Trading Italy as Credit I

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The difficulty in haircutting BTPs

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While the market is in awe of the recent surge in seemingly cheap liquidity, little if anything fundamental has changed to address the ongoing sovereign crisis, and absent any large-scale policy response the Eurozone sovereign debt crisis will almost surely take a further turn for the worse. Given the ECB's reluctance or legal inability to monetize the debt, and the large wall of issuance coming (see Rates Flash – Quantifying the eurozone's 2012 financing requirements, 13 December 2011) taking place amidst the ongoing downgrades, one of two alternatives is increasingly likely: Eurozone break-up (see Special Topic: Currency risk in a Eurozone break-up – Legal Aspects, 18 November 2011) or large-scale sovereign defaults. While our core view remains more hopeful, we take the opportunity to look in detail at trading risky sovereigns (such as Italy), as credit. In particular, in this, the first of a series of papers, we explain how credit traders would approach BTP spread trades, to gain on a restructuring, but as well gain on recovery.

Credit trading—always positioning for possible haircuts

While sovereign bonds such as BTPs, SPGBs, GGBs, etc, have largely been the domain of so-called *rates* traders, as the sovereign debt crisis has unfolded, the investor base in Europe has changed dramatically. In particular, as pension and insurance fund managers have stepped out, *distressed-debt*, *high-yield*, and *emerging markets* traders have stepped in. While traditional traders will admit that markets now trade like credit, little if any of the methodology of credit has come across into rates.

Credit traders, typically having fewer instruments at their disposal, tend to use much more coarse techniques in putting on trades than the traditionally complex rates trades. In general, other than outright directional trades, cash credit investors will look to benefit from positioning for or against a restructuring, doing so by trading the capital structure (e.g., senior vs sub or BOTs vs RepItaly vs BTPs which we leave to another note), rich/cheap to recovery (e.g., CTZs vs BTPs vs BTPei's, again for another note), CDS basis trades, and spread trades and purely directional trades.

Sovereign bonds themselves usually do not allow for most capital structure-style trades, with rather limited notions of seniority and subordination, but they do offer a great diversity of product types. Italy, for instance offers BOTs (bills), CTZs (discount notes), CCTs (floaters, both Euribor and BOT-linked), BTPs (bonds), BTPei's (linkers), and Rep Italy international bonds of many differing flavours, each class of which may have an entirely different treatment in a restructuring. Furthermore, Italian bonds (BTPs and BTPei's) may be stripped into constituent coupon and principal strips, where interest only (IO) coupons are entirely fungible between the different issues and the principal only (PO) retains the reconstitution option[1].

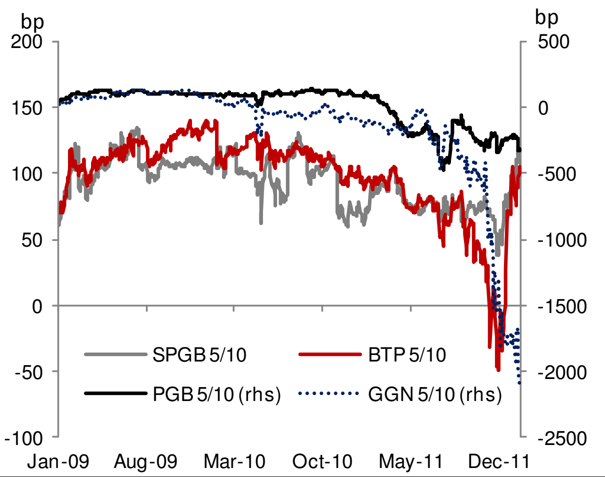
We will look to trade BTPs in this note, focusing in particular on spread trades, given that purely directional trading tends to require greater conviction in both Italian finances and market sentiment. Spread trades, by comparison we instead prefer to look at spread trades, taking default into account, hedging it or having explicit views on the outcome of future restructurings.

[1] Although this reconstitution option will change from mid-2012 (see Italian Tesoro, *Guidelines for Public Debt Management 2012*), where all new POs will be fully fungible with IOs of the same maturity, and old non-fungible strips can be exchanged with the Tesoro for new fungible strips. This will bring Italian stripping practice in line with French and German. See the Tesoro website for more information on stripping.

Flatteners or forwards

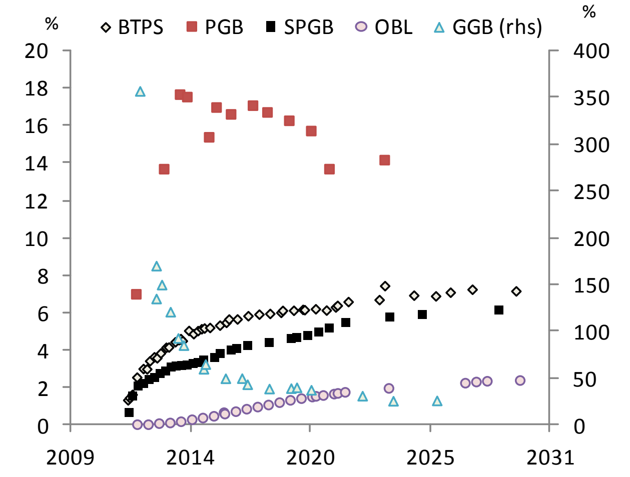
Stressed credit curves typically flatten or invert and we have seen significant flattening of SPGB and BTP curves during the heights of the crisis, with some modest recovery of late (e.g., 5y-10y BTP at a recent high of 105bp, up from a low of -50bp last November), as seen in Figure 1, while Irish, PGB and GGB curves remain largely flat or inverted as can be seen in Figure 2. While there has been a recent easing of tensions, ongoing funding stresses and sovereign downgrades are altogether likely to increase the flattening pressure.

Figure 1: 10/15yr Spreads



Source: Bloomberg

Figure 2: Government Spot curves

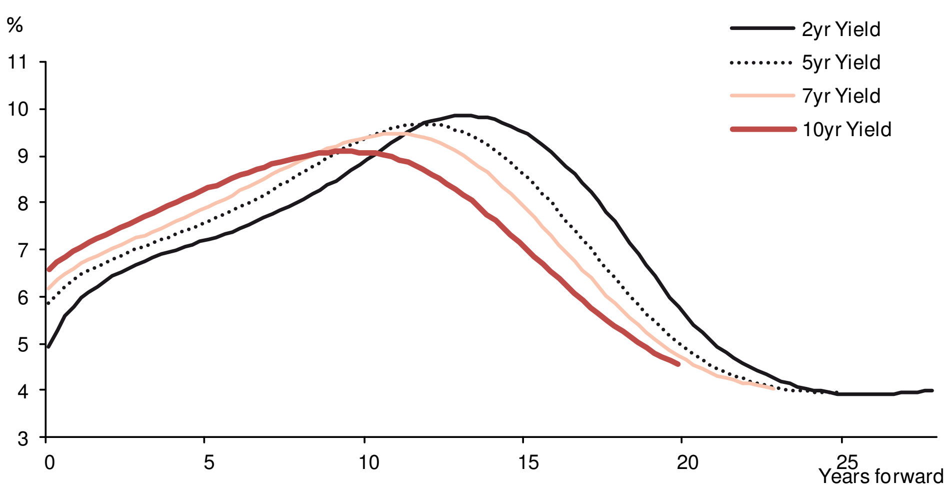


Source: Nomura

Rates traders position for stress via dv01 neutral flattening trades. While also doing dv01 neutral trades, it is common for credit traders to put on *par-for-par* or *cash-for-cash* (also called *proceeds-neutral*) trades. Unlike the case of dv01-neutral flatteners, both of these 'flatteners' have positive **duration**, and are in some way **akin to forwards** - in particular the par-for-par trade would be a forward bond trade save for any coupon mismatch before the short maturity (what's a coupon spread between friends?). Rather than a pure forward, we will show that they are more like a **long straddle**, **benefitting both from recovery while being neutral or positive to default**.

In Figure 3, we see forward rates from a BTP spline curve, at various horizons for each of a 2yr, 5yr, 7yr and 10yr maturity. We note that the 2yr rate, 13yr forward peaks at 9.86%. This corresponds to a 13yr-15yr slope trade, while the 5yr rate peaks between 11-12yrs at 9.72%, corresponding to a 11yr-16yr slope trade. We note that forward rates are probably so high

Figure 3: Forward splines



Source: Nomura

due to ECB's SMP buying up to around 10yr.

It would make perfect makes sense to put on a trade that would effectively make money as long as 2yr yields are below 9.86% in 12yr time. Moreover, in the current environment, each forward trade benefits from positive roll. If, on the other hand, yields are above this break-even, it is unlikely that Italy will remain sustainable, and a restructuring would probably have ensued. We explain in some detail the recovery values of these trades, where the investor possibly benefits from or is indifferent to various haircuts.

Relative value for forward trades

To better understand the relative merits of each trade, we present what appears to be the best set of trades in this sector. After an exhaustive search among the 2023-2029 year sector, we determined that on a volatility adjusted basis, the following trades tended to have the largest returns under reasonable restructuring scenarios. In particular we look to trade BTP 4.75% Aug-2023 versus BTP 5.25% Nov-2029. The descriptive statistics for the instruments are shown in Figure 4 and for the flattener/forwards in Figure 5.

Figure 4: BTP descriptive statistics (flattener/forward)

	Short	Long
Maturity	Aug-23	Nov-29
Issued	Feb-08	Nov-98
Coupon (%)	4.75	5.25
Price (clean, EUR)	86.16	82.79
Price (dirty, EUR)	88.42	83.99
Yield	6.47	6.95
Mod Duration	8.55	10.95
DV01	-7.56	-9.07
Convexity	88.27	157.23
Repo (1m, bp)	37.50	37.50
Carry (1m, bp)	-0.04	-0.04
Carry (1m, EUR)	0.33	0.37
Roll (1m, bp)	0.01	0.03
Roll (1m, EUR)	0.10	0.24

Source: Nomura, Reuters

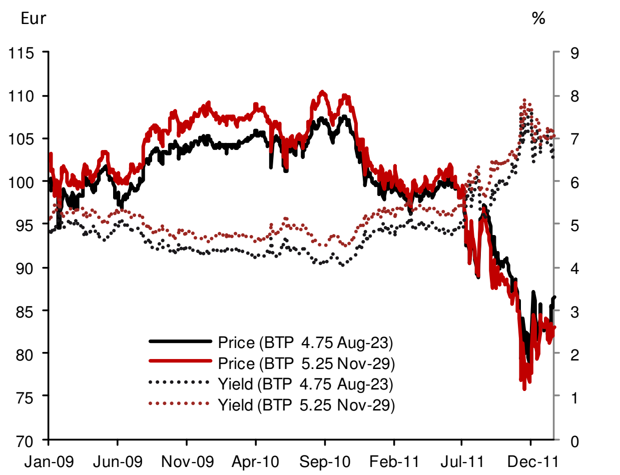
Figure 5: Flattener/Forward trade descriptive statistics

	DV01 Neutral	Par for Par	Proceeds Neutral
Weight (short leg)	-1.20	-1.00	-0.95
Cash-out	22.04	4.43	0.00
DV01	0.00	-1.51	-1.88
VAR (EUR)	-0.94	-0.75	-0.74
Curvature (EUR per bp^2)*	0.39	0.54	0.58
Carry (1m, EUR)	-0.03	0.04	0.06
Roll (1m, EUR)	0.12	0.14	0.14
Carry & Roll (1m, EUR)	0.09	0.17	0.20
Value (R - €90, t=0m)	-17.93	0.00	4.51
Value (R - €80, t=0m)	-15.94	0.00	4.01
Value (R - €70, t=0m)	-13.95	0.00	3.50
Value (R - €90, t=12m)	-18.25	0.47	5.17
Value (R - €80, t=12m)	-16.25	0.47	4.67
Value (R - €70, t=12m)	-14.26	0.47	4.17

*2nd derivative of price to interest rates. Source: Nomura

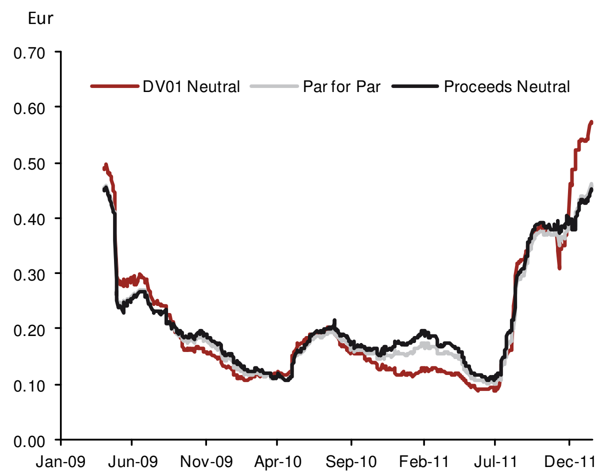
In an upward sloping yield curve the shorter maturity bond usually has a higher price and lower duration than higher maturity bond. Consequently, for a fixed notional in the long bond, the dv01-neutral trade will involve higher notional in short bonds (1.2x in Figure 5), the par-for-par of course will be the same notional, and the proceeds-neutral will involve less notional in the short bond (0.95x in Figure 5). Moreover, there is usually a positive cash-out

Figure 6: Price and Yields for the underlying BTPs



Source: Nomura, Reuters

Figure 7: 3m rolling volatility



Source: Nomura, Reuters

for dv01-neutral and par-for-par trade, while cash-for-cash is flat (as showin in Figure 5 for EUR 100mm in the long leg). The different notional weighting will also result in differing sensitivities to parallel shifts; with the proceeds-neutral trade having the highest dv01, followed by par-for-par, reflecting being long a 11yr forward 6yr bond.

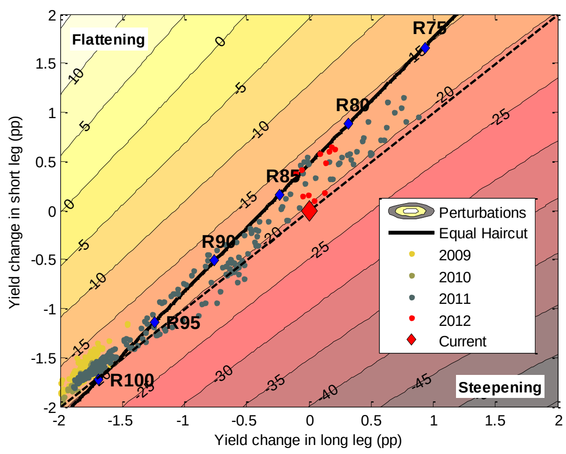
The proceeds-neutral weighting can be seen in Figures 7, where we have the 3m realized rolling volatility for each of the strategies with weights fixed as of Jan 2012 (i.e., current weight used retroactively). We note that there are periods when our ranking of sensitivity reverses and volatility of the dv01-neutral weighting becomes much higher than cash-for-cash, as is the case since Dec-2011. This reversal is due to the fact that the steepening was driven by much larger moves in the 12yr relative to 18yr. The volatility of the par-for-par is similar to cash-for-cash due to the similarity of the weighting[2].

The different notional weighting also ensures that the 1m carry and roll is the highest for proceeds-neutral trade followed by par-for-par and dv01 neutral flattener. Clearly, while all would benefit from flattening and some form of restructuring, the proceeds-neutral trade, with the largest carry has the longest staying power, while the dv01 neutral has a much shorter fuse. The roll of course is less relevant recently.

Finally, we look to the trades in restructuring scenarios. In particular, we assume that both short and long legs are restructured on the same terms, par for (very much reduced) par of new longer maturity bonds (much as is case of the Greek PSI).Since par-for-par trade has the same notional amount in both legs the value of the flattener in case of credit event will be zero irrespective of the recovery value, and the investor can merely pocket the initial premium (together with the carry from accumulated coupons and net financing). We see this in Figure 5, where the trades are valued for 90%, 80% and 70% recovery values for restructuring now and at 12 months in the future. In each trade, the net value (cash-out together with subsequent valuation) is positive in a default event.

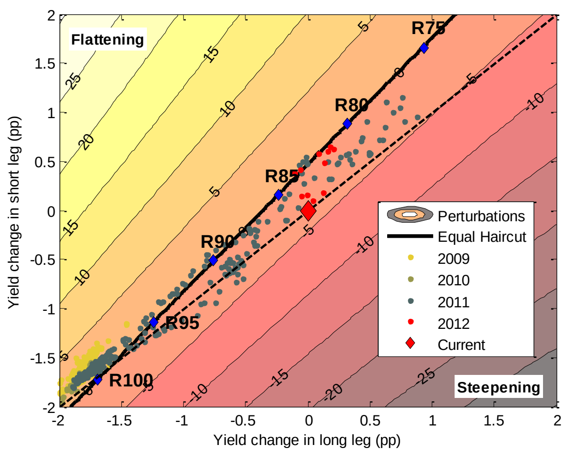
The value of the proceeds and dv01-neutral flatteners will depend on the recovery value, with dv01-neutral benefitting from deeper haircuts (being net short-notional) and cash-for-cash benefitting from more shallow haircuts. Irrespective, in the current environment, taking initial cash-out into account, none of the trades would result in a loss under any recovery scenario.

Figure 8: Perturbing the DV01 neutral trade



Source: Nomura, Reuters

Figure 9: Perturbing the Par for Par weighted trade

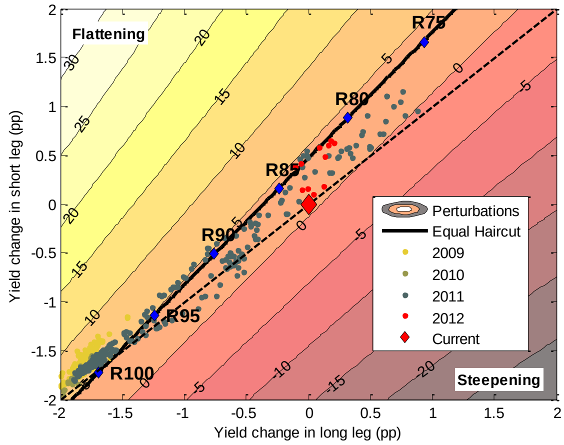


Source: Nomura, Reuters

[2] We could construct a minimum-variance combination, by regressing 5yr bond and 10yr bond and b adjusting the dv01 weighting. This approach to an adjusts for the common denominator in both bonds and is useful in situations when dv01-neutrality leads to too large a weighting on the short-end. This would lead to a *minimum variance portfolio* where expected returns are formed from historic moves. We argue that it is more reasonable to consider explicit haircuts into our expectations, and dv01-neutral and minimum variance trades will underperform in most credit events.

The discussion above can be summarized using contour plots (see Figures 8-10), which indicate net trade values under different interest rate combinations with white-hot indicating higher payoffs for each, and red-to-brown indicating higher losses). In the plots we perturb both legs of the trade by up to 2pp on the either side, i.e. interest rate on the BTP 4.75% Aug-23 (5.25% Nov-29) moves within the range of -2pp to +2pp from the current value of

Figure 10: Perturbing the Proceeds Neutral trade



Source: Nomura, Reuters

6.47% for Aug-23 and 6.95% for Nov-29. Note that all the combinations above the dotted line indicate flattening, while all below it - steepening.

We have also superimposed historical yields for both securities from 2009 until 2012. These clearly highlight the 2011 flattening, and recent recovery. We note BTP 4.75% Aug-23 / 5.25% Nov-29 slope of 53bp is significantly above the 2009-12 average of 38.6bp. Irrespective, history has limited informational value except we note that potential downside of the trade appears relatively limited.

Finally we have indicated equal-recovery-line i.e. all combinations perturbations in yields that gives us identical recovery value for both bonds. The values on the line indicate the recovery value for both bonds. In the dv01-neutral (Figure 6) and cash-for-cash (Figure 8) this equal-recovery line is superimposed on the charts, while in the par-for-par, it coincides with the contour indicating zero residual value. This makes it clear that in spite of any recent flattening, the bonds do not trade anywhere close to equal recovery values. And in the event of a haircut, the proceeds neutral trade stands to gain handsomely, the par-for-par gains the initial premium, and the dv01 neutral will have its initially high premium reduced.

While default is a possibility, the road to default is long and arduous and it is not unlikely that yields will be much higher than spot prior to default. For the sake of comparison, we note that the Greek yields are both much higher and inverted, with interpolated yields in 2023 at 29%, and in 2029 at 21.25%. This is true as well of PGB curves, with interpolated yields in 2023 at 14.2% and in 2029 at 10.5%. Similar moves would lead to positive P&L on all three trades.

Relative value for high-low coupon trades

Alternatively we can consider selling high-coupon (high price) bonds for low-coupon bonds, and in particular, we look to short BTP 9.00% Nob-2023 versus BTP 5.00% Mar-2025. Unlike the previous curve trades, these have relatively high negative carry. But this negative carry is more than compensated by large cash-out in case of the par-for-par trade at the start of the trade or residual value for proceeds-neutral trade in case of a restructuring.

Figure 11: BTP descriptive statistics (high/low coupon)

	Short	Long
Maturity	Nov-23	Mar-25
Issued	Nov-93	Jul-09
Coupon (%)	9.00	5.00
Price (clean, EUR)	113.93	85.15
Price (dirty, EUR)	115.99	87.12
Yield	7.22	6.72
Mod Duration	7.64	9.23
DV01	-8.77	-8.01
Convexity	74.90	105.19
Repo (1m, bp)	37.50	37.50
Carry (1m, bp)	-0.07	-0.04
Carry (1m, EUR)	0.63	0.35
Roll (1m, bp)	0.01	0.01
Roll (1m, EUR)	0.10	0.09

Source: Nomura, Reuters

Figure 12: High/low coupon descriptive statistics

	DV01 Neutral	Par for Par	Proceeds Neutral
Weight (short leg)	-0.91	-1.00	-0.75
Cash-out	18.85	28.86	0.00
DV01	0.00	0.76	-1.42
VAR (EUR)	-0.65	-0.79	-0.56
Curvature (EUR per bp^2)*	0.12	0.04	0.25
Carry (1m, EUR)	-0.23	-0.29	-0.13
Roll (1m, EUR)	0.00	-0.01	0.02
Carry & Roll (1m, EUR)	-0.23	-0.30	-0.11
Value (R - €90, t=0m)	7.77	0.00	22.40
Value (R - €80, t=0m)	6.91	0.00	19.91
Value (R - €70, t=0m)	6.04	0.00	17.42
Value (R - €90, t=12m)	4.97	-3.46	20.83
Value (R - €80, t=12m)	4.10	-3.46	18.34
Value (R - €70, t=12m)	3.24	-3.46	15.85

*2nd price derivative to interest rates. Source: Nomura

Conclusion:

Given the significant staying power of the trade, we prefer the **cash-for-cash** BTP 4.75% Aug-23 / 5.25% Nov-29 trade with positive carry for its positioning for a default with higher recovery values, but equally poised for a lowering of Italian funding pressures due to its high positive duration. We like this trade in particular because although Italy remains under significant funding pressure, we believe that it is unlikely that a credit event should materialize imminently.

While we believe any credit event in Italy will likely result in still high recoveries, it may be seen as more prudent by some to remain recovery-neutral, and the par-for-par trade, with modest negative carry, will be one of the easiest to justify for those who believe default is more likely than not, but are unwilling to take a view on how Italy (and more importantly, decision makers within the EU) will ultimately treat the private sector.

Irrespective each of these trades, par-for-par or cash-for-cash can be seen as a credit straddle, effectively long duration, but either directly benefiting from or neutral to recovery.

Trade recommendation

Sell EUR 95mm BTP 4.75% Aug-2023 versus buy EUR 100mm BTP 5.25% Nov-2029 as proceeds-neutral flattener.

Sell EUR 100mm BTP 9.00% Nov-2023 versus buy EUR 100mm BTP 5.00% Mar-2025 as par-for-par flattener

ISCLOSURE APPENDIX A1

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