-0.6%	~~~~~~ ^{49.4}	-^	~ Mar 0.3	Mr Mar 3.4	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
United Kingdom	0.6%	-0.2%	53.3	- 1.5%	~~~~~ \\\	Mmmm 180.7	hlow how and 796
Eurozone	0.2%	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	M 51.7	-0.4%	Vor - 0.5	Munder June 4.1	WWWWWWWWW IC 3%
Japan	-0.5%	-1.4%	49.5	-0.7%	-0.2	My when the 7.8	- 15%
Brazil/Latam	^{9.0%}	~~~~	45.7 How	-2.3%	0.5	WM ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	MMWWWWWWW
Russia/CEEMEA		-0.5%	1 Mar 10.8		0.0	May May mar 13.2	h-w-lynywywy ^{n47%}
India/Asia Pacific	\sim	-0.4%	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~	Mr -0.5	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	WWWWWWWWWWW
China	1.3% ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		50.4	-0.1%	-0.4 Journe	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	My all my ar

Fig. 19: ISSG Global Macroeconomic Heat Map

This heat map is designed to display a wide spectrum of macroeconomic trends across the major global regions over the past three years. Green and red shading indicate what we believe to be positive and negative levels, respectively, of the indicated variables; while green and red borders indicate positive and negative changes over the last quarter. Yellow shading indicates neutral readings. The time series lines are shown merely for ease of comparing trends, and are not meant to convey any particular values or levels. See appendix for series definitions and sources.

As we enter the final quarter of 2016, economic statistics present a mixed picture as we look across the various regions we cover. Revisions to inflation expectations are pointing upwards in the US, UK and China. Growth in the US has been lackluster, with a number of disappointing datapoints. In addition to that, revisions to growth expectations in the UK continue to take a negative turn following the Brexit outcome. Growth in the EM countries, however, has either been significantly above 3 year average or had a positive third quarter (or both). Economic surprises out of Brazil and India were on the negative side, and more or less mixed elsewhere. UK provided some exception, where the post-Brexit expectations may have been overdone, thus surprising to the upside. As a broad positive observation, corporate earnings estimates around the world are generally trending higher.

rig. 20. 1996 Global Correla								
Global Correlation Heatmap (Last 3 years as of 29-Sep-16)	World Equity	EM Equity	DM Bonds	EM \$ Bonds	DM IG Corps Hedged	DM HY Corps Hedged	Commod	Dollar
World Equity	13.9%	0.82	-0.34	0.51	-0.07	0.69	0.46	-0.09
EM Equity	mar	14.8%	-0.23	0.62	0.07	0.71	0.53	-0.18
DM Bonds	m	m	3.1%	0.15	0.76	-0.19	-0.21	0.11
EM \$ Bonds	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	6.6%	0.42	0.73	0.45	-0.23
DM IG Corps Hedged	m m	mymy		munun	3.2%	0.29	-0.02	-0.01
DM HY Corps Hedged	- month	monder	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- var	- horan	5.8%	0.51	-0.19
Commod		- Lower	mon	mar	myme		15.0%	-0.44
Dollar			- mart		- mar			7.4%

Fig. 20: ISSG Global Correlation Heat Map

The Global Correlation Heatmap is designed to convey levels and changes in correlation and volatility numbers across major asset classes. Numbers in the unshaded cells represent the current exponentially weighted volatility level, with green and red fonts representing low and high levels relative to a time-weighted 3 year mean. The lower left half of the Heatmap, displaying exponentially-weighted weekly correlation pair data for the last 3 years, is included to allow users to compare trends and is not meant to convey any particular values or levels. The upper right half of the Heatmap reflects the current observation for the same data series. Green and red shading indicate what we believe to be low and high levels, respectively, of the current observation relative to a time weighted 3 year mean, while green and red borders indicate a significant decrease or increase over the last quarter.

Correlations are rising around the globe, although mostly due to the fact that asset prices are trending upwards across asset classes. The diversification benefit of stock-bond allocation still exists, but the magnitude is noticeably shrinking. With interest rates poised to rise in the US and to decrease (or at least stay unchanged) in much of the developed world, we expect to see divergences in asses class behavior going forward. The only correlation to move significantly downwards over the third quarter of 2016 was USD vs. DM bonds. Also of note is the fact that DM bond volatility, while still above 3 year average, has decreased in the third quarter.

Performance Monitor

Fig. 21: Capital Markets % change over 1 year to 30 Sep 16



Fig. 23: Global Equity Performance % change vs. MSCI AC World Index Over 1 Year To 30 Sep 16







-1

ΕM

World Small Cap

World Large Cap

World Growth

World Value

World



Fig. 26: FX Currency Pairs % change over 1 year to 30 Sep 16



Figs. 21, 22, 23, 24, 25, 26 Source: Thomson Reuters Datastream & ISSG Past performance is not indicative of future results

Fig. 22 : Equity Country Index Performance % change over 1 year to 30 Sep 16

Appendix & Disclosures

ASSET	INDEX	DEFINITION
Commodities	Bloomberg Commodities Index Total Return (USD Index)	The Bloomberg Commodities index is an index that tracks the performance of broad based commodities.
Gold	Gold Bullion LBM USD/ozt	Tracks the performance of gold bullion spot prices.
Oil	Brent Crude Month FOB USD/BBL	Tracks the performance of Brent Crude Oil spot prices.
Global Sovereign Bonds	JPM Global GBI (USD Index)	Tracks the performance of global sovereign bonds.
Developed Sovereigns		US, UK, Japan, and German Sovereign Debt securities
US Equity	S&P 500 (USD Index)	Tracks the performance of 500 of largest market capitalization equities in the United States.
US Cash	JPM US Cash Index (3M) (USD Index)	Tracks the performance of US 3 month treasury bills.
US Dollar	JPM USD Index Real Broad	Tracks the performance of the US Dollar against a basket of broad currencies.
Global Corporate Bonds	Barclays Global Agg Corp (USD Index)	Tracks the performance of aggregate corporate bonds.
Developed REITS	FTSE E/N Dev REITS (Local Currency)	Tracks the performance of global real estate investment trusts in developed markets.
Global Natural Resource Equities	S&P Gbl Nat Resource Equities (USD Index)	Tracks the performance of global equities linked to natural resources.
Global Investment Grade Bonds	Barclays Inv Grade Corporates (USD Index)	Tracks the performance of aggregate investment grade corporate bonds.
Global Inflation Linked Bonds	Barclays Global Agg Infl-Lkd (USD Index)	Tracks the performance of global inflation linked bonds.
Global High Yield Bonds	Barclays Global High Yield (USD Index)	Tracks the performance of global high yield bonds rates below investment grade.
World	MSCI World Total Return (LC Index)	A broad global equity benchmark that represents large and mid-cap equity performance across 23 developed markets countries.
MSCI AC World	MSCI AC World Index	Tracks the performance of developed and emerging market global equities
Global EM Debt (USD)	JPM EMBI Global Composite (USD Index)	Tracks the performance of dollar based emerging market sovereign bonds.
EM Equities	MSCI Emerging Markets (LC Index)	Tracks the performance of emerging market equities.
UK Equities	FTSE 100 (LC Index)	Tracks the performance of equities domiciled within the United Kingdom.
Europe Ex UK Equities	MSCI Europe ex UK (LC Index)	Tracks the performance of equities domiciled in Europe and not including the UK.
Japan Equity	MSCI Japan (LC Index)	Tracks the performance of equities domiciled in Japan.
Pacific Ex Japan Equity	MSCI Pacific ex Japan (LC Index)	Tracks the performance of equities domiciled in the Asia - Pacific region but not including Japar
Germany Equity	DAX 30 (LC Index)	Tracks the performance of 30 of largest equity market capitalization companies in Germany.
Eurozone Equity	EuroStoxx 50 (LC Index)	Tracks the performance of 50 of largest equity market capitalizations in the Eurozone.
France Equity	CAC 40 (LC Index)	Tracks the performance of 40 of the largest equity market capitalizations of France.
Australia Equity	ASX All Ordinaries (LC Index)	Tracks the performance of the largest equity market capitalizations of Australia.
Brazil Equity	MSCI Brazil (LC Index)	Tracks the performance of the equities domiciled in Brazil.
India Equity	MSCI India (LC Index)	Tracks the performance of equities domiciled in India.
China Equity	MSCI China (LC Index)	Tracks the performance of equities domiciled in China.
World Growth	MSCI World Growth (LC Index)	Tracks the performance of growth oriented equities as defined by MSCI.
World Large Cap	MSCI World Large Cap (LC Index)	Tracks the performance of large equity market capitalization companies.
World Value	MSCI World Value (LC Index)	Tracks the performance of value oriented equities as defined by MSCI.
World Small Cap	MSCI World Small Cap (LC Index)	Tracks the performance of small equity market capitalization companies.
Leveraged Loans	S&P Leveraged Loan Index (USD Index)	Tracks the performance of leveraged loans.
Global EM Debt (Local Curr.)	JPM GBI Emerging Markets (LC Index)	Tracks the performance of local currency denominated emerging market bonds.
Agriculture	S&P GSCI Agriculture Total Return (USD Index)	Tracks the total return performance of agricultural commodity futures.
Precious Metals	S&P GSCI Precious Metals Total Retn	Tracks the total return performance of futures for precious metals related futures.
Industrial Metals	S&P GSCI Industrial Metals Total Retn (USD Index)	Tracks the total return performance of futures for industrial metals related commodities.
Energy	S&P GSCI Energy Total Return (USD Index)	Tracks the total return performance of futures for energy related commodities.
EUR/USD	EUR/USD	Tracks the performance of the Euro / US Dollar exchange rate.
RUS/USD	RUS/USD	Tracks the performance of the Russian Ruble / US Dollar exchange rate.
CHN/USD	CHN/USD	Tracks the performance of the Chinese Renminbi / US Dollar exchange rate.
SEK/USD	SEK/USD	Tracks the performance of the Swedish Krona / US Dollar exchange rate.
GBP/USD	GBP/USD	Tracks the performance of the British Pound / US Dollar exchange rate.
AUD/USD	AUD/USD	Tracks the performance of the Australian Dollar / US Dollar exchange rate.
BRL/USD	BRL/USD	Tracks the performance of the Brazilian Real / US Dollar exchange rate.

ASSET	INDEX	DEFINITION
CAD/USD	CAD/USD	Tracks the performance of the Canadian Dollar / US Dollar exchange rate.
IND/USD	IND/USD	Tracks the performance of the Indian Rupee / US Dollar exchange rate.
JPY/USD	JPY/USD	Tracks the performance of the Japanese Yen / US Dollar exchange rate.
EM LATAM/USD		Considers the aggregate performance direction of a basket of currencies from Latin American countries as defined in the JPM GBI Emerging Markets Index
EM Asia/USD		Considers the aggregate performance direction of a basket of currencies from Asian countries as defined in the JPM GBI Emerging Markets Index
EUR FX		Tracks the performance of the Euro / US Dollar exchange rate.
GBP FX		Tracks the performance of the British Pound / US Dollar exchange rate.
JPY FX		Tracks the performance of Japanese Yen / US Dollar exchange rate.
EM FX		Tracks the performance of a basket of Emerging Markets currencies versus the US Dollar.
US 10Y Yield		Tracks the performance of the yield on the 10 year US treasury note.
Inflation	Headline Consumer Price Index	Tracks the performance of inflation as reported by respective national economic statistics bureaus.
Growth (PMI)		Tracks the performance of purchasing managers indices in each country to proxy GDP growth.
Company Earnings		A proprietary diffusion index of positive and negative analyst earnings estimate revisions.
Monetary Policy		Derived from the futures curve for short term interest rates as indicative of central bank policy.
Inflation Revisions		A proprietary measure of cumulative economist revisions for future levels of inflation in a country.
Growth Revisions		A proprietary measure of cumulative economist revisions for future real economic growth in a country.
ECB Balance Sheet / GDP	ECB Balance Sheet / GDP	A ratio of value of ECB balance sheet assets to Eurozone GDP.
BOJ Balance Sheet	BOJ Balance Sheet	Total assets on the Bank of Japan balance sheet.
Japan GDP	Japan GDP	Japan GDP at current prices seasonally adjusted.
Fed Balance Sheet	Fed Balance Sheet	Total assets on the Federal Reserve balance sheet.
US GDP	US GDP	US GDP at current prices seasonally adjusted.
US Household Debt to Disposable Income	BCMPUSDI Index	A ratio of US household income debt to disposable income.
US Household Net Worth as a Percentage of Disposable Income	NWOR%DPI Index	US Household Net Worth as a Percentage of Disposable Inocme (SAAR).
Morgan Stanley Global Trade Leading Indicator	MSGTLI Index	Morgan Stanley Global Trade Leading Indicator allows to forecast global trade dynamics with a one-month lead.
US Office Vacancy Rates	ROFFUSMV Index	Office vacancy rates (in percent) for US Metro Total.
US Retail Vacancy Rates	RRETUSMV Index	Retail vacancy rates (in percent) for US Metro Total.
US Motor Vehicle Assemblies - Medium and Heavy Trucks (LHS)	IPVPTRMH Index	US Motor Vehicle Assemblies - Medium and Heavy Trucks (in millions).
US GDP Growth QoQ (RHS)	GDP CQOQ Index	US GDP growth - quarterly.
USD GBP	GBP Curncy	USD to GBP exchange rate.
USD JPY	JPY Curncy	USD to JPY exchange rate.

These benchmarks are broad-based indices which are used for comparative purposes only and have been selected as they are well known and are easily recognizable by investors. Comparisons to benchmarks have limitations because benchmarks have volatility and other material characteristics that may differ from the portfolio. For example, investments made for the portfolio may differ significantly in terms of security holdings, industry weightings and asset allocation from those of the benchmark. Accordingly, investment results and volatility of the portfolio may differ from these of the benchmark. Also, the indices noted in this presentation are unmanaged, are not available for direct investment, and are not subject to management fees, transaction costs or other types of expenses that the portfolio may incur. In addition, the performance of the indices reflects reinvestment of dividends and, where applicable, capital gain distributions. Therefore, investors should carefully consider these limitations and differences when evaluating the comparative benchmark data performance. The foregoing index licensers are not affiliated with The Bank of New York Mellon Corporation, do not endorse, sponsor, sell or promote the investment strategies or products mentioned in this presentation and they make no representation regarding advisability of investing in the products and strategies described herein. Valuation Model – The ISSG Valuation Model considers relative valuations across the asset classes that we rank. We consider the current values placed on future cash flows of the securities against their historical longer-term trend levels. Momentum Model – The ISSG Regime Based Asset Allocation Model defines five macroeconomic regimes based on the interaction of growth and inflation expectations. We believe changes to these expectations drive regime shifts and influence asset returns.

ASSET CLASS World Equity EM Equity

DM Bonds

EM \$ Bonds DM IG Corps Hedged DM HY Corps Hedged

Commodities

Dollar

BNY ISSG RBAA Regimes:



CORRELATION HEAT MAP DEFINITIONS

INDEX — please see above for definitions
MSCI AC World (LC Index)
MSCI Emerging Markets (LC Index)
JPMorgan GBI Global Unhedged
JPMorgan EMBI Global Composite (USD Index)
Barclays Global Aggregate Corp Index (USD Index)
Barclays Global High Yield (USD Index)
Dow Jones – UBS Commodities Index Total Return (USD Index)
US Dollar Index

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