J.P.Morgan

Global Asset Allocation

Outlook

Fundamentals and forecasts have not changed this month. The outlook remains for a Steady Eddie world economy that is growing at just above potential. This produces only very slow inflation rises or economic overheating. The US expansion is most mature and thus most at risk of overheating, but inflation remains behind the curve here. Without much increase in world leverage, aside from certain pockets, there is also not a lot of financial overheating. This Goldilocks cocktail is perfect to produce a record long cycle, even as it is much slower than past ones.

Strategy

The equity rally is safe as long as the economy is safe, as stocks peak on the eve of a recession. But a longer cycle does not necessarily make for strong equity gains as nominal earnings growth should slow. We have thus recently added high-income assets to compensate for low nominal gains. These can include duration, credit spreads, high-dividend stocks, and FX carry. Some of these are vulnerable to a Fed or ECB balance sheet tantrum as they are very bond like. EM local bonds have no medium-term correlation with DM government bonds and we thus stay significantly long here, taking in the FX risk and carry. Higher-dividend stocks are also very bond like with preferreds least vulnerable: we favor these. Credit spreads are negatively correlated to DM bond yields and we thus add to credit, though hedge duration now.

Asset Allocation

We stay OW Equities but reduce to +5% into Q3 as the summer tends to be difficult for stocks. We move the money into Credit that moves up to +10%. We keep the low-income assets, Government bonds, Commodities and Cash, to -10%, -2% and -3%, respectively.

Volatility Strategy

While the low level of market volatility is explained by very low supply of economic surprises currently, we see a significant risk that the supply of economic or policy surprises will increase from here. We thus recommend an overall long vol stance via buying low-cost 3-month USD/JPY delta-hedged straddles. To hedge against EM risks we recommend buying MXN vol vs. Oil vol. We take profit on our previous long in EEM vol vs CNH vol. To hedge against markets underpricing the Fed, we re-iterate one previous trade: long in USD vs. Silver 3M 25D risk-reversals. But we close the previous long in 3Mx5Y USD payers vs. 3Mx5Y USD receivers and replace it with a new relative trade: buy 2Y Schatz calls vs. selling 2Y UST calls.

Global Asset Allocation

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Contents

See page 59 for analyst certification and important disclosures, including non-US analyst disclosures.

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Forecasts & Strategy

Interest rates		Current	Sep-17	Dec-17	Mar-18	Jun-18
United States	Fed funds rate	1.16	1.15	1.40	1.40	1.65
	10-year yields	2.23	2.40	2.65	2.70	2.75
Euro area	Refi rate	0.00	0.00	0.00	0.00	0.00
	10-year yields	0.37	0.55	0.80	1.00	1.15
United Kingdom	Repo rate	0.25	0.25	0.25	0.25	0.25
	10-year yields	1.15	1.15	1.40	1.65	1.80
Japan	Overnight call rate	-0.10	-0.10	-0.10	-0.10	-0.10
	10-year yields	0.06	0.05	0.05	0.10	0.10
Emerging markets	GBI-EM - Yield	6.20		6.64		
Credit Markets		**Current**		**Dec-17**		
US high grade (bp over UST)		137		135		
Euro high grade (asset swap sprd)		69		65		
USD high yield (bp vs. UST)		454		425		
Euro high yield (bp over Bunds)		282		325		
EMBIG Div (bp vs. UST)		307		300		
EM Corporates (bp vs. UST)*		267		275		
Foreign Exchange		**Current**	**Sep-17**	**Dec-17**	**Mar-18**	**Jun-18**
EUR/USD		1.14	1.08	1.15	1.15	1.16
USD/JPY		112	108	105	105	103
GBP/USD		1.29	1.21	1.31	1.31	1.32
USD/CNY		6.80	6.88	6.94	7.00	7.00
JPM USD Index		118.7	120.9	119.3	119.9	120.1
DXY		96.0	99.7	94.2	94.3	93.6
EMCI		68.7	67.9	67.7	67.4	67.2
				Quarterly Averages		
Commodities		**Current**	**17Q3**	**17Q4**	**18Q1**	**18Q2**
Brent ($/bbl)		47	50	52	48	43
Gold ($/oz)		1249	1250	1230	1240	1260
Equity Markets		**Current**	**Sep-17**	**Dec-17**	**Mar-18**	**Mar-18**
S&P 500		2441		2400		
Stoxx Europe 600		386		410		
FTSE 100		7388		7500		
Topix		1614		1650		
MSCI EM ($)		1017		1100		

YTD Equity Sector Performance*	US		Europe		Japan		EM$	
Energy	-13.5%	OW	-6.1%	OW	-5.2%	N	-0.5%	N
Materials	8.9%	OW	5.5%	N	7.6%	UW	10.5%	N
Industrials	8.6%	N	15.0%	UW	6.9%	N	17.8%	N
Discretionary	10.3%	UW	7.8%	N	-0.8%	OW	24.1%	OW
Staples	8.6%	UW	14.1%	N	14.3%	OW	13.3%	UW
Healthcare	16.6%	OW	14.7%	N	4.3%	N	10.6%	UW
Financials	4.6%	OW	10.2%	OW	-0.6%	N	14.3%	OW
Information Tech.	18.0%	N	16.3%	N	20.1%	UW	37.7%	OW
Telecommunications	-10.5%	N	4.6%	OW	11.2%	N	10.1%	UW
Utilities	10.8%	N	11.9%	N	8.2%	N	8.9%	UW
Overall	**10.1%**		**10.6%**		**7.7%**		**19.2%**	

*Levels/returns as of Jun 27, 2017

Source: J.P. Morgan

Investment themes

Goldilocks has not left the room yet

World economy is cruising at just above potential pace. Inflation is behind the curve allowing central banks to do the same. This improves cycle longevity, setting us up to break the 10-year record expansion length from the 1990s, carrying us through 2019.

Equity rally unlikely to remain straight line and we thus reduce at the margin

The summer months have bad seasonals, long positions and the risk of policy disappointment.

Stay with high-income strategy, on weak nominal gains, but reduce vulnerability to the Fed, ECB

Add to credit, but hedge the duration risk, creating holdings that are negatively correlated to any Fed and ECB balance sheet tantrum. In equities focus on preferreds instead of high-dividend and REITs that are most vulnerable to a bond sell off. Stay significantly long EM local bonds, currency unhedged.

Macro momentum remains strong to EM and Euro area

Remain long their equities and FX against US, while staying long USTs vs Euro bonds.

Global Asset Allocation:

Lower EQ to +5% OW and move capital to Credit, up to +10%. Keep low-yielding Government Bonds, Cash and Commodities at -10%, -3% and -2%, respectively.

Source: J.P. Morgan

Tactical overview

	Direction	Country	Sector
Asset allocation	Longer cycle	Europe, EM	High Income
Equities	Long and OW	Euro area and EM	Preferreds; Defensives
Bonds	UW, flat duration	EM, AU, NZ	Flat inflation
Credit	OW	USD	HY
FX	Short USD	EM	
Comd's	UW		OW Oil; Indu. metals

Source: J.P. Morgan

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Global Market Strategy

- **Forecasts for world economy cruising at just over potential on track with no net changes for three months now. Risk is balanced. Inflation ought to rise slowly, but is behind the curve.**
- **Goldilocks growth makes for a longer cycle and keeps us OW global equities. But slow nominal growth should produce slower capital gains on stocks and keeps us OW higher-income assets.**
- **Higher income can be obtained from higher-dividend stocks, REITs, credit spreads, duration, cross-country bond spreads, futures roll and FX carry.**
- **We add to income via credit spread tighteners as they are positively correlated to DM bond yields which remain vulnerable to fears of Fed and ECB balance sheet normalization. We keep our long in EM bond duration; are neutral in DM duration; stay long EM FX carry; and have only small longs in high-dividend stock through preferreds, as they are vulnerable to bond prices.**
- **Within Credit, we add to credit spread tighteners, but more in HG than HY as the latter are vulnerable to oil prices.**
- **At the start of a Q3 that is technically more challenging, we reduce risk by moving 5% from Equities to Credit, which reduces our equity OW to +5%. We effectively replace a long equity to bond position with a credit spread tightening one.**
- **Across countries, we retain our macro momentum OWs of EM and the Euro area in equities and FX, reversing in bonds, though only US vs Euro area.**

Fundamentals have not moved this month and neither have markets, oil excepted. Our global growth forecasts are unchanged over the past three months (Figure 1). Our model portfolios earned small returns from overweighting high-income assets.

The strategy has been and remains based on a view of low-volatility growth at a just-above-potential cruising pace that creates only little inflation or need for monetary tightening. It implies a longer-lived cycle with slow nominal growth where we **stay OW Equities on cycle longevity and compensate for low nominal growth with OWs of higher-income assets.**

With no new information or adverse movements in markets, value or positions, we have no reason to change our strategy. With the same inputs as a month ago, we get the same output from the strategy "machine". All that is left is fine-tuning and including some hedges as extreme low volatility and a topping out of this year's trends does make one a bit more nervous of trend reversals.

Figure 1: JPMorgan Forecast Revision Index, Global
Cumulative % change in rolling 4-quarter growth forecast for Global real GDP growth.

Source: J.P. Morgan

The fundamentals as we see them: Next week, we enter the 9th year of the recovery from the '08-'09 Great Financial Crisis. The crisis produced the deepest recession of the post-war period. It pushed economic activity well below potential and for some time dented spending as economic agents first needed to repair balance sheets. Aggressive central bank action pulled the world economy out of immediate depression risk, but still extreme low productivity gains kept economic growth low since.

We have argued, e.g. in Safety versus speed, May 19, that post-crisis macro-prudential limits on leverage in the financial sector have made the world economy safer, but likely also slower. This means it now takes twice as long "to get there" as growth is about half of previous post WWII expansions. The journey is safer, though, making for a **longer than average cycle, now quite likely set to become the longest on record.** The previous record for a US expansion is 10 years, scored during the '90s.

The main risk to this slow and safe cycle is that economic agents, in particular those who gained the least from it, lose patience and demand policy makers to speed up the expansion, through fiscal stimulus and deregulation of the constraints that are holding back freer lending and risk taking. This political risk has become more subdued in recent months, as the world navigated the Dutch and French elections well; US Congress remains conflicted between a desire to cut taxes and its distaste of deficits; the German elections in September are unlikely to turn the world around; and the next Italian elections are almost a year from now.

We thus do **not see high political regime risk in H2**. This issue goes to the core paradox of investors feeling very uncertain about the future and at the same time buying a lot of risk assets and finding market volatility to be extremely low. This paradox is best resolved by thinking of these two across two timeframes, short and medium term. The very features that in our mind help keeping economic volatility low for now – macro-prudential restraints and low productivity growth – are in turn raising social dissatisfaction and raising the odds of dramatic political change that undermines the dominance to global capitalism of the past three decades.

The strategy it implies: Markets and investors have problems projecting and pricing risks that are more than a year out. This is not an issue of short-sightedness but of the great uncertainty around alternative scenarios more than one year out. As a result, our own strategy is focused on the near-term low macro and market volatility where we position for low and stable growth.

A global growth pace that is Goldilocks-like, not too fast nor too slow relative to potential, itself driven by weak labor supply and productivity growth, is "perfect" to extend the likely life-span of the economic expansion. We know from past cycles that as long as the expansion is alive, company earnings keep rising pulling equity prices with them, with the eventual peak in stock prices coming only in the year before a recession. Faster economic growth could give you faster earnings and equity price increases, but the relation is not clean. For one, the current US expansion is the slowest on record in GDP terms, but the fastest for earnings (S&P500 EPS). Hence, **for our long equity position, we are more interested in avoiding a recession than in growing very fast**. **Longevity matters more than speed**. As strategists, we thus do not mind at all a safe and slow economy that makes for a longer cycle against a faster one that raises the risk of an earlier recession error that makes for a faster but shorter cycle.

Our Income strategy: Asset returns come from income and capital gains. In a low-volatility environment where nominal earnings gains are likely to be slow given how far we are already in the cycle, capital gains should become slower from here. This has been the first reason, of two, for us to overweight higher-income assets against lower-income ones across asset classes. This is not a free lunch, though as in the equity asset class, higher-income stocks tend to be lower beta, and this thus becomes a defensive strategy.

We also have a second unrelated reason to be in defensive stocks. Technically, the market is close to a topping process, which increases the odds of a random market correction of some 5-10%. There remains some probability in investors' mind that the new US Administration will move on tax reform and infrastructure spending. We are not confident at all and thus see a policy-realism correction as a decent risk late summer. Late summer also tends to be a seasonally bad time for stocks. Finally, while we have not cut US growth forecast, the weaker tone of some recent activity data has eliminated our original upside risk bias on global growth and has thus reduced some downside protection. None of these arguments is decisive on their own, but the combination has given us a separate argument, from trying to gain income, to overweight higher-income lower-beta equity sectors.

Fine tuning; We have been starting slow with our income strategy, first by buying local EM bonds, unhedged, on top of OWs of HY bonds and loans. Last month, we added UWs of low- to negative yielding Cash and Commodities against Credit; neutralizing DM bond duration from being short; neutralizing OWs of Financials and short Gold which depended on higher bonds yields; and adding preferred OWs to our equity long/short portfolio.

Being long income is not without risk. As mentioned below, in equities it has a defensive bias. In HY, it exposes one to oil prices that fell 8% last month. We still see tightening in the energy market over the summer, but are not relying on it given the Q2 failure for inventories to shrink. We thus reduce overall exposure to HY, while staying long.

In addition, a strategy that overweights higher-income assets should in principle be correlated to the core of the fixed income market, government bonds. Yesterday's significant underperformance in REITs and high-dividend stocks after the bond sell-off following ECB President Draghi's comments underscores this risk. We are not short DM bond duration, but the last three months of low US inflation readings despite a tighter jobs market does create a risk that inflation will come back at some point. In addition, both the ECB and Fed are planning to start normalizing their balance sheets late this year. Our and their models are saying this should not create undo volatility in the bond markets (otherwise they would go much slower), but there is always the risk of a taper tantrum, as yesterday's move highlighted. It is thus probably wise not to have a concentration of high income positions that is highly correlated to bond prices.

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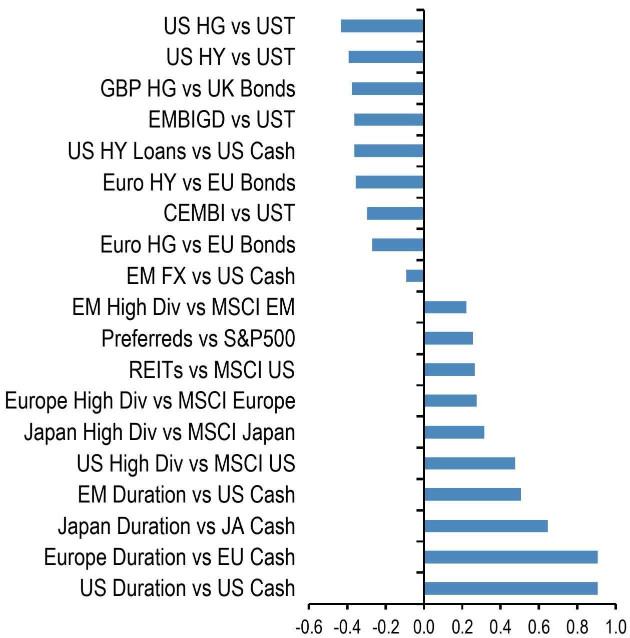
In the chart below, we present the return correlation between our DM Government bonds Index, GBI, currency hedged and a diverse set of high-income positions, OW high-dividend stocks, REITs and preferreds against their broad stock indices; long credit spreads; long bond duration and long EM carry. It finds that credit spreads tighteners are negatively correlated to bond prices; EM FX carry is uncorrelated; and high-dividend stock OWs are positively correlated. We thus add to our credit spread positions; keep our long in EM local bonds; and cut our long in high-dividend stocks while retaining our OW of US preferreds.

Figure 2: Correlation between high-income positions and GBI
%, 2007-now, monthly data; high-income positions are long high-dividend stocks, REITs, and preferreds vs local equity indices; long duration vs local cash; credit spread tightening vs duration-matched local government bonds; and EM FX Carry vs USD.



Source: J.P. Morgan

Across countries, macro momentum continues to favor OWs of the Euro area and EM, in equities and FX while staying short core EMU bonds against USTs.

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Long-only asset allocation

- **A long and slow expansion keeps us OW equities with higher-income assets to make up for slow nominal growth.**
- **Entering a seasonally difficult quarter, we cut our Equity OW from +10% to +5%, comfortably staying OW EM and Euro on still strong macro momentum.**
- **Credit spread tighteners are least vulnerable to Fed balance sheet concerns, and we thus raise our Credit OW vs Bonds to +10%, from +3%.**
- **Keep DM bond duration close to Neutral, but EM long. Our Bond and Credit portfolios are 24bp and 19bp higher in yield than benchmark, respectively. In equities, move income from High-dividend to Preferred as the former is too vulnerable to bonds.**
- **UW low-yielding Cash and Commodities that are still negative roll. In Commodities, OW Energy and Industrial Metals.**
- **Last month, our portfolio was flat, outperforming the benchmark by 0.21%, largely on OW-ing EM. YTD we outperformed by 68bp. Since inception, Aug 2012, we outperformed by 8.79%.**

Table 1: Asset Allocation Grid

The table represents the exposures of our long-only portfolio, which reflect our asset allocation views across asset classes and major sectors within each asset class. Active weights for asset classes are expressed as percentages of the overall asset allocation portfolio, while active weights for sectors are presented as percentages of each individual asset class portfolio. Up/down arrows indicate a positive or negative change in active allocations compared to last month. Blue/red bars suggest our qualitative OW/UWs and strength of conviction.

Major Asset Classes			Active Weights	Δ	UW | OW
Equities			5%	↓	
Bonds			-10%		
Credit			10%	↑	
Commodities			-2%		
Cash			-3%		
Major Sectors within each Asset Class			**Active Weights**	**Δ**	**UW | OW**
Equities	Countries	US	-7.0%		
		Europe ex-UK	4.0%		
		Japan	-1.0%		
		UK	-1.0%		
		EM	3.0%		
		Other	0.0%		
		Preferred	2.0%	↑	
		High Dividend	0.0%	↓	
Bonds	Countries	US Nominal	0.0%	↓	
		US TIPs	-0.1%		
		Europe Core	-3.1%	↑	
		Europe Periphery	-0.3%		
		Japan	-0.5%		
		UK	-1.3%	↓	
		EM Local	3.0%	↑	
		Australia	2.0%		
		Other	0.3%		
Credit	HG	US	1.0%		
		Europe	-2.0%		
		UK	-2.0%		
	HY	US	2.0%		
		Europe	-2.0%		
		US Loans	2.0%		
	EM	Sovereigns	1.0%		
		Corporates	0.0%		
Commodities		Energy	15.0%	↓	
		Industrial metals	10.0%	↑	
		Agriculture	-5.0%		
		Precious metals	-10.0%	↓	
		Livestock	-10.0%	↓	

vs. US Benchmark		
Note	Tracking Error (%)	1.81%

vs. Benchmark		
Note	Yield (bp)	+24.06
	Dur (months)	-0.23
	DM Tracking Error (%)	0.17%
	Inflation-linked vs Nominal	0.0%
	Australia vs US	2.0%
	Sweden vs UK	2.0%

vs. Benchmark		
Note	Yield (bp)	+19
	Duration (months)	-0.6
	Tracking Error (%)	0.86%
	US vs Europe	5.5%
	HY vs HG	2.5%

vs. Benchmark		
Note	Tracking Error (%)	7.1%

Source: J.P. Morgan

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Table 2: Long-only portfolio weights

Assets	Active Portfolio	Benchmark	Active deviation
Equities	**50%**	**45%**	**5%**
S&P 500 Energy	1.3%	1.4%	
S&P 500 Materials	0.7%	0.7%	
S&P 500 Industrials	2.3%	2.4%	
S&P 500 Cons Discr	2.8%	2.9%	
S&P 500 Cons Staples	2.0%	2.1%	
S&P 500 Healthcare	3.2%	3.4%	
S&P 500 Financials	3.1%	3.2%	
S&P 500 IT	5.0%	5.2%	
S&P 500 Telecom	0.5%	0.5%	
S&P 500 Utilities	0.7%	0.7%	
S&P 500 Real Estate	0.7%	0.7%	
Europe ex UK	9.7%	6.9%	
Topix	3.4%	3.5%	
UK	2.4%	2.6%	
EM	7.6%	5.4%	
Other Countries	3.7%	3.3%	
Preferred	1.0%	0.0%	
High Dividend	0.0%	0.0%	
Bonds	**20%**	**30%**	**-10%**
GIFMS	12.7%	20.0%	
GBI US 1-5	2.1%	3.9%	
GBI US 5-10	1.6%	1.7%	
GBI US 10+	0.9%	1.4%	
GBI Japan 1-5	0.7%	1.1%	
GBI Japan 5-10	0.5%	0.8%	
GBI Japan 10+	1.0%	1.6%	
GBI UK 1-5	0.2%	0.4%	
GBI UK 5-10	0.1%	0.2%	
GBI UK 10+	0.3%	0.7%	
GBI Germany 1-5	0.0%	0.4%	
GBI Germany 5-10	0.0%	0.3%	
GBI Germany 10+	0.0%	0.3%	
GBI France 1-5	0.3%	0.5%	
GBI France 5-10	0.2%	0.4%	
GBI France 10+	0.3%	0.4%	
GBI Italy 1-5	0.3%	0.5%	
GBI Italy 5-10	0.2%	0.4%	
GBI Italy 10+	0.2%	0.4%	
GBI Spain 1-5	0.2%	0.3%	
GBI Spain 5-10	0.2%	0.3%	
GBI Spain 10+	0.1%	0.2%	
GBI Australia 1-5	0.2%	0.1%	
GBI Australia 5-10	0.2%	0.1%	
GBI Australia 10+	0.1%	0.1%	
GBI Belgium	0.2%	0.3%	
GBI Canada	0.1%	0.2%	
GBI Denmark	0.1%	0.1%	
GBI Netherlands	0.2%	0.3%	
GBI Sweden	0.4%	0.1%	
GBI-EM	0.0%	0.0%	
GBI-EM	0.0%	0.0%	
TIPS	0.6%	0.9%	
EMU Linkers	0.3%	0.4%	
UK Linkers	0.4%	0.6%	
Cash	0.4%	1.0%	
GBI-EM	3.7%	4.7%	
Indonesia	0.3%	0.5%	
Malaysia	0.2%	0.3%	
Philippines	0.0%	0.0%	
Thailand	0.2%	0.3%	
Hungary	0.0%	0.1%	
Poland	0.1%	0.2%	
Nigeria	0.4%	0.5%	
Romania	0.1%	0.1%	
Russia	0.3%	0.3%	
Turkey	0.4%	0.4%	
South Africa	0.3%	0.4%	
Argentina	0.0%	0.1%	
Brazil	0.4%	0.5%	
Chile	0.1%	0.1%	
Colombia	0.3%	0.4%	
Mexico	0.4%	0.5%	
Peru	0.1%	0.1%	
MBS	3.5%	5.3%	
Credit	**25%**	**15%**	**10%**
US HG	12.1%	7.1%	
EU HG	3.9%	2.6%	
US HY Bonds	1.7%	0.7%	
US HY Loans	2.5%	1.2%	
EU HY	0.3%	0.5%	
EMBIG	2.1%	1.1%	
CEMBI	1.9%	1.2%	
UK HG	0.5%	0.6%	
Commodities	**3%**	**5%**	**-2%**
Energy	1.4%	1.6%	
Industrial metals	0.8%	0.9%	
Agriculture	0.7%	1.4%	
Precious metals	0.2%	0.9%	
Livestock	-0.2%	0.2%	
Cash	**2%**	**5%**	**-3%**

Source: J.P. Morgan

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Long-short risk allocation

- **No change in fundamentals, forecasts, asset prices or positions imply no changes in strategy, aside from fine tuning. With the same facts, we get the same conclusions.**
- **In slow moving markets, we retain OWs in higher income assets, but fine tune by making them less vulnerable to a bond overreaction to the coming balance sheet normalization by the Fed and ECB.**
- **We thus retain credit longs but hedge the duration risk. In Bonds, we OW higher-yielding bond markets and in Equities, we are long preferred bonds vs index. We retain the same significant long in EM local bonds, currency unhedged, both to get carry and to benefit from slowing inflation and monetary easing in EM.**
- **Stay OW Euro and EM equities currency unhedged on continued strong relative macro momentum and still not extreme positions.**

Cross asset and hedges

Jan Loeys

- **Stay long global equities versus government bonds, MSCI AC World vs our GBI** (★★)
Goldilocks growth should make for a record long cycle with higher equity prices, even given today's new record highs, as that is what equities have done in each past cycle. Equities go up until the last year of the cycle on earnings growth, not multiple expansion. Our equity strategists are a bit nervous into Q3 on bad seasonals, the high risk of US policy disappointment, fading price momentum, and softer activity data. We thus cut our long equities to bonds by a third.

- **Stay long EM local bonds vs USD cash** (★★)
EM bonds remain our preferred high-income asset. We have been long for four months now and the asset is up 11% YTD, even as it was flat this past month on a stronger dollar. We see EM central banks easing on fading inflation and continue to see good medium-term value in EM currencies vs the dollar. With a 6.2% yield, well above local inflation, it fits our high-income strategy well. Stay significantly long.

Table 1: GAA Long-short portfolio exposures
VaR in bp, annualized.

	VaR size
OVERALL	**100**
FIXED INCOME	**34**
10Y SEK vs. GBP swaps (cross-market signals)	12
10s/30s Germany Steepener	10
5Y NZ vs. US	10
3y Australia vs. US	10
Long GBI Russia	8
10y US vs. Germany	6
EQUITIES	**48**
World Defensives vs. Cyclicals (PMI rule)	20
Euro area vs. US	20
US Preferred vs. S&P500	20
EM vs. US	10
Euro area Small Cap vs. Large Cap	10
US Healthcare vs. S&P500	10
Global Energy vs. MSCI World	10
Canada vs. Mexico (FX signal)	3
UK vs. Sweden (PMI signal)	3
Taiwan vs. South Africa (PCF signal)	3
CREDIT	**39**
US HY vs. UST	10
US HG vs. UST	10
US HY Loan vs. Cash	8
EMBIGD vs. UST	8
US HG 10s30s curve flattener	6
CDX.IG 5s10s curve flattener (dur. weighted)	6
COMMODITIES	**10**
Dec'17 LME Aluminum	4
Jun'17 LME Zinc	4
Sep'17 CBOT Kansas Wheat vs. Sep'17 Chicago Wheat	4
Jul'17 LME Copper	2
CROSS ASSET	**39**
GBI EM vs. USD Cash	25
MSCI AC World vs. GBI Global	20
FX	**14**
BRL vs. NZD	9
TRY vs. ZAR	8
Long DXY	4
ILS vs. EUR	4
ILS vs. USD	3
CZK vs. EUR	1

Source: J.P. Morgan

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Total risk exposures

Jan Loeys

- **Positive beta to equities, corporate bond spreads, and energy, with a negative beta to DM bond duration.**
  The table below shows the 3-month beta of our portfolio positions, by asset class and in aggregate, to five major risk factors – global equities, DM bond prices, US HG credit spreads, US HG bond prices, and energy prices. We present betas in response to a one-month sigma move in the five risk factors. The betas show that the aggregate of our positions adds up to a long in equities, corporate bond spreads, but negative to bonds. Relative to last month, we are now slightly long energy, and short outright corporate bonds as we now hedge the duration risk on Credit longs. Overall we are taking more directional risk than last month.

Table 2: 3-month Beta of our L/S portfolio positions to 5 major risk factors, i.e. global equities, bond duration, credit spreads, and energy

	Fixed Income	Equities	Credit	Commodities	Cross Asset	FX	Total Portfolio
Beta							
MSCI AC World	2.09	-4.55	2.74	0.65	5.73	-0.24	6.42
GBI (hedged)	-4.83	4.04	-3.85	-0.29	-0.80	-0.38	-6.11
US HG spreads	4.34	-3.91	4.40	0.34	1.02	0.42	6.61
US HG	-4.31	4.43	-4.03	-0.30	-0.64	0.04	-4.81
GSCI Energy	1.37	0.70	0.76	0.17	0.40	-0.01	3.38
Correlation							
MSCI AC World	0.32	-0.50	0.52	0.27	0.79	-0.07	0.39
GBI (hedged)	-0.74	0.45	-0.74	-0.12	-0.11	-0.10	-0.37
US HG spreads	0.66	-0.43	0.84	0.14	0.14	0.11	0.40
US HG	-0.66	0.49	-0.77	-0.12	-0.09	0.01	-0.29
GSCI Energy	0.21	0.08	0.14	0.07	0.06	0.00	0.21

Source: J.P. Morgan

Fixed Income

Mika Inkinen

- **Shift bearish exposure via outright shorts in 30y Germany to 10s/30s German curve steepeners (★★)**
  We retain a medium-term bearish view on Euro area duration given the backdrop of robust, above-trend growth and rapid withdrawal of slack in the labor market. While the unemployment rate at 9.3% remains above our estimate of the natural rate at 8%, at the present pace the Euro area looks set to reach full employment in 2H18. Against this backdrop, the ECB shifted to a neutral risk bias on its growth outlook and risk bias around rates. The still low level of core inflation allows the ECB to keep its policy stance accommodative, but we expect it to continue its gradual normalization process given the outlook on growth and labor market slack above and approaching scarcity issues (our colleagues in European rates strategy estimate that at the present pace it would run out of German bonds by end-3Q18). We expect the next step at the September meeting to be a further tapering of its QE pace from €60bn/m to €40bn/m in 1Q18, followed by a further announcement in December or January of a cut to €20bn/m for 2Q18. However, given we do not see a catalyst to push yields higher in the near term, **we prefer to express our medium-term bearish bias via 10s/30s steepeners on the German curve**.

  In the US, we see growth modestly above potential in 2H, which combined with continued labor market tightness should begin to put upward pressure on inflation. However, given recent downside inflation surprises have been broad-based and difficult to dismiss with any one-off factors, this raises questions about the trajectory and **we remain neutral on US duration**. Provided we see some signs of a recovery in core inflation prints in coming months and growth remains on track, we would look to enter shorts ahead of the September meeting where we expect the Fed to announce the start of its balance sheet normalization process.

- **Keep longs in 3y Australia vs. US to longs in 5y NZ vs. US (★★)**
  We continue to see the RBA to be persuaded eventually to cut its policy rate to 1.0% from the current 1.5%. As we noted last month, we have a high conviction on the terminal rate, while the eventual delivery could take longer given the slow-burn adjustment. Indeed, our economists moved their call from 2H17 to 1H18 (Auld, *RBA adjustment now a story for 1H18*, Jun 13), as the more chronic adjustment via incomes rather than rising unemployment reduces the risk of a sharp drop in demand. In addition, given the introduction of new macro-prudential measures to address housing are recent, the RBA is likely to take time to assess the effect of efforts to slow down growth in house prices and credit. Nevertheless, we think a steady drip of modest disappointments will eventually see it cut rates further. Markets are currently pricing in around 20bp of policy rate compression by mid-2018 compared to our expectations of around 100bp.

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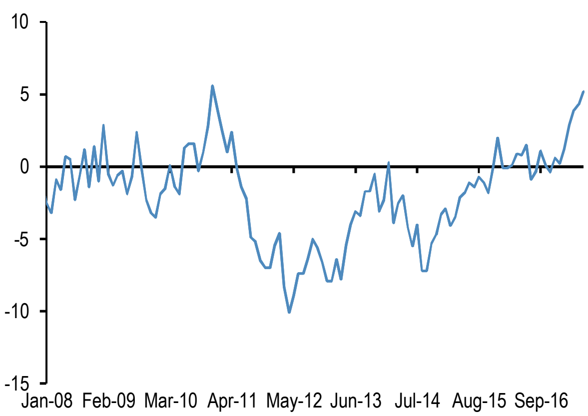
Similarly, we stay long NZ vs. US duration given the headwinds faced by the NZ economy. Financial conditions are tightening (an appreciating real exchange rate, macro-prudential measures constraining housing credit, higher bank funding costs pushing up mortgage rates and a tightening in lending standards for companies), and recent activity data suggest slowing growth (negative on a per-capita basis) and a worsening trade balance. While we expect the RBNZ to remain on hold, compared to the market pricing in more than 50% of a full hike in 1H18, the recent data flow support a downside risk bias on rates.

- **Stay short 10y Bunds vs. USTs (★)**
  The divergence in activity surveys between the Euro area and the US continued this month based on the flash manufacturing PMIs. The continued rise in the Euro area, and decline in the US, survey has brought the difference between the two PMIs close to its high ahead of the Euro area sovereign crisis. The continued divergence in macro momentum keeps us short Bunds vs. Treasuries, though we take part profit on the trade.

Figure 1: Difference between Euro area and US manufacturing PMI
Latest observation is for Jun17 flash PMIs; pt



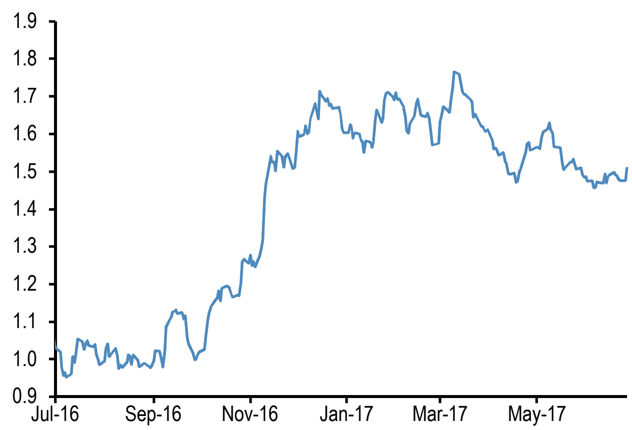
Source: Markit.

- **Add long duration exposure to Russia via GBI-EM Russia, unhedged (★)**
  The recovery in Russia has strengthened in recent quarters, and broadened beyond non-tradable sectors as domestic demand is picking up. Inflation has also decelerated more quickly than anticipated, and has essentially reached its 4% target. At the same time, a strong currency, low inflation and declining inflation expectations have allowed the central bank to cut rates by 75bp to 9% thus far this year, but the high real policy rate leaves room for further cuts even as we think the output gap has essentially closed. We expect policy rates to be cut further to 8.5% by year-end and a further 125bp by end-2018. Our colleagues in EM strategy hold significant long exposure to Russia in bonds, but are tactically hedge currency risk due to expected policy rate cuts as well as an expected deterioration in the current account due to seasonality effects (see *EM Local Markets Recommendations Roundup*, Jun 26). We add longs via the GBI Russia index.

Systematic trading strategies

- **Our combined duration signal likely to turn modestly long duration**
  We update our regular suite of systematic signals for outright and cross-market fixed income trading in Chart E1 in the Appendix. Global swap rates were modestly higher on the month despite somewhat mixed macroeconomic data, with central banks appearing to be willing to look through recent inflation disappointments. As our signals were largely neutral on the month, the performance of our overall duration signal was similarly flat.

Figure 2: DM swap rates
Equally weighted average of 10y EUR, GBP, JPY, USD, AUD, CAD, CHF, SEK, NOK and NZD swaps; %



Source: J.P. Morgan

This month, as we publish ahead of our regular rebalancing at the beginning of the month, we provide an indication of signal positioning in Chart E1 based on data up to Jun 27. **This suggests that our signal would turn modestly long duration for the first time since April 2016**. The biggest shift is in the revision ratio signal, where momentum in global earnings revision turned bullish for bonds for the first time in six months. Thus far we only have flash PMIs for the US, Euro area and Japan (we hold the signals for other countries constant), which suggests a modest shift in a bullish direction for

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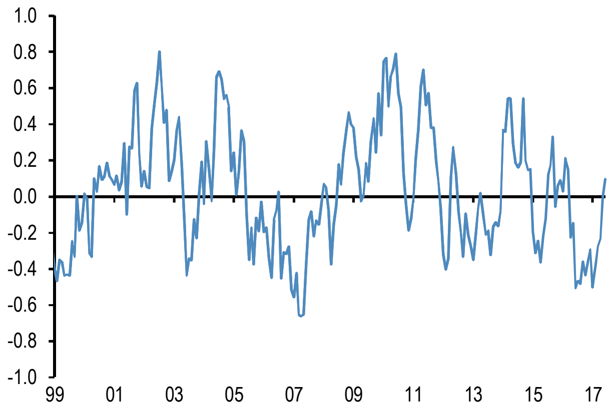
bonds as 2M momentum in Japan turned negative. Against this bullish signal from economic momentum signals, price momentum signals partially offset these moves as the bond market sell-off on Jun 27 meant that bond momentum shifted to shorts from longs last month. The equity price momentum remains bearish for bonds, while the carry-to-risk signal was again little changed overall despite a modest rise in yields and decline in vol. At a country level, the shift in positioning was generally muted.

Figure 3: Overall duration signal

Weighted signal; positive numbers signal long duration, negative numbers short duration, and near zero signals neutral exposure



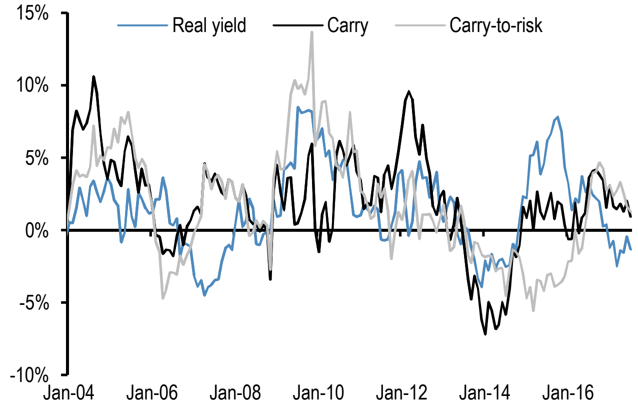
Source: J.P. Morgan

Cross-market signals: long 10y SEK vs. GBP swaps (★★)

Our cross-market signals continued to perform well in June, with the carry and carry to risk signals returning 0.3% and 0.4%, respectively, while the real yield signal was flat. This leaves first half performance at 1.9% and 1.5%, respectively, for the carry and carry-to-risk signals, with information ratios of 3.1 and 2.0. The real yield signal posted the strongest performance of the signals at 3.5%, offsetting much of the losses in 2H16 (Figure 4), though the higher return volatility means that the information ratio was around 2.2.

Figure 4: Overall duration signal

Weighted signal; positive numbers signal long duration, negative numbers short duration, and near zero signals neutral exposure



Source: J.P. Morgan

As with the duration signal above, given we publish ahead of our regular monthly rebalancing we note the following indicative changes to our signals based on data available up to Jun 27. **First**, NZD swaps replaced EUR swaps in the carry signal, meaning both the carry and real yield signals now favor bullish NZ exposure. **Second**, EUR swaps replace SEK swaps in the short leg of our real yield signal.

As we have done since the BoJ announced its 0% yield target, we continue to apply a degree of discretion by replacing JPY swaps with GBP swaps as the next lowest carrying country. In addition, given offsetting exposures in EUR swaps in the carry-to-risk and real yield signals, we combine signals by eliminating these offsets. This month, this leaves our signals pointing to longs in SEK and NZD or AUD swaps vs. shorts in GBP and USD or CAD swaps. Given we already hold cross-market longs in both NZ and Australian duration, **we add longs in 10Y SEK vs. GBP swaps as an income trade in a global portfolio**. In addition, in a cross-market valuation framework based on 1Yx3M OIS rate and central bank balance sheet differentials, SEK swaps appear cheap vs. GBP swaps (see *Overview, GFIMS*, Jun 23).

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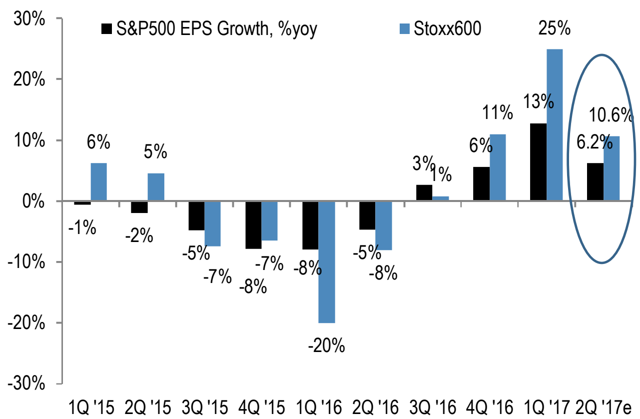
Equities

Jigar Vakharia, Nikolaos Panigirtzoglou

- **OW Euro area vs. US equities (★★★)**
  We stay long Euro area equities vs. the US given superior EPS impetus in the former (Figure 5). Euro area EPS growth remains stronger vs. that in the US, following prolonged earnings underperformance in the Euro area in the previous two years (Figure 6). Manufacturing PMIs in the Euro area stand at 6-year highs, much stronger than their US counterparts. Euro area equities are also supported by cheaper valuations as well as investor positioning which still remains light compared to US equities.

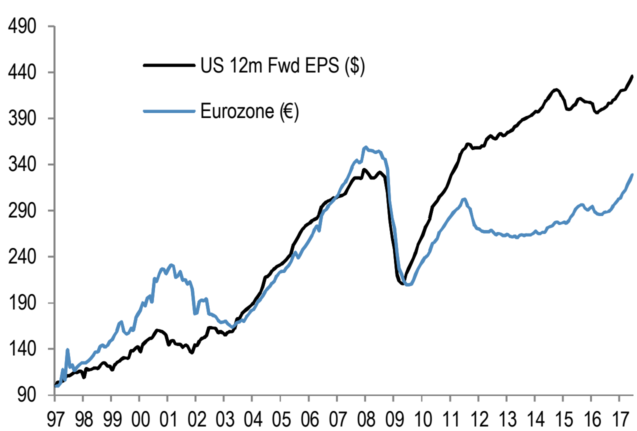
Figure 5: US and Eurozone quarterly EPS growth % yoy



Source: IBES, Thomson Reuters, J.P. Morgan.

Figure 6: Eurozone vs. US earnings

Rebased to 100 as of 1st Jan 1997



Source: MSCI, Datastream, J.P. Morgan.

- **Stay OW EM vs. US equities (★★)**
  We continue to prefer EM equities vs. US equities as the former are supported by strong flow momentum and more positive EPS revisions. In fact, the past week was the 24th consecutive week of inflows into EM equity ETFs, the longest streak of inflows since Oct 2000. The earnings growth in EM is underpinned by higher nominal GDP growth and better pricing power. Earlier in the month, our EM equity strategists increased their MSCI EM target to 1100 by the end of the year on the expectation of further risk premia compression and P/E multiple rerating. Within EM, China, Russia and Korea remain our top picks (Mowat et al., *Key Trades and Risks*, Jun 15).

- **Increase long in US preferred stocks to earn income (★★★). Exit previous relative trade of OW Euro area banks vs. US banks.**
  In a falling yield environment, investors' search for yields is likely to spill over into equities. In a backdrop of low volatility and flattening yield curves, we foresee modest capital gains in equities from here on and hence prefer to focus in dividend income.

  In particular we double the size of our OW in US Preferred stock ETF (PFF US). This ETF, which consists mostly of financial stocks that pay fixed dividends, current yields around 6% with very low volatility. We execute this trade versus the S&P 500 (SPY US).

  Within financials, we exit our previous relative trade of OW Euro area banks vs. US banks due to recent underperformance.

- **Keep OW in global defensive vs. cyclical sectors (★★★)**
  We retain an OW in Defensive vs. Cyclical sectors as we see downside risks to the release of the global manufacturing PMI for the month of June. The JPM global manufacturing PMI declined to 52.6 in May from 52.7 in April. Our trading rule is based on the 1-month change in the global manufacturing PMI as a momentum signal (N. Panigirtzoglou and G. Koo, *Trading cyclical vs. defensive sectors*, Sep 09). This trading rule remains negative and thus favors defensives.

  This was the best performing trade in our model portfolio over the past two months. We think this trade can be also a good hedge against a potential rise in macro volatility and weakness arising from profit taking with global equity indices at all-time highs.

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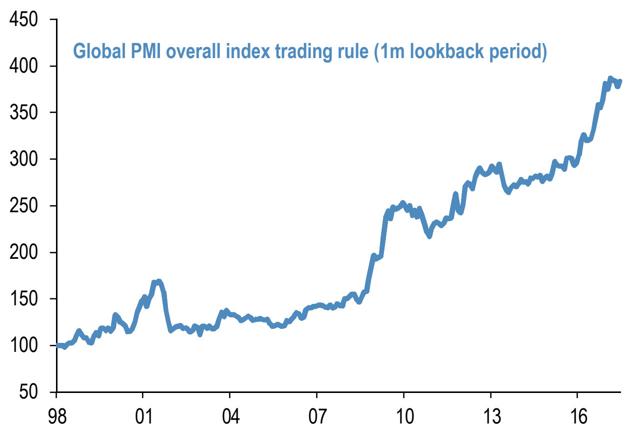
Figure 7: Performance of the trading rule for Global Cyclical vs. Defensive equity sectors

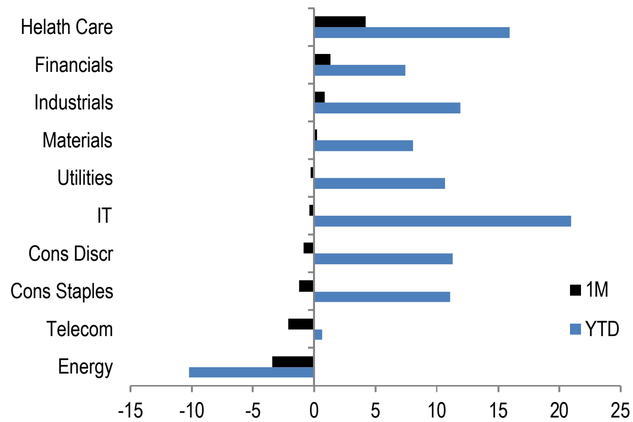
Based on 1-month momentum



Source: Bloomberg, J.P. Morgan

Figure 8: Global equity sector performance over the past month and YTD

%, sectors of MSCI AC World. Sorted by 1-mth returns as on Jun 27.



Source: Bloomberg, J.P. Morgan

- **Stay long small vs. large caps within the Euro area** (★★)
  Our OW in SMid vs Large cap in the Euro area failed to deliver alpha last month but has outperformed YTD. We continue to like this trade as SMid offers domestic exposure to a region that is still showing positive economic momentum as it continues to recover (SMid EBITDA has grown in the Euro area half as much as in the UK or the US from the 2007 prior cycle peak). This is helping SMid deliver higher earnings growth than that of large-caps (16.0% vs 9.6% last yr), with the benefit of a stronger balance sheet (ND/EBITDA of 1.2x vs 1.5x), and cheaper valuations on EV/Sales, P/B, EV/EBITDA or even Fw P/E.

  Within SMid, we favor the Eurozone (Periphery in particular) vs. the UK. Outside of Europe, we like EM, especially Brazil, Russia, and India, driven by their superior value/growth proposition (see Lecubarri et al., *The SMid View*, Jun 1).

- **OW the Energy sector globally** (★★)
  We add an OW in energy stocks globally as we see upside risks to oil price in 2H. We showed in *Flows and Liquidity* that Oil got oversold last week and thus appears poised for a rebound.

  Fundamentally, we expect y/y net income margin to surprise positively this quarter and Energy stocks should continue to benefit from improved earnings visibility. Valuations too are supportive for the sector. Our Global and US equity strategists have a positive view on the sector.

- **OW the US Healthcare sector** (★★)
  We add an OW in US Healthcare sector vs. the S&P500 on strong momentum. Healthcare is one of the best performing US sectors this month and YTD. Our US equity strategy team believes US Healthcare is likely to re-rate versus both its defensive (Staples) and its growth (Technology) peers.

- **Global systematic country model based on PMI signal, FX signal and Price to Cash flow signal recommends OW UK, Canada and Taiwan vs. Sweden, Mexico and South Africa** (★)
  Our rule-based systematic country model for allocating between 16 major markets across both DM and EM is based on three signals: price-to-cash flows, changes in FX rates over four months, and changes in manufacturing PMIs over the past two months (*A country model for equities*, N. Panigirtzoglou and J. Vakharia, Oct'13). The PMI signal goes long the country with the highest 2-month PMI momentum against the one where PMIs have decreased the most. The FX signal goes long the country with the largest depreciation in exchange rates over the past 4 months against the country with the largest appreciation. The Price to Cash flow signal overweights the country with the lowest P/CF ratio z-score vs. the country with the highest ratio. For July, we retain the June recommendations as we await the June PMI release.

  Current month's recommendations are:
  - UK vs. Sweden (PMI signal)
  - Canada vs. Mexico (FX signal)
  - Taiwan vs. South Africa (Price to cash flow signal)

  The strategy so far in June has returned 0.7%. For the half year in 2017, strategy return is -0.8%.

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Table 3: Performance of global systematic country model

PMI signal

Period	Country Long	Country Short	Performance Long	Performance Short	Stratergy Overall
Jun-16	Switzerland	Brazil	0%	17%	-17%
Jul-16	Russia	Switzerland	-1%	2%	-3%
Aug-16	Brazil	Switzerland	4%	-1%	4%
Sep-16	Brazil	South Africa	2%	6%	-4%
Oct-16	UK	South Africa	-6%	0%	-6%
Nov-16	Sweden	Australia	-1%	1%	-1%
Dec-16	Switzerland	UK	5%	3%	2%
Jan-17	Australia	India	4%	8%	-4%
Feb-17	Sweden	Brazil	1%	5%	-5%
Mar-17	South Africa	Taiwan	-3%	3%	-6%
Apr-17	Brazil	Russia	0%	-1%	1%
May-17	Brazil	South Africa	-8%	3%	-10%
Jun-17	UK	Sweden			

FX signal

Period	Country Long	Country Short	Performance Long	Performance Short	Stratergy Overall
Jun-16	Mexico	Russia	3%	5%	-2%
Jul-16	UK	Russia	2%	-1%	3%
Aug-16	Mexico	Japan	1%	0%	1%
Sep-16	UK	Japan	0%	1%	-2%
Oct-16	UK	South Africa	-6%	0%	-6%
Nov-16	UK	South Africa	2%	-8%	9%
Dec-16	Japan	Russia	0%	14%	-14%
Jan-17	Japan	Russia	5%	0%	5%
Feb-17	Japan	Russia	1%	-5%	6%
Mar-17	Japan	Russia	1%	2%	-1%
Apr-17	UK	Russia	4%	-1%	6%
May-17	Canada	Mexico	1%	0%	0%
Jun-17	Canada	Mexico			

Price to Cash Flow signal

Period	Country Long	Country Short	Performance Long	Performance Short	Stratergy Overall
Jun-16	Canada	Mexico	2%	3%	-2%
Jul-16	Euro area	Mexico	4%	-3%	6%
Aug-16	Euro area	South Africa	2%	-9%	12%
Sep-16	Euro area	South Africa	1%	6%	-6%
Oct-16	Euro area	South Africa	-1%	0%	-1%
Nov-16	Euro area	South Africa	-4%	-8%	4%
Dec-16	Euro area	South Africa	6%	6%	0%
Jan-17	Euro area	Switzerland	3%	5%	-2%
Feb-17	Euro area	Mexico	2%	5%	-3%
Mar-17	Taiwan	South Africa	3%	-3%	6%
Apr-17	Taiwan	Mexico	3%	1%	2%
May-17	Taiwan	South Africa	3%	3%	0%
Jun-17	Taiwan	South Africa			

Source: J.P. Morgan.

Table 4: Ranks of the equity markets of different countries based on 3 signals

1 denotes highest ranking, 16 denotes lowest ranking. The darker the color, the lower the ranking. Last row shows the average ranking across the 3 signals: 2-month changes in manufacturing PMIs, 3-month changes in currencies and Price-to-Cash flow as value signal; The lower the reading, the more attractive the equity market of that particular country is.

	US	Euro area	UK	Japan	Canada	Australia	Swiss	China	Korea	Brazil	Taiwan	Mexico	Sweden	S. Africa	India	Russia
2m PMI increase	10	5	1	7	5	3	14	13	6	2	15	9	16	11	12	8
4m FX decline	3	12	6	7	1	2	10	4	8	9	11	16	5	14	13	15
Price-to-Cash Flows	13	3	4	12	14	6	11	2	7	8	1	15	5	16	10	9

Source: J.P. Morgan.

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Credit

Lixin Bao

- **Long US HY Bonds vs. UST (★★)**
  We continue to favor US HY in the credit world to earn carry in a stable macro environment. Although we expect only a small tightening in spreads, their high income should still allow them to outperform most fixed income alternatives. With economic surprises continuing to fade on the margin but with some upside risk on inflation from tightening labor market, we move to OW credit in spread terms this month from outright as credit spread tighteners benefit from a rise in bond yield.

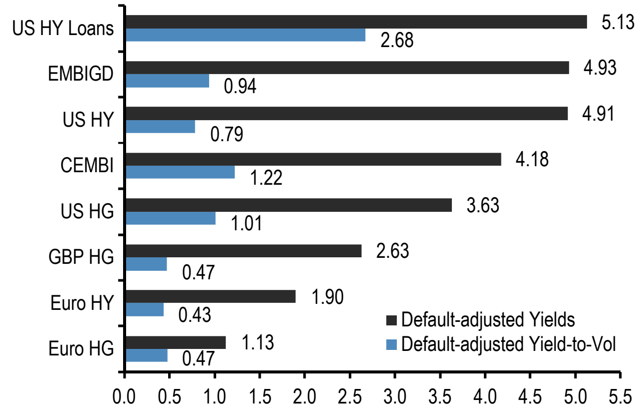
  With a current yield at 6.11%, US HY remains relatively attractive against low expected defaults and also looks attractive on a default- and risk-adjusted basis (Figure 9). Defaults are down sharply over the past year, and we expect them to remain low for the next two years (2% or lower). A record refinancing wave limits maturities over the next three years, and stronger earnings than past years also provide a favorable condition for a steady recovery in the more distressed components of the HY market. US HY also benefited from conservative corporate behaviors. The pipeline of future defaults as suggested by bonds trading at 70 or lower currently stands at only 2%, way below the 16% peak seen during end of 2015.

  The major risk factor remains Oil prices, but US HY and Oil prices have decoupled in the last four months and our Oil strategist forecasts higher prices into the summer. HY spreads widened only 8bp MTD and total returns are down a mere 0.04% while oil fell over 9%. So far the weakness is contained to the energy sector and spread widening is relatively modest in part because energy companies had improved their production efficiencies and balance sheets coming out of the oil crisis last year. A further fall in oil prices to below $40/bbl would be a major downside risk but we think this is a risk into next year.

- **Long US HG vs. UST (★)**
  The medium-term risk on US HG spreads have tilted to the positive with stronger demand, expected monetary tightening and reduced reliance on short-term financing offsetting concerns on high leverage and cycle-low spreads. The Fed is also likely to keep moving slowly given the recent softness in US inflation and increased political uncertainty. Without a faster Fed, we do not see an immediate threat of spread widening. A major bullish factor for US HG would be US tax reform, but we guess that only token measures will pass. Spreads are thus likely to grind tighter very modestly, but its risk-adjusted carry looks fairly attractive. We similarly switch to a long in spread terms as Fed talk is turning increasingly hawkish and an ECB taper may spur rising rates volatility.

Figure 9: Default-adjusted yields and yield-to-vol across credit sectors

%, HY and EM credit adjusted for expected losses due to default, 2-year weekly volatility annualized used for volatility



Source: J.P. Morgan

- **Stay long US HY Loans vs. Cash (★★)**
  We expect demand for HY loans to increase on more upside risk on higher UST yields and a search-for-yield in a stable economy, though we do not expect a significant tightening in spreads. On value, they still offer an attractive yield of 6.03%, 4.20% over Libor, against a default forecast of 1.5% this year. Its risk-adjusted carry that is adjusted for expected defaults is attractive at 2.68.

- **Stay long US HG 10s30s curve flattener (★)**
  The funding status of the US corporate pension world has improved significantly from last year and may induce immunization activity by replacing equities with long-duration bonds. A potential backup in UST yields should further increase long-end demand.

- **Stay long CDX.IG 5s10s curve flattener (★)**
  The CDX.IG 5s10s curve tends to flatten as the spread widens and thus serves as a risk hedge. We keep this hedge against a more aggressive Fed and balance sheet tantrum that might trigger a selloff in US credit due to the vulnerability of high leverage in US non-financials corporates, and any policy

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disappointment or political missteps. The trade is about carry neutral and thus a low cost hedge.

- **Close long iTraxx Senior Financials vs. iTraxx Main** (★)
  Though medium term, we continue to expect financials to outperform within European credit on continued growth momentum, rising rates and value. Our European financials strategists believe European bank credit outperformance vs non-financial corporates has fully played out, as the current basis between financials and non-financials has been eroded to pre-CSPP levels and now is the time to exit on this trade (Henriques et al, *European Bank Outlook H2'17*, June 13). We thus tactically take profit on this trade.

- **Close short iTraxx Main vs. Swap spreads** (★)
  The decoupling between European rates and credit markets has not reversed as we expected which led us to take a loss on this trade. Over the summer months, iTraxx Main spreads should grind tighter on still favorable technicals from ongoing ECB CSPP purchases and light issuance. Also rising idiosyncratic risks are likely to increase over H2 which would likely increase demand for higher quality credit. Thus we choose to close out the shorts in iTraxx Main.

- **Long EMBIGD vs. UST** (★)
  EM credit has extended its YTD outperformance as macro fundamentals are generally improving. Credit fundamentals are also stabilizing. Strong demand, lower UST yields and a weaker dollar are also supportive. We find that absolute valuations remain unattractive, but both carry and carry-to-risk remain attractive relative to DM. Following China's credit tightening, the political turmoil in Brazil and with the Fed to shrink balance sheet in H2, EM credit could be under pressure, but downside risk should be limited as the risk on either Brazil or China should remain local, and EM spread returns against duration-matched USTs empirically are negatively correlated with government bonds. We stay long EMBIGD for carry but now against UST to reduce correlation with global bond prices.

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Foreign Exchange

Paul Meggyesi, Meera Chandan

- **Stay long DXY**
  A confluence of reasons—cheap valuations vs. rates, an underpriced Fed hikes and improving growth momentum (chart 2)—motivated dollar longs vs. the rest of DM. The flash PMIs releases this week reinforce this view as the Euro area and Japan PMIs fell by more than that in the US. Our preference for dollar longs remains vs. other G10 currencies rather than EM given that the backdrop still looks favorable to the latter. We thus maintain a long DXY position, which also helps reduce exposure to idiosyncratic drivers in these countries.
  — **Bought DXY at 97.1080. Stop at 95.00. Marked at +0.1%.**

- **Long EM high yielders vs. other low beta currency; Keep short NZD/BRL and maintain long TRY/ZAR**
  Within the theme of lower beta versions of EM carry, we continue to like short NZD/BRL and long TRY/ZAR. REER valuations remain compelling to be short NZD and long TRY (NZD is among the richest currencies globally; TRY among the cheapest). Despite the lower beta versions to earn carry, these positions will always be vulnerable to idiosyncratic moves. Both NZD and BRL contributed to underperformance this week: NZD because the RBNZ was less dovish than expected and BRL due to the perception that reforms will not get approved, and the perception that President Temer's governability is weak. Our EM strategists continue to think that political risks are now priced in for BRL and have initiated additional longs in the currency this week vs. MXN (*Latin America Local Markets Compass*, Carlos Carranza et al). On NZD and AUD, we think that the relative differences in the macro backdrop (undershooting inflation and some slack in the system; Figure 10) will prevent the policy rates/ carry in these currencies from improving, especially given how high the real rates are in these currencies (Figure 11).
  — **Stay short NZD/BRL at 2.3820.** Stop at 2.47. Marked at -1.9%.

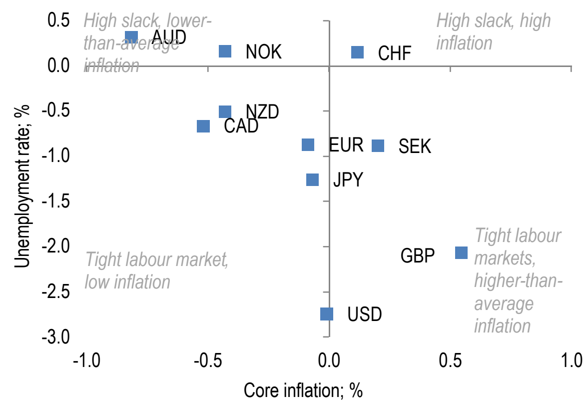
  — **Stay long TRY/ZAR from 3.7335.** Review point 3.60. Marked at -0.4%.

- **In EM, keep structural long in ILS vs a 50:50 EUR:USD basket. Stay short EUR/CZK**
  We keep exposure to these structural views. Our EMEA EM strategists remain constructive on both CZK and ILS (see *EMEA EM Local Markets Compass*, Siddiqui et al).

  — **Long ILS vs a 50:50 EUR:USD basket.** Entered May 19th at 3.7980, with a target of 3.60, and review point of 3.85. Marked at +1.31%.

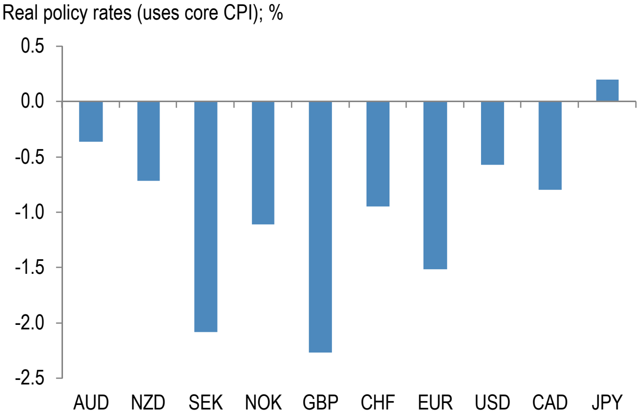
  — **Stay short EUR/CZK forward.** Sold 26.6883 expiry 27 November, 2017. Marked at 1.50%.

Figure 10: The Antipodean currencies have among the largest inflation undershoots in G10…
Core CPI vs. unemployment rate; deviation from 10y avg (%pt)



Source: J.P. Morgan

Figure 11: …but still real yields are high
Real policy rates (uses core CPI); %



Source: J.P. Morgan

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Commodities

Gregory Shearer

- **Stay long Dec'17 LME Aluminum**
  Amid broader metals price weakness over the last couple of weeks, aluminum prices have stayed relatively resilient as the policy underlying Chinese supply-side reform has come into sharper focus. Indeed, when we took profit on our previous long aluminum recommendation earlier in May, we underscored our continued constructive view for aluminum prices over the medium-term, and this recommendation is simply an extension of this view. More specifically, aluminum is shaping up to have one of the most constructive fundamental stories of all the base metals through the balance of 2017 and into 2018 as, in addition to the Chinese government's resolve to address aluminum-related pollution issues around Beijing and Tianjin, both national and local governments are now jointly working through a supply-side reform agenda that will progress through the rest of 2017. The final version of the supply-side reform was perceived as much stricter than expected as all projects built after May 2013 are now considered illegal, with few exceptions. First closures are expected by the end of September, though earlier action cannot be ruled out as local governments seem eager to prove their compliance. Overall, Xinjiang and Shandong provinces are expected to be impacted the most, according to CRU. In summary, amid international pressure on China to reduce excess capacity and curtail exports through the form of pending WTO complaints and investigations launched by the US Commerce Department, we have high confidence in the resolve of Chinese regulators to forge ahead with supply-side reform in aluminum, and believe prices will increasingly reflect the resulting tighter fundamentals over the medium-term.
  - **Went long Dec'17 LME aluminum at a price of $1,929/t on May 18, 2017. Trade target is $2,122/t with a stop loss at $1,832/t. Marked to market on June 27, 2017 at $1,892/t for a loss of $37/t or 1.9%.**

- **Stay long Jul'17 LME Copper**
  While we do expect the copper price to eventually weaken in steps toward $5,000/t on a spot basis by the end of the year, we don't expect that weakness just yet. With supply still bleeding and stronger 2Q demand, we expect the metal to claw back some of its recent losses and trade back up towards $6,000/t in the near-term. In essence, we expect cathode oversupply to decline this quarter as a concentrate gap opens and feeds into cathode production cuts. Seasonally-strong second quarter demand should also help, further drawing down inventories and supporting prices. However, as our trade has moved into the money, we have tightened our stop to avoid a loss.
  - **Went long Jul'17 LME copper at a price of $5,771.50/t on April 7, 2017. Trade target is $6,640/t with a stop loss at $5,772/t. Marked to market on June 27, 2017 at $5,842.25/t for a gain of $70.75/t or 1.2%.**

- **Stay long Jun'17 LME zinc**
  Essentially all the indicators we have been watching for the last six to nine months have recently been signaling a tightening refined zinc market in China over the last couple weeks. A drop-off in smelter production in April—NBS stats show nearly a 6% decline yoy—driven chiefly by cutbacks brought about by an extremely tight concentrate market have driven physical premiums in Shanghai versus prompt SHFE prices higher, while also driving up import premiums to a three year high. The relatively higher domestic prices and premiums have opened the import arbitrage window with April imports already jumping to a 13 month high and anecdotals pointing towards a strong May import figure as well. Investor length has bounced higher in the last week and we do believe that given the severity of the tightness outlined above, zinc prices will likely make one more run towards $2,800/t in the coming month and thus stay long in the near-term. As our trade has moved into the money, we have tightened our stop to avoid a loss.
  - **Went long Jun'17 LME zinc at a price of $2,784/t on March 2, 2017, and added an equal proportion at $2,696/t on March 7, 2017. We were stopped out of the relatively more expensive leg of the trade on June 5 for a loss of 5%. Rolled remaining leg into Jul'17 contract on June 19, embedding the cost of roll into the entry price. Trade target is $3,200/t with stop loss of $2,705/t for the remaining leg. Marked to market on June 27, 2017 at $2,749.25/t for a gain of $24/t or 0.9%.**

- **Stay long Sep'17 Kansas Wheat-CBOT Wheat protein spread**
  We remain constructive on the wheat complex, as adverse weather across the US and EU has pared back yield potential, on already low acreage. After the recent rally across the wheat complex, we take a tactical approach and go long the protein premium, as the high protein balance remains the tightest across the complex. We go long Kansas Wheat September '17 as a high liquid proxy for Minneapolis Wheat.

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- **Went long Kansas Wheat Sep '17 - CBOT Wheat Sep '17 protein spread at 6 USc/bu on June 21, 2017. Trade target is 12 USc/bu with a stop of 3 USc/bu. Marked to market on June 27, 2017 at 6.75 USc/bu for a gain of 0.75 USc/bu or 12.5%.**

- **Took profits on the Aug'17 ICE ULS Gasoil crack**
  With little sign yet that there will be any disruption to the Qatari gas exports to the UAE, we take profits on the ICE gasoil crack long position.

- **Went long Aug'17 ICE Gasoil crack at $8.78/bbl on June 9, 2017. Took profits on June 16, 2017 at $9.47/bbl, for a profit of 69¢/bbl.**

- **Closed long Aug'17 WTI**
  We closed the long August WTI future outright position as the trade reached its stop loss level of $44/bbl.

- **Went long Aug'17 WTI on June 9, 2017 at $46.07/bbl. Closed on June 21, at the stop loss level of $44/bbl for a loss of $2.07/bbl.**

- **Closed long Dec'17/Dec'18 Brent spread**
  We close the long December 2017/December 2018 Brent spread at its stop loss limit of $2.30/bbl after the collapse in time spreads, associated with market sell off pushed this position to its stop loss limit.

- **Went long the December 2017/December 2018 Brent spread at -$1.15/bbl on June 9, 2017. Closed at the stop loss of $2.30/bbl on June 21, for a loss of $1.15/bbl.**

- **Took profit on short Dec'17 CME Gold**
  As our trade moved into the money, we tightened our stop to avoid a loss. Prices moved below this level on June 23 and we closed at a profit.

- **Went short Dec'17 CME gold at a price of $1,266.20/oz on May 18, 2017. Closed on June 23, 2017 at $1,260/oz for a gain of $6.20/oz or 0.5%.**

- **Took profit on long Dec'17 CBOT Wheat**
  We remain constructive on wheat futures as adverse weather has impacted spring planting and crop development. The USDA is yet to downgrade the HRW crop and we remain cautious after snow cover and the recent heat wave which have contributed to deterioration in crop conditions. Non-Commercial participants continue to cover their shorts in CBOT Wheat however, and an ongoing rally in CBOT Corn will pull wheat higher, in our view.

- **Went long CBOT Wheat December 2017 at 465.25 USc/bu on May 12. Closed on June 16, 2017 at 502.75 USc/bu for a gain of 37.5 USc/bu or 8.1%.**

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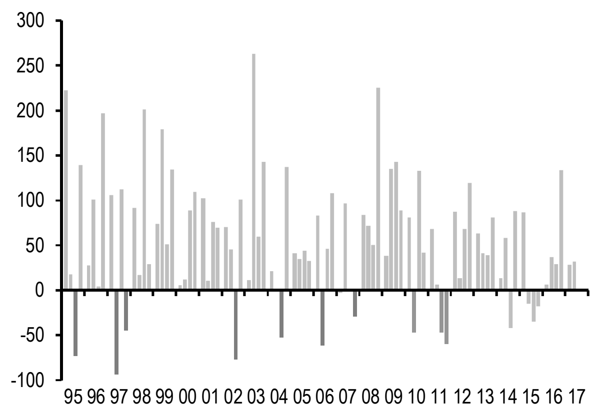
Portfolio performance

Performance (cumulative return, basis points)

	since last GMOS (7 Jun)	YTD
Total	5	60
Equities	1	2
Bonds	2	12
Credit	-1	18
Currency	2	-9
Commodity	1	9
Cross-asset	-1	39
Hedges	0	-10

J.P. Morgan model portfolio performance

Quarterly performance*, bp, not annualized



* The GMOS performance reported is calculated as of closing on the date of the GMOS publication. Any necessary adjustment for market movements today will be made in the following GMOS, reflected in the YTD GMOS performance section. Source: J.P. Morgan.

J.P. Morgan model portfolio performance by trade

P&L in basis points since the last *GMOS* publication date.

	Since Last GMOS	VaR size
OVERALL	**4.7**	**91**
FIXED INCOME	**2.3**	**25**
Short 30y Germany - Small size	-0.1	6
Short 30y Germany	0.3	12
5Y NZ vs. US	0.1	10
3y Australia vs. US	-0.2	10
10y US vs. Germany	1.5	10
10Y AUD vs. GBP swaps (real yield signal)	0.7	5
EQUITIES	**1.3**	**45**
World Defensives vs. Cyclicals (PMI rule)	1.2	20
US Preferred vs. S&P500	1.4	10
UK vs. Sweden (PMI signal)	-0.4	3
Taiwan vs. South Africa (PCF signal)	0.6	3
Euro area vs. US	0.3	20
Euro area Small Cap vs. Large Cap	-1.6	10
Euro area Banks vs. US Banks	-0.7	10
EM vs. US	0.6	10
Canada vs. Mexico (FX signal)	0.1	3
CREDIT	**-0.9**	**39**
US HY vs. Cash	-0.9	15
US HY Loan vs. Cash	-2.2	10
US HG vs. Cash	1.1	10
US HG 10s30s curve flattener	-0.2	6
Short iTraxx Main vs. Swap spreads (3:5)	-0.5	6
iTraxx Senior Financials vs. iTraxx Main	2.6	6
EMBIGD vs. Cash	-0.8	10
CDX.IG 5s10s curve flattener (dur. weighted)	0.0	6
COMMODITIES	**1.4**	**6**
Short Dec'17 CME Gold	0.5	2
Jun'17 LME Zinc	0.4	2
Jul'17 LME Copper	0.4	2
Dec'17 CBOT Wheat	0.3	2
Dec'17 LME Aluminum	-0.2	2
CROSS ASSET	**-1.3**	**48**
MSCI AC World vs. GBI Global	-1.1	30
GBI EM vs. USD Cash	-0.2	25
FX	**1.9**	**17**
TRY vs. ZAR	1.0	8
NOK vs. JPY	0.9	9
ILS vs. USD	0.3	3
ILS vs. EUR	0.2	4
EUR vs. AUD	-0.2	6
CZK vs. EUR	0.3	1
CHF vs. USD	-0.1	4
CHF vs. AUD	-0.4	6

Source: J.P. Morgan

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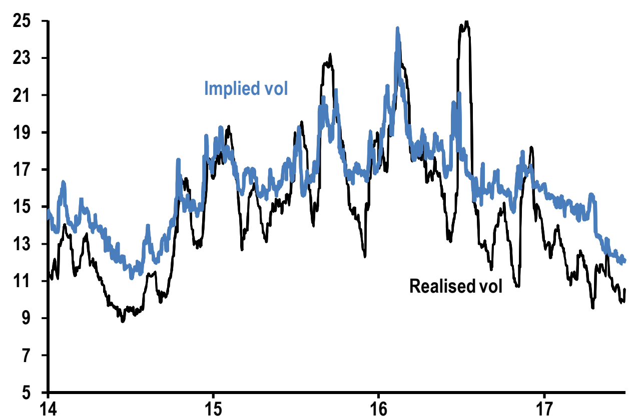
Volatility Strategy

- **Implied volatilities continued to decline over the past month, matching the historical lows seen previously in August 2014.**
- **While the low level of market volatility is explained by very low supply of economic surprises currently, we see a significant risk that the supply of economic or policy surprises will increase from here.**
- **We thus recommend an overall long vol stance via buying low-cost 3-month USD/JPY delta-hedged straddles.**
- **To hedge against a potential ECB taper tantrum, we continue to recommend 1) long 6Mx5Y ATMF USD payer swaptions contingent on SPY falling 5%, and 2) long SX5E calls funded by short iTraxx X-over spread receivers.**
- **To hedge against EM risks, we recommend buying MXN vol vs. Oil vol. We take profit on our previous long in EEM vol vs CNH vol.**
- **To hedge against markets underpricing the Fed, we re-iterate one previous trade: long in USD vs. Silver 3M 25D risk-reversals. But we close the previous long in 3Mx5Y USD payers vs. 3Mx5Y USD receivers and replace it with a new relative trade: buy 2Y Schatz calls vs. selling 2Y UST calls.**

- Implied volatilities continued to decline since our last publication on June 7th, matching the historical lows seen previously in the summer of 2014. This downshift in implied volatilities is shown in our implied vol metric, i.e. the weighted average of 3-month implied volatilities across five asset classes, which currently stands at levels last seen in August 2014 (Figure 1).
- Realized volatilities were little changed since our last publication. Realized volatilities are also shown in Figure 1 which constructs a 1-month Realized vol metric across asset classes based on the same indices and weights as the ones used for our Implied volatility metric. As a result of the decline in Implied volatilities, the ratio between our cross-asset Implied and Realized vol metrics went down to 1.14x currently from 1.20x in our last publication on June 7th.
- In other words, option markets embed currently modest volatility risk premia and this is one reason we are reluctant to sell vol from here. In fact we recommend an overall long vol stance via buying USD/JPY straddles. Table 1 reveals that from a volatility carry perspective, it is a lot less onerous to be long USD/JPY vol as the implied to realized vol ratio is below 1.0x. This contrasts with other asset classes such as equities or credit where the implied to realized vol ratios are well above 1.0x and is thus very onerous to be long volatility there.

Figure 1: Cross-asset Implied and Realised vols

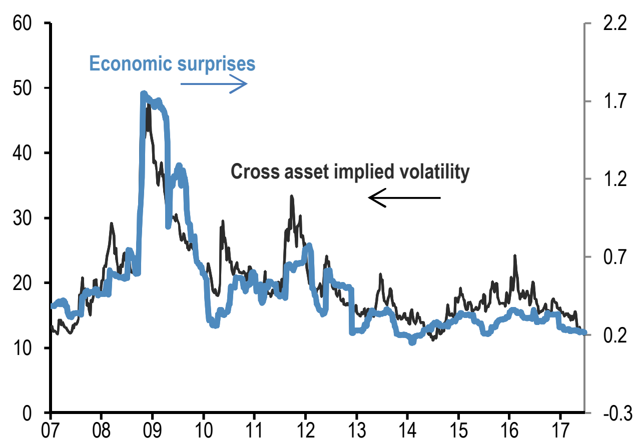
Weighted average of 14 vols across 5 asset classes. We apply a 20% weight on each of the five asset classes. The 14 vols used are: V2X Index, VIX Index, VNKY Index, JPMVXYG7 Index, JPMVXYEM Index, CL1 Comdty, HG1 Comdty, GC1 Comdty, C 1 Comdty, iTraxx, CDX.IG, CDX.HY, Euro 10y swap rate, US 10y swap rate. 3-month implied vols are used for the cross-asset Implied vol metric. Realised vols are instead calculated over 1-month (20 business day) rolling window.



Source: J.P. Morgan

Figure 2: Economic surprises vs. market implied volatility

See text for details. The construction of the 3-month implied volatility across five asset classes is explained in Figure 1.



Source: J.P. Morgan calculations.

This is not to say that the current low level of market vol is not explained or justified. As we argued before, it is explained if one considers the very low supply of

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fundamental or economic surprises currently. In particular, in our sister publication, *Flows & Liquidity*, June 2nd, “Why is market vol so low”, we argued that a very low supply of economic surprises currently is by itself enough to explain the low level of market volatility. We proxy economic surprises by the standard deviation of weekly changes in J.P. Morgan’s Forecast Revision Index (FRI) for global real GDP growth.

- This is shown in Figure 2 by the standard deviation of weekly changes in J.P. Morgan’s Forecast Revision Index (FRI) for global real GDP growth. The J.P. Morgan Forecast Revision Index is the cumulative change in the J.P. Morgan Forecast History Index starting at 100 in 4 January 2002. In this regard, the change in any given week shows the %-point revision to the J.P. Morgan Economics Research forecast of average real GDP growth over the quarters t-1, t, t+1, and t+2, where t is the quarter in which the forecast is made. The standard deviation of weekly changes in the global FRI shown in Figure 2 is calculated over a six-month rolling window. This proxy for economic surprises had reached very high levels immediately after the Lehman crisis, but started normalizing quickly after then. Over the past six years, it saw two major episodes of increases in the supply of economic surprises: the euro debt crisis of 2011/2012 and the oil price shock of 2014/2015. The supply of economic surprises rose during these two episodes as the euro area economy entered a recession during the euro debt crisis and as fears of a US or global recession emerged during 2015.
- But this last vol episode, triggered by the oil price shock of 2014/2015, is behind us as oil prices stabilized. As a result, both the supply of economic surprises and market vol declined over the past year. And Figure 2 shows that the current level of 3-month implied volatility across five asset classes is very much in line with our economic surprise proxy.
- But we see a significant risk that the supply of economic or policy surprises will rise from here and this is why we adopt a long overall vol stance. There are several risk factors one can envisage from here that could trigger a vol increase: a more hawkish ECB or Federal Reserve than currently priced in or justified by the macro backdrop or a more pronounced downshifting in the Chinese shadow banking system hurting EM. We do not think the above risks are very high but we do believe they are significant enough to justify a tactical long vol stance and selective portfolio hedges.
- We had introduced several hedges in our last publication. We close some of these previous hedges and we add some new ones in this publication:
- 1) To hedge against a potential ECB taper tantrum, we recommended two trades. The first trade is long 6Mx5Y ATMF USD payer swaptions contingent on SPY falling 5%. The biggest risk to multi-asset investors is a simultaneous sell off in bonds and equities. We thus recommend going short rate/equity correlation via hybrid US rate/equity structures given an attractive entry point for this correlation right now.
- The second trade is long SX5E calls funded by short iTraxx X-over spread receivers. Credit has been a direct beneficiary of the ECB’s QE and is thus more vulnerable to ECB tapering than Euro area equities. This is especially true if an ECB taper tantrum induces bond fund selling as it happened during the Fed’s taper tantrum in 2013. Bond fund selling would amplify the widening in credit spreads given that the vast majority of bond funds invest in corporate bonds. See sections below.
- 2) To hedge against EM risks, we had previously recommended selling rich CNH vols to fund long EEM vols as a low bleed EM hedge. We prefer to take profit on this trade. To hedge against EM risks, we initiate a new trade via going long MXN vol vs Oil vol. See sections below.
- 3) To hedge against markets underpricing the Fed, we re-iterate one previous trade: long in USD vs. Silver 3M 25D risk-reversals. But we close the previous long in 3Mx5Y USD payers vs. 3Mx5Y USD receivers and replace it with a new relative trade: buy 2Y Schatz calls vs. selling 2Y UST calls.

4) To hedge against Italian election risks, we had recommended in our publication going long FTSE MIB vol vs. Eurostoxx50 vol via delta hedged 3-month ATM straddles (we preferred straddles as variance swaps are less liquid for the FTSE MIB index). The implied to realized vol ratios stood at 1.2x for FTSE MIB at initiation on June 7th vs. 1.5x for Eurostoxx50. In other words, there was significantly more volatility risk premium priced in the Eurostoxx50 index vs. the FTSE MIB index. In other words we felt that equity option markets were underpricing Italian political risks with the prospect of an early election in sight at the time. Unfortunately the prospect of an early election has now been greatly reduced and in addition Italian state aid for the two Veneto banks has removed another source of uncertainty for Italian equities. We close this hedge at a loss of €0.3 per vega

In this note, we focus on medium-term asset allocation across equity volatility, fixed income volatility, FX volatility, and commodity volatility. More detailed recommendations are presented in our sister publications, Equity Derivatives Markets Weekly Outlook, US Fixed Income Markets Weekly, Global Fixed Income Markets Weekly, FX Markets Weekly, Credit Markets Outlook and Strategy, and CD Player. We have argued previously that volatility can be viewed and traded much like any other asset class (see *Volatility as an Asset Class*, Terry Belton et al., and *Variance Swaps*, Marko Kolanovic et al). Declaring volatility an asset class is not obvious. The main asset classes around which we allocate strategically and tactically are stocks, bonds, credit, and commodities. FX is used largely for tactical allocation. Each of these provides returns in compensation for a distinct and identifiable type of risk. One aspect of risk common to each of these asset classes and around which investors can position is the high-frequency volatility of their prices. Many market participants indeed take views and positions on how volatile each of these asset classes will be in the future. One can, therefore, consider volatility a tactical asset class. The trades below reflect our top-down views on future asset class volatilities, relative to what is priced in option markets. We pay more attention to relative value volatility trades across asset classes.

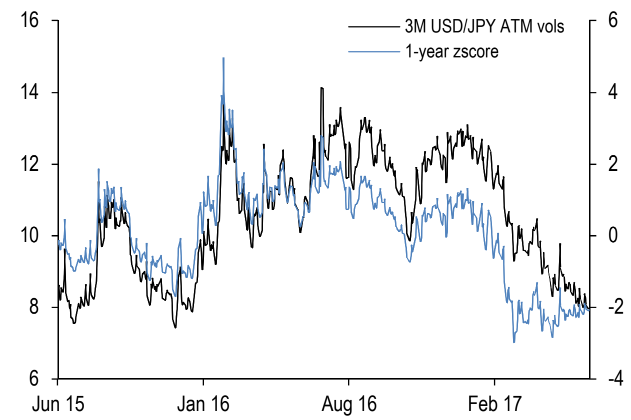
Low cost, limited downside, long gamma exposure via delta-hedged 3M USD/JPY outright straddles or as relative value vs. S&P500 index vol to collect carry

With G10 central banks forcefully back on agenda over the last couple of weeks, we think it is prudent to add hedges against potentially jittery summer months' price action, that may get exacerbated by low market liquidity. As detailed in the *mid-year FX derivatives outlook*, Sandilya et al from June 23, expectations for FX vols are to bounce higher in H2 and for steep vol curves in G10 to mean-revert flatter as gamma tenors find support.

With the front vols near 8.0 vols handle, the lowest since Jan 2016 (-2.1 sigma below 1-year average) and on the back of performing realized vols, we find USD/JPY delta-hedged straddles offer a low cost, limited downside, long gamma exposure to policy or economic risks.

We recommend buying 3M USD/JPY ATM straddles @ 8.0/8.2.

Figure 3: 3M USD/JPY straddles are at the cheapest levels since Jan 2016



Source: J.P. Morgan

Alternatively, assuming policy or economic risks are more directed toward rates and currencies rather than equities which are instead underpinned by solid EPS growth and strong equity fund flows, taking a long position in USD/JPY vs. short positon in S&P500 index vol would provide a RV (Relative Value) trade that maintains desired risk hedge while collecting vol carry.

We recommend buying 3M USD/JPY ATM straddles @ 8.0/8.2 vs. selling Sep 29 S&P500 index 2435 straddles @10.0, in vega neutral notionals with a ratio of 2:1.

Given that 3M-1M slide down the vol curve is at nominal levels of 0.5vols for 3M USD/JPY and about 2vols for S&P500 index ATM, a ratio of 2:1 for this relative value trade would achieve positive carry. It is important to emphasize that at the above ratio of 2:1, this relative value trade exposes investors to some S&P500 tail risk, so it is not suitable for those investors believing that S&P500 index tail risks are currently high. For those investors, we believe the outright long in delta-hedged 3M USD/JPY outright straddles is more suitable.

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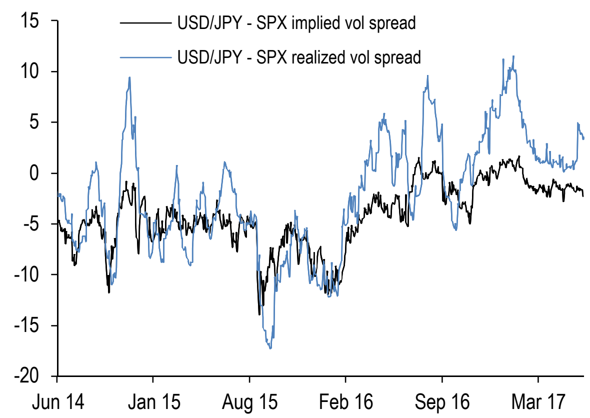
Figure 4: RV trade supportive backdrop with USD/JPY realized vols preforming and SPX realized vols underwhelming



Source: J.P. Morgan

Open long in USD/MXN 6M straddles funded with short Brent straddles

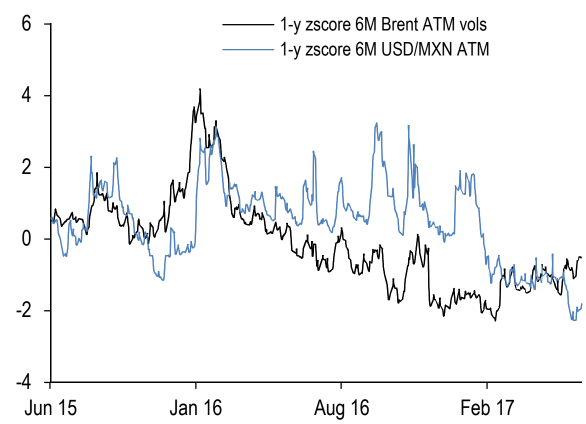
While off the April lows, crude oil realized vol still hovers a good 3vol pts below implied. A fairly narrow range for Brent around $50/bbl (YE Brent target, now at $52/bbl – *2017 Commodities Mid-Year Outlook*) should keep realized vols in check. Moreover, at current levels, oil option valuations should not be an impediment to further risk premium compression in oil, overall, making crude oil vols an attractive short (*Commodity Derivatives Mid-Year Outlook*, Sandilya et al, from June 23).

Riddled by idiosyncratic and/or non-crude oil issues since 2016, MXN has largely decoupled from oil. MXN performance vs. the USD YTD has been stellar (+19% in total returns, the best in EM). However, with MXN at the best levels since May 2016, our FX strategists see the USDMXN move as overdone and have turned bearish MXN based on rich valuations, unfavorable positioning and as Banxico is likely to end the tightening cycle thus halting the widening of interest rate differentials relative to the US (*Emerging Markets FX*, Siddiqui et at, from June 23).

In vol space, USD/MXN 6M ATM vols at 11.5 vols are near the lowest in more than a year and for now well supported by the recent spot dynamics (1-mo trailing realized is at 11.6vols). The 6M-3M vol curve roll down is at nominal levels at about 0.5vols while FX options carry to vol ratio is near multi-year highs, making ownership of long MXN straddles easier to bear even if spot jitters underperform. While the timeline of the US recalibration of NAFTA and broader trade relationships is very cloudy, trade protectionism risk remains and commodity currencies remain vulnerable to headline risk. We recommend positioning for that risk via long USD/MXN straddles funded with short Brent straddles.

Buy 6M USD/MXN straddles @11.20/11.65 financed by selling Dec 17 Brent straddles @30.10, in 2.5:1.0 vega notionals.

Figure 5: MXN vol in depressed, especially relative to the nominal levels of Oil vol.



Source: J.P. Morgan

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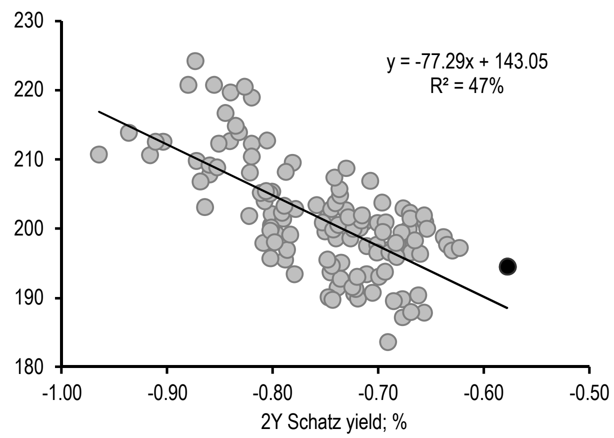
Buy Schatz calls versus 2Y UST calls

We like fading the recent sell-off in German yields. While we have a modest upward bias to our 2Y yield forecast as time progresses, we expect that over the near term, a large amount of excess liquidity and heavy purchases of short-dated German bonds would keep pressure on Schatz yields. We believe that position unwinds have led to cheap valuations for Schatz; our near term target is still -70bp. In our view, buying Schatz calls versus selling 2Y US Treasury calls offers attractive upside in this regard as risks are biased for the UST yields to rise higher as the Fed continues with its normalization process in terms of balance sheet and rate hikes. The cross market spread is directional to Schatz yield but that directionality does not seem fully priced into the options market (Figure 6). Treasury options trade richer versus Schatz options implying that this cross market conditional spread trade can be set up at levels better than forwards. We highlight that 2Y Treasury yields are trading at around 1.35%, or just about 10bp above the IOER. This spread between 2Y UST yield and the fed funds target IOER rates is close to its bottom of the past few years and therefore we expect limited downside to being short 2Y UST calls (Figure 7).

Overall, we recommend buying 2Y Schatz calls versus selling 2Y UST calls.

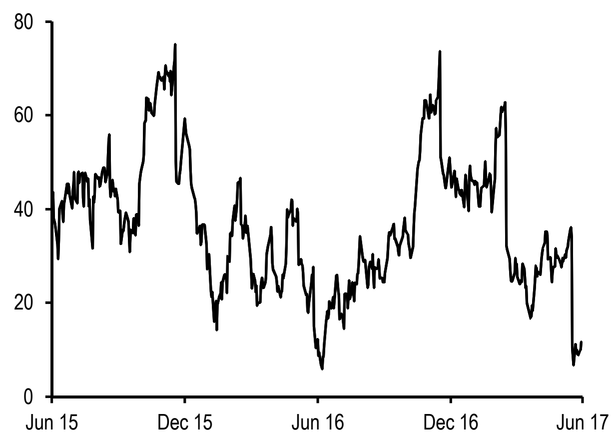
Trade details:
Buy 1000 119 Sep17 Schatz calls versus selling 607 108.125 Sep17 2Y UST calls to enter into a cross market (USD-EUR) widener at a net credit of 5cents at CTD forward yield spread of 197.7bp and CTD spot yield spread of 194bp;

Figure 6: We recommend buying Schatz calls versus selling 2Y UST calls. Implied directionality (versus Schatz) is expensive versus delivered volatility and we recommend selling this directionality
2Y UST - Schatz yield regressed against 2Y Schatz yield; past 6M; %



Source: J.P. Morgan

Figure 7: The 2Y UST yield - Fed's IOER spread is at its tightest levels indicating limited downside risk from selling UST calls
2Y UST yield - Fed's IOER; past 2Y; bp



Source: J.P. Morgan

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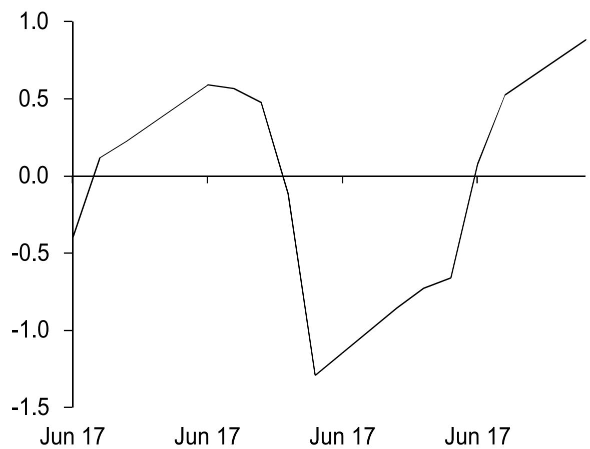
Take profit on short CNH vol vs. long EEM vol trade

We had noted before that the sharp CNH rally at the end of May following the PBoC's tweaking of the USD/CNY fix methodology took front-end vols more than 1.5vols higher. We argued at the time that the reaction in FX vol space seemed overdone and that it should normalize going forward as the next phase of the CNH move was anticipated to be better contained. This is because of the historical experience of Chinese policy gradualism that rarely, if ever, rewards continuation of one-off, knee-jerk currency moves. We thus saw an opportunity to sell CNH vol in order to fund a long in EEM vol as a low bleed EM hedge. Our thesis is that EM equities are not subject to nearly the same (or any) degree of policy control; consequently there isn't a cap on realized vols in the same way as there is on FX. This lent itself to a natural long equity vol vs. short FX vol RV theme at an asset class level. In particular, we had recommended selling 3M USD/CNH ATM straddles @4.0/4.2 v.s buying Sep 15 EEM 42.00 straddles @15.8, in market-neutral vega notional, i.e. a ratio of close to 4:1. The first leg of the trade produced a solid profit more than compensating for the underperformance of the second leg (Figure 8). As a result, the trade posted a decent positive overall PnL and, with the risks for the USD re-pricing on the back of the Fed/markets divergence, we prefer to take profit.

Figure 8: Cumulative P/L of short 3M USD/CNH - long Sep 15 EEM 42.00 straddle (delta-hedged)
Cumulative PnL in vol points



Source: J.P. Morgan

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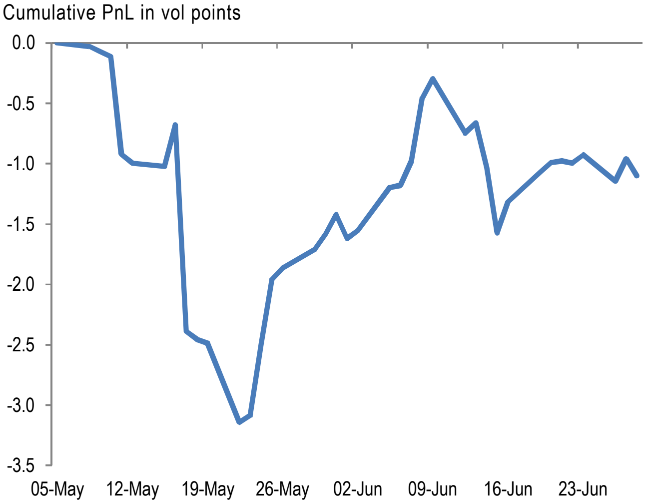
Keep long in USD vs. Silver 3M 25D risk-reversal

We had previously (May 4th) recommended two trades as a hedge to a potentially hawkish Fed and a pickup in USD: long USD/CHF and USD vs. Silver 3M 25D risk-reversals. We took profit in our last publication on the former, i.e. long USD/CHF 25D risk-reversal, but kept the latter, i.e. long USD vs. Silver 3M 25D risk-reversal, on the hope that the trade will recapture its previous loss. Unfortunately, the trade has only recaptured part of its previous loss. Given the risk for a USD re-pricing on the back of the Fed/markets divergence, we prefer to keep the trade into next month.

Figure 9: Cumulative PNL of long USD vs. Silver 3M 25D risk-reversal

Cumulative PnL in vol points



Source: J.P. Morgan

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Sell rate/equity correlation via hybrid US rate/equity structures

We believe the biggest risk to multi asset investors through year-end is a simultaneous sell-off in bonds and equities. This could emerge either because of an ECB taper tantrum or a more aggressive Fed in terms of balance sheet shrinkage and rate hikes relative to what is currently priced in. Given this backdrop, we continue to recommend going short rate/equity correlation via hybrid US rate/equity structures. Specifically, we had recommended in our last publication on June 7th to buy 6Mx5Y ATMF USD payer swaptions contingent on SPY declining 5%. As Figure 10 shows, 6Mx5Y ATMF payer swaption contingent on SPY falling 5% offered a hefty, nearly 80%, discount to the vanilla payers making these hybrid structures attractive.

The attractiveness of selling rate/equity correlations has not diminished since our last publication.

Figure 10: Payer swaptions contingent on SPY lower offered a significant discount to vanilla on last publication June 7th

Contingent 6Mx5Y and 6Mx10Y ATMF payer swaption indicative offer (correlation bid) discount to vanilla* for different equity strikes of SPY

SPY strike	ATMF payer swaption discount	
(% of spot SPY)	6Mx5Y	6Mx10Y
100%	63%	64%
98%	71%	73%
95%	79%	81%
90%	84%	87%

Source: J.P. Morgan

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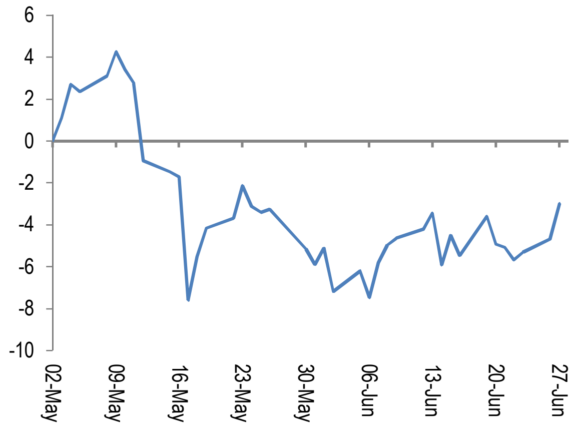
Close long in 3Mx5Y payers versus 3Mx5Y receivers

We initially recommended this trade (buy $100mn 20bp high 3Mx5Y payer swaption - notification date 8/2/17, maturity date 8/4/22, strike 2.194%, premium 27.9bp - versus selling 20bp low 3Mx5Y receiver swaption - notification date 8/2/17, maturity date 8/4/22, strike 1.794%, premium 27.9bp- premium neutral at inception on May 4th) as an expression of our bearish view on duration and a hedge to a potentially hawkish Fed. Since that time, however, our colleagues in Treasury Strategy have turned neutral. Given this change in outlook, we recommend unwinding this rather aggressive trade at a P/L of -3 bp. We replace it with a new relative trade: buy 2Y Schatz calls vs. selling 2Y UST calls (see section above).

Figure 11: This trade has underperformed given the rally in yields over the past two months

P/L of long 3Mx5Y payers versus 3Mx5Y receivers trade (bp of yield; LHS)



Source: J.P. Morgan

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SX5E calls funded by selling iTraxx X-over spread receivers as a hedge to ECB tapering

We had re-entered euro area equity upside vs. credit trade on May 4th, i.e. SX5E calls funded by selling iTraxx X-over spread receivers, given how tight CDS spreads are currently in euro area. With CDS credit spreads having fallen sharply after the French election to multi year lows, and with the prospect of ECB tapering posing more downside risk to credit, we believe it is attractive to fund euro equity upside by selling receivers in credit. The euro equity upside is predicated on our belief that only a small portion of previous euro equity underweights has been covered by investors so far.

In particular, we had recommended to buy equity calls funded by selling CDS spread receivers, i.e. we had recommended to sell an iTraxx X-over S27 September-17 receiver of $100m notional at a strike of 225bp and a price of 9.3 cents × €100m ÷ 10000 = €93k and to buy similar delta 544 of 15-Sep-17 SX5E calls at a strike if 3900 costing 17.1 × 10 × 544 = €93k, i.e. for a flat premium for the combined trade. The PnL of the trade has been very negative so far as both legs lost money. In particular, the price of the SX5E calls collapsed from 17.1 to only 2 euros.

Despite the past two months' loss, we keep this medium term trade as we see it as good hedge to a potential ECB taper tantrum. Credit has been a direct beneficiary of the ECB's QE and is thus more vulnerable to ECB tapering than Euro area equities. This is especially true if an ECB taper tantrum induces bond fund selling as it happened during the Fed's taper tantrum in 2013. Bond fund selling would amplify the widening in credit spreads given that the vast majority of bond funds invest in corporate bonds.

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Table 1: Cross Asset Volatility Monitor - 3m ATM Implied Volatility (1y history) as of 27-June-2017

This table shows the richness/cheapness of current implied volatility levels (red dot) against their 1 year historical range (thin blue bar) and the ratio to current realized volatility. Assets with implied volatility outside their 25th/75th percentile range (thick blue bar) are highlighted.

Asset	Current	Low	Low date	High	High date	Upside	Downside	Implied/realized volatility
S&P 500	10%	9%	19-Jun-17	17%	4-Nov-16	7%	1%	1.6x
EuroSTOXX	14%	13%	19-Jun-17	26%	28-Jun-16	13%	1%	1.4x
Nikkei 225	13%	13%	27-Jun-17	27%	28-Jun-16	14%	0%	1.3x
Hang Seng	12%	12%	1-Jun-17	21%	28-Jun-16	8%	0%	1.2x
MSCI EM	16%	15%	28-Apr-17	24%	11-Nov-16	8%	1%	1.3x
Gold	11%	10%	16-Jun-17	18%	28-Jun-16	8%	1%	1.0x
Oil (brent)	29%	23%	28-Feb-17	47%	29-Nov-16	18%	6%	1.1x
Copper	17%	16%	24-Oct-16	34%	11-Nov-16	17%	1%	1.0x
BB commodity index	10%	10%	16-Jun-17	17%	12-Jul-16	7%	0%	1.2x
EUR/USD	7%	6%	19-Jun-17	11%	22-Feb-17	5%	0%	1.0x
USD/NOK	8%	8%	16-Jun-17	13%	28-Jun-16	4%	1%	0.9x
USD/JPY	8%	8%	27-Jun-17	14%	21-Jul-16	6%	0%	0.9x
GBP/USD	8%	7%	12-May-17	15%	6-Jul-16	7%	1%	0.9x
USD/CHF	7%	6%	19-Jun-17	10%	19-Dec-16	4%	0%	1.2x
10y US swaps	64	62	16-Jun-17	94	1-Dec-16	31	1	1.1x
10y Eur swaps	42	40	14-Jun-17	64	5-Dec-16	22	2	1.0x
CDX IG	36%	34%	14-Jun-17	52%	28-Jun-16	17%	2%	1.4x
CDX HY	31%	30%	14-Jun-17	44%	13-Sep-16	13%	1%	1.4x
iTraxx	36%	31%	19-Jun-17	71%	28-Jun-16	35%	4%	1.6x
iTraxx X/O	36%	31%	19-Jun-17	65%	28-Jun-16	29%	5%	1.8x

Note: Swaps volatility is 3m 10y payer ATMF implied annualized BP vol and credit volatility is 3m 5y on-the-run ATM spread volatility. MSCI EM and Treasury futures are 3m implied vol from Bloomberg.
Source: J.P. Morgan

Definitions:

Low:	Lowest closing level in the last 1y
Low date:	Date the lowest closing level was reached (or the first time it was reached in the case of several identical low closing levels)
High:	Highest closing level in the last 1y
High date:	Date the highest closing level was reached (or the first time it was reached in the case of several identical high closing levels)
Graph:	Shows the current level and the 25th/75th percentile relative to the 1y high/low
Upside:	Implied return/volatility percentage points from current level up to the High (note: return is calculated as simple difference for spread products)
Downside:	Implied return/volatility percentage points from current level down to the Low (note: return calculated as simple difference for spread products)

Implied/realized volatility: Current 3m implied volatility / current realized 3m volatility

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Table 2: Cross Asset Correlations

3-month rolling correlation of daily changes. (calculations up to June 27th).

3M Correlation Levels	<-60	-60 to +60	>+60

		3-month rolling correlation of daily changes																			
		Equity					Commodity				Currency					Swaps		CDS			
		S&P 500	EuroSTOXX	Nikkei 225	Hang Seng	MSCI EM	Gold	Oil (brent)	Copper	BB-Com	EUR/USD	USD/NOK	USD/JPY	GBP/USD	USD/CHF	10y US	10y EUR	CDX IG	CDX HY	iTraxx	iTraxx X/O
Equity	S&P 500		62	28	35	65	-30	2	21	-3	-5	-4	52	-6	21	46	25	73	70	55	53
	EuroSTOXX	62		25	27	50	-32	-7	11	3	16	-16	35	-12	9	37	26	56	50	81	79
	Nikkei 225	28	25		34	23	-27	-10	13	-8	14	-10	20	-11	5	12	12	21	23	19	20
	Hang Seng	35	27	34		59	5	6	22	15	1	0	19	-17	14	17	2	30	36	21	21
	MSCI EM	65	50	23	59		-2	17	34	28	11	-33	22	0	11	18	7	51	56	48	50
Commodity	Gold	-30	-32	-27	5	-2		16	-12	22	12	-17	-46	-8	-17	-27	-18	-18	-10	-21	-30
	Oil (brent)	2	-7	-10	6	17	16		16	75	-7	-32	1	-7	11	5	3	19	36	-16	-15
	Copper	21	11	13	22	34	-12	16		34	-1	-21	11	-7	9	6	3	20	31	21	19
	BB-Com	-3	3	-8	15	28	22	75	34		8	-38	-5	0	1	7	6	7	24	-5	-8
Currency	EUR/USD	-5	16	14	1	11	12	-7	-1	8		-71	-37	45	-86	-22	26	1	-7	17	26
	USD/NOK	-4	-16	-10	0	-33	-17	-32	-21	-38	-71		43	-32	56	35	8	-9	-11	-17	-29
	USD/JPY	52	35	20	19	22	-46	1	11	-5	-37	43		-19	50	75	53	50	46	32	25
	GBP/USD	-6	-12	-11	-17	0	-8	-7	-7	0	45	-32	-19		-45	-27	9	-8	-20	-12	-5
	USD/CHF	21	9	5	14	11	-17	11	9	1	-86	56	50	-45		34	-16	15	24	9	0
Swaps	10y US	46	37	12	17	18	-27	5	6	7	-22	35	75	-27	34		68	48	45	40	26
	10y EUR	25	26	12	2	7	-18	3	3	6	26	8	53	9	-16	68		40	28	26	20
CDS	CDX IG	73	56	21	30	51	-18	19	20	7	1	-9	50	-8	15	48	40		88	58	57
	CDX HY	70	50	23	36	56	-10	36	31	24	-7	-11	46	-20	24	45	28	88		52	51
	iTraxx	55	81	19	21	48	-21	-16	21	-5	17	-17	32	-12	9	40	26	58	52		92
	iTraxx X/O	53	79	20	21	50	-30	-15	19	-8	26	-29	25	-5	0	26	20	57	51	92	

Source: J.P. Morgan

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Table 3: Monthly change of Cross Asset Correlations

Monthly change of 3-month rolling correlation of daily changes (calculations up to June 27th)

1M Change in 3M Correlation	<-25	-25 to -10	-10 to +10	+10 to +25	>+25

		Monthly change of 3-month rolling correlation of daily changes																		
		Equity					Commodity				Currency					Swaps		CDS			
		S&P 500	EuroSTOXX	Nikkei 225	Hang Seng	MSCI EM	Gold	Oil (brent)	Copper	BB-Com	EUR/USD	USD/NOK	USD/JPY	GBP/USD	USD/CHF	10y US	10y EUR	CDX IG	CDX HY	iTraxx	iTraxx X/O
Equity	S&P 500		4	2	24	3	8	-16	-20	-20	-14	11	2	5	13	9	-2	-2	-5	6	11
	EuroSTOXX	4		0	15	9	0	-4	-13	-3	-7	1	-4	-4	7	-10	-21	2	1	-3	6
	Nikkei 225	2	0		0	0	9	-4	-17	-5	6	-8	-13	2	-12	-8	-16	7	4	-3	-1
	Hang Seng	24	15	0		16	-11	5	-19	4	4	-1	-4	-4	-1	-3	-9	27	28	12	8
	MSCI EM	3	9	0	16		9	-16	-21	-14	-19	15	10	-4	23	13	-3	-4	-2	10	14
Commodity	Gold	8	0	9	-11	9		0	1	-5	16	-20	-15	-5	-10	-13	-6	11	12	-4	-3
	Oil (brent)	-16	-4	-4	5	-16	0		-12	-2	-4	12	9	-5	4	17	22	-12	-4	-10	-1
	Copper	-20	-13	-17	-19	-21	1	-12		-11	-5	5	2	-15	8	-2	2	-13	-15	-6	5
	BB-Com	-20	-3	-5	4	-14	-5	-2	-11		0	7	13	-1	6	19	23	-22	-17	-14	-4
Currency	EUR/USD	-14	-7	6	4	-19	16	-4	-5	0		-4	3	-8	-4	9	9	-13	-18	-15	-10
	USD/NOK	11	1	-8	-1	15	-20	12	5	7	-4		-2	9	-1	-8	-14	12	17	7	0
	USD/JPY	2	-4	-13	-4	10	-15	9	2	13	3	-2		18	-4	-2	1	11	12	-2	-5
	GBP/USD	5	-4	2	-4	-4	-5	-5	-15	-1	-8	9	18		12	15	14	-10	-15	-16	-8
	USD/CHF	13	7	-12	-1	23	-10	4	8	6	-4	-1	-4	12		-8	-16	13	18	15	8
Swaps	10y US	9	-10	-8	-3	13	-13	17	-2	19	9	-8	-2	15	-8		4	18	22	-3	-1
	10y EUR	-2	-21	-16	-9	-3	-6	22	2	23	9	-14	1	14	-16	4		16	21	-15	-9
CDS	CDX IG	-2	2	7	27	-4	11	-12	-13	-22	-13	12	11	-10	13	18	16		-3	-1	12
	CDX HY	-5	1	4	28	-2	12	-4	-15	-17	-18	17	12	-15	18	22	21	-3		-5	12
	iTraxx	6	-3	-3	12	10	-4	-10	-6	-14	-15	7	-2	-16	15	-3	-15	-1	-5		12
	iTraxx X/O	11	6	-1	8	14	-3	-1	5	-4	-10	0	-5	-8	8	-1	-9	12	12	12	

Source: J.P. Morgan

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No.	Closed Trades	Date of recommendation	Date of close	Performance
1	Sell 3m ATM straddles on DJ-UBS Commodity Index and buy 3m ATM staddles on Gold	9-Jan-13	6-Mar-13	Positive
2	Sell 3m ATM straddles on MSCI EM Index and buy 3m ATM staddles on Eurostoxx50	9-Jan-13	6-Mar-13	Positive
3	Short USDJPY straddles/long Nikkei straddles	7-Feb-13	3-Oct-13	Positive
4	Short 3m ATM straddles on 2-year euro swap rates and long 3m ATM straddles on 2-year sterling swap rates	6-Mar-13	1-May-13	Positive
5	Short Copper 3-month straddles/long Eurostoxx50 3-month straddles	1-May-13	1-May-13	Positive
6	Long 6m USDSEK straddles vs. short 6m straddles on 2y USD swap rates, vega neutral.	1-May-13	26-Jun-13	Negative
7	Long 3- month S&P500 straddles vs. short in 3-month Gold straddles, vega neutral with a ratio of 1 to 0.6.	1-May-13	26-Jun-13	Positive
8	Short CDX.HY 3-month straddles/long Eurostoxx50 3-month straddle	3-Apr-13	1-May-13	Positive
9	Short 3m ATM straddles on ISE30 protected by being long 3m ATM straddles on TRY, vega neutral	5-Jun-13	8-Aug-13	Negative
10	Short CDX.HY 3-month straddles/long S&P500 3-month straddles, vega neutral	5-Jun-13	26-Jun-13	Flat
11	Short CDX.IG 3-month straddles/long S&P500 3-month straddles, vega neutral	26-Jun-13	8-Aug-13	Positive
12	Short 3m straddles on 2-year Euro swap rates vs. long 3m straddles on 10y US swap rates, vega neutral	26-Jun-13	3-Oct-13	Positive
13	Long Copper vs. Short AUD	26-Jun-13	3-Oct-13	Negative
14	Long vol bias via S&p500 straddles	8-Aug-13	3-Oct-13	Flat
15	Long Oct VIX	8-Aug-13	3-Oct-13	Flat
16	Long VNKY futures	8-Aug-13	4-Sep-13	Positive
17	Long in 6-month S&P500 straddles vs. Short 6-month straddles on the 2y US swap rate	3-Oct-13	4-Dec-13	Negative
18	Buy 6- month USDSEK straddles vs. sell 6-month straddles on 2y USD swap rates	3-Oct-13	6-Nov-13	Positive
19	Short in Nikkei 1y vol vs. long in 1y7y swaption vol, via staddles vega neutral	6-Nov-13	7-May-14	Negative
20	Long AUD/USD vol vs short 6Mx2Y USD rates vol through 6M delta-hedged straddles	6-Nov-13	4-Dec-13	Positive
21	Sell straddles on CDX.HY versus Brent crude oil, vega neutral.	6-Nov-13	8-Jan-14	Positive
22	Buy 1,000 ATM November 5Y Treasury Note futures straddles versus 700 ATM November Bobl futures straddles	3-Oct-13	9-Apr-14	Negative
23	Buy straddles on EMB US ETF vs. selling staddles on EEM US ETF	4-Dec-13	8-Jan-14	Positive
24	Buy 3M USD/JPY 103 Put for 1.2550% JPY notional, sell 3M Nikkei Put at 90% Strike for 1.28% JPY equal notional	8-Jan-14	9-Apr-14	Positive
25	Sell 3-month ATM DJ-UBS Commodity Index straddles versus Gold vega neutral	8-Jan-14	7-Feb-14	Negative
26	Buy 3-month straddles on Copper vs. selling 3-month straddles on MSCI EM	7-Feb-14	9-Apr-14	Positive
27	Sell 3-month straddles on iTraxx Main, delta-hedged	7-Feb-14	9-Apr-14	Positive
28	Long 5Y GBP gamma vs. EUR gamma	7-Feb-14	6-Aug-14	Positive
29	Long 9Mx3M FVAs on a basket of (USD/NOK, USD/SEK, EUR/NOK, EUR/SEK, EUR/USD, GBP/USD, EUR/JPY)	5-Mar-14	4-Jun-14	Positive
30	Buy 3- month 135.50 GLD calls (105% of the ATM) contingent on SPX below 1835 (98% of the ATM)	5-Mar-14	6-Aug-14	Negative
31	Buy 1Y SEK/JPY Put	5-Mar-14	3-Sep-14	Positive
32	Sell 1m vs. buy 12m Copper vol	9-Apr-14	7-May-14	Positive
33	Long BRL Vol	9-Apr-14	7-May-14	Negative
34	Long 3-month straddles on Gold vs. 3-month straddles on Copper, vega neutral	9-Apr-14	7-May-14	Positive
35	Long 3-month straddles on Gold vs. 3-month straddles on INR, vega neutral	9-Apr-14	7-May-14	Positive
36	Long 3M USD/JPY put funded by selling a 3M put on Nikkei	9-Apr-14	4-Jun-14	Positive
37	Buy SX7E straddles and sell iTraxx Senior Financial staddles.	7-May-14	2-Jul-14	Negative
38	Sell 3-month straddles on CDX.HY	9-Apr-14	7-May-14	Positive
39	Sell 3-month straddles on iTraxx Senior Financial	7-May-14	2-Jul-14	Positive
40	long 3M USD/JPY put funded by selling a 3M put on Nikkei	4-Jun-14	2-Jul-14	Positive
41	Sell 3-month straddles on CDX.HY	2-Jul-14	3-Sep-14	Positive
42	Long 3M USD/JPY put funded by selling a 3M put on Nikkei November series	2-Jul-14	3-Sep-14	Flat
43	Long Brent vs. Copper vol	2-Jul-14	6-Aug-14	Positive
44	Long 3M USD/JPY put funded by selling a 3M put on Nikkei December series	3-Sep-14	1-Oct-14	Flat
45	EUR/USD<2% OTMS & Nikkei>104%	3-Sep-14	1-Oct-14	Positive
46	EUR/USD<2% OTMS & EUR5Y<ATMS	3-Sep-14	1-Oct-14	Positive
47	iTraxx Main November Receiver Ladder	1-Oct-14	5-Nov-14	Positive
48	Long in 6-month EURNOK straddles vs. short 6-month straddles on 10y USD swap rates	1-Oct-14	5-Nov-14	Positive
49	VSTOXX October 15/17 strangle vs. 19 call	1-Oct-14	5-Nov-14	Negative
50	Q1 2015 OTM call options on NBP and TTF gas	3-Sep-14	5-Nov-14	Negative

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No.	Closed Trades	Date of recommendation	Date of close	Performance
51	Naked 6M 10D Gold call	5-Nov-14	3-Dec-14	Positive
52	Short 2M vs long 6M ATMF Gold straddles, gamma-neutral delta-hedged calendar spread	5-Nov-14	3-Dec-14	Positive
53	EUR 5y<ATMS & S&P500>105%	3-Sep-14	3-Dec-14	Positive
54	Long 25-delta 3Mx5Y USD swaption risk reversals versus CDX.IG risk reversals	9-Apr-14	3-Dec-14	Positive
55	Long 2Y GBP gamma versus 10Y gamma using 6M expiry options	6-Aug-14	3-Dec-14	Negative
56	Short iTraxx XO puts to buy CDX.HY puts	5-Nov-14	7-Jan-15	Positive
57	EUR5Y<ATMS & Nikkei>107%	3-Sep-14	7-Jan-15	Positive
58	EUR/USD<1.5%OTMS & S&P>103%	3-Sep-14	7-Jan-15	Positive
59	USD 10Y < ATMF & S&P > 107.5%	1-Oct-14	7-Jan-15	Positive
60	Short CDX.IG December 65bp payer to fund DAX OTM calls struck at 10,500	2-Jul-14	7-Jan-15	Flat
61	Buy USD reds OTC midcurve vol versus EUR via 2Y expiries (2Yx(1Yx1Y))	13-Aug-14	7-Jan-15	Positive
62	Sell 3-month straddles on yen and buy 3-month straddles on Japanese equity (EWJ US ETF)	5-Nov-14	7-Jan-15	Negative
63	Long 2Y GBP gamma versus 10Y gamma using 1Y expiry options	3-Dec-14	7-Jan-15	Negative
64	Sell 6m vol on iTraxx Main versus USD rates	5-Nov-14	4-Mar-15	Negative
65	Sell 6-month straddles on 10y USD swaps	7-Jan-15	4-Mar-15	Positive
66	Long 6M GBP/AUD straddle vs. short USD 6Mx10Y straddle	5-Nov-14	4-Mar-15	Positive
67	Short iTraxx Main S22 55bp March Straddles	4-Feb-15	4-Mar-15	Positive
68	Short Brent straddles (hedged with long 2-month USD/NOK straddle during February)	7-Jan-15	1-Apr-15	Negative
69	Long 2Yx2Y GBP straddles versus EUR	4-Feb-15	1-Apr-15	Positive
70	6-month USD gamma vs EUR gamma in 5y rates	4-Mar-15	1-Apr-15	Negative
71	Short in Copper vol vs. MSCI EM vol	4-Feb-15	1-Apr-15	Positive
72	3Mx5Y USD payers vs. selling a premium neutral amount of 3Mx5Y EUR payers	1-Apr-15	6-May-15	Negative
73	CDX.HY July Butterfly centered at $107 and with the wings at $108.5 and $105.5	6-May-15	3-Jun-15	Positive
74	Short on Eurostoxx50 straddles (June expiry)	4-Mar-15	3-Jun-15	Negative
75	Short Eurostoxx50 straddles -long S&P500 straddles (June expiry)	4-Mar-15	3-Jun-15	Negative
76	Long in 6M6M forward NZD/JPY vol vs. 6-month 10Y USD rate vol	1-Apr-15	3-Jun-15	Positive
77	Dual At Expiry Digital SX5E>103% and 10yUS swap rate<ATMF, price at inception of 15.5%	1-Apr-15	3-Jun-15	Negative
78	Short on Eurostoxx50 straddles (September expiry)	3-Jun-15	1-Jul-15	Negative
79	Short Eurostoxx50 straddles -long S&P500 straddles (September expiry)	3-Jun-15	1-Jul-15	Negative
80	Short on Senior Financials 75bps July straddles	3-Jun-15	1-Jul-15	Negative
81	Long CDX.HY vs. CDX.IG Sep Calls	1-Apr-15	1-Jul-15	Negative
82	Long Jun-15 ATM calls on the outperformance of the Euro STOXX 50 over the S&P 500 expired on June 19th at a profit	3-Dec-15	1-Jul-15	Positive
83	Long iTraxx Main 50bps June Receivers (S22) vs. CDX IG 60bps June Receivers (S23)	4-Mar-15	1-Jul-15	Flat
84	Long Gold/USD vol vs. short USD/JPY vol	3-Jun-15	29-Jul-15	Positive
85	Long 5y USD swap rate gamma via 3-month straddles, delta hedged	29-Jul-15	2-Sep-15	Positive
86	6Mx10Y payers contingent on S&P down 5% or 10%	29-Jul-15	2-Sep-15	Negative
87	Sell 87.5-90bp September payer spreads in Main vs. buy 3075-3050 September put spreads in SX5E	29-Jul-15	2-Sep-15	Positive
88	Sell 3-month ATM straddles on Copper and buy 3-Month ATM straddles on MSCI EM	29-Jul-15	2-Sep-15	Positive
89	Contingent 3m calls on NKY conditional on lower 10y USD rate	3-Jun-15	2-Sep-15	Negative
90	Contingent 3m calls on NKY conditional on lower EURUSD	3-Jun-15	2-Sep-15	Negative
91	Long VSTOXX vs VIX Nov futures	2-Sep-15	7-Oct-15	Positive
92	Long 6m straddles on 5Y USD swap rates vs short 6m straddles on 5Y EUR swap rates	2-Sep-15	7-Oct-15	Negative
93	4Mx20Y JPY receiver swaption struck at ATMF which pays off provided that Nikkei 225 is above 107% of spot at expiry	7-Oct-15	4-Nov-15	Negative
94	Long 3M 20D USD/JPY call vs. short 3M 25D calls in EUR/JPY, CAD/JPY and AUD/JPY	7-Oct-15	4-Nov-15	Positive
95	Long in 3-month straddles on Brent Oil futures vs. short 3-month straddles on Copper (via delta-hedged straddles)	7-Oct-15	4-Nov-15	Positive
96	CDX.IG Short November Straddle	2-Sep-15	4-Nov-15	Positive
97	CDX.IG Bull December Risk Reversal	2-Sep-15	4-Nov-15	Positive
98	Short 2Yx3Y Forward Start Variance Swap in EUR/JPY (JPY payout)	2-Oct-14	4-Nov-15	Positive

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No.	Closed Trades	Date of recommendation	Date of close	Performance
99	3-month dual digital on SX5E down 5% conditional on EURUSD higher by 3%	2-Dec-15	6-Jan-16	Positive
100	3-month dual digital on EURUSD higher by 3% conditional on 5y USD swap rates down by 10bp	2-Dec-15	6-Jan-16	Positive
101	Long in JPY rate vs. EUR rate vol	7-Oct-15	6-Jan-16	Negative
102	Long in SX5E calls vs. short in iTraxx Main receivers	5-Nov-15	6-Jan-16	Flat
103	3Mx5Y USD ATMF receivers $100mn notional funded by selling $165mn notional 3Mx5Y EUR ATMF receivers	2-Dec-15	6-Jan-16	Negative
104	Long in US HY credit vs US equities via puts: S&P 500 March 1,900 put options and sell iBoxx HY TRS March 220 payers	5-Nov-15	3-Feb-16	Negative
105	basket of long USD/Asia 3M 25D Risk Reversals to position for further RMB devaluation	2-Dec-15	3-Feb-16	Negative
106	Long vol via 1-month CDX.IG variance swaps	6-Jan-16	3-Feb-16	Negative
107	Copper/Gold correlation via dual at expiry digital: Copper down 10% conditional on Gold up by 5% from spot	6-Jan-16	3-Feb-16	Positive
108	Dual at expiry digital: FTSE100 down 10% conditional on EURGBP up by 5% from spot	6-Jan-16	3-Feb-16	Positive
109	Buy US and sell European IG credit volatility (CDX IG vol vs. iTraxx Main vol)	6-Jan-16	2-Mar-16	Negative
110	Take profit on CDX.IG March Seagull	3-Feb-16	2-Mar-16	Negative
111	Take profit on S&P500 OTM calls funded via selling 10y USD OTM swaption receivers	3-Feb-16	2-Mar-16	Positive
112	Sell iTraxx Main Payers, Buy CDX.IG Payers	3-Feb-16	2-Mar-16	Negative
113	Close 1Yx10Y GBP payers versus EUR as a Brexit risk trade	6-Jan-16	6-Apr-16	Negative
114	Take profit in Nikkei vs. USD/JPY vol	3-Feb-16	6-Apr-16	Positive
115	Close 6M FTSE100 90-110 skew vs. sell 6M GBP/USD 25D skew	2-Mar-16	6-Apr-16	Negative
116	Close long-standing long in 3Y floors on Euribor funded by selling OTM floors on Libor as there is little convexity left.	1-Oct-14	4-May-16	Positive
117	Close GBP 5Y swaption vol vs. USD 5Y swaption vol trade	2-Mar-16	4-May-16	Negative
118	Close Nikkei risk reversal as we see no immediate action by the BoJ	6-Apr-16	4-May-16	Positive
119	Close long Eurostoxx50 calls funded by selling iTraxx Main receivers	6-Apr-16	1-Jun-16	Positive
120	Close CDX.IG bull risk reversal and rotate into a short strangle position.	4-May-16	1-Jun-16	Positive
121	Close short 3-mth delta-hedged straddles on USDMXN vs. EEM vega-neutral with a ratio of 1.5:1	4-May-16	1-Jun-16	Positive
122	Basket of 3M 25D USD risk reversals in NZD, INR and KRW	1-Jun-16	6-Jul-16	Negative
123	USD swaption payer spread conditional on USD/JPY staying below 112 as a cheap hedge against the risk of further repricing of Fed expectations	1-Jun-16	6-Jul-16	Negative
124	Short 3m USDCNH straddle	6-Apr-16	6-Jul-16	Positive
125	Short 3m 25-delta USDCNH naked calls	6-Apr-16	6-Jul-16	Positive
126	15jul16 dual digital SPX < 95% , CLQ6 >110% , 7.5% offer on May 4th (refs SPX cash 2050, CLQ6 45)	4-May-16	15-Jul-16	Negative
127	15jul16 dual digital SPX > 105% , CLQ6 < 0.90% , 10% offer on May 4th (refs SPX cash 2050, CLQ6 45)	4-May-16	15-Jul-16	Negative
128	Short 3m USDCNH straddle	6-Jul-16	3-Aug-16	Positive
129	Short 3m 25-delta USDCNH naked calls	6-Jul-16	3-Aug-16	Positive
130	15th July SPX 5% call contingent on USD 5y swap rate below 1.30%	4-May-16	3-Aug-16	Positive
131	15th July EEM 5% call contingent on USD 5y swap rate below 1.30%	4-May-16	3-Aug-16	Positive
132	Buy Sep-16 VIX futures vs.Sep-16 VSTOXX futures	6-Jul-16	7-Sep-16	Positive
133	Unwind long US rate 3Mx5Y swaption straddle	3-Aug-16	7-Sep-16	Negative
134	Buy SX5E calls funded by selling iTraxx Crossover receivers	6-Jul-16	7-Sep-16	Positive
135	Short 1-month CDX HY Variance swaps	3-Feb-16	5-Oct-16	Positive
136	CDX.IG December short strangle (selling 70bp call and 110bp put)	1-Jun-16	2-Nov-16	Positive
137	Long position in November VSTOXX futures	5-Oct-16	2-Nov-16	Positive
138	CDX.IG payers funded by selling iTraxx Main payers	5-Oct-16	2-Nov-16	Positive
139	November expiry EEM puts funded by selling matched-expiry 10Y receivers	5-Oct-16	2-Nov-16	Positive
140	3-month ATM EEM straddles	5-Oct-16	30-Nov-16	Flat
141	3-month EEM puts with December expiry funded by selling matched-expiry USD 10Y receivers	2-Nov-16	30-Nov-16	Positive
142	Long in delta-hedged 3-month ATM straddles on the 10-year EUR swap rate	7-Sep-16	30-Nov-16	Positive
143	long in delta-hedged 3-month ATM straddles on the 10-year EUR swap rate vs. short in iTraxx crossover 3-month ATM straddles delta hedged	7-Sep-16	30-Nov-16	Positive
144	January expiry CDX.HY put combination as macro event risk hedge	7-Sep-16	30-Nov-16	Negative
145	Sell vol on CDX HY (JCRESVH1 short volatility index) and buy vol on S&P500 index (through variance swaps YAJPVUS8 Index).	6-Jul-16	30-Nov-16	Positive
146	Take profit on spread and volatility compression trade between CDX.IG and iTraxx SenFin	30-Nov-16	4-Jan-17	Positive
147	Exit short in USD/CNH gamma and skew	5-Oct-16	4-Jan-17	Negative
148	long MSCI EM vol vs. US/Euro equity vol	30-Nov-16	3-Mar-17	Negative
149	Long 2-month USD/JPY vol	4-Jan-17	3-Mar-17	Positive
150	3-month 5% SPX puts conditional on Gold rising by 5%	4-Jan-17	3-Mar-17	Negative
151	3Mx10Y ATMF USD receiver swaptions contingent on Oil rising 5%	4-Jan-17	3-Mar-17	Negative
152	long 3M expiry ATM USDCAD vol versus 3Mx10Y ATMF USD swaptions vol	3-Feb-17	5-Apr-17	Positive
153	SX5E calls funded by selling iTraxx X-over spread receivers	3-Feb-17	5-Apr-17	Positive

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No.	Closed Trades	Date of recommendation	Date of close	Performance
154	Long in EUR/USD vol	3-Feb-17	4-May-17	Flat
155	Short in 2y German government bond futures vol vs 2y UST Futures vol	5-Apr-17	4-May-17	Positive
156	Short in Copper vol vs. MSCI EM vol	3-Feb-17	4-May-17	Negative
157	3-month Dual at expiry digitals on Copper down 10% conditional on Gold up by 5% from spot: Mid price 2.20% correlation mid 20%	3-Feb-17	4-May-17	Negative
158	3m Dual at expiry digitals on Oil down 10% conditional on Gold up by 5% from spot: Mid price 2.85% , correlation mid 10%	3-Feb-17	4-May-17	Negative
159	Short in Euro area equity vol vs. EMequity vol	5-Apr-17	7-Jun-17	Positive
160	USD/CHF 3M 25D risk reversal	4-May-17	7-Jun-17	Positive
161	Take profit on short CNH vol vs. long EEM vol trade	7-Jun-17	28-Jun-17	Positive
162	Close long FTSE MIB vol vs. Eurostoxx50 vol via delta hedged 3-month ATM straddles	7-Jun-17	28-Jun-17	Negative

APPENDIX

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Global Economic Outlook Summary

	Real GDP			Real GDP						Consumer prices			
	% over a year ago			% over previous period, saar						% over a year ago			
	2016	2017	2018	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18	4Q16	2Q17	4Q17	2Q18
United States	1.6	2.1	1.8	2.1	1.2	3.0	1.8	1.8	1.8	1.8	2.0	**1.8** ↓	**2.2** ↓
Canada	1.5	2.6	1.7	2.7	3.7	2.1	2.1	1.9	1.5	1.4	**1.5** ↓	2.0	1.9
Latin America	-0.8	1.3	2.3	**0.7** ↑	**3.2** ↑	**1.3** ↑	**1.7** ↓	**2.2** ↓	2.1	5.3	4.3	**4.0** ↓	3.8
Argentina	**-2.2** ↑	3.1	3.3	**2.8** ↑	**4.3** ↑	**6.8** ↑	**4.1** ↓	**2.8** ↓	3.0	40.4	24.6	21.1	17.0
Brazil	-3.6	0.0	1.8	-2.2	4.3	-1.0	0.4	1.5	1.6	7.0	**3.6** ↓	**3.4** ↓	**4.5** ↓
Chile	1.6	1.4	3.1	-1.4	0.7	2.4	3.1	5.2	2.0	2.8	2.5	2.5	2.6
Colombia	2.0	1.8	3.0	4.1	-0.9	3.0	3.5	3.5	3.0	6.1	4.4	4.2	3.5
Ecuador	-1.5	1.5	-1.2	7.0	4.0	-3.0	-4.0	-4.0	-2.0	1.2	0.7	0.8	1.0
Mexico	2.3	2.0	2.2	2.9	2.7	1.3	1.6	2.0	2.2	3.2	5.8	5.6	3.1
Peru	3.9	2.6	4.4	-0.1	0.6	2.0	5.0	6.0	4.5	3.3	3.3	2.4	2.7
Venezuela	-15.0	-5.0	-1.5	-3.0	-3.0	-10.0	0.0	-3.0	-2.0	764.6	1167.1	751.3	289.7
Asia/Pacific	4.8	4.9	4.6	5.0	**4.9** ↓	**4.9** ↑	4.9	**4.9** ↑	4.6	1.9	1.6	2.0	2.3
Japan	1.0	**1.5** ↓	**0.8** ↑	1.4	**1.0** ↓	**2.5** ↑	1.5	0.9	0.5	0.3	0.5	1.0	0.7
Australia	2.5	**2.0** ↓	3.0	4.5	1.1	**0.8** ↓	**4.1** ↑	**4.2** ↑	2.9	1.5	2.1	**2.2** ↓	**2.1** ↓
New Zealand	3.1	**2.5** ↓	2.7	1.6	**2.1** ↓	**2.4** ↓	**3.3** ↓	**3.4** ↑	1.8	1.3	**1.9** ↑	**2.0** ↑	**1.8** ↓
EM Asia	5.9	6.0	5.6	5.9	6.1	5.8	5.8	5.9	5.7	2.3	1.8	2.2	2.7
China	6.7	6.7	6.2	6.7	6.9	6.6	6.4	6.4	6.0	2.2	1.5	1.9	2.6
India	7.1	7.2	7.4	5.7	5.5	7.4	7.9	8.5	9.0	3.7	**2.3** ↓	3.6	4.0
Ex China/India	3.4	**3.7** ↑	3.4	4.1	4.2	3.1	3.4	3.3	3.5	1.8	**2.2** ↓	**2.2** ↓	**2.1** ↓
Hong Kong	2.0	2.8	2.0	4.9	2.8	1.6	0.8	0.8	2.5	1.2	1.6	3.4	3.1
Indonesia	5.0	5.1	5.3	5.5	5.2	5.0	5.0	5.0	5.5	3.3	4.3	4.5	3.3
Korea	2.8	2.8	2.5	2.0	4.3	2.2	2.8	2.5	2.5	1.5	2.0	1.5	1.5
Malaysia	4.2	5.2	4.4	5.1	7.5	3.4	4.5	4.2	4.5	1.7	**3.7** ↓	**2.8** ↓	**1.8** ↓
Philippines	6.9	6.4	6.6	7.3	4.3	7.2	6.7	7.8	5.3	2.5	**3.2** ↓	**2.8** ↓	**3.0** ↓
Singapore	2.0	2.6	2.4	12.3	-1.3	2.6	1.4	1.4	2.6	0.0	**1.0** ↓	**1.5** ↑	**1.6** ↑
Taiwan	1.5	2.3	2.0	1.4	3.8	1.0	2.4	2.2	2.3	1.8	0.5	0.3	1.7
Thailand	3.2	3.5	3.2	2.1	5.2	3.5	3.5	3.0	3.2	0.7	0.4	0.8	1.7
Western Europe	1.8	**2.0** ↑	**1.9** ↑	**2.2** ↑	**2.0** ↑	2.3	1.9	1.9	**1.9** ↑	0.9	**1.7** ↓	**1.5** ↓	**1.3** ↓
Euro area	1.7	**2.1** ↑	**2.0** ↑	**2.1** ↑	**2.3** ↑	2.5	2.0	2.0	**2.0** ↑	0.7	**1.5** ↓	**1.1** ↓	**1.0** ↓
Germany	1.8	2.0	**2.0** ↑	1.7	2.4	2.5	2.0	2.0	**2.0** ↑	1.0	**1.6** ↓	**0.9** ↓	**1.4** ↓
France	1.1	**1.7** ↑	**1.7** ↑	**2.1** ↑	**1.9** ↑	2.3	1.8	1.8	**1.8** ↑	0.7	**1.0** ↓	**0.8** ↓	**1.0** ↓
Italy	1.0	1.3	1.1	1.4	1.8	1.3	1.3	1.3	1.0	0.2	**1.7** ↑	**1.4** ↓	**0.8** ↓
Spain	3.2	**3.1** ↑	**2.7** ↑	2.8	3.3	**3.5** ↑	**3.3** ↑	**2.8** ↑	**2.5** ↑	0.8	**2.1** ↓	**0.8** ↓	**0.7** ↓
Norway	0.8	1.8	1.9	1.5	2.6	1.8	1.8	1.8	2.0	3.6	**2.0** ↓	1.7	1.9
Sweden	2.9	2.3	2.3	2.9	1.7	2.5	2.5	2.5	2.3	1.4	**1.8** ↑	**1.7** ↑	1.6
United Kingdom	1.8	1.6	**1.6** ↑	2.7	0.7	1.5	1.3	1.3	1.5	1.2	2.8	3.0	**2.6** ↓
EMEA EM	1.6	**2.6** ↑	**2.4** ↓	**5.0** ↓	**3.2** ↑	**2.7** ↑	**1.2** ↓	2.0	**2.2** ↓	4.3	4.7	**4.4** ↓	4.3
Czech Republic	2.4	3.1	2.8	1.6	5.4	2.8	3.0	2.9	2.8	1.4	**2.1** ↓	**2.1** ↓	2.3
Hungary	2.0	4.0	3.5	3.0	5.4	4.5	4.0	4.0	3.5	1.3	**2.2** ↓	**2.4** ↓	**2.5** ↓
Israel	4.0	3.2	**3.5** ↑	4.7	1.4	1.6	1.6	2.4	3.2	-0.3	0.6	**0.8** ↓	**1.0** ↓
Poland	2.7	4.0	3.5	7.0	4.5	3.5	3.5	3.5	3.5	0.2	1.9	**1.6** ↓	**1.8** ↓
Romania	4.8	5.0	3.5	6.2	7.1	3.9	4.1	2.6	4.3	-0.5	**0.8** ↑	**1.9** ↑	**3.3** ↓
Russia	-0.2	**1.4** ↑	**1.4** ↓	1.1	1.7	**3.5** ↑	**0.3** ↓	1.8	**1.0** ↓	5.7	4.1	4.1	**4.8** ↑
South Africa	0.3	**0.5** ↓	**1.0** ↓	-0.3	-0.7	**0.8** ↑	2.0	0.8	**0.9** ↓	6.6	5.3	**4.7** ↓	**4.5** ↓
Turkey	2.9	**3.8** ↑	**3.1** ↓	**14.4** ↓	**5.8** ↑	**1.2** ↑	**-0.8** ↓	0.9	2.8	7.6	11.1	9.9	7.3
Global	2.6	3.0	**2.9** ↑	3.2	**3.0** ↑	**3.3** ↑	2.9	2.9	**2.8** ↑	1.9	**2.0** ↓	**2.1** ↓	**2.2** ↓
Developed markets	1.6	2.0	**1.8** ↑	**2.2** ↑	1.6	**2.6** ↑	1.9	1.8	**1.7** ↑	1.3	**1.7** ↓	**1.6** ↓	**1.7** ↓
Emerging markets	4.1	**4.7** ↑	4.6	4.9	**5.2** ↑	**4.6** ↑	**4.4** ↓	4.7	4.6	3.0	2.6	2.8	3.1

Note: For some emerging economies seasonally adjusted GDP data are estimated by J.P. Morgan. Bold denotes changes from last edition of *Global Data Watch*, with arrows showing the direction of changes. Underline indicates beginning of J.P. Morgan forecasts. Unless noted, concurrent nominal GDP weights calculated with current FX rates are used in computing our global and regional aggregates. Regional CPI aggregates exclude Argentina, Ecuador and Venezuela. Regional GDP aggregates exclude Venezuela. Forecasts for Argentina are based on JPMorgan's estimates of CPI. Source: J.P. Morgan

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Central Bank Policy Rate Watch

	Official rate	Current rate (%pa)	Change since (bp) 05-07 avg	oya	Last change	Next meeting	Forecast next change	Forecast (%pa) Jun 17	Sep 17	Dec 17	Mar 18	Jun 18
Global		2.21	-203	6				2.21	2.15	2.20	2.19	2.25
excluding US		2.59	-162	46				2.58	2.50	2.48	2.45	2.45
Developed		0.52	-286	18				0.52	0.52	0.64	0.63	0.75
Emerging		5.08	-192	-18				5.07	4.92	4.85	4.82	4.80
Latin America		8.07	-276	-107				8.03	7.35	7.11	7.11	7.12
EMEA EM		6.60	20	18				6.61	6.43	6.22	5.98	5.84
EM Asia		4.09	-162	-11				4.09	4.06	4.06	4.06	4.07
The Americas		2.27	-288	75				2.26	2.16	2.33	2.33	2.54
United States	Fed funds	**1.25**	-308	0	14 Jun 17 (+25bp)	26 Jul 17	**13 Dec 17 (+25bp)**	1.25	**1.25**	1.50	1.50	1.75
Canada	O/N rate	0.50	-313	-400	15 Jul 15 (-25bp)	12 Jul 17	Oct 17 (+25bp)	0.50	0.50	**0.75**	**0.75**	**1.00**
Brazil	SELIC O/N	10.25	-519	330	31 May 17 (-100bp)	26 Jul 17	26 Jul 17 (-75bp)	10.25	9.00	8.50	8.50	8.50
Mexico	Repo rate	**7.00**	-94	-100	**22 Jun 17 (+25bp)**	10 Aug 17	**On hold**	7.00	7.00	7.00	7.00	7.00
Chile	Disc rate	2.50	-200	-100	18 May 17 (-25bp)	13 Jul 17	Jul 18 (+25bp)	2.50	2.50	2.50	2.50	2.50
Colombia	Repo rate	6.25	-100	-25	26 May 17 (-25bp)	30 Jun 17	**30 Jun 17 (-50bp)**	**5.75**	**5.25**	**5.25**	**5.25**	**5.25**
Peru	Reference	4.00	2	0	11 May 17 (-25bp)	13 Jul 17	**13 Jul 17 (-25bp)**	**4.00**	3.50	3.50	3.50	3.75
Europe/Africa		1.05	-263	-25				1.05	1.01	0.98	0.93	0.90
Euro area	Depo rate	-0.40	-330	-75	10 Mar 16 (-5bp)	20 Jul 17	4Q 18 (+15bp)	-0.40	-0.40	-0.40	-0.40	-0.40
United Kingdom	Bank rate	0.25	-467	0	4 Aug 16 (-25bp)	2 Aug 17	**3Q18 (+25bp)**	0.25	0.25	0.25	0.25	0.25
Norway	Dep rate	0.50	-258	0	17 Mar 16 (-25bp)	21 Sep 17	On hold	0.50	0.50	0.50	0.50	0.50
Sweden	Repo rate	-0.50	-302	0	11 Feb 16 (-15bp)	4 Jul 17	3Q 18 (+10bp)	-0.50	-0.50	-0.50	-0.50	-0.50
Czech Republic	2-wk repo	0.05	-235	0	1 Nov 12 (-20bp)	29 Jun 17	4Q 17 (+20bp)	0.05	0.05	0.25	0.50	0.50
Hungary	3-m dep	0.90	-641	0	21 May 16 (-15bp)	18 Jul 17	1Q 19 (+20bp)	0.90	0.90	0.90	0.90	0.90
Israel	Base rate	0.10	-412	-50	23 Feb 15 (-15bp)	10 Jul 17	1Q 18 (+15bp)	0.10	0.10	0.10	0.50	0.75
Poland	7-day interv	1.50	-317	-150	4 Mar 15 (-50bp)	5 Jul 17	**4Q 18 (+25bp)**	1.50	1.50	1.50	1.50	**1.50**
Romania	Base rate	1.75	-719	0	6 May 15 (-25bp)	3 Jul 17	Feb 18 (+25bp)	1.75	1.75	1.75	2.25	2.75
Russia	Repo rate	**9.00**	N\A	369	**16 Jun 17 (-25bp)**	28 Jul 17	**Jul 17 (-25bp)**	9.00	**8.50**	**8.25**	**8.00**	**7.75**
South Africa	Repo rate	7.00	-123	-11	17 Mar 16 (+25bp)	20 Jul 17	**Nov 17 (-25bp)**	7.00	7.00	**6.75**	**6.50**	**6.50**
Turkey	Eff. fund. rat	11.95	-406	-25	26 Apr 17 (+25bp)	27 Jul 17	**Dec 17 (-50bp)**	**12.00**	**12.00**	**11.50**	10.50	10.00
Asia/Pacific		3.16	-45	-4				3.16	3.14	3.14	3.13	3.12
Australia	Cash rate	1.50	-438	75	2 Aug 16 (-25bp)	4 Jul 17	**1Q 18 (-25bp)**	1.50	**1.50**	**1.50**	**1.25**	1.00
New Zealand	Cash rate	1.75	-556	0	11 Aug 16 (-25bp)	10 Aug 17	On hold	1.75	1.75	1.75	1.75	1.75
Japan	O/N call rate	-0.10	-33	0	28 Jan 16 (-20bp)	20 Jul 17	On hold	-0.10	-0.10	-0.10	-0.10	-0.10
Hong Kong	Disc. wndw	**1.50**	-431	-175	**14 Jun 17 (+25bp)**		**13 Dec 17 (+25bp)**	1.50	**1.50**	1.75	1.75	2.00
China	1-yr working	4.35	-175	-25	23 Oct 15 (-25bp)	-	On hold	4.35	4.35	4.35	4.35	4.35
Korea	Base rate	1.25	-283	-25	11 Jun 15 (-25bp)	13 Jul 17	On hold	1.25	1.25	1.25	1.25	1.25
Indonesia	BI rate	4.75	-493	0	20 Oct 16 (-25bp)	20 Jul 17	On hold	4.75	4.75	4.75	4.75	4.75
India	Repo rate	6.25	-56	0	4 Oct 16 (-25bp)	2 Aug 17	3Q 17 (-25bp)	6.25	6.00	6.00	6.00	6.00
Malaysia	O/N rate	3.00	-20	-13	13 Jul 16 (-25bp)	13 Jul 17	On hold	3.00	3.00	3.00	3.00	3.00
Philippines	Rev repo	3.00	-404	0	11 Sep 14 (+25bp)	10 Aug 17	On hold	3.00	3.00	3.00	3.00	3.00
Thailand	1-day repo	1.50	-219	0	29 Apr 15 (-25bp)	15 Jul 17	On hold	1.50	1.50	1.50	1.50	1.50
Taiwan	Official disc.	1.38	-114	0	30 Jun 16 (-12.5bp)	30 Sep 17	On hold	1.38	1.38	1.38	1.38	1.38

Source: J.P. Morgan. [1]BoJ targets ¥80tn/year expansion in monetary base and sets the IOER (O/N) as policy guidance.

Bold denotes move since last GDW and forecast changes. Underline denotes policy meeting during upcoming week.

Aggregates are GDP-weighted averages. [2]The BI rate for Indonesia reflects announced recalibration effective August 19, 2016

[3] The Philippines introduced a recalibrated reverse repo rate effective June 3 at a level of 3.00%

[1]Rather than the refi rate, we now display the 1-wk dep rate, which better represents CBR policy stance and is closer to interbank market rates.

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J.P. Morgan FX Forecasts vs. Forwards & Consensus

Exchange rates vs. U.S dollar		Current					JPM forecast gain/loss vs June 18*			Actual change in local FX vs USD			
Majors		28-Jun	Sep 17	Dec 17	Mar 18	Jun 18	Spot	Forwards	Consensus**	Past 1mo	Past 3mo	YTD	Past 12mos
	EUR	1.14	1.08	1.15	1.15	1.16	2.0%	0.0%	2.7%	1.8%	6.5%	8.1%	2.7%
	JPY	112	108	105	105	103	8.9%	6.9%	10.7%	-0.8%	-0.2%	4.3%	-8.4%
	GBP	1.29	1.21	1.31	1.31	1.32	1.9%	0.8%	3.8%	0.8%	3.8%	4.9%	-3.0%
	AUD	0.76	0.73	0.71	0.69	0.67	-12.3%	-11.9%	-11.8%	2.7%	0.0%	6.0%	3.4%
	CAD	1.31	1.33	1.31	1.33	1.36	-4.0%	-4.5%	-1.5%	3.1%	2.2%	3.0%	-0.2%
	NZD	0.73	0.68	0.65	0.65	0.64	-12.4%	-11.8%	-11.1%	3.5%	4.4%	5.4%	3.7%
JPM USD index		119.2	121.1	119.5	120.1	120.3	1.0%	1.4%	-1.4%	-0.8%	-1.8%	-4.9%	0.0%
DXY		96.1	99.7	94.2	94.3	93.6	-2.6%	-0.9%	-3.7%	-1.4%	-4.3%	-6.0%	-0.1%
Europe, Middle East & Africa													
	CHF	0.96	0.99	0.91	0.90	0.91	6.1%	3.4%	7.5%	1.8%	4.3%	6.1%	2.2%
	ILS	3.50	3.50	3.45	3.45	3.35	4.5%	2.8%	4.8%	1.8%	3.7%	10.1%	10.7%
	SEK	8.56	8.80	8.22	8.13	8.02	6.8%	4.5%	2.1%	1.6%	4.4%	6.3%	-0.7%
	NOK	8.45	8.61	8.00	7.83	7.67	10.2%	9.4%	2.7%	-0.5%	1.3%	2.2%	0.3%
	CZK	23.12	24.31	22.83	22.70	22.37	3.4%	0.9%	2.5%	2.7%	10.0%	11.1%	6.1%
	PLN	3.72	3.94	3.70	3.70	3.66	1.6%	1.7%	1.4%	0.5%	6.0%	12.4%	7.3%
	HUF	272	289	274	274	272	0.3%	-1.2%	1.0%	1.2%	6.2%	8.0%	5.1%
	RUB	59.39	59.00	60.00	61.50	61.50	-3.4%	3.2%	-4.1%	-4.9%	-5.5%	3.6%	8.4%
	TRY	3.51	3.55	3.65	3.75	3.75	-6.3%	3.2%	0.8%	1.8%	3.9%	0.3%	-17.4%
	ZAR	12.96	13.20	13.30	13.30	13.30	-2.6%	3.2%	3.4%	0.1%	2.5%	6.0%	17.1%
Americas	ARS	16.36	16.20	16.70	17.25	17.55	-6.8%	10.0%	-0.1%	-2.3%	-5.9%	-3.0%	-9.1%
	BRL	3.30	3.28	3.30	3.30	3.35	-1.6%	4.8%	0.6%	-1.2%	-4.4%	-1.3%	0.2%
	CLP	663	670	660	655	650	2.0%	3.2%	3.5%	1.8%	-4.5%	1.1%	0.6%
	COP	3018	2975	3050	3150	3150	-4.2%	0.0%	-5.6%	-3.5%	-4.5%	-0.5%	-1.2%
	MXN	17.88	18.40	18.50	18.50	18.80	-4.9%	0.4%	1.1%	3.3%	4.7%	15.9%	5.4%
	PEN	3.25	3.30	3.33	3.38	3.40	-4.3%	-1.1%	-1.5%	1.0%	-0.3%	3.2%	1.5%
	VEF†	2637	3000	5000	5000	5000	-47.3%	na	na	na	na	na	na
LACI		65.1	64.6	64.1	63.8	63.0	-3.1%	3.0%	0.5%	0.4%	-1.0%	4.3%	1.0%
Asia	CNY	6.80	6.88	6.94	7.00	7.00	-2.9%	-0.2%	-0.3%	0.8%	1.3%	2.1%	-2.2%
	HKD	7.80	7.79	7.80	7.81	7.81	-0.1%	-0.7%	-0.4%	-0.1%	-0.4%	-0.6%	-0.6%
	IDR	13342	13400	13475	13525	13600	-1.9%	2.1%	-0.9%	-0.2%	-0.2%	1.0%	-1.2%
	INR	64.55	65.50	66.00	66.00	66.50	-2.9%	0.9%	-0.8%	-0.1%	0.6%	5.2%	5.3%
	KRW	1144	1120	1130	1140	1145	-0.1%	-0.8%	1.3%	-1.9%	-2.3%	5.4%	2.4%
	MYR	4.30	4.25	4.23	4.23	4.25	1.1%	2.8%	0.0%	-0.6%	2.9%	4.4%	-5.1%
	PHP	50.55	49.65	49.85	50.10	50.10	0.9%	2.9%	0.8%	-1.5%	-0.8%	-1.9%	-7.0%
	SGD	1.38	1.380	1.390	1.400	1.400	-1.3%	-1.8%	0.0%	0.3%	1.2%	4.7%	-2.0%
	TWD	30.44	30.10	30.20	30.30	30.40	0.1%	-0.8%	1.3%	-0.7%	-0.4%	6.2%	6.4%
	THB	33.96	34.10	34.25	34.40	34.50	-1.6%	-1.4%	0.0%	0.4%	1.4%	5.5%	3.7%
ADXY		106.0	105.8	105.1	104.5	104.3	-1.6%	-0.3%	0.1%	0.0%	-1.0%	3.0%	-0.4%
EMCI		68.7	67.9	67.7	67.4	67.2	-2.2%	1.5%	0.5%	0.2%	0.2%	4.1%	1.8%
Exchange rates vs Euro										Actual change in local FX vs EUR			
	JPY	128	117	121	121	119	6.7%	7.0%	7.8%	-2.6%	-6.3%	-3.6%	-10.8%
	GBP	0.88	0.89	0.88	0.88	0.88	-0.2%	0.8%	1.1%	-1.0%	-2.5%	-2.8%	-5.6%
	CHF	1.09	1.07	1.05	1.04	1.05	4.0%	3.5%	4.8%	0.0%	-2.1%	-1.8%	-0.5%
	SEK	9.73	9.50	9.45	9.35	9.30	4.7%	4.6%	-0.5%	-0.2%	-1.9%	-1.6%	-3.3%
	NOK	9.61	9.30	9.20	9.00	8.90	8.0%	9.4%	0.0%	-2.2%	-4.9%	-5.4%	-2.4%
	CZK	26.28	26.25	26.25	26.10	25.95	1.3%	0.9%	-0.2%	0.9%	3.2%	2.8%	3.2%
	PLN	4.23	4.25	4.25	4.25	4.25	-0.4%	1.7%	-1.2%	-1.3%	-0.5%	4.1%	4.5%
	HUF	310	312	315	315	315	-1.7%	-1.2%	-1.6%	-0.6%	-0.3%	-0.1%	2.3%
	RON	4.55	4.60	4.60	4.60	4.60	-1.1%	0.2%	-0.9%	0.4%	0.1%	-0.2%	-0.5%
	TRY	4.00	3.83	4.20	4.31	4.35	-8.1%	3.2%	-1.8%	0.0%	-2.4%	-7.3%	-19.6%
	RUB	67.51	63.72	69.00	70.72	71.34	-5.4%	3.2%	-6.5%	-6.6%	-11.3%	-4.1%	5.4%
	BRL	3.75	3.54	3.80	3.80	3.89	-3.6%	4.8%	-2.0%	-3.0%	-10.3%	-8.5%	-2.5%
	MXN	20.32	19.87	21.28	21.28	21.81	-6.8%	0.4%	-1.5%	1.5%	-1.7%	7.3%	2.6%

↑ indicates a revision resulting in a stronger currency forecast, ↓ indicates a revision resulting in a weaker currency forecast. Source: J.P.Morgan

* Positive indicates JPM more bullish on local currency than spot, consensus or forward rates. ** Bloomberg *FX Consensus Forecasts*. † *DICOM*

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Global Commodities Price Forecasts

Quarterly and annual averages

		Current									Actual change			
		Jun 27	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	2017	2018	Past 1mo	Past 3mos	YTD	Past 12mos
Energy														
WTI Crude	US$/bbl	44.26	47.00	49.00	45.00	40.00	41.00	42.00	48.95	42.00	-11.1%	-10.6%	-17.6%	-4.5%
Brent Crude	US$/bbl	46.71	50.00	52.00	48.00	43.00	44.00	45.00	51.90	45.00	-10.4%	-10.9%	-17.8%	-1.0%
Natural Gas	US$/MMBtu	3.03	3.25	3.35	3.45	3.00	2.75	3.00	3.25	3.05	-6.3%	-4.5%	-18.6%	11.7%
European Thermal Coal (API2)	US$/mt	79.30	71.00	70.00	65.0	65.0	65.0	65.0	70.75	65.0	55.8%	13.8%	-8.0%	49.6%
Newcastle Spot Thermal Coal	US$/mt	80.60	75.00	75.00	70.0	70.0	70.0	70.0	77.50	70.0	8.3%	-0.2%	-8.8%	49.1%
Precious Metals														
Gold	US$/t oz.	1,246	1,250	1,230	1,240	1,260	1,330	1,350	1,236	1,295	-1.7%	-0.6%	8.2%	-5.8%
Silver	US$/t oz.	16.59	17.48	16.79	17.22	18.05	19.56	20.06	17.22	18.72	-4.0%	-9.0%	3.7%	-6.5%
Base Metals														
Aluminum	US$/mt	1,877	1,975	2,050	1,950	1,850	1,750	1,850	1,950	1,850	-3.7%	-3.9%	10.1%	18.4%
Copper	US$/mt	5,838	5,500	5,400	5,300	5,400	5,400	5,100	5,606	5,300	3.5%	-0.8%	5.7%	24.3%
Nickel	US$/mt	9,213	9,300	9,500	8,800	8,500	8,200	8,500	9,599	8,500	1.9%	-7.7%	-7.5%	3.1%
Zinc	US$/mt	2,747	2,615	2,450	2,400	2,450	2,300	2,300	2,629	2,363	4.4%	-3.2%	7.4%	37.9%
Agriculture														
Wheat	USc/bu	453	475	500	520	540	520	520	460	525	3.4%	6.5%	11.1%	1.5%
Corn	USc/bu	359	375	400	410	420	430	420	379	420	-4.0%	0.2%	2.1%	-6.7%
Soybeans	USc/bu	911	950	950	960	980	1,000	1,000	965	985	-1.6%	-6.0%	-8.6%	-19.6%
Sugar (ICE #11)	USc/lb	12.65	14.50	15.00	16.00	16.50	16.00	16.00	16.07	16.13	-15.9%	-26.1%	-35.2%	-35.1%
Cotton (ICE #2)	USc/lb	74.44	75.00	75.00	75.00	77.00	77.00	77.00	75.35	76.50	-3.4%	-2.2%	5.4%	17.3%
MDE-Bursa Palm Oil	MYR/tonne	2,589	2,500	2,700	2,700	2,700	2,500	2,500	2,762	2,600	-8.8%	-9.9%	-19.5%	4.9%
Bulk Commodities														
Iron Ore	US$/mt	59.70	58.00	62.00					66.91	65.00	3.1%	-27.4%	-24.3%	10.8%
Hard Coking Coal	US$/mt	147.4	175.0	150.0	150.0	145.0	135.0	130.0	202.5	140.0	-1.5%	-1.9%	-34.8%	62.2%

End of period levels

		Current									Actual change			
		Jun 27	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	2017	2018	Past 1mo	Past 3mos	YTD	Past 12mos
Major Indices														
S&P GSCI ER	Index	201.5	210.4	210.0	188.8	181.8			210.0		-7.2%	-8.1%	-13.6%	-10.2%
BCOM ER	Index	80.4	82.5	81.9	78.0	77.5			81.9		-4.3%	-5.8%	-8.1%	-7.2%
ER Sub-indices														
GSCI Energy	Index	91.0	96.4	96.6	79.8	73.8			96.6		-10.8%	-12.0%	-21.9%	-14.3%
GSCI Industrial Metals	Index	174.4	167.8	164.0	159.8	155.9			164.0		1.2%	-3.4%	6.3%	20.5%
GSCI Precious Metals	Index	169.0	168.8	167.8	169.9	176.3			167.8		-2.2%	-2.1%	6.9%	-7.6%
GSCI Agriculture and Livestock	Index	75.1	77.7	77.7	77.5	78.9			77.7		-3.3%	-2.0%	-3.1%	-11.5%

Source: J.P. Morgan

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Macro signals for markets

Chart E1: Rules: Current duration and cross-country signals

Positions by country and by signal, and weighted average across signals

Positive numbers signal a duration long, negative numbers a duration short and 0 neutral. Indicative signals based on data up to 27 Jun

Duration — Current signal by country

	Weight	Euro area	Japan	UK	US	Australia	Canada	Sweden	Switzerland	New Zealand	Norway	Combined
PMI momentum	15%	0	1	0	1	1	1	1	1	0	1	0.7
Revision ratio momentum	15%	1	1	1	0	1	1	0	1	0	1	0.7
Bond price momentum	20%	-1	0	0	-1	1	-1	-1	-1	1	-1	-0.4
Equity price momentum	15%	-1	-1	-1	-1	1	1	-1	-1	-1	1	-0.4
Carry to Risk	35%	0.3	-1.4	-0.9	-0.8	1.4	-0.8	1.2	0.6	-0.2	1.0	0.0
Combined		-0.1	-0.4	-0.2	-0.5	1.1	0.0	0.2	0.1	0.0	0.6	0.1
Previous month		*-0.2*	*-0.6*	*0.0*	*-0.4*	*0.9*	*0.1*	*0.4*	*-0.1*	*-0.2*	*0.1*	*0.0*

NB: Positive numbers signal a duration long, negative numbers a duration short, and 0 neutral. Combined signal can be thought of as a scalar relative to a risk budget - e.g. a coefficient of -0.2 would signal a short of 20% of risk limit.
Source: J.P. Morgan. Bloomberg

Positions of cross-country signals

Each measure ranks countries from highest to lowest; the highest two per signal indicate long positions in 10Y swaps and lowest to indicate short positions in 10Y swaps. Indicative signals based on data up to 27 Jun.

Cross-market — Current basket

	First pair		Second pair	
	Long	Short	Long	Short
Carry	SEK	JPY	NZD	NOK
Carry to Risk	SEK	USD	EUR	CAD
Change in slope	NOK	USD	EUR	NZD
Real yield	NZD	GBP	AUD	EUR
Unemployment change	CHF	EUR	AUD	USD

Returns on duration signals

Data up to 27 Jun.; %

	Returns*, %								
	1M	3M	6M	YTD	12M	5Y	10Y	Since 1998	IR since 1998
PMI momentum	-0.1	0.5	-0.5	-0.9	2.6	2.0	3.3	2.6	0.65
Revision ratio momentum	0.0	-1.0	-1.5	-1.9	0.2	1.4	4.1	3.2	0.74
Bond price momentum	0.0	-0.8	-1.8	-1.8	-3.3	1.3	2.9	2.4	0.53
Equity price momentum	-0.2	-1.5	-2.8	-3.2	-1.3	0.4	2.3	3.5	0.68
Carry to Risk	0.1	0.5	0.7	0.7	3.6	1.3	1.2	2.2	0.56
Combined	0.0	-0.3	-0.7	-0.9	0.5	0.9	1.8	2.0	1.21

* Holding period returns for 1M - 6M; annualized for 12M and longer.
Source: J.P. Morgan. Bloomberg

Manufacturing PMI momentum: Short duration in each country if both local country and global manufacturing PMI increased over past two months, long duration if both fell, and neutral otherwise.

Earnings revision ratio momentum: Short duration in each country if the local and global IBES equity earnings revision ratio increased over the past three months, long duration if both fell, and neutral otherwise.

Bond price momentum: Long duration if our bond total return swap indices are above both 1-month and 12-month average, short if below both 1-month and 12-month average, neutral otherwise.

Equity price momentum: Long duration in each country if local equity market is below its 6-month average, and short if it is above 6-month average (net of cash).

Carry-to-risk: Long duration if carry-to-risk (10Y – 3M slope) is above its 10Y average, short duration if below its 10Y average, with position size proportional to how far carry to risk is above or below average.

Returns on cross-market signals

Data up to 27 Jun; %

	Returns*, %								
	1M	3M	6M	YTD	12M	5Y	10Y	Since 1996**	IR since 1996**
Carry	0.3	1.5	1.9	1.9	0.9	-0.2	1.4	3.0	0.72
Carry to Risk	0.4	0.4	1.5	1.5	1.3	-0.8	1.4	2.3	0.62
Change in slope	-0.1	-0.6	0.0	0.0	-4.8	-3.0	-0.2	1.7	0.44
Real yield	0.0	1.8	3.5	3.5	-1.3	1.1	2.0	1.5	0.48
Unemployment change	-0.7	0.9	0.1	0.1	-3.2	-1.0	-0.4	0.5	0.14

* Holding period returns for 1M - 6M; annualized for 12M and longer.
** Except for the real yield signal, which starts in 2004.
Source: J.P. Morgan. Bloomberg

Carry and carry-to-risk: Overweight countries with high carry (10Y swap rate – 1M Libor rate), and overweight countries where carry is high relative to volatility[1].

Reversal (change in curve slope): Overweight countries where curve (10Y - 1Y slope) has steepened most, relative to average over past 6M[2].

Real yield: Overweight markets with high real yields, measured as 10Y swap rate less consensus forecasts of inflation over the next 10Y[3].

Unemployment: Overweight countries where unemployment has been rising the most (current level less its average over the past 10 months)[4].

[1] See *A cross-market bond carry strategy*, N. Panigirtzoglou, March 2006.
[2] See *Exploiting reversals in cross-market yield spreads*, S. Mac Gorain, March 2012.
[3] See *Rule-based Fixed Income Monthly*, S. Mac Gorain, November 2012.

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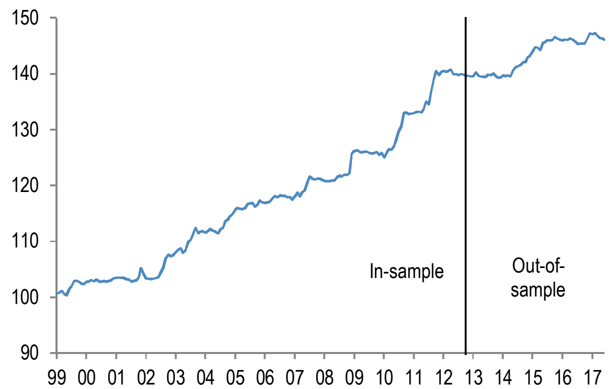
Duration signal performance

Index, Dec 1998 = 100



Source: J.P. Morgan

Duration signal performance

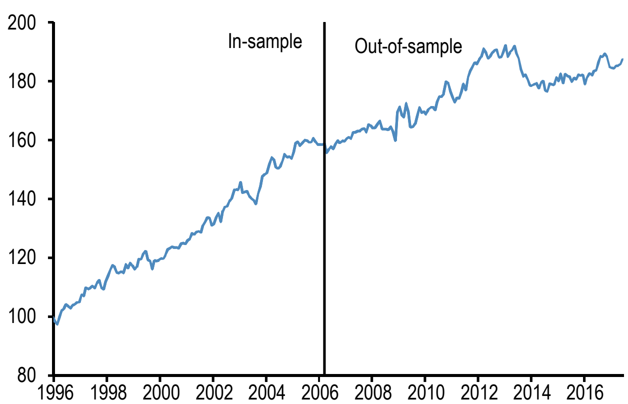
Since 1998; % and IR

	Return	Vol	IR	Max drawdown	Success ratio
PMI momentum	2.6%	4.0%	0.66	-7.7%	56%
Revision ratio momentum	3.2%	4.5%	0.74	-4.5%	61%
Bond price momentum	2.4%	4.5%	0.53	-4.4%	55%
Equity price momentum	3.5%	5.2%	0.69	-6.3%	54%
Carry to Risk	2.2%	4.5%	0.56	-13.5%	55%
Combined	2.0%	1.7%	1.22	-1.8%	63%

Source: J.P. Morgan

Cross-market carry signal performance

Index, Jan 1996 = 100



Source: J.P. Morgan

Cross-market signal performance

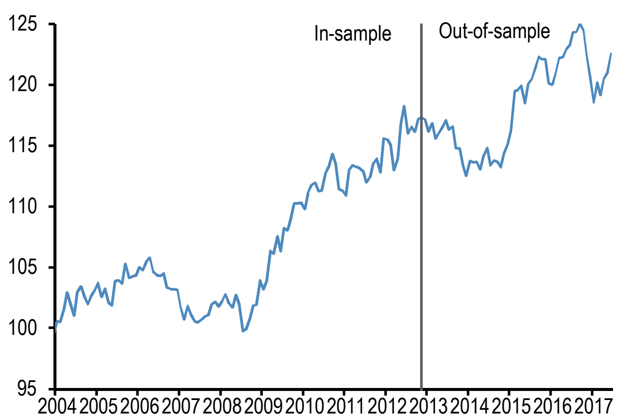
Since 1996 (except real yield signal since 2004); % and IR

	Return	Vol	IR	Max drawdown	Success ratio
Carry	3.0%	4.1%	0.72	-5.5%	58%
Carry-to-risk	2.3%	3.7%	0.62	-4.6%	56%
Change in slope	1.7%	4.0%	0.44	-5.8%	56%
Real yield	1.5%	3.2%	0.48	-5.3%	57%
Unemployment	0.5%	3.6%	0.14	-9.8%	52%

Source: J.P. Morgan

Cross-market real yield signal performance

Index, Jan 2004 = 100



Source: J.P. Morgan

[4] See *Using unemployment to trade bonds*, S. Mac Gorain, November 2011.

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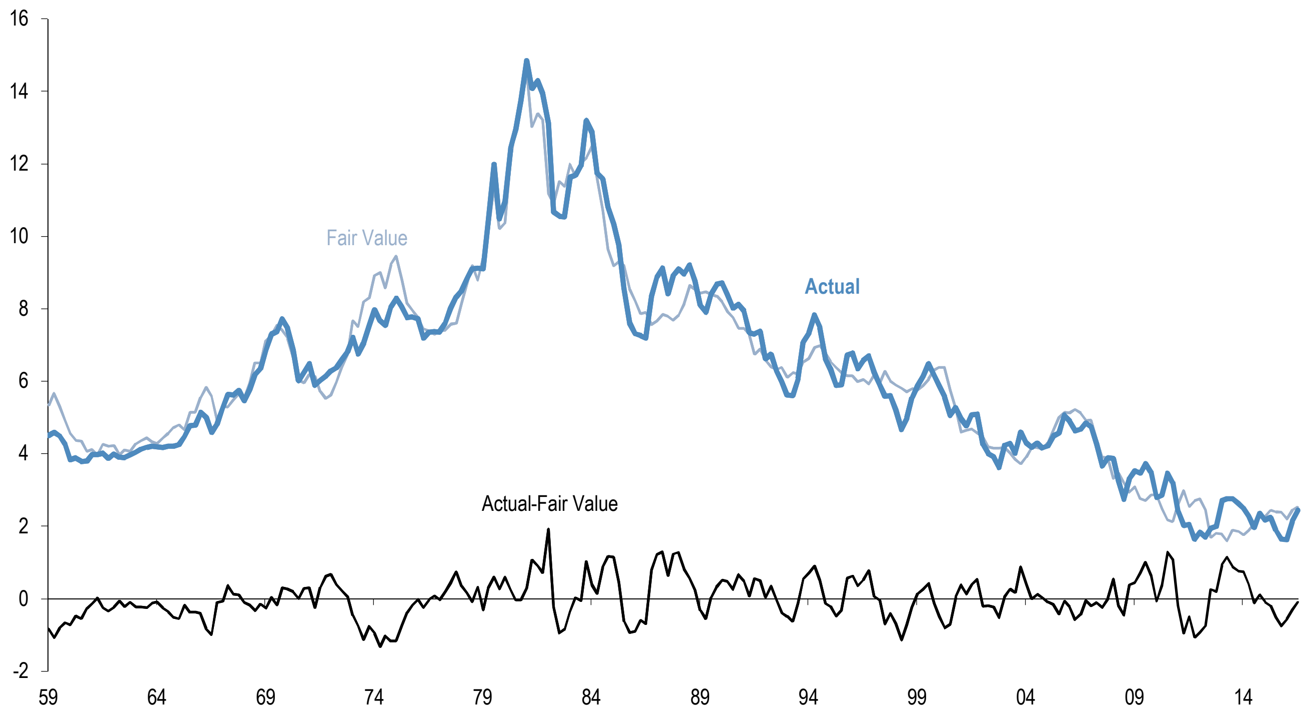
Valuation

Chart A1: Fair value of the 10y UST 2.8% by end-2017
In %, Estimates till Q1'17



Source: Federal Reserve, J.P. Morgan.

Box 1: Fair value model for 10-year US Treasury

Our 2017 year-end projection of the fair value of the 10y UST yield is 2.8%. This projection assumes 75bp of hikes by the Fed in 2017, a partial retracement of the decline in inflation vol in 2016, and a modest rise in inflation expectations from 2.2% to 2.3%.

10-year UST real yield = 0.77
+ 0.43 x 3m real rate (based on 1-year CPI exp)
+ 0.12 x corporate financing gap/GDP
+ 0.08 x government deficit/GDP
+ 0.69 x 5y inflation standard deviation
- 0.12 x EM current account surplus
- 0.19 x log(excess reserves/stock of govt debt held outside the Fed)

NB: The sample period begins 3Q1959 Q3 to 4Q2016, R2-adj 88%, Standard Error 58bp.

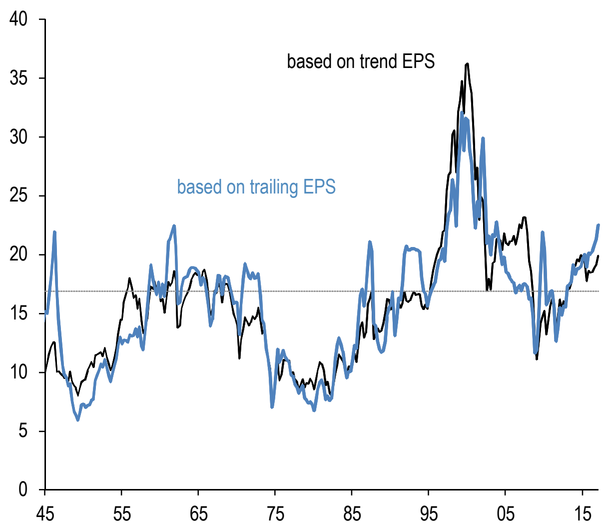
QE stock effect: log(11%) excess reserves/stock of govt debt held outside the Fed x 0.19 = 44bp

Fair value was as low as 1.6% in December 2013 but it has risen since then mostly due to the rise in inflation vol.

More details in Panigirtzoglou and Loeys, A Fair Value model for US Bonds, Credit and Equities, June 30, 2006)

Chart A2: S&P500 PE Multiples

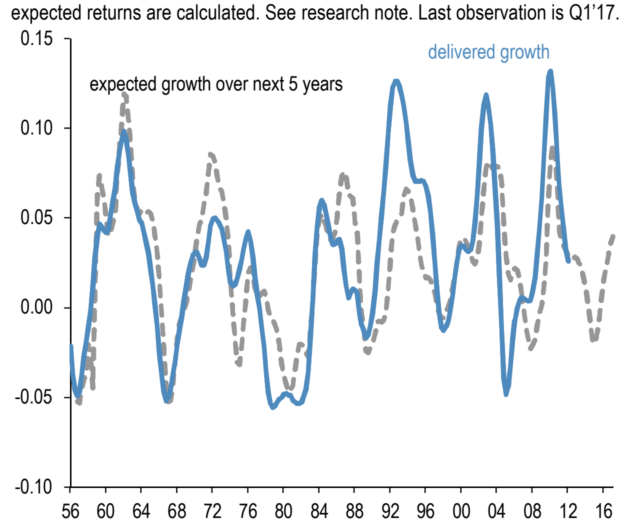
S&P500 PE based on 12 month trailing and trend EPS. Black dotted line is average of trend EPS. Last observation is Q1'17.



Source: Bloomberg, J.P. Morgan.

Chart A3: S&P500 real EPS growth

In %, Annualized real delivered and expected growth. See Box 2 for how expected returns are calculated. See research note. Last observation is Q1'17.



Source: Federal Reserve, J.P. Morgan.

Box 2: 2-stage DDM model

$$P = \frac{k \cdot E_0}{EDR - g_{LT}}(1 + g_{LT} + 5 \cdot (g_E - g_{LT})) \qquad (1)$$

k = dividend payout ratio = 0.50, g_{LT}= long-term earnings growth = 2.2%

g_E = Earnings expectations (5yr real growth) = 11.9 – 0.52 × past 5yr real earnings growth – 1.18 × past E/P (2)

EDR = Equity Discount Rate = 4.19+ 0.59× inflation volatility + 0.16 × real GDP growth volatility + 0.07 × 10yr real yield (3)

To derive a fair value for equity prices, we model both expectations of future cash flows and the equity discount rate (EDR). Expected future cash flows (i.e. dividends) are a function of expected inflation and corporate earnings growth.

We model future earnings growth using past 5 year earnings growth and earnings yield. To generate earnings growth expectations, we estimate the model recursively (equation (2)).

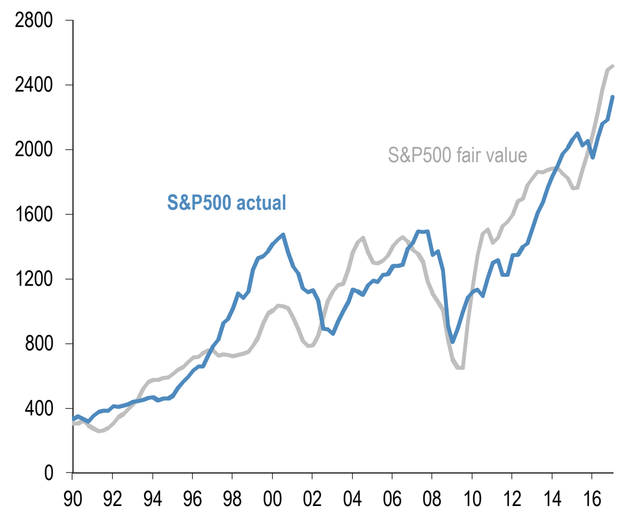
In the second stage, we assume that real earnings growth reverts to its long run average since 1950s of 2.2%. Using this two-stage equity valuation framework along with the observed price, we can generate the implied EDR using equation (1).

We model the EDR using volatility of real growth and volatility of inflation over the past five years and real bond yields (equation (3)).

Finally, our fair value is equal to the expected future cash flows discounted to the present using our estimated EDR.

Chart A4: S&P500 fair value model

Y-axis is index level. Actual vs fitted model. Fair value model is based on 2-stage dividend discount model. See Box 2 for details and research note. Last observation is Q1'17.



Source: Federal Reserve, J.P. Morgan.

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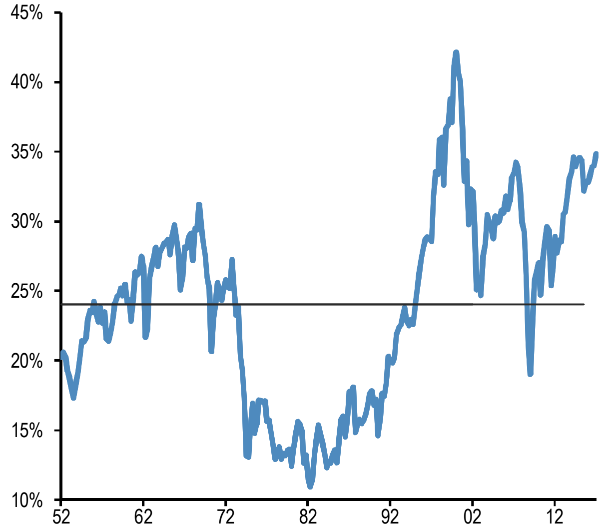
Chart A5: Equity allocation of US households

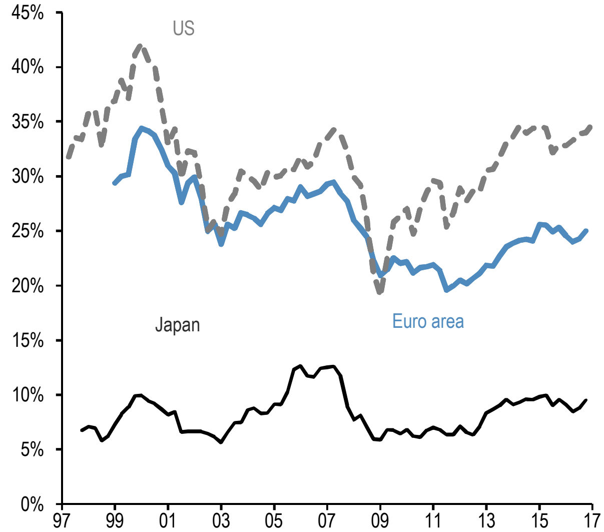
In %, sum of equities held directly or via mutual fund shares and Defined Contribution plans divided by total financial assets. Last observation is Q1'17.



Source: Bloomberg, J.P. Morgan.

Chart A6: Equity allocation of households

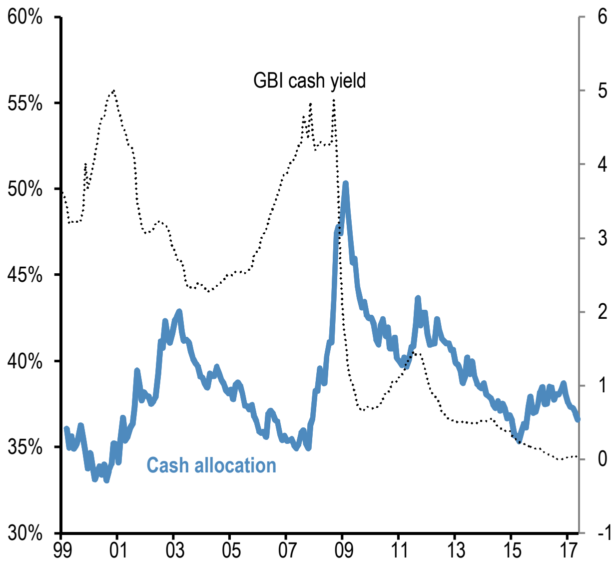
% of financial assets. Excludes equities held via defined benefit pension plans. Latest observation is Q1'17 for US and Q4'16 for Japan and Euro area.



Source: J.P. Morgan, NBER.

Chart A7: Implied cash allocation of global non-bank investors

Left axis shows global M2 as % total holdings of equities/bonds/M2 by nonbank investors. Right axis shows GBI cash yield. Refer box 3 for details. Last observation is May'17.



Source: J.P. Morgan.

Box 3: Cash, equity and bond allocation for non-bank investors.

Cash: Global M2 reflects the cash balance of nonbank investors, such as households, corporations, pension funds, insurance companies and SWFs.

Bonds: Bond universe for non-bank investors is the sum of the market value of global bond indices, adjusted by excluding the bonds held by central banks, FX reserve managers and commercial banks.

Equities: Equity is market value of DataStream world equity index, which is mostly held by non-bank investors.

For further details refer *Flows & Liquidity*, N. Panigirtzoglou dated Nov 14, 2016.

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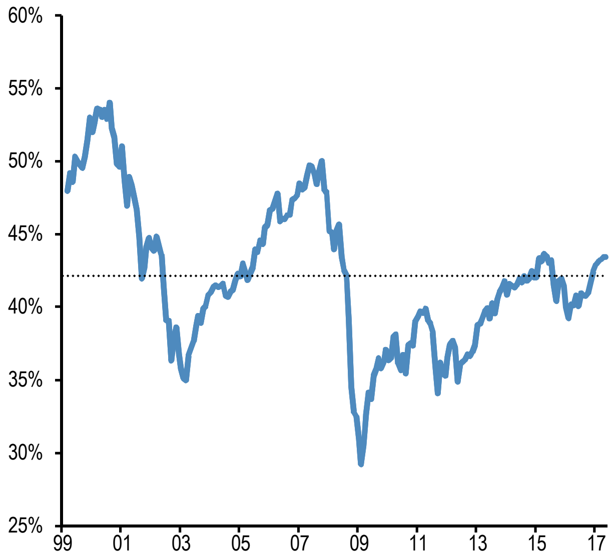
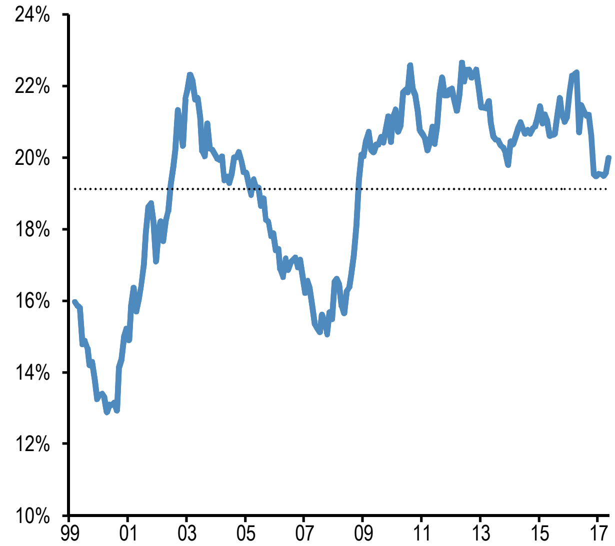
Chart A8: Implied equity allocation of global non-bank investors
Global equities as % total holdings of equities/bonds/M2 by non-bank investors. Refer box 3 for details. Last observation is May'17.



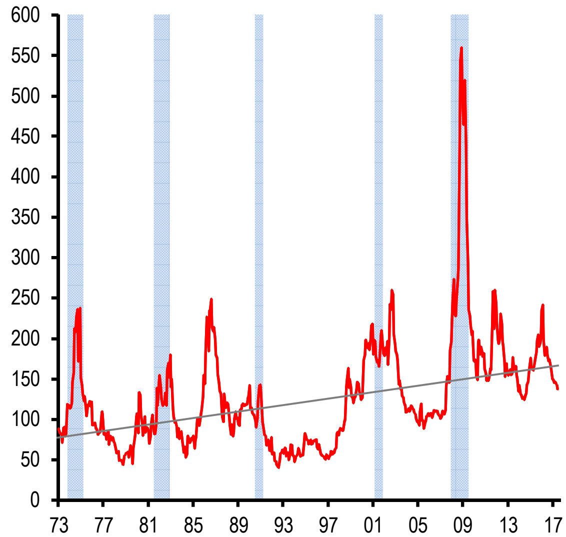
Source: J.P. Morgan.

Chart A9: Implied bond allocation of global non-bank investors
Global bonds held by non-bank investors as % total holdings of equities/bonds/M2 by non-bank investors. Refer box 3 for details. Last observation is May'17.



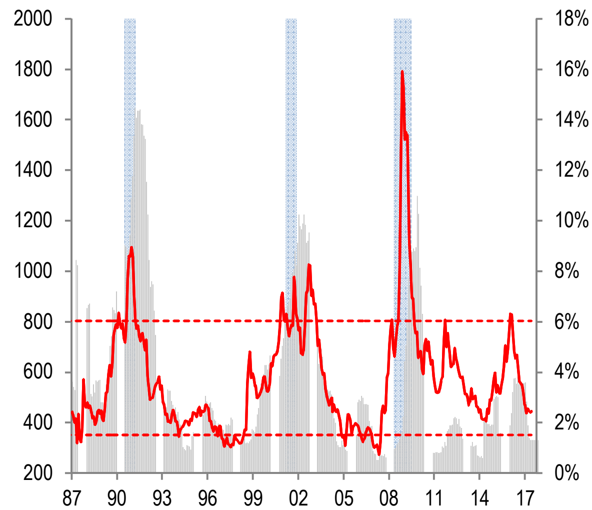
Source: J.P. Morgan.

Chart A10: US High-grade credit spread over USTs
Spreads in bps. JULI Index. Blue bars are marked for recession. Last observation is Jun 27, 2017.



Source: J.P. Morgan.

Chart A11: US High-yield credit spread over USTs and HY default rates
Spreads in bps (LHS). Grey background area is 12-month rolling default rate in % (RHS). Blue bars are marked for recession. Last observation is Jun 27, 2017.



Source: J.P. Morgan.

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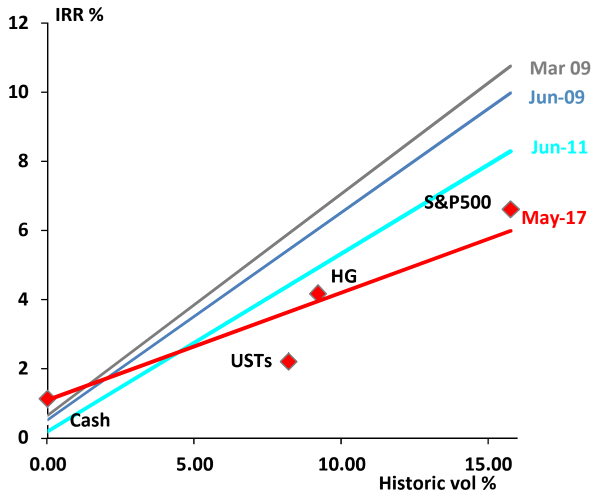
Chart A12: Risk-return tradeoff line

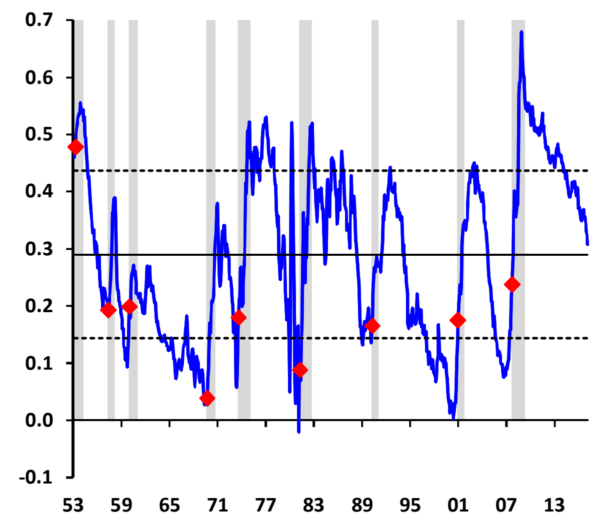
In %. Monthly data since 1954. IRRs are calculated as current yield (USTs are the 10yr UST). In credit we adjust for expected defaults/downgrades (HG is US long maturity BBBs). For stocks, the IRR is earnings yield, based on trend for operating earnings, plus expected long-term inflation. The slope is the beta of the regression of IRRs with the intercept fixed at the cash rate. In other words, the slope is additional internal return per additional unit of historic vol. Last observation is May'17.



Source: Bloomberg, J.P. Morgan.

Chart A13: Slope of the risk-return trade-off line

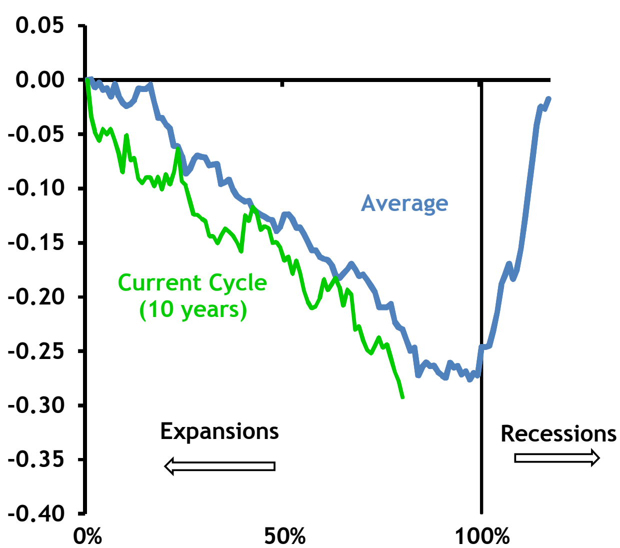
Slope of risk/return tradeoff line since 1954. For a detailed explanation, please see previous chart A12. Monthly data since 1954. Red dots mark the start of each recession and grey bars are marked for recession. Last observation is May'17.



Source: J.P. Morgan, NBER

Chart A14: US risk premium in current vs average cycles

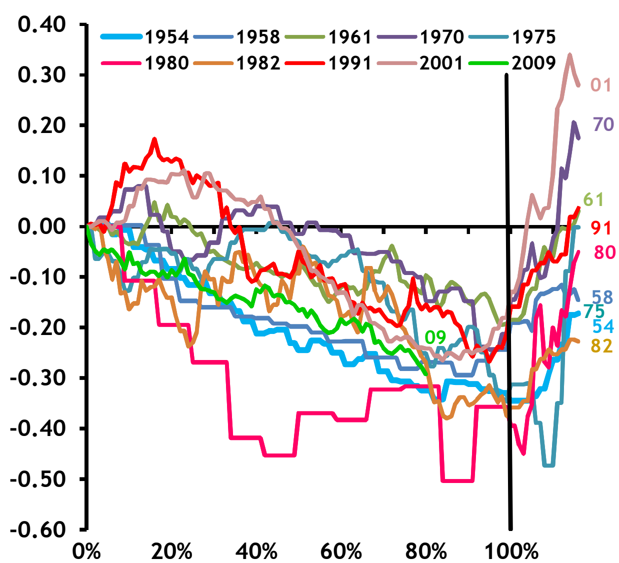
In %. Measures change in risk premium vs cash throughout the cycle with the beginning of expansions normalized to zero. On average, by the end of the average expansion, risk premium will compress by about 30 basis points. We assume current cycle lasts 10 years. Time line is normalized by how much the expansion or recession is complete. Monthly data since 1954. Last observation is May'17.



Source: Bloomberg, Federal Reserve, J.P. Morgan

Chart A15: US risk premium during expansions and recessions

In %. Measures change in risk premium throughout the cycle with the beginning of expansions normalized to zero. We assume current expansion lasts 10 years. Time line is normalized by how much the expansion or recession is complete. Monthly data since 1954. Last observation is May'17.



Source: Bloomberg, Federal Reserve, J.P. Morgan

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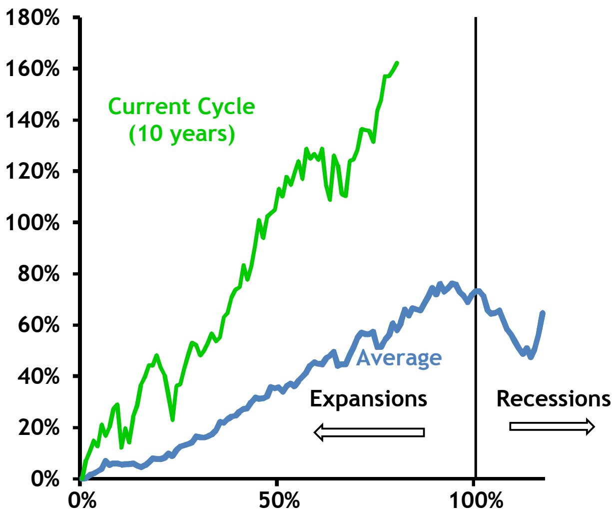
Cyclical Charts

Chart B1: S&P 500 in current and average cycles

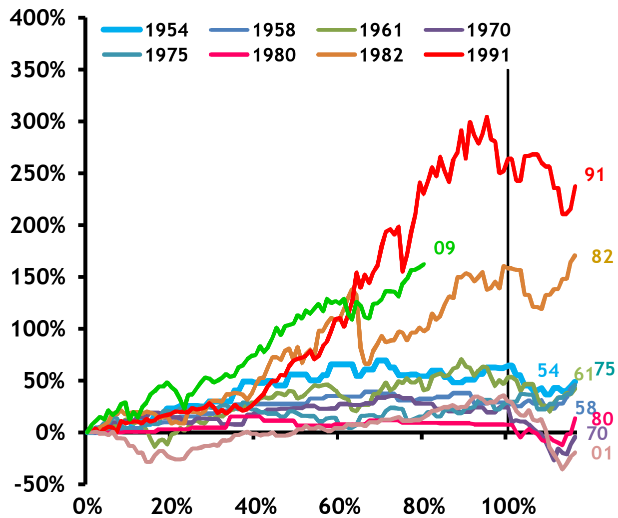
Y-axis is cumulative return throughout the cycle. The current cycle is assumed to last 10 years. Time line is normalized by how much the expansion or recession is complete. Monthly Data since 1954. Last observation is May'17.



Source: Bloomberg, J.P. Morgan

Chart B2: S&P 500 during expansions and recessions

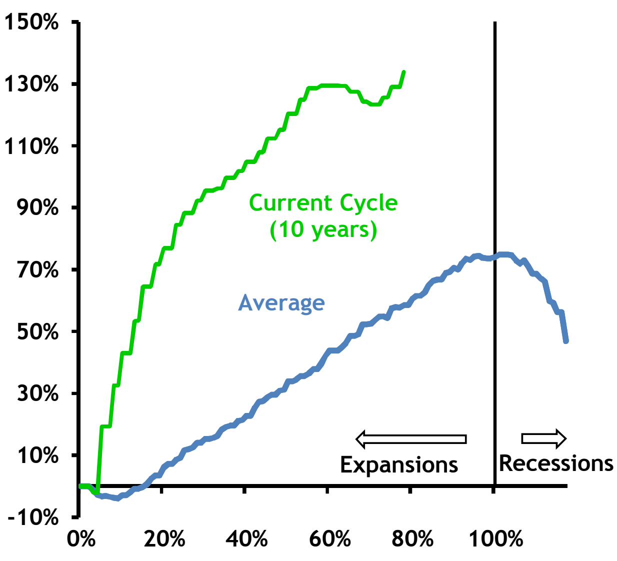
Y-axis is cumulative return throughout the cycle. The current cycle is assumed to last 10 years. Time line is normalized by how much the expansion or recession is complete. Monthly Data since 1954. Last observation is May'17.



Source: Bloomberg, J.P. Morgan

Chart B3: US earnings in current and average cycles

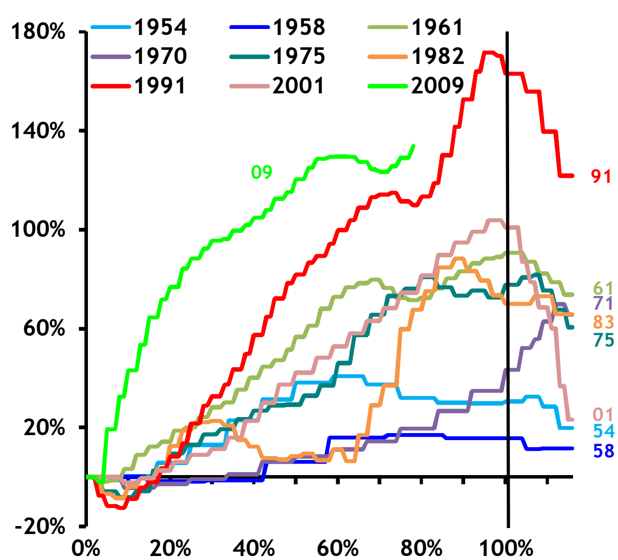
Y-axis is cumulative % change in S&P 500 12 month trailing EPS from the start of the expansion. We assume current expansion lasts 10 years. Quarterly data since 1954. Last observation is Q1'17.



Source: Federal Reserve, Moody's, Bloomberg, J.P. Morgan.

Chart B4: US earnings during expansions and recessions

Y-axis is cumulative % change in S&P 500 12 month trailing EPS from the start of the expansion. We assume current expansion lasts 10 years. Quarterly data since 1954. Last observation is Q1'17.



Source: Federal Reserve, Moody's, Bloomberg, J.P. Morgan

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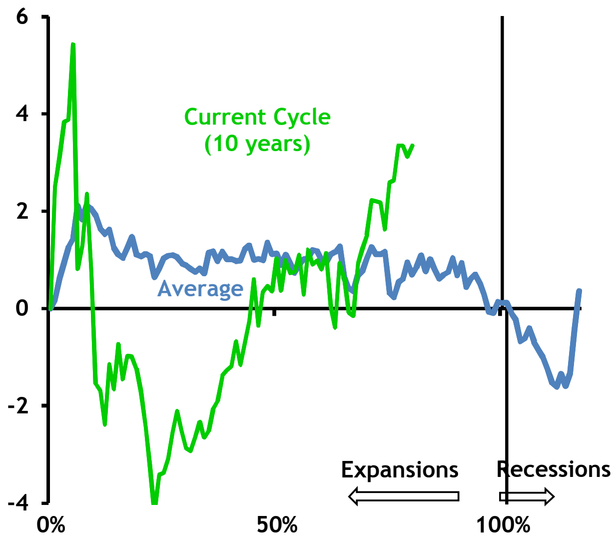
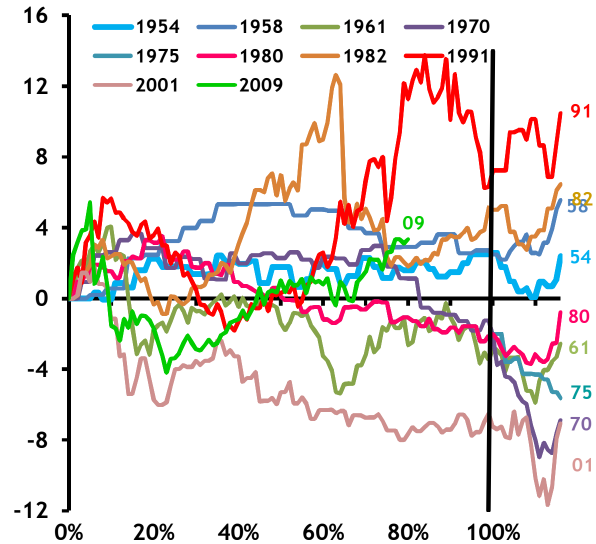
Chart B5: Change in P/E multiple in current and average cycles
Measures change in S&P500 trailing P/E ratio adjusted by using latest earnings known (e.g. Dec P/E uses Sep EPS, Jan-Mar P/E uses Dec EPS) throughout the cycle with the beginning of expansions normalized to zero. We assume current cycle lasts 10 years. Monthly data since 1954. Last observation is May'17.



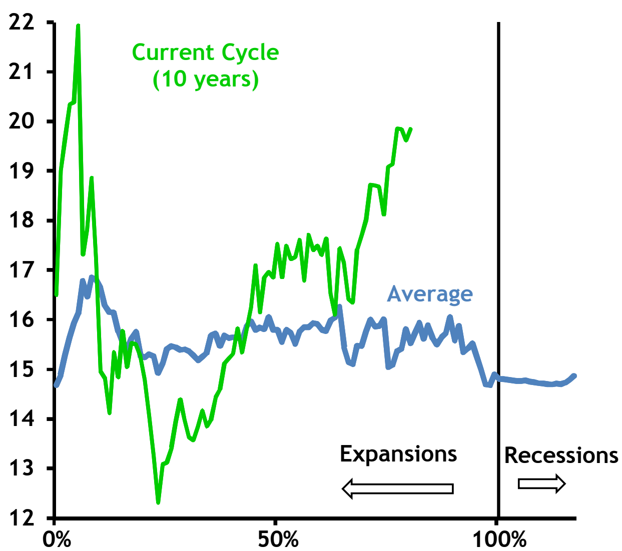
Source: Bloomberg, J.P. Morgan

Chart B6: Change in P/E multiple during expansions and recessions
Measures change in S&P500 trailing P/E ratio adjusted by using latest earnings known (e.g. Dec P/E uses Sep EPS, Jan-Mar P/E uses Dec EPS) throughout the cycle with the beginning of expansions normalized to zero. We assume current cycle lasts 10 years. Monthly data since 1954. Last observation is May'17



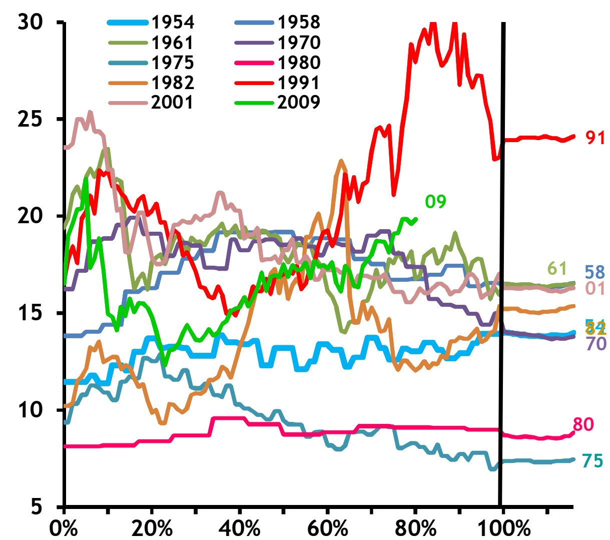
Source: Bloomberg, J.P. Morgan

Chart B7: P/E multiple in current and average cycles
S&P500 trailing P/E ratio adjusted by using latest earnings known (e.g. Dec P/E uses Sep EPS, Jan-Mar P/E uses Dec EPS) throughout the cycle with the beginning of expansions normalized to zero. We assume current cycle lasts 10 years. Monthly data since 1954. Last observation is May'17.



Source: Bloomberg, J.P. Morgan.

Chart B8: P/E multiple during expansions and recessions
S&P500 trailing P/E ratio adjusted by using latest earnings known (e.g. Dec P/E uses Sep EPS, Jan-Mar P/E uses Dec EPS) throughout the cycle with the beginning of expansions normalized to zero. We assume current cycle lasts 10 years. Monthly data since 1954. Last observation is May'17.



Source: Bloomberg, J.P. Morgan.

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Table B1: US and global equities never peak 13 months before an economic contraction

MSCI World peak	S&P 500 peak	Peak of economy (NBER)	Lead of MSCI peak to economic peak (mth)	Lead of S&P peak to economic peak (mth)
	Jul-56	Aug-57		13
	Aug-59	Apr-60		8
	Nov-68	Dec-69		13
Mar-73	Jan-73	Nov-73	8	10
Jan-80	Jan-80	Jan-80	0	0
Nov-80	Nov-80	Jul-81	8	8
Jan-90	Jul-90	Jul-90	6	0
Mar-00	Mar-00	Mar-01	12	12
Oct-07	Oct-07	Dec-07	2	2
		AVERAGE	6	7

Source: J.P. Morgan, NBER.

Table B2: Credit spread tights before an economic peak

Beginning of cycle	Corporate spread (BAA) tight	Peak of economy (NBER)	Months from spread tight to economic peak
May-54	Apr-56	Aug-57	16
Apr-58	Apr-59	Apr-60	12
Feb-61	Feb-66	Dec-69	46
Nov-70	Aug-73	Nov-73	3
Mar-75	Jul-78	Jan-80	18
Jul-80	May-81	Jul-81	2
Nov-82	May-85	Jul-90	62
Mar-91	Jul-97	Mar-01	44
Nov-01	Aug-05	Dec-07	28
		AVERAGE	26

Source: J.P. Morgan, NBER

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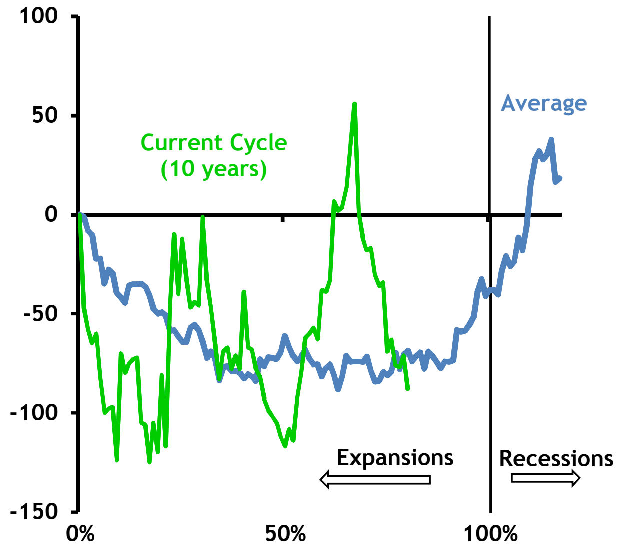
Chart B9: US credit spreads in current and average cycles

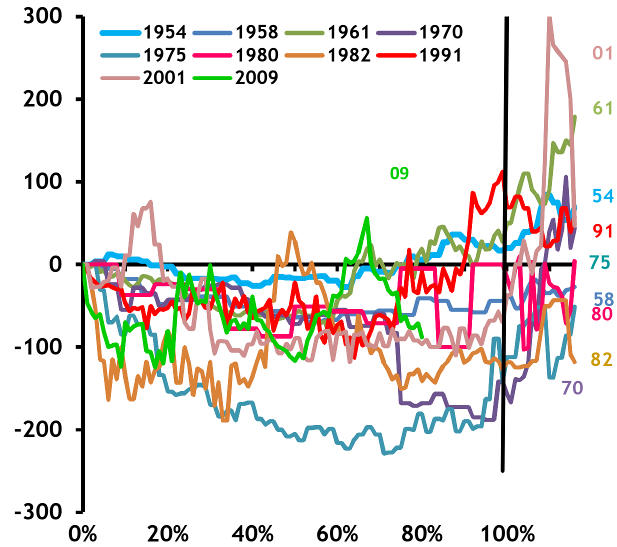
Y-axis is basis points and measures the cumulative change in spread from the beginning of the expansion. Moody's BAA corporate bond index spread to UST 20Y yield. The current expansion is assumed to last 10 years. Monthly Data since 1954. Last observation is May'17.



Source: Bloomberg, J.P. Morgan

Chart B10: US credit spreads during expansions and recessions

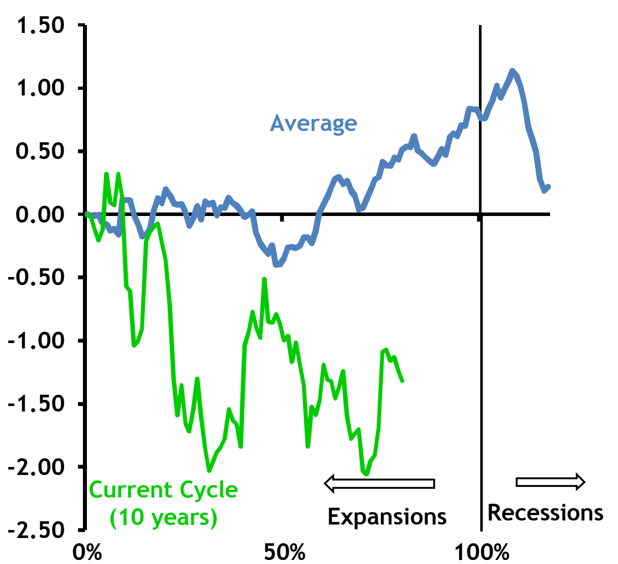
Y-axis is basis points and measures the cumulative change in spread from the beginning of the expansion. Moody's BAA corporate bond index spread to UST 20Y yield. The current expansion is assumed to last 10 years. Monthly Data since 1954. Last observation is May'17.



Source: Bloomberg, J.P. Morgan

Chart B11: UST 10Y yield in current and average cycles

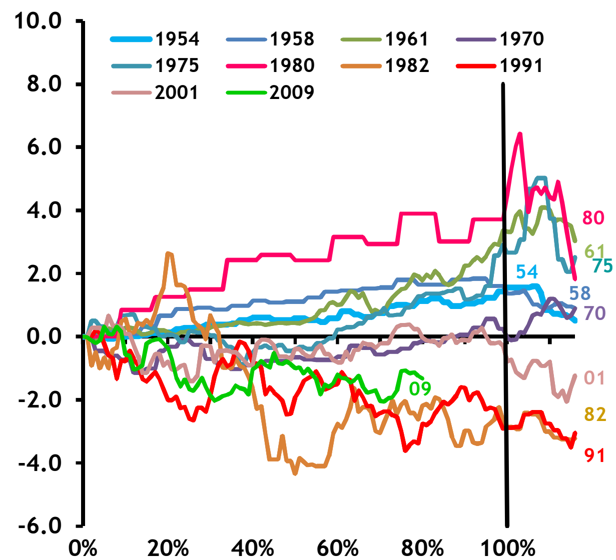
Y-axis is cumulative change in yield throughout the cycle. The current expansion is assumed to last 10 years. Monthly Data since 1954. Last observation is May'17.



Source: Federal Reserve, Moody's, Bloomberg, J.P. Morgan.

Chart B12: UST 10Y yield during expansions and recessions

Y-axis is cumulative change in yield throughout the cycle. The current expansion is assumed to last 10 years. Monthly Data since 1954. Last observation is May'17.



Source: Federal Reserve, Moody's, Bloomberg, J.P. Morgan.

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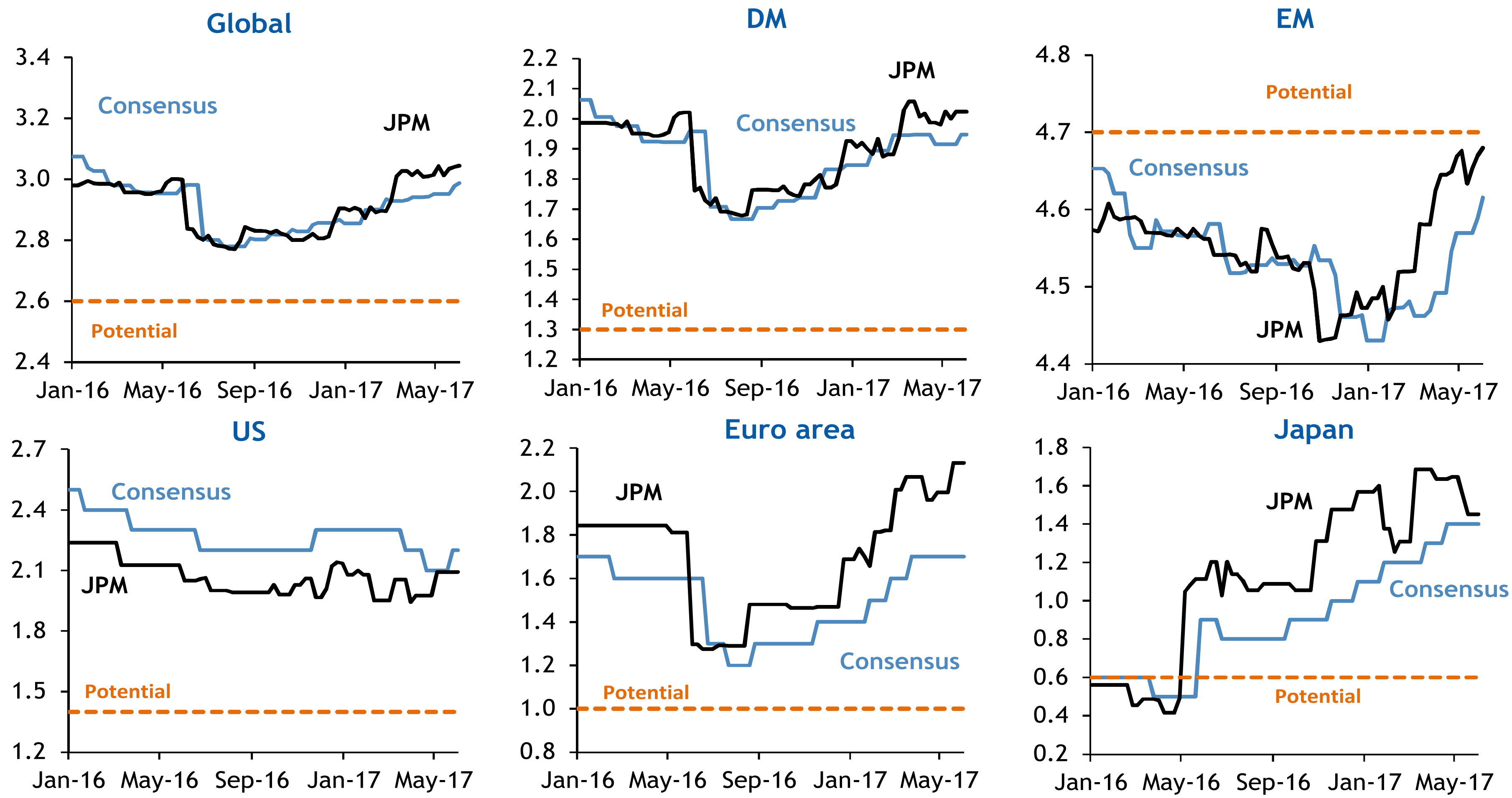
Macro Momentum

Chart C1: 2017 GDP Expectations

In %, GDP estimates of JP Morgan and consensus with current JP Morgan estimates of potential growth. Consensus Economics forecasts for global growth are done using the same 5-year rolling USD GDP country/region weights that we use for our own global growth forecast.



Source: J.P. Morgan, Consensus Economics, Blue Chip. Last observation is Jun 23.

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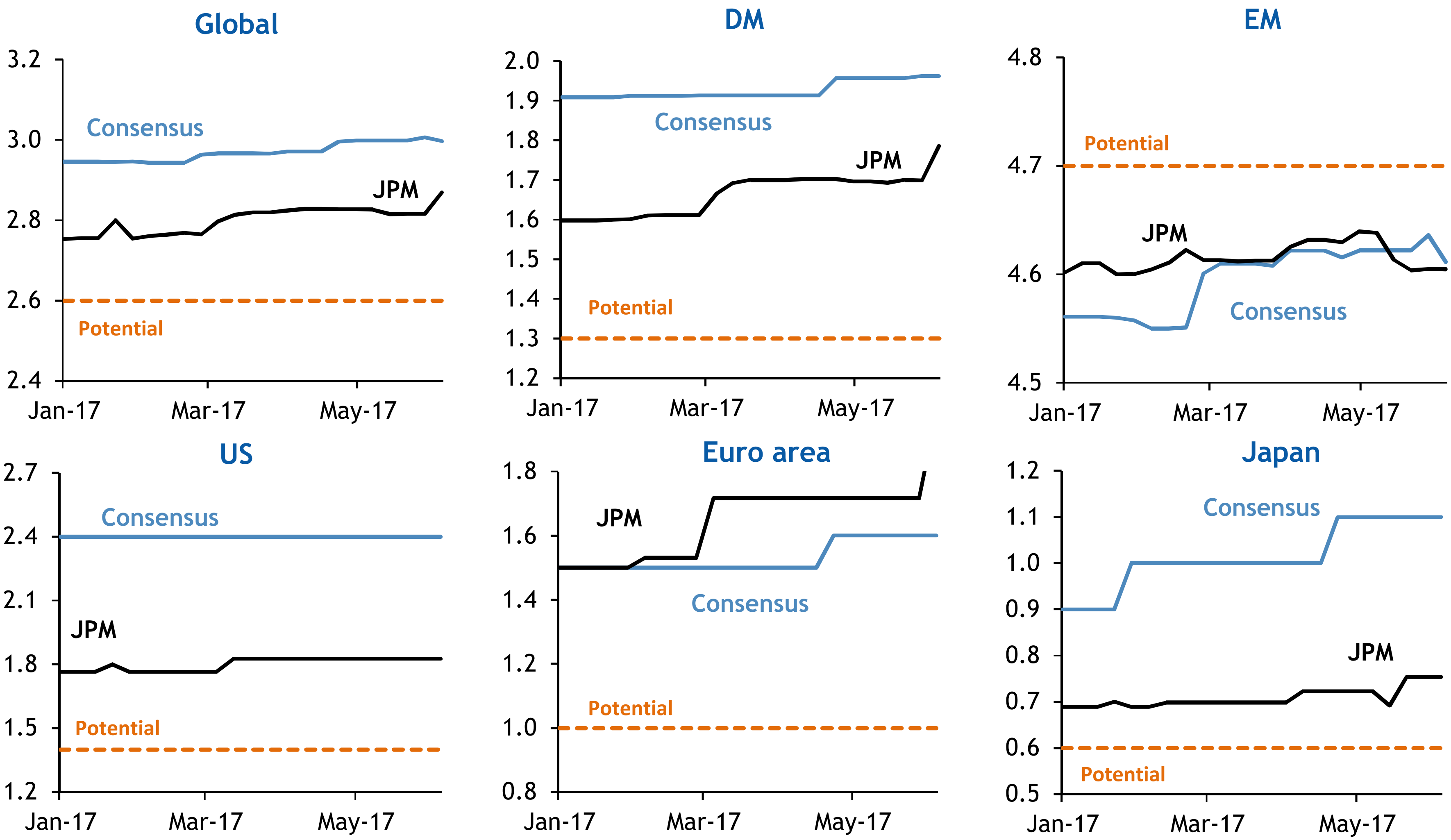
Chart C2: 2018 GDP Expectations

In %, GDP estimates of JP Morgan and consensus with current JP Morgan estimates of potential growth. Consensus Economics forecasts for global growth are done using the same 5-year rolling USD GDP country/region weights that we use for our own global growth forecast.



Source: J.P. Morgan, Consensus Economics, Blue Chip. Last observation is Jun 23.

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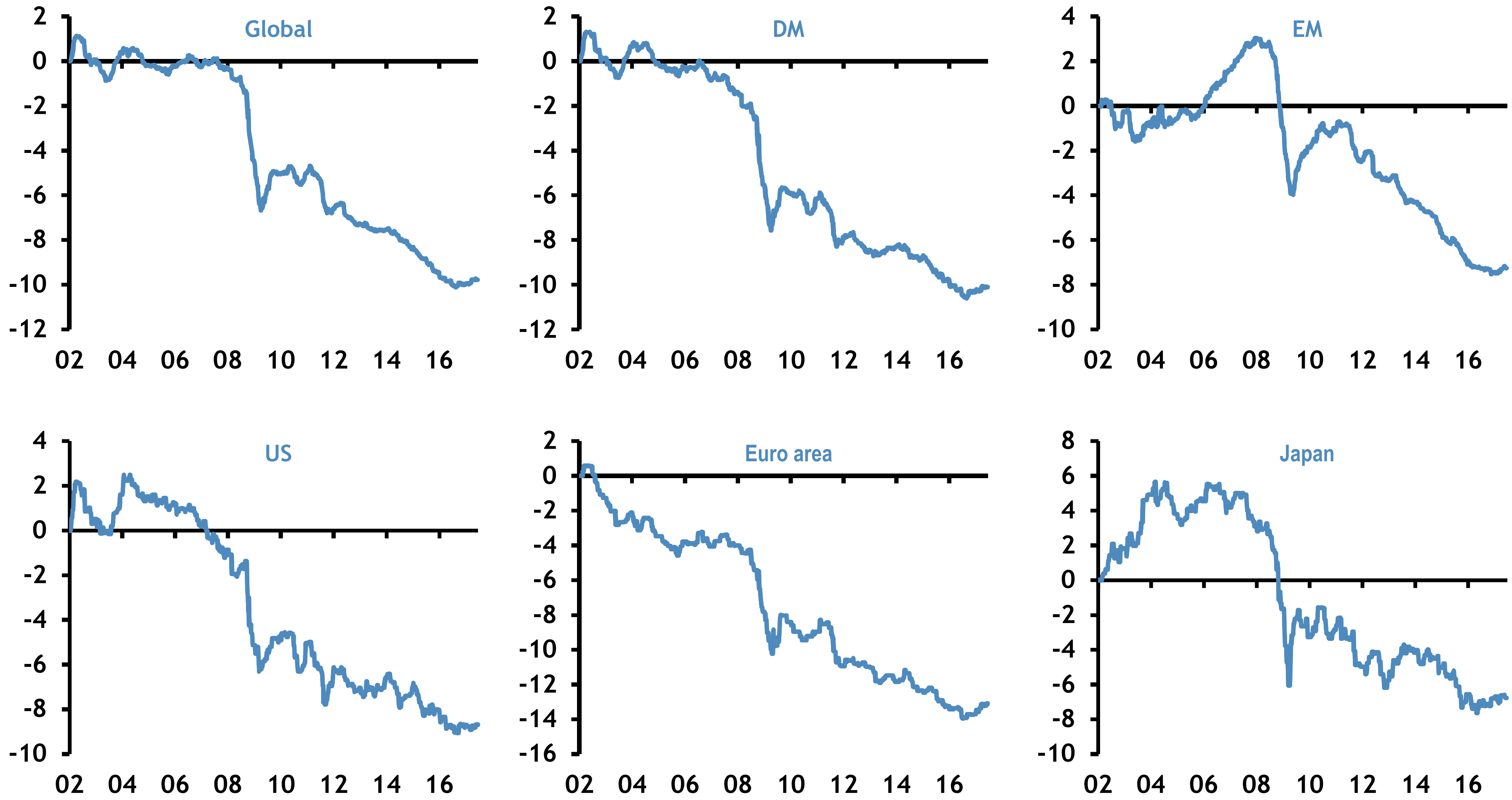
Chart C3: Forecast Revision indices since 2002

In %, The FRI is cumulative weekly changes in GDP forecasts for the current Quarter (Q), Q-1, Q+1 and Q+2 made by J.P. Morgan economists. Start of every series is normalized to zero.



Source: J.P. Morgan. Last observation is Jun 23. Research Note.

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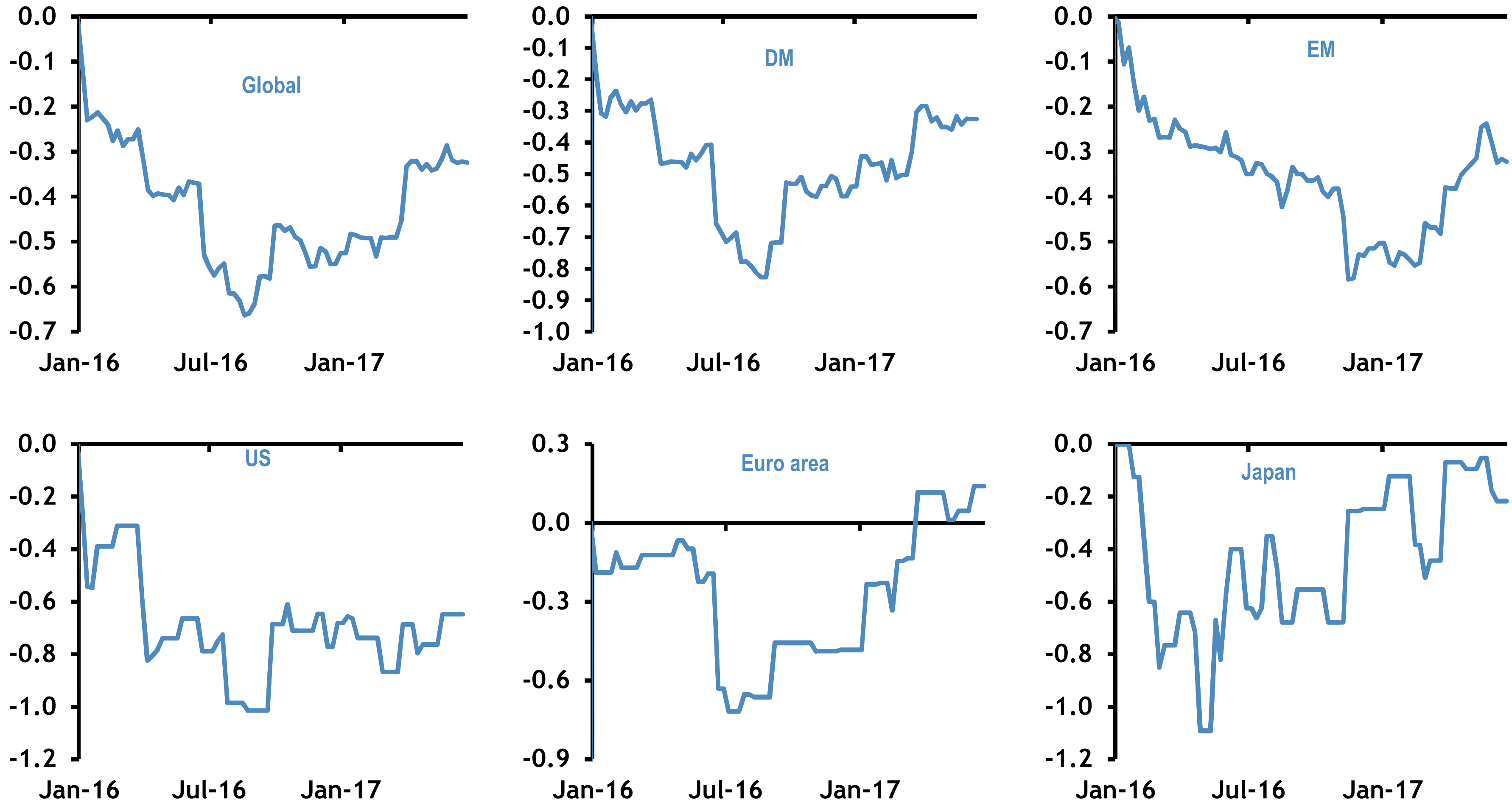
Chart C4: Forecast Revision indices since 2016

In %, The FRI is cumulative weekly changes in GDP forecasts for the current Quarter (Q), Q-1, Q+1 and Q+2 made by J.P. Morgan economists. The beginning of every series is normalized to begin at zero.



Source: J.P. Morgan. Last observation is Jun 23. Research Note.

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Chart C5: Forecast Revision indices since 2016

In %, The FRI is cumulative weekly changes in GDP forecasts for the current Quarter (Q), Q-1, Q+1 and Q+2 made by J.P. Morgan economists. The beginning of every series is normalized to begin at zero.

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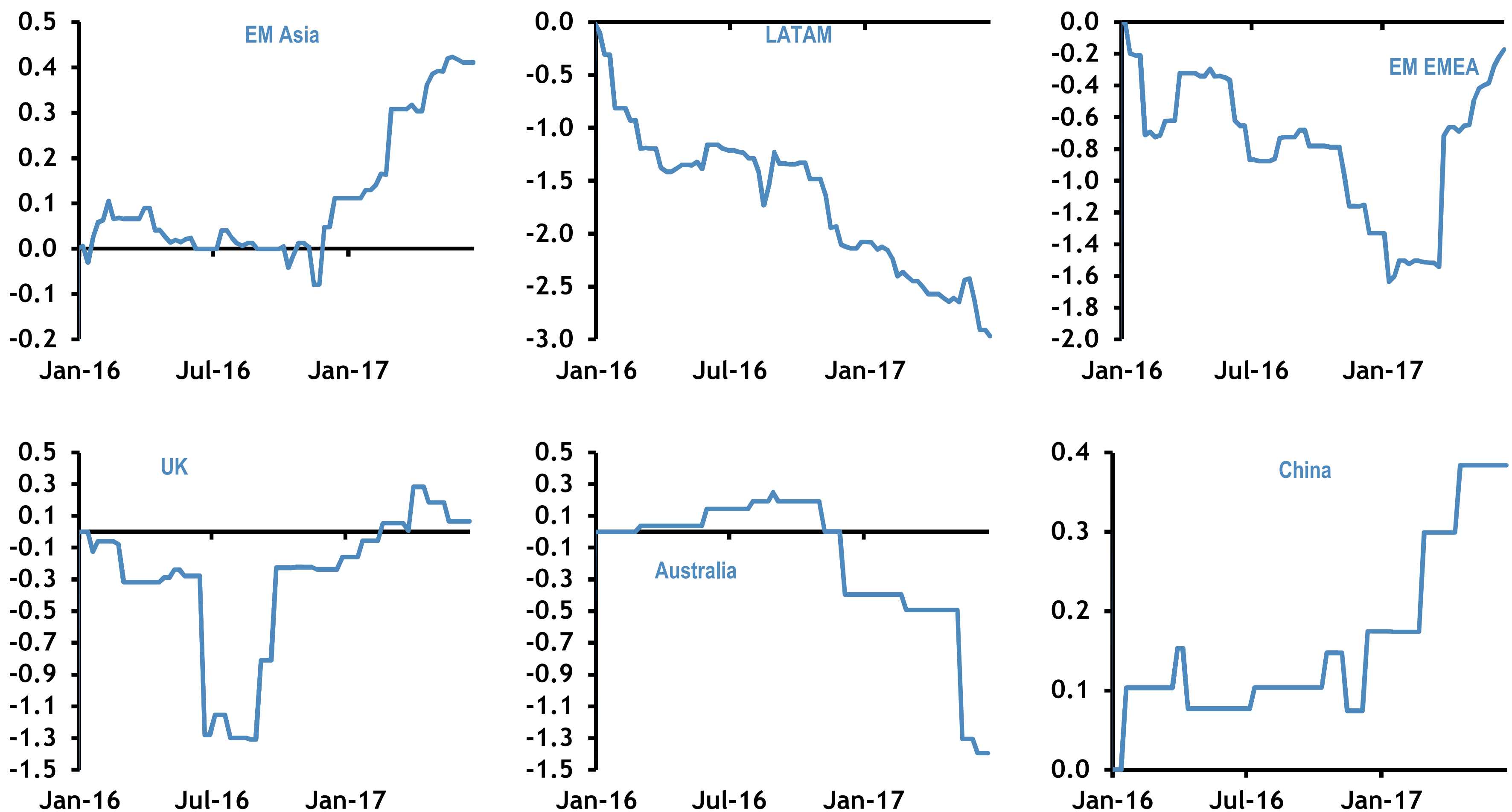

Source: J.P. Morgan. Last observation is Jun 23. Research Note.

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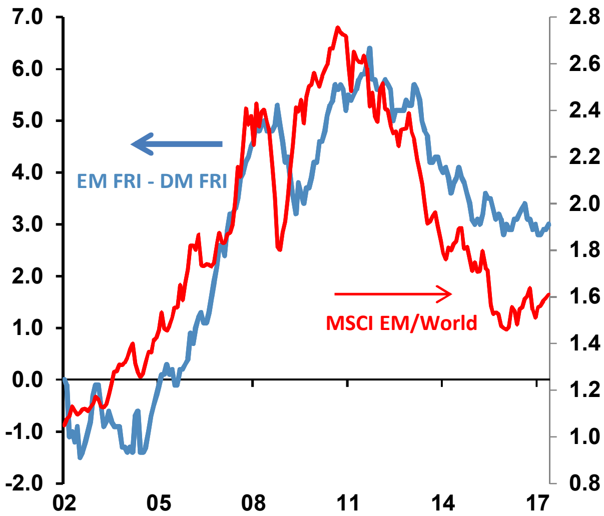
Chart C6: EM-DM FRI and MSCI EM/World since 2002

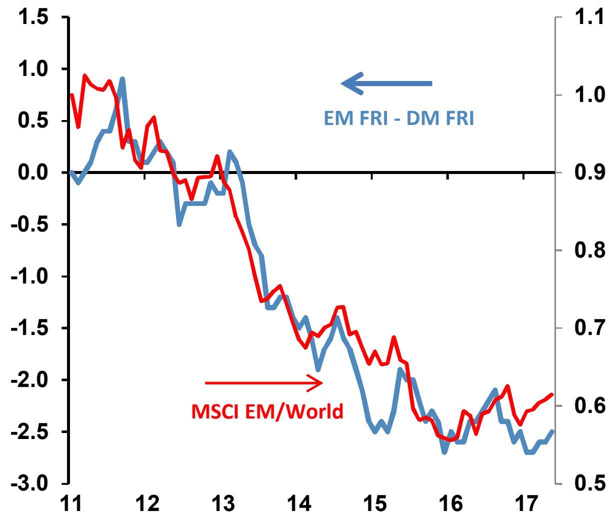
In %, The FRI is cumulative weekly changes in GDP forecasts for the current Quarter (Q), Q-1, Q+1 and Q+2 made by J.P. Morgan economists. Last observation is May'17.



Source: J.P. Morgan. Bloomberg.

Chart C7: EM-DM FRI and MSCI EM/World since 2011

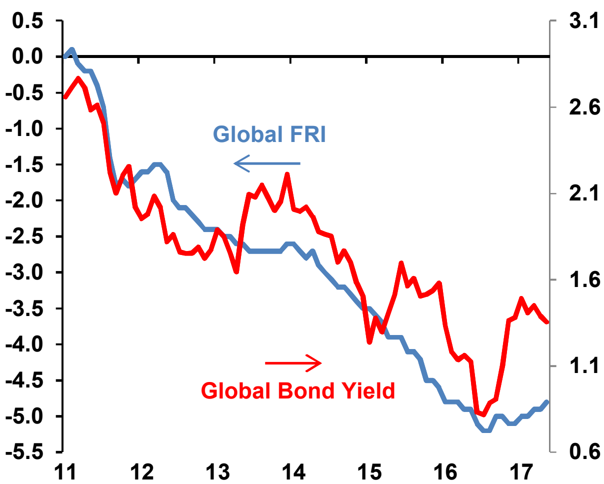
In %, The FRI is cumulative weekly changes in GDP forecasts for the current Quarter (Q), Q-1, Q+1 and Q+2 made by J.P. Morgan economists. Last observation is May'17.



Source: J.P. Morgan. Bloomberg.

Chart C8: Global FRI and global bond yield

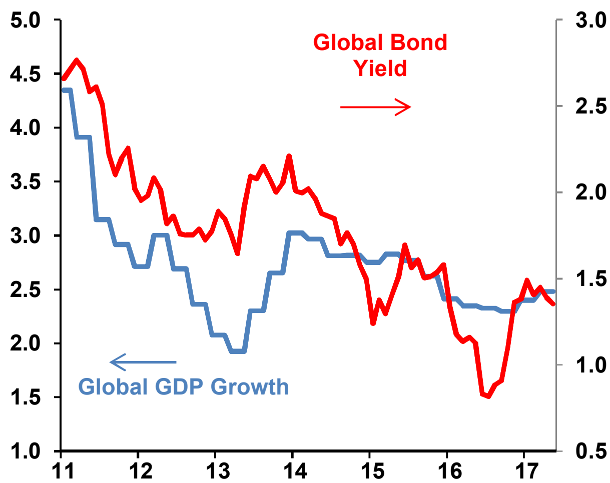
In %, The FRI is cumulative weekly changes in GDP forecasts for the current Quarter (Q), Q-1, Q+1 and Q+2 made by J.P. Morgan economists. Global bond yield is the JPMorgan Global Government Bond Index. Last observation is May'17.



Source: J.P. Morgan. Bloomberg.

Chart C9: Global growth and bond yield

In %, Global bond yield is the JPM GBI Index. Global GDP growth is the % change oya. Last observation is May'17.



Source: J.P. Morgan. Bloomberg.

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Table D1: Indices tracked by the 100 biggest ETFs

AUM in $bn is sum of ETF assets benchmarked to the following indices for the largest 100 ETFs. AUM as of June 27, 2017.

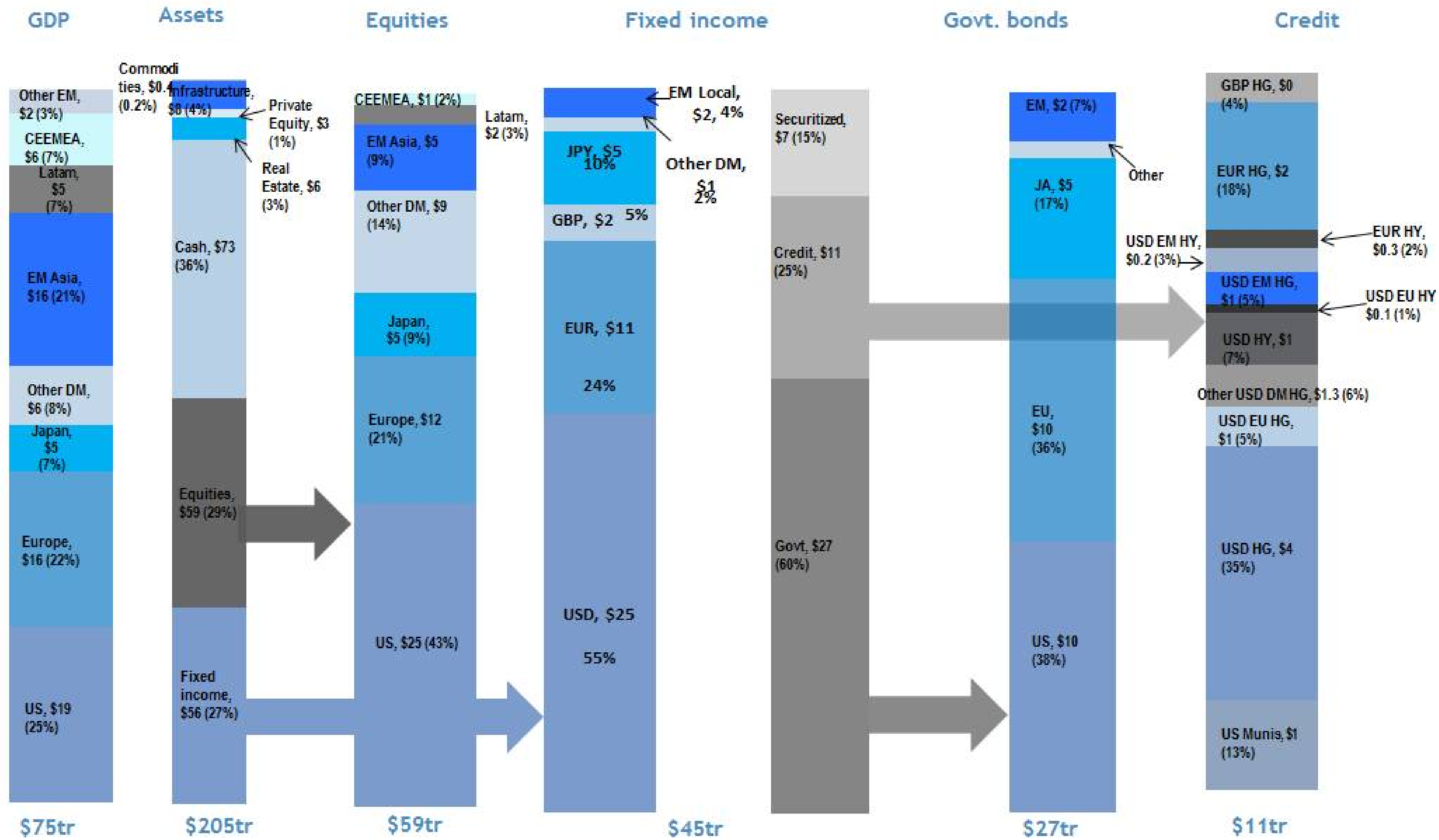
Equity Index	AUM ($ bln)	Exchange	Region
S&P 500 Index	472.3	NYSE Arca	United States
MSCI EAFE Index	190.3	NYSE Arca	International
MSCI Emerging Markets Index	126.1	NYSE Arca	International
TOPIX Index	97.1	Tokyo	Japan
Nikkei 225 Index	92.5	Tokyo	Japan
MSCI US Broad Market Index	79.2	NYSE Arca	United States
S&P Mid Cap 400 Index	59.5	NYSE Arca	United States
Nasdaq 100 Index	52.2	NASDAQ GM	United States
EuroStoxx 50 Index	43.8	Xetra ETF	Eurozone
Russell 2000 Index	38.7	NYSE Arca	United States
Russell 1000 Value Index	36.7	NYSE Arca	United States
Russell 1000 Growth Index	36.1	NYSE Arca	United States
Russell 1000 Index	34.7	NYSE Arca	United States
MSCI Europe Index	34.3	NYSE Arca	European Region
MSCI REIT Index	33.8	NYSE Arca	United States
MSCI US Prime Market Value Index	30.9	NYSE Arca	United States
S&P Small Cap 600 Index	30.4	NYSE Arca	United States
S&P IT Select Sector Index	30.0	NYSE Arca	United States
FTSE All-World ex-US Index	28.4	NYSE Arca	International
MSCI US Prime Market Growth Index	27.3	NYSE Arca	United States
DJ Industrial Average Index	25.7	NYSE Arca	United States
Mergent Dividend Achievers Select Index	24.4	NYSE Arca	United States
S&P Financial Select Sector Index	23.2	NYSE Arca	United States
MSCI World Index	22.0	London	Global
MSCI US Mid Cap 450 Index	19.4	NYSE Arca	United States
MSCI US Small Cap 1750 Index	18.3	NYSE Arca	United States
Hang Seng Index	18.3	Hong Kong	Hong Kong
S&P 500 Growth Index	18.2	NYSE Arca	United States
FTSE High Dividend Yield Index	18.1	NYSE Arca	United States
S&P Health Care Select Sector Index	17.5	NYSE Arca	United States
MSCI Japan Index	17.4	NYSE Arca	Japan
DJ Select Dividend Index	17.3	NYSE Arca	United States
S&P Energy Select Sector Index	15.8	NYSE Arca	United States
S&P HY Dividend Aristocrats Index	15.5	NYSE Arca	United States
MSCI USA Minimum Volatility Index	13.8	NYSE Arca	United States
S&P Equal Weight Index	13.6	NYSE Arca	United States

Conti...	AUM ($ bln)	Exchange	Region
S&P 500 Value Index	13.4	NYSE Arca	United States
S&P Consumer Discretionary Select Sector Index	12.6	NYSE Arca	United States
MSCI US Small Cap Value Index	10.9	NYSE Arca	United States
S&P Industrial Select Sector Index	10.7	NYSE Arca	United States
S&P Consumer Staples Select Sector Index	10.3	NYSE Arca	United States
Nasdaq BioTechnology Index	10.0	NASDAQ GM	United States
Alerian MLP Infrastructure Index	9.9	NYSE Arca	United States
S&P/TSE 60 Index	9.7	Toronto	Canada
WisdomTree Europe Hedged Equity Index	9.7	NYSE Arca	European Region
Russell Mid Cap Value Index	9.6	NYSE Arca	United States
MSCI US Prime Market 750 Index	9.5	NYSE Arca	United States
DAX Index	9.5	Xetra ETF	Germany
DJ US Large - Cap Index	9.0	NYSE Arca	United States
S&P Total Market TR Index	9.0	NYSE Arca	United States
AMEX Gold Miners Index	8.7	NYSE Arca	Global
Russell 2000 Value Index	8.5	NYSE Arca	United States
FTSE Global All Cap ex US Index	8.4	NASDAQ GM	International
WisdomTree Japan Hedged Equity Index	8.2	NYSE Arca	Japan
Russell 2000 Growth Index	8.0	NYSE Arca	United States
S&P Utilities Select Sector Index	7.9	NYSE Arca	United States
Russell Mid Cap Growth Index	7.8	NYSE Arca	United States
Russell 3000 Index	7.8	NYSE Arca	United States
CRSP U.S. Mid-Cap Index	7.4	NYSE Arca	United States
S&P 500 Low Volatility Index	7.0	NYSE Arca	United States
MSCI All Country World Index	6.9	NASDAQ GM	Global
S&P Mid Cap 400 Growth Index	6.7	NYSE Arca	United States
EuroStoxx 600 Index	6.5	Xetra ETF	European Region
Morningstar Dividend Yield Focus Index	6.4	NYSE Arca	United States
MSCI ACWI ex USA Investable Market Index	6.3	NASDAQ GM	International
FTSE 100 Index	6.3	London	United Kingdom
MSCI US Investable Market Health Care Index	6.2	NYSE Arca	United States

Equity Index - out of Top 100 ETF	AUM ($ bln)	Exchange	Region
S&P Materials Select Sector Index	3.7	NYSE	United States
DJ US Select Telecommunications Index	0.4	NYSE	United States

Source: J.P. Morgan.

Chart E1: Market panorama



Source: Bloomberg, Datastream, J.P. Morgan. GDP as of end 2015. Market size estimates for sub asset class as of May'17.

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