

RISK PREMIUM INVEST

Daily US and Euro Market Analysis

20 November 2019

Fixing at 17:30 (GMT+1)

| | Yield | Change (bps) | Contribution of Risk Premium |
|---------------------|--------|--------------|------------------------------|
| 10-Year US Treasury | 1,76% | -3 | -2 |
| 10-Year Bund | -0,35% | -1 | -1 |

| | Level | Change (%) | Contribution of Risk Premium |
|---------------|---------|------------|------------------------------|
| S&P 500 | 3116,70 | -0,10% | -0,27% |
| EURO STOXX 50 | 3686,79 | -0,24% | -0,25% |
| Euro / Dollar | 1,107 | -0,13% | -0,28% |

PART I : DAILY MOVES EXPLAINED

PART II : RISK PREMIA ANALYSIS

PART III : INTRADAY CHARTS AND MARKET INDICATORS

PART I : DAILY MOVES EXPLAINED

We first summarize the main news of the day and their impact on various markets. Then, we assess whether the day's movements are fully explained by the news flow or are also related to so-called technical factors (i.e. the day-to-day management of tactical positions).

Main Market Moving News

| Macroeconomics | Significant surprise * | Market impact | | |
|----------------|------------------------|---------------|----------|----|
| | | Bonds | Equities | FX |
| | 0 | F | F | F |
| | | | | |
| | | | | |
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| | | | | |

| Company news |
|--|
| Better results than expected for Lowe's Companies, Target. |
| |

| Others |
|--------|
| |
| |
| |

- F "Fundamental", the market reaction seems broadly in accordance with a fundamental approach of valuation.
- F / T The market reacts in the expected direction, but with a surprising intensity.
- T "Technical", the market reaction seems to be disrupted to a large extent by technical adjustments of positions.

- * Significant surprise means that a piece of news may alter significantly the valuation analysis:
- 0 No significant surprise.
- 1 Surprise, but with little implication for the fundamental value of the asset under consideration.
- 2 Significant surprise which may justify a visible move in some asset prices.
- 3 Highly significant surprise.

Day Changes : Fundamental or Technical ?

| | | | US 10Y | EU 10Y | S&P 500 | STOXX 50 | €/ \$ |
|--------------------------|-------------------|-----------------|--------|--------|---------|----------|-------|
| No significant movements | | | X | X | X | X | X |
| Fundamental | Expected returns | | | | | | |
| | Risk premia | | | | | | |
| Technical | Capitulation | Fundamentalists | | | | | |
| | | Momentum | | | | | |
| | Profit taking | Fundamentalists | | | | | |
| | | Momentum | | | | | |
| | Position building | Fundamentalists | | | | | |
| | | Momentum | | | | | |

- Fundamental** Changes in market prices can be explained, partly or wholly, by the news flow. Incoming information may alter investors’ view on future pay-off (expected returns) or their required risk premia (risk premia).
- Technical** Without information, markets may move thanks to “technical factors”. This happens when investors change their positioning for reasons not directly related to the information they have just received. Changes of positioning may be explaining by capitulation (or stop-losses activation, i.e. ending a position that has produced losses), profit-taking (ending a position that has produced the expected profits) or position building (building a new position or increasing an existing position). These various changes of position may come from “Fundamentalists”, i.e. investors who base mainly their decisions on a fundamental analysis of valuations or “Momentum” investors who try to assess the current underlying dynamic.

“Fundamental” or “technical” factors are not mutually exclusive. For example, following some positive news, a market may rise less than expected. In such a situation, both fundamental and technical factors (for example profit taking) play a role.

PART II : RISK PREMIA ANALYSIS

Prices in financial markets are determined by investors' arbitrages and as a result, market prices reflect the expected pay-offs of various assets, current and future short-term interest rates (i.e. the discount factors), and, last but not least, the risk premia required by investors. Pay-offs' profile are specific to each asset class and as a result, fundamental valuation models based on arbitrage need to be specifically taylorred to fit each asset class (with as a result the "discounted cash flow model" for equities, the "expectations hypothesis model" for risk-free bonds and the lesser known "overshooting model" for exchange rates).

In the following tables, Risk Premium Invest intends on a daily baisis to separate the role played by each of these key factors (monetary policy, pay-offs, risk premia), taking into account the asset classes' specificities. For more information about the methodology we use, see www.riskpremium.com/?p=1500

10-Year Interest Rates Analysis

| US 10 Year | | | | | |
|------------|------------------|--------|--------|------------------|--------|
| Δ Treasury | Factors | | Δ Swap | Model | |
| | Δ r ^e | Δ RP | | Δ r ^e | Δ RP |
| -0,03% | -0,02% | -0,02% | -0,03% | -0,02% | -0,02% |

| EU 10 Year | | | | | |
|------------|------------------|--------|--------|------------------|--------|
| Δ Bund | Factors | | Δ Swap | Model | |
| | Δ r ^e | Δ RP | | Δ r ^e | Δ RP |
| -0,01% | 0,00% | -0,01% | -0,01% | 0,00% | -0,01% |

- Δ r^e** Changes in ten-year yields resulting from revised views on future monetary policies (i.e. changes in the expected paths of future short-term interest rates).
- Δ RP** Changes in ten-year yields explained by the changes in the risk premium required by investors who buy long-term bonds.
- Model** Risk Premium Invest has estimated a yield curve model which helps to interpret movements in the interest rate swap yield curve, and help to separate the contribution of various shocks. Risk Premium Invest uses this model as well as other information, especially the news flow (macroeconomic information, policy announcements, etc.), to interpret changes in ten-year rates for US-treasuries and Bunds.

Equity Markets Analysis

| S&P 500 | | | |
|---------|------------------|-------|--------|
| Δ S&P | Factors | | |
| | Δ r ^e | Δ π | Δ RP |
| -0,10% | 0,16% | 0,00% | -0,27% |

| EURO STOXX 50 | | | |
|---------------|------------------|-------|--------|
| Δ STOXX | Factors | | |
| | Δ r ^e | Δ π | Δ RP |
| -0,24% | 0,00% | 0,00% | -0,25% |

- Δ r^e** Changes in the market index resulting from revised views on future monetary policies (i.e. changes in the expected paths of future short-term interest rates).
- Δ π** Changes in the market index resulting from revised opinions on future companies' profits.
- Δ RP** Changes in the market index explained by the changes in the risk premium required by investors who buy equities.

Foreign Exchange Market Analysis

| Foreign Exchange Market | | |
|-------------------------|------------------|--------|
| Δ €/ \$ | Δ r ^e | Δ * |
| -0,13% | 0,15% | -0,28% |

The « overshooting model » is the valuation benchmark which should be used in order to analyse what is going on in the FX market. The “overshooting model” is to exchange rates what the “discounted cash flow model” and the “expectation hypothesis model” are respectively for the equity and bond markets. The “overshooting model” is a key arbitrage-based model, where exchange rates movements are related to changes in expected in monetary policies, risk premia and, last but not least, the long term equilibrium exchange rate.

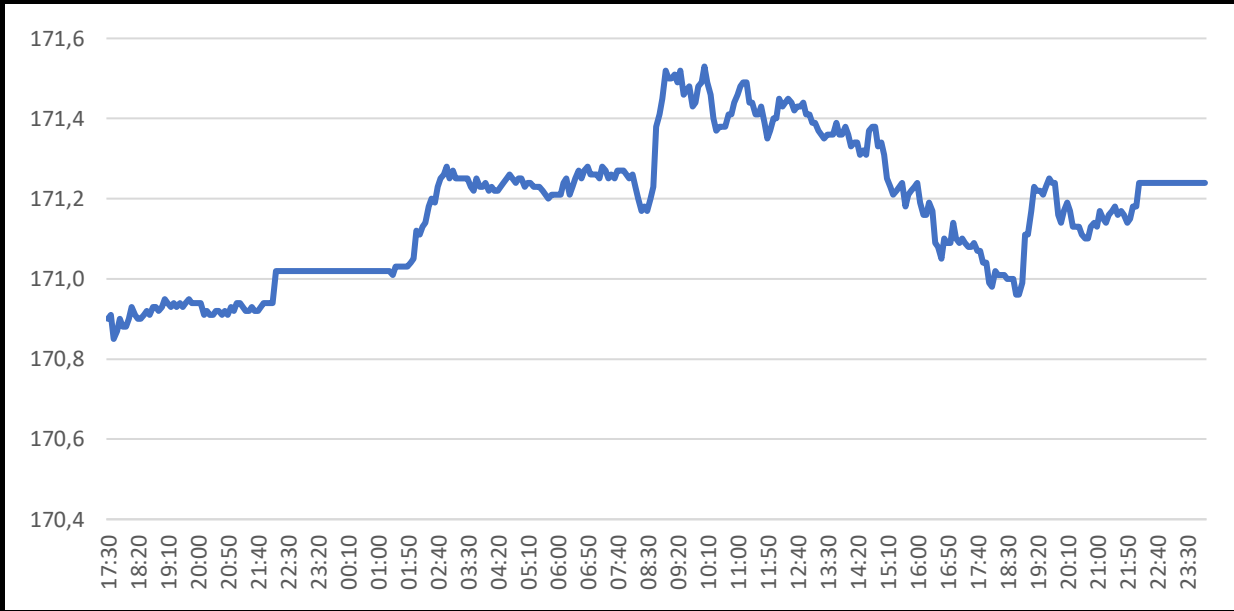
- Δ r^e** Changes in the dollar/euro rate explained by markets' revised views on both the US and the Eurozone monetary policies (for an euro based investor, the pay-off of an investment in dollars depends crucially on the future US monetary, while the Eurozone monetary policy plays a key role as a determinant of the “discount factor”).
- Δ *** Changes in the dollar/euro rate explained by the two other factors. With unchanged views on monetary policies, exchange rates may move because investors change their estimate about the long-term equilibrium exchange rate, or because risk premia change. Most of the movements are related to the latter rather than the former. Yet, in this daily analysis, we do not try to disentangle precisely the two factors, as there are little available information to do so.

PART III : INTRADAY CHARTS AND MARKET INDICATORS (1/2)

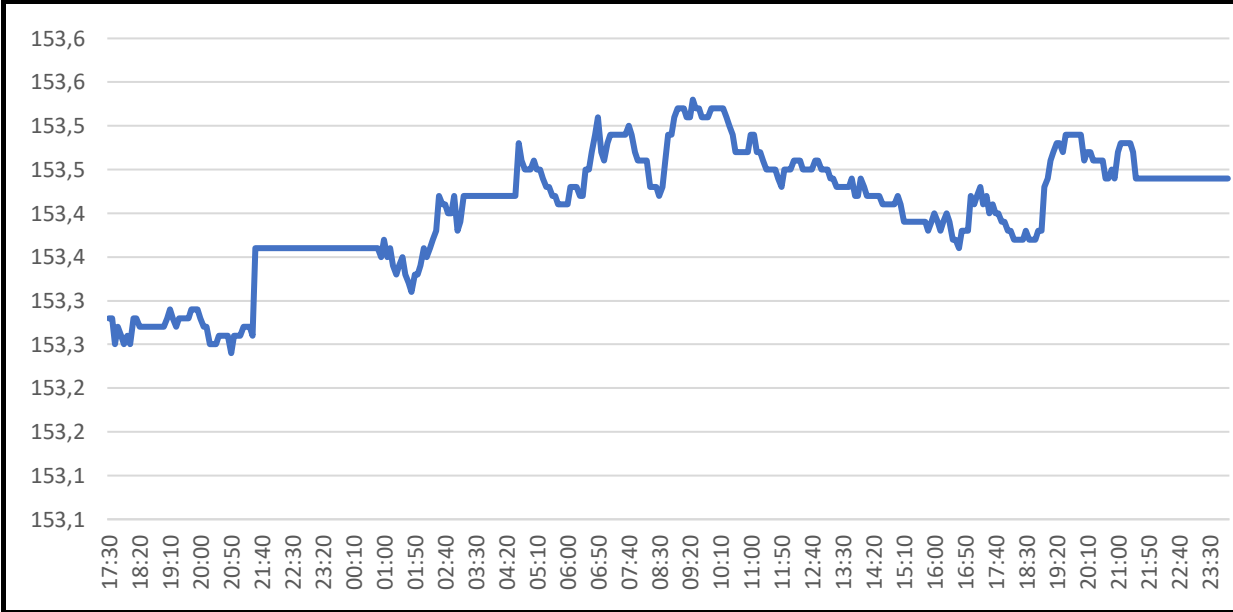
10-Year US Treasury Future



10-Year Bund Future



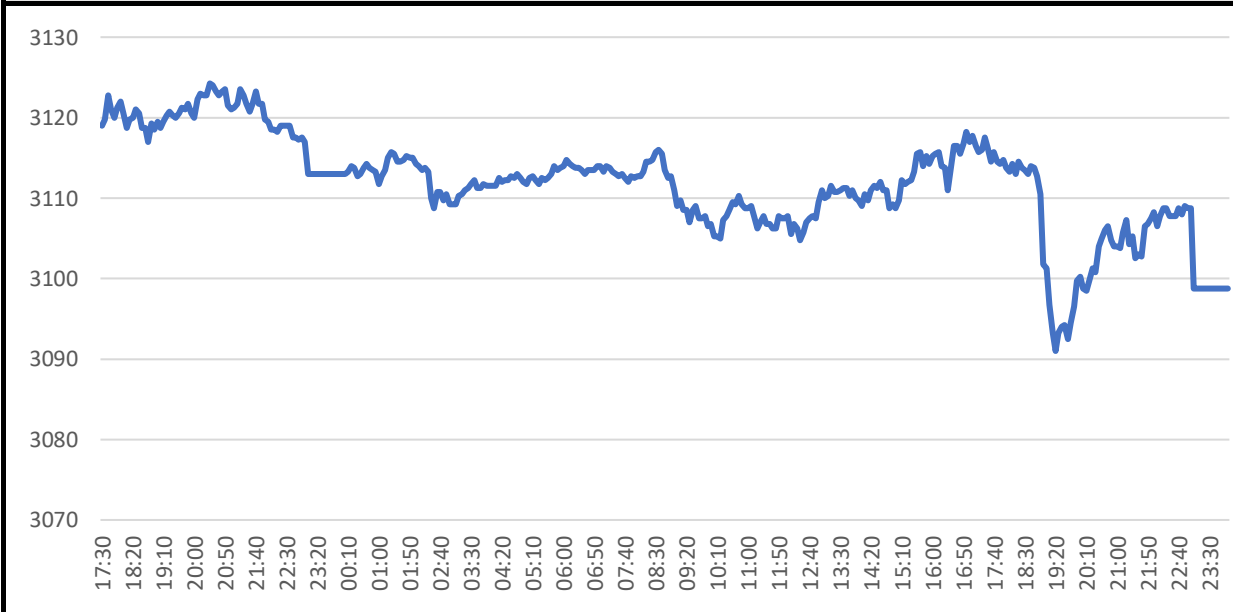
10-Year Japan Government Bond Future



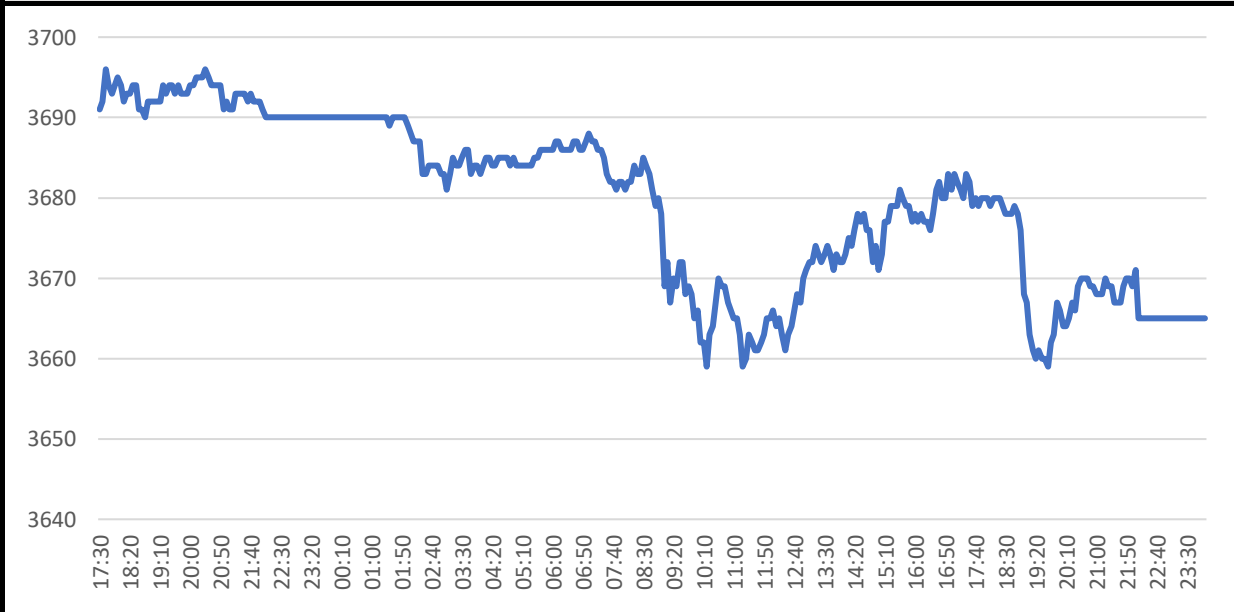
BRENT Future



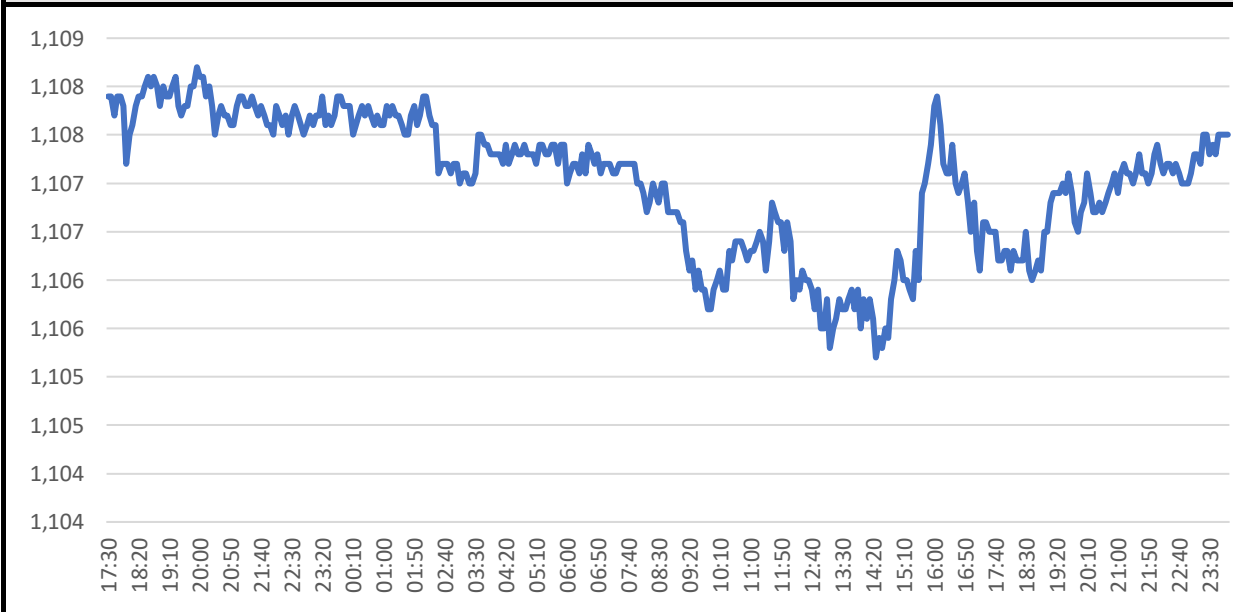
S&P 500 Future



EURO STOXX 50 Future



€/ \$ Spot



\$/Y Spot



Main market indicators, fixing at 17:30 (GMT+1)

| Government Bond indicators | Yield | Change (bps) |
|--|--------|--------------|
| 10-Year US Treasury | 1,76% | -0,03 |
| 10-Year US Treasury Implied Volatility | 4,39% | 0,17 |
| 10-Year Bund | -0,35% | -0,01 |
| 10-Year Japan Government Bond | -0,11% | -0,03 |

| Equity indicators | Level | Change (%) |
|--------------------------------|---------|------------|
| S&P 500 | 3116,70 | -0,10% |
| S&P 500 TR * | 6292,17 | -0,36% |
| S&P 500 Volatility (VIX) | 12,69 | 0,48% |
| EURO STOXX 50 | 3686,79 | -0,24% |
| EURO STOXX 50 Volatility (V2X) | 12,73 | 2,86% |

| Foreign Exchange indicators | Level | Change (%) |
|-----------------------------|---------|------------|
| Euro / Dollar | 1,107 | -0,13% |
| Dollar / Yen | 108,670 | 0,16% |

| Other market indicators | Level | Change (%) | Change (bps) |
|------------------------------------|--------|------------|--------------|
| BRENT | 64,11 | 1,75% | - |
| US Inflation Breakeven | 1,49 | - | -0,02 |
| EU Inflation Breakeven | 0,79 | - | -0,02 |
| iShares iBoxx Investment Grade | 127,44 | 0,19% | - |
| iShares iBoxx High Yield Corporate | 86,38 | -0,13% | - |
| iShares Euro Corporate Bond | 133,77 | -0,05% | - |

* Fixing at US market closed