

Re-denomination risk down as time goes by

No growth undermines debt sustainability: the Sentix Index signals stress

The Sentix Index estimates the one-year probability of Italy leaving the monetary union based on the assessment of investors. The index spiked to 19% in November 2016 before recently moderating to 15%. This compared with the 2.5% average in 2012-1H16 and signals the increase in the market's concerns about 'Italexit' that emerged at the end of last year given the perceived systemic risk on the banks and in light of the strong protest vote being decisive in the rejection of the Constitutional referendum.

Currency matters: 90% correlation in Italy between productivity and FX since 1970

Italy's current 20% average labour productivity (ALP) gap vs Germany and France stems from three periods: 1) 1979, when Italy entered the EMS with a +/-6% fluctuation boundary; 2) 1989, when it joined its peers in the narrower +/-2.25% boundary; and 3) 1996, when Italy revalued its currency by 8% to re-enter the EMS before anchoring the Lira to the Euro. Lack of monetary sovereignty, US rates tightening, ECB tapering, regulatory hurdles on banks' holding of govies and subdued GDP growth all suggest the current 1.5% funding cost of Italy is destined to rise and potentially affect the >€200bn govies to be refinanced in 2017. The unpredictable EU electoral calendar adds uncertainty as well.

Quantifying the cost of re-denomination: four variables suggest €280bn loss . . .

Redenomination in any Eurozone country is a function of the freedom allowed on the bonds issued under domestic law and the constraints of the recently introduced EU discipline on collective action clauses (CACs). We see four sources of losses: 1) €48bn govies under foreign law; 2) €902bn govies under the new CACs regime; 3) €210bn held by the ECB under QE subject to no risk sharing; and 4) €151bn public debt derivatives carrying €37bn MTM loss. Assuming 30% devaluation on the new currency, or 2x the cumulated inflation gap between Italy and Germany since joining the Euro, results in €280bn loss.

. . . partly offset by €191bn gain from the Lex Monetae on bonds under domestic law

With the Decree of the Minister of Economy and Finance n. 96717 of 7 December 2012, Italy agreed on the mandatory implementation of CACs on every sovereign issuance with maturity >one year. Based on our estimates the migration to CACs bonds in 2013-16 has left the country with €932bn domestic law bonds that could benefit from the *Lex Monetae*, which allows for debt payments in a new (devalued) currency. Such debt portion would crystallise a gain of €191bn in case of redenomination.

At the 'point of neutrality' today: redenomination tomorrow will be too costly

Even assuming Italy agrees with EU partners on inflating QE bonds away, our exercise suggests a mere €8bn gain. Italy is thus at the tipping point between gain from *Lex Monetae* and loss from CACs. We estimate by 2022 all govies will be under CACs, moving €30/40bn from gain to loss each year. This means a net loss of €381bn in 2022 versus, say, a potential gain of €285bn back in 2013 before CACs. We conclude that the redenomination benefit has already gone. Time costs money to Italy due to CACs and thus, purely on financial grounds, it reduces the *Italexit* risk and makes of any voluntary debt re-profiling a better option to eventually sustain its debt. This is before adding to the equation €672bn private debt under foreign law, which would increase the bill.

The market demands a higher yield for non CACs; the Quanto spread is higher than Spain's

We have compared CACs and non CACs pairs of Italian govies displaying similar features in order to test our 'time costs money' finding, i.e., that as time goes by the financial incentive for redenomination declines. Indeed, our data suggest 30bps yield premium on 3.5yr non CACs bonds actually drops to 10bps on 12yrs. The *Quanto* spread captures the 'convertibility risk' implied in the premium between USD and Euro denominated CDS. Our data suggest that at end 2016 for the first time Italy's *Quanto* exceeded Spain's confirming the crucial role Italy plays for the future of the Eurozone given a 90% correlation we found between the probability of Italexit and the probability of a Euro break-up.

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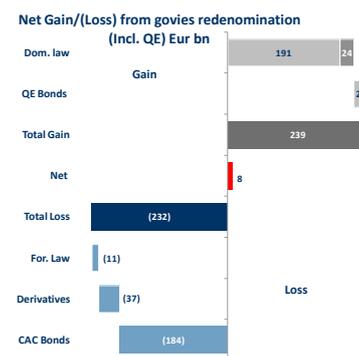
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No growth undermines debt sustainability

Post joining the euro, Italy's GDP stayed flat in real terms between 1999 and 2015 whilst it contracted by 7% from 2008 to 2016. The fiscal position of the country is negatively affected by its high public debt and the related cost of servicing it. It is therefore impressive that Italy has managed to run a primary surplus since entering the Eurozone, with the only exception being 2009. Indeed, only Belgium, with a 2.5% average primary surplus since 1995, has managed to exceed Italy's 2.1%. At the same time, however, only Greece has faced a higher interest burden than Italy, with an average 6.1% of GDP funding cost vs Italy's 5.5%. As such, we think currency matters even more in the case of Italy as a means to sustain its debt payments. We have seen the current 20% average labour productivity (ALP) gap that Italy has accumulated vs Germany and France since 1970 materialising in three periods: 1) 1979, when Italy entered the EMS with a +/-6% fluctuation boundary; 2) 1989, when Italy joined its peers in the narrower +/-2.25% boundary; and 3) 1996, when Italy revalued its currency by 8% to re-enter the EMS before anchoring the lira to the euro. This is confirmed by the 90% correlation we found for Italy between ALP and the exchange rate since 1970. It follows that subdued GDP growth, limited structural reforms, deflation and lack of monetary sovereignty will continue to represent challenges for Italy's debt sustainability.

QE clearly helped the country to buy time: we estimate that by end-2017, the ECB will own 13% of outstanding Italian debt, before tapering inevitably starts pushing yields up at a time when we expect regulatory hurdles to force Italian banks to reduce their holdings of domestic govies. The proposed cap of 25% of tangible equity for holding domestic govies will, for instance, result in the need to dispose of €150bn by the Italian banks under our coverage, i.e., nearly half of their current exposures. Not even the cost of funding benefit from QE can be taken at face value: if, on the one side, we estimate a €20bn cost of funding benefit from 2013 (when QE expectations started to affect the yield curve), on the other, we calculate a cumulated €21bn negative impact of low rates on the MTM of public debt derivatives over the same period. We believe a combination of the following suggests the current 1.5% cost of funding for Italy can only rise and start affecting the >€200bn in govies to be refinanced this year: 1) monetary tightening by the Fed; 2) tapering ahead by the ECB; 3) deflation in Italy (-0.1% in 2016); 4) inflation in the rest of the Eurozone (+1.1% in 2016) pushing for ECB tightening sooner or later; and 5) further fiscal tightening via the triggering of the safeguarding clauses potentially resulting in higher VAT penalising growth.

Our conclusion is that a voluntary debt re-profiling, an Italexit scenario, or a combination of the two will inevitably gain traction with investors given the lack of growth and/or significant discontinuity in the Eurozone macro-economic politics. This view seems to be confirmed by the Sentix Index, which estimates the one-year probability of Italy leaving the monetary union based on the assessments of institutional investors: a 2.5% average probability in the 2012-1H16 period spiked to a record 19.3% in November 2016 on the back of concerns about systemic risk in the banking sector and political uncertainty, before moderating to 15% most recently.

No growth since joining the euro

GDP has contracted by 7% since 2008 . . .

Italy is one of the countries worst affected by having joined the euro, seeing the lowest growth among European peers since the introduction of the common currency. Over the last 15 years, Italy has achieved zero GDP growth while contracting by 7% since the peak in 2008. It is therefore no surprise that the IMF only expects GDP to recover to its peak level in real terms in 10 years' time. Such a poor performance is reflected by the situation of the manufacturing industry: once the backbone of Italy's economy and the main example of Italian industriousness and excellence, the sector's added value in real terms is currently below the levels reached in the 1990s, with output

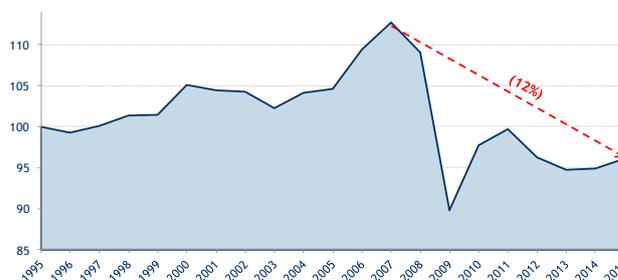
having shrunk by 12% since the onset of the crisis. The consequence of this situation is seen today in the books of Italian banks, which now have a total of €360bn in doubtful loans.

It remains difficult to envisage a change of direction in the country's economic growth in the current environment given Brussels' focus on reducing fiscal deficits rather than increasing investments.

Italy's GDP in real terms - 1995-2015 (1995=100)



Italy's manufacturing industry added value in real terms 1995-2015 (1995=100)



Source: Mediobanca Securities, ISTAT

... in spite of a consistent primary surplus ...

Italy's fiscal position is heavily penalised by its high level of public debt and the related cost of servicing it. It is therefore remarkable that Italy has managed to run a primary surplus since entering the Eurozone, with the only exception being 2009.

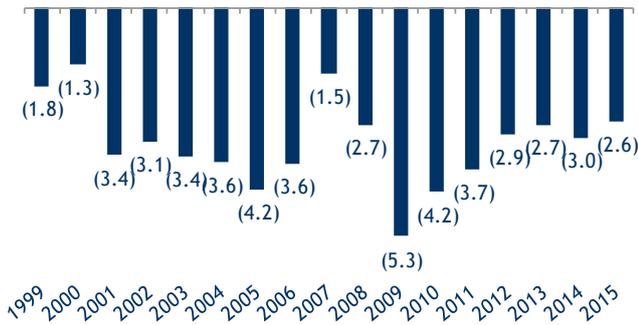
Italy's primary balance/GDP ratio - 1999-2015



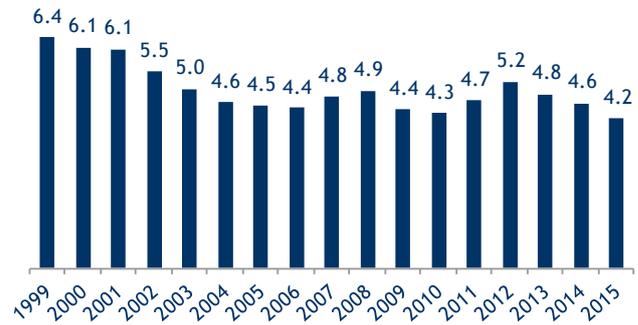
Source: Mediobanca Securities, Eurostat

When interest service on public debt is added back, the net lending/net borrowing of the Italian government turns negative. As we show on the right-hand side chart below, we estimate that interest service on debt has ranged between 4.2 and 6.4 pp of GDP since 1999.

Italy's net lending (+) or net borrowing (-) to GDP ratio (%) 1999-2015



Italy's interest paid/GDP ratio - 1999-2015 (%)

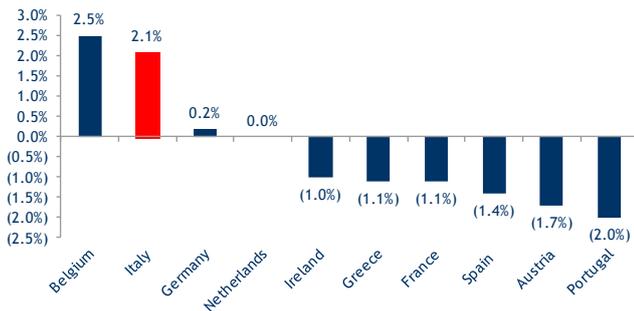


Source: Mediobanca Securities, ISTAT

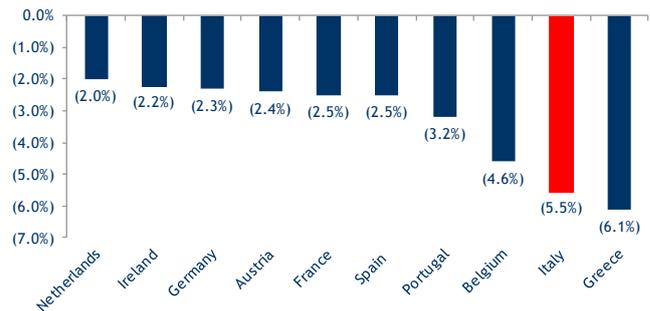
... leading the Eurozone pack

The very peculiar positioning of Italy on the fiscal side is even more apparent when we contrast it to its main EU partners. As we show below, only Belgium has managed to exceed Italy's primary surplus level since the mid-1990s. However, in contrast, only Greece has faced a higher interest burden than Italy when it comes to servicing its debt over the same period, with an average of 6.1% of GDP vs Italy's 5.5%.

Average primary balance as a % of GDP since 1995



Average interest cost as a % of GDP since 1995



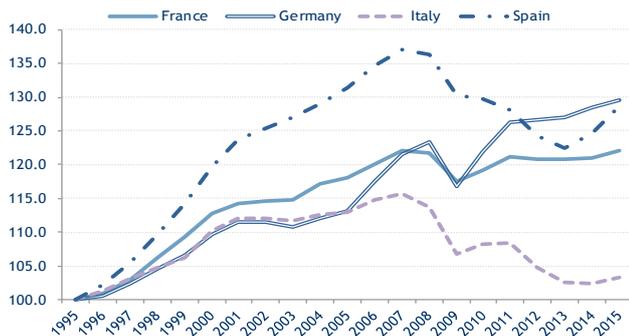
Source: Mediobanca Securities, IMF

Growth is necessary to support debt

Currency matters . . .

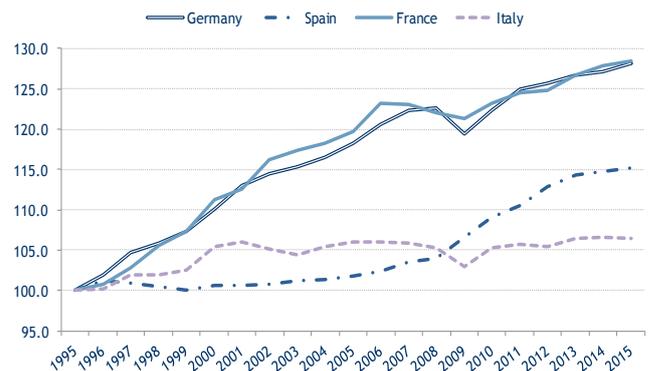
In real terms, Italy has not been able to generate any wealth since the introduction of the euro, with current GDP per capita at constant prices just slightly above 1995 levels. This mirrors the path of real labour productivity, which seems to have ceased to improve since the mid-1990s.

GDP per capita, constant prices 1995-2015 (1995=100)



Source: Mediobanca Securities, ISTAT

Real labour productivity per hour worked - 1995-2015 (1995=100)



However, it remains our view that public debt issues are the symptom rather than the cause of peripheral Europe's low-growth malaise. Private, not public, debt has been the trigger of the crisis, and Italy is no exception. Eurozone private debt increased by 27 pp of GDP in 1999-2007 vs public debt having declined by 6 pp (-10 pp in Italy, -25 pp in Spain).

Public and private debt trends as % of GDP - 1999/2007

	Public Debt (% GDP) 1999	Public Debt (% GDP) 2007	Public Debt (p.p. change 99-07)	Private Debt (% p.p. change 99-07)
Eurozone	71	65	(6)	27
Greece	99	103	4	58
Italy	110	100	(10)	38
Spain	61	36	(25)	98
Portugal	51	68	17	61
Ireland	47	24	(23)	na

Source: Mediobanca Securities, Eurostat

. . . especially when *beggar-thy-neighbour* is at play

It is thus the need to rescue the private sector, coupled with austerity, which has made public debt/GDP explode after 2007, especially in the periphery. The widening gap in the ECB's Target 2 between the core and the periphery since then better captures this trend and explains the widening cost of funding between the two regions. This mirrors the widening current account (CA) gap between the core and the periphery since 2002. It was a CA deficit of between 5-15% of GDP in 2004-2008 that got Greece into trouble, mainly due to the sudden curtailment of investment. Italy's CA deficit has ranged between 0% and -4% of GDP since entering the euro, mainly due to a 5 pp lower private savings rate while public savings remained stable at -3 pp of GDP. As such, we argue that currency matters, as the euro amplified the North vs South competitiveness gap captured by the CA balance. Indeed, in 1999-2Q16, Germany accumulated a CA surplus of €2.1tn (75% of its 2015 GDP), nearly 2x the peripheral Europe cumulated CA deficit of €1.2trn over the same period.

EU countries - Cumulated current account balances since the introduction of the euro, 1999-2Q16

Country	1999-2Q16 (€bn)	as % GDP, 2015
Germany	2,096	75%
Netherlands	620	99%
Finland	70	36%
Belgium	34	9%
Austria	96	31%
Luxemburg	46	96%
France	(40)	(2%)
Slovakia	(25)	(35%)
Estonia	(10)	(54%)
Malta	(1)	(24%)
Spain	(631)	(63%)
Italy	(154)	(10%)
Greece	(248)	(153%)
Portugal	(194)	(117%)
Ireland	(11)	(5%)
Cyprus	(11)	(68%)
Slovenia	2	5%
Total EU periphery	(1,248)	(40%)
Total Eurozone	1,638	17%

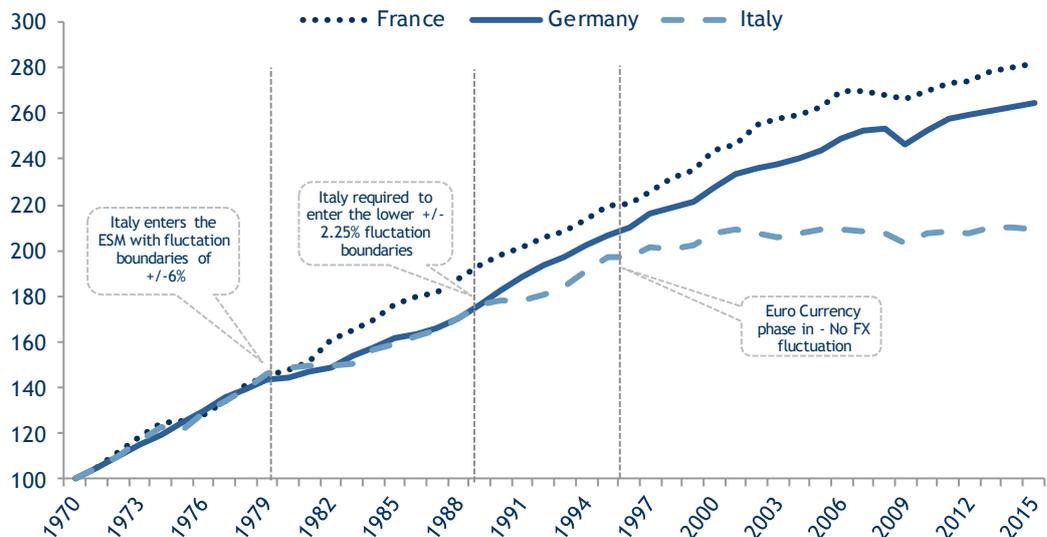
Source: Mediobanca Securities, IMF

Three FX issues explain Italy's lack of competitiveness

Such an asymmetric re-equilibrium shows a dangerous *beggar-thy-neighbour* zero-sum game in the Eurozone. This is very much the case for the export-led Italian economy, which historically made excessive devaluation the oil of its growth engine and the band-aid for implementing structural reforms.

Three time periods explain the 20% average labour productivity (ALP) gap that Italy accumulated vs Germany and France since 1970: 1) 1979, when Italy entered the EMS in the +/-6% fluctuation boundary; 2) 1989, when Italy joined its peers in the narrower +/- 2.25% fluctuation boundaries; and 3) 1996, when Italy revalued its currency by 8% to re-enter the EMS before anchoring the lira to the euro.

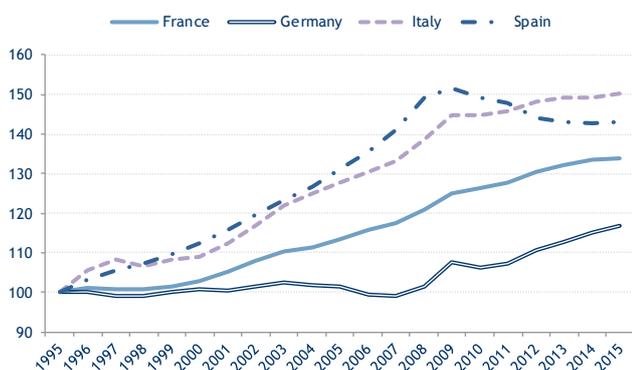
Average labour productivity in Italy, France and Germany, 1970-2015



Source: Mediobanca Securities, OECD, Asimmetrie

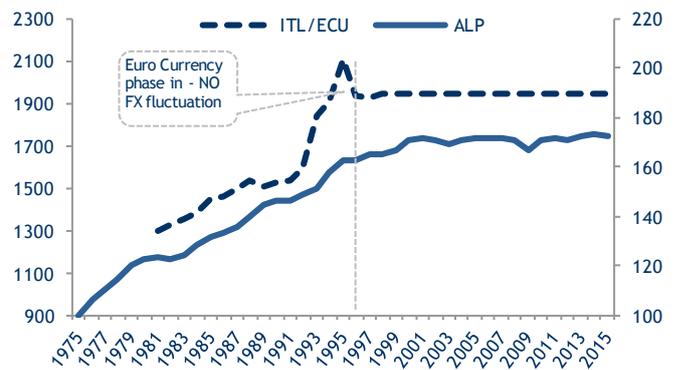
This means that Italy has a competitive gap to fill if it wishes to return to a robust growth path and thus manage to sustain its debt. A combination of job market rigidity, above-average unit labour costs and lack of FX flexibility all contributed to the subdued growth seen in the last two decades. This is probably best summarised in the right-hand chart below, which shows the correlation between Italy's average labour productivity and the lira exchange rate/ECU until 1999, after which the rate was fixed against the euro. Indeed, over the 1970-2015 period, we find a 90% correlation between ALP and exchange rate.

Unit labour costs - 1995-2015 (1995=100)



Source: Mediobanca Securities, OECD, Asimmetrie

Italian average labour productivity vs exchange rate - 1975-2015



Debt/GDP ratio on the rise

Denominator struggling . . .

In the last three years, Italy's GDP has returned to growth in real terms. In 2016, the country was able to continue the recovery begun in 2014, benefiting from exogenous factors such as QE and low oil prices.

Italy's GDP growth - 1995-2016



Source: Mediobanca Securities, Eurostat

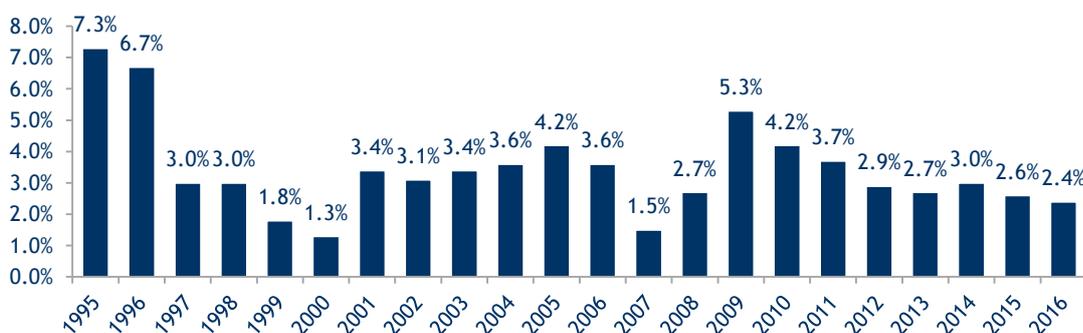
However, it is reasonable to expect 2017 to represent a challenge for the Italian economy. Indeed, growth estimates for 2017 range between 0.9% (Bank of Italy, European Commission, ISTAT) and 1% (Ministry of Economy and Finance). Three factors are worth mentioning, in our view:

- ◆ Brussels requested €3.5 extraordinary fiscal package this year with a possible mix of spending review and VAT hikes (already provided for by the safeguarding clauses). Such a scenario is also the result of the possible implications for the health of Italy's public accounts of the emergency funds (€20bn) allocated at year-end 2016 by the newly established government of Prime Minister Paolo Gentiloni with the Decree "Salva-Risparmio" designed to create a protective shield to the banking system.
- ◆ The phasing out of fiscal incentives for new hires related to the Jobs Act which could result in a deceleration in employment growth.
- ◆ The possible increase in the cost of funding in connection with the ECB's tapering of QE and the consequent implications for the real economy.

. . . and the numerator is only going up

It is equally difficult to pursue strategies for reducing the debt/GDP ratio based on the numerator decrease. The nominal deficit has been on a decreasing path over the last two years mainly due to the lowering of the interest burden allowed by the QE launched by the ECB in March 2015.

Italy's deficit/GDP ratio - 1995-2016



Source: Mediobanca Securities, Eurostat

Indeed, interest servicing largely explains the consistent rise in Italy's debt/GDP ratio.

- ◆ We estimate that since 2010, Italy issued net debt of €357bn, mostly aimed at servicing the interest on its existing jumbo debt.
- ◆ This resulted on average in about 4.6% of GDP in interest expense, which more than offset a sizeable primary balance surplus of 1.4% on average over the same period.
- ◆ The large part of the extra debt issuance not due to interest service over such period was due to the contribution to the European Financial Stability Facility (EFSF, now ESM), mostly between 2012 and 2013, amounting to 2.1% of GDP. This is confirmed by the fact that public administration spending increased by only 0.6% CAGR over the period.

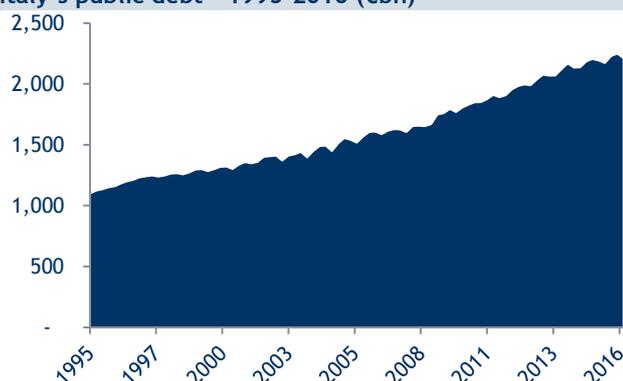
Italy's key public debt accounts - 2010-2015 (€bn)

	GDP	Net indebtedness a=(b-c)	Net indebtedness as a % of GDP	Debt outst	Interest paid/GDP ratio	Interest paid (b)	Public administration expense before interest	Public administration expense before interest as a % GDP	Primary balance as a % of GDP	Primary balance (c)	Net debt issuance	Excess/(Deficit) debt issuance
2010	1,641	(69.3)	4.2%	1,852	4.3%	71	730	44.5%	0.0%	0.7	79	10.1
2011	1,637	(57.0)	3.5%	1,908	4.7%	77	732	44.7%	1.2%	19.6	57	0.0
2012	1,613	(47.5)	2.9%	1,990	5.2%	84	735	45.6%	2.2%	35.5	49	1.0
2013	1,605	(47.0)	2.9%	2,070	4.8%	77	739	46.0%	1.9%	30.5	83	35.6
2014	1,620	(48.9)	3.0%	2,137	4.6%	75	751	46.3%	1.6%	25.9	58	9.4
2015	1,642	(42.4)	2.6%	2,173	4.2%	69	759	46.2%	1.6%	26.3	31	(11.1)*
Cumulated 2010-15	-	(312.1)				451.9	29			138.5	357.1	45.1

Source: Mediobanca Securities, ISTAT, Bank of Italy, MEF, *Treasury liquidity deployed

The result of the above is that Italy has moved further and further away not only from the benchmark-parameter of 60% set in 1992 by the Maastricht Treaty, but also from the re-entry routes provided by the most recent revision of the Stability and Growth Pact (the *Six Pack*). The rules established by Europe regarding the size of public debt (in force since 2015) require that member countries with debt/GDP ratios above 60% must undertake a reduction plan to be completed within 20 years (i.e., with an annual reduction therefore equal to 5% of the difference between the actual level of the ratio and the 60% requirement). Italy is far off the European targets.

Italy's public debt - 1995-2016 (€bn)



Source: Mediobanca Securities, Bank of Italy

Italy's debt/GDP ratio - 1995-2016



Source: Mediobanca Securities, Bank of Italy

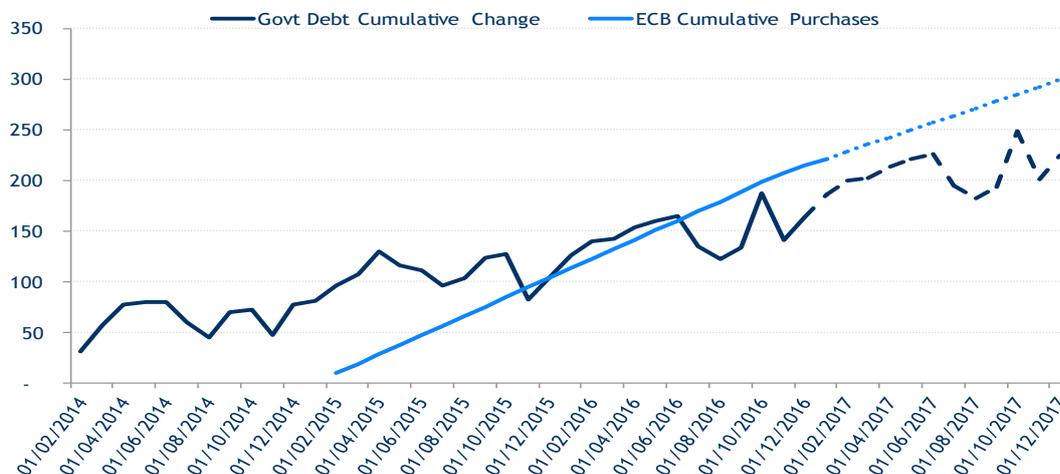
ECB tapering, banks' regulatory constraints and MTM of derivatives

ECB purchases under QE set to reach 13% of outstanding debt in 2017 . . .

So far, the ECB has bought €210bn of Italian debt via QE and we estimate that by end-2017 this will reach €300bn. This means that the ECB is responsible for buying 13% of the total debt outstanding in Italy. As such, tapering of QE will leave Italy without the key buyer of its debt. In the chart below, we outline the cumulative change in Italian sovereign debt and the cumulative ECB purchases under

the QE programme. We note that the central bank has become the main funder of Italy's deficit and has purchased more than 100% of its cumulative change already in 2016.

ECB's cumulative purchases of Italy's debt vs cumulative change in Italy's debt 2014-17e (€bn)



Source: Mediobanca Securities, Bank of Italy, ECB

... while banks will face significant regulatory hurdles ...

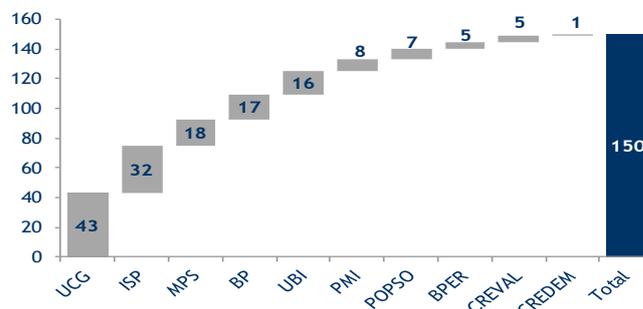
At the same time, regulatory pressure could force Italian banks to significantly reduce their holdings of domestic debt. Italian banks are the largest holders of Italian sovereign debt, at about 60% of the total outstanding. Indeed, over the last few years, banks have increased their exposure to such securities in order to exploit the extraordinarily cheap liquidity provided by the ECB through carry trade and supported by a favourable capital treatment which implies zero risk weighting. However, more recently, the regulator and some market participants have pointed to the riskiness of such treatment and proposed the introduction of floors, capital requirements and/or limits to banks' holding of sovereign debt securities. There are various proposals on the table, but the outcome for BTPs will likely be negative, as this might increase selling pressure and make it more difficult for the government to finance its debt. In the chart below, we estimate €150bn of BTPs to be potentially disposed of should the current proposal of a 25% cap on tangible equity as the maximum level allowed be passed.

Resident financial institutions' ownership of Italian bonds 2008-2015 (€bn)



Source: Mediobanca Securities, Bank of Italy

Italy's main banks - Govies disposal to cope with 25% Rule (€bn, 2015 - 2016)



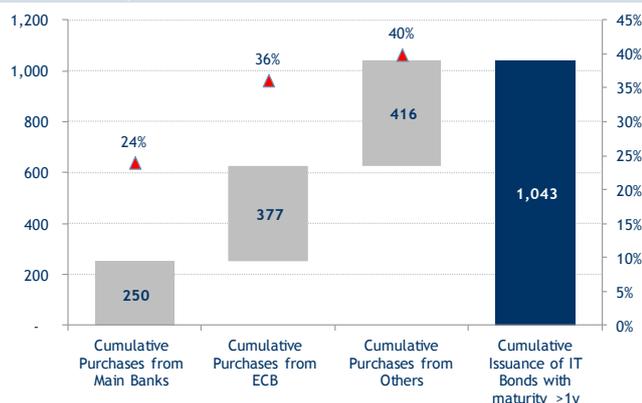
Source: Mediobanca Securities, Company data

... leaving the country with a €1tn BTP ownership problem over 2019-2022 ...

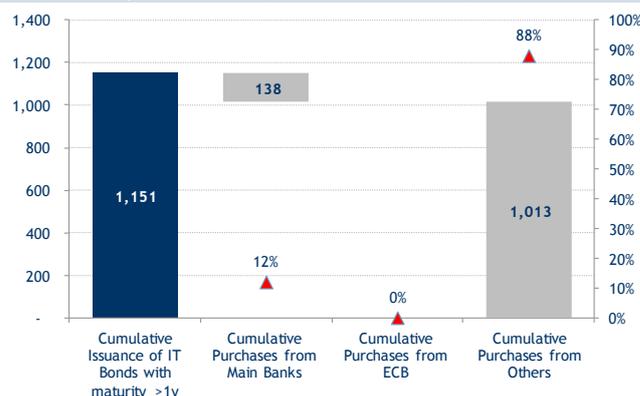
It follows that unless a significant increase in domestic buying occurs outside of the banks, Italy might face a significant increase in its cost of funding when QE tapering and regulatory hurdles materialise. In the charts below, we show the breakdown of purchases of Italian bonds and their issuance, cumulatively, in the periods 2015e-2018e and 2019e-2022e to explain the relevance of the ECB's and the main banks' purchases. Indeed, if so far those have been the main institutions to

finance Italian debt, the end of the QE programme and potential regulatory tightening with regard to banks' holdings of sovereign debt could jeopardise the sustainability of Italy's debt or at the least lead to a significant rise in yields. In the charts below we assume that banks would have to purchase 50% less sovereign bond issuance and that the QE programme will expire at end-2018. As such, Italian bonds would have to find additional buyers for the >€1tn that we estimate will be issued cumulatively between 2018 and 2022.

Cumulative issuance of Italian debt with maturity >1y and purchases by institution, 2015e-18e (€bn)



Cumulative issuance of Italian debt with maturity >1y and purchases by institution, 2019e-22e (€bn)

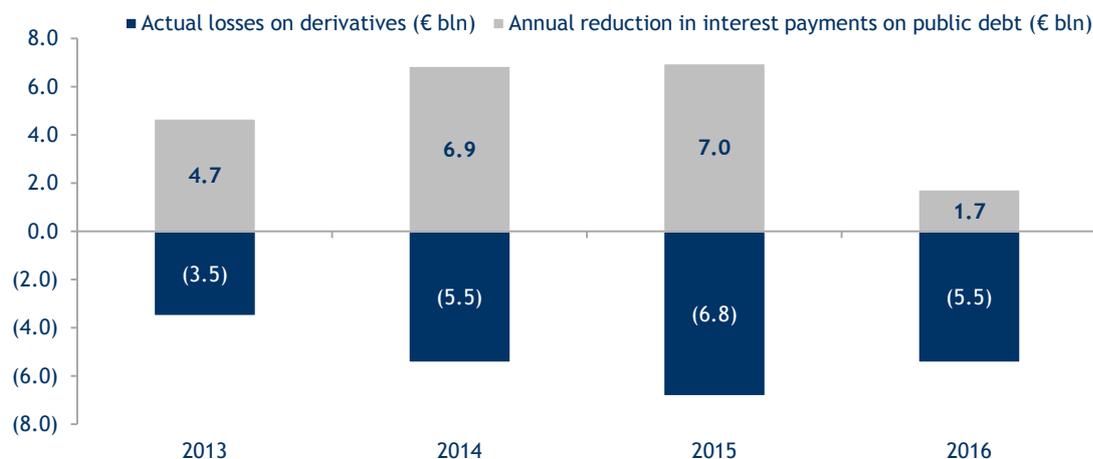


Source: Mediobanca Securities, Bank of Italy, Bloomberg

... while derivatives offset the cost of funding benefit of QE

The benefits of the ECB's QE programme in terms of a reduction in interest payments, however, must be interpreted cautiously. On the one hand, the extraordinary purchases by the ECB have enabled the Italian Treasury to place government bonds at exceptionally low rates, while on the other, over the last four years, these savings in interest expenditure have been substantially zeroed by the implicit net payments that the state is facing in respect of its outstanding positions in derivatives contracts on government debt. Although since the new national accounting system (ESA 2010) started to be used in September 2014, charges related to derivative contracts are no longer counted in interest payments on the debt, those charges must still be financed by public funds and, therefore, aggravate the increase in the stock of public debt.

Interest savings from QE vs derivatives MTM (2016 Estimate)



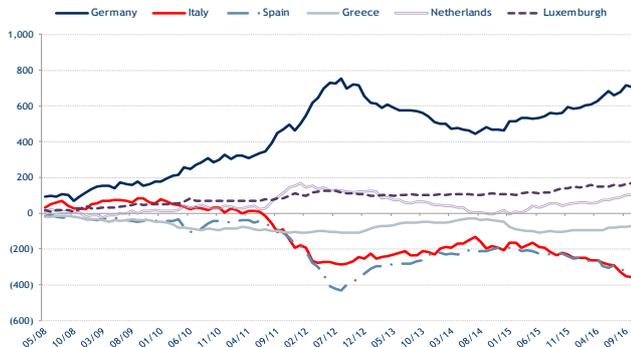
Source: Mediobanca Securities. ISTAT, MEF

Target 2 captures the problem

Imbalance between core Europe and periphery continues to widen

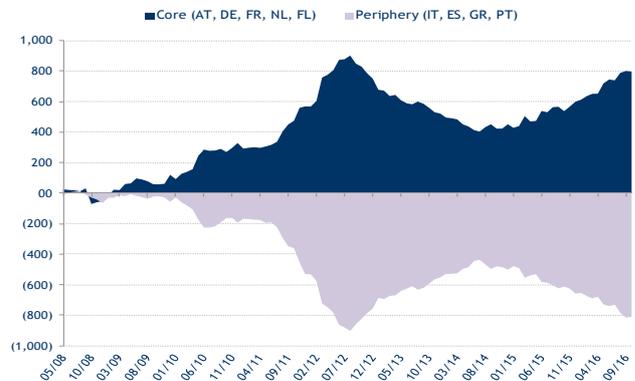
At October 2016, Italy's net Target 2 balance was a negative €355bn, a €132bn increase yoy.

Target 2 net balance - Breakdown by main countries 2008-2016 (€bn)



Source: Mediobanca Securities, ECB

Target 2 net balance - Breakdown by main areas 2008-2016 (€bn)



The main outflows Italy recorded in the last few years (2014-2016) stem from the net purchases of foreign fund shares by Italian residents, followed by domestic banks and other investors' increased holding of foreign debt securities, albeit in the last months the acceleration is also related to another emerging phenomenon: the reduction of the net borrowing of Italian banks (-€50 billion from June to October 2016). Net borrowing has decreased due to the substantial reduction of deposits abroad and the missed renewals of existing loans. These phenomena signals a stress on the Italian banking sector's funding practices similar to what happened in 2011-2012.

Italy's Target 2 net balance 2008-2016 (€bn)



Source: Mediobanca Securities, ECB

Selected entries of Italy's Financial Account and Target2 Net Balance 2011-2016



Diving into the Target 2 balances

Complex technicalities hinder a clear explanation of the driving components of the Target 2 central banks' accounting method. Even the same ECB is explicitly warning not to make bold assumptions from analysis of these data since simplistic explanations could lead to wrong conclusions. Some academic research on the importance of Target 2 balances has progressed considerably from the seminal but disputed work of Sinn (2012). Prof Sinn's research has the merit of attracting attention to the relationship between the current accounts and the Target 2 balances of Eurozone countries. A surplus in the current account should lead to a positive Target 2 net balance, and vice versa. In

this perspective, Sinn considers the Target 2 balances in terms of a “*stealth bail-out*” of peripheral countries by the creditor central banks. According to Sinn, in case of a “debtor” central bank leaving the Eurosystem, its Target 2 net balance would become immediately payable. A subsequent default of the debtor central bank would turn into a net loss for the Eurosystem to be absorbed jointly by all the remaining members (risk mutualisation or risk-sharing). Whelan (2012 and 2014) contested this view pointing out that any central bank can always operate with “negative equity” (i.e., it can offset losses by “printing money”, without fiscal transfers from the taxpayers). Szécsényi (2015) suggested that Target 2 assets and liabilities could eventually lead to losses in case of a Euro break-up, but these should be a lot less than the raw net imbalances.

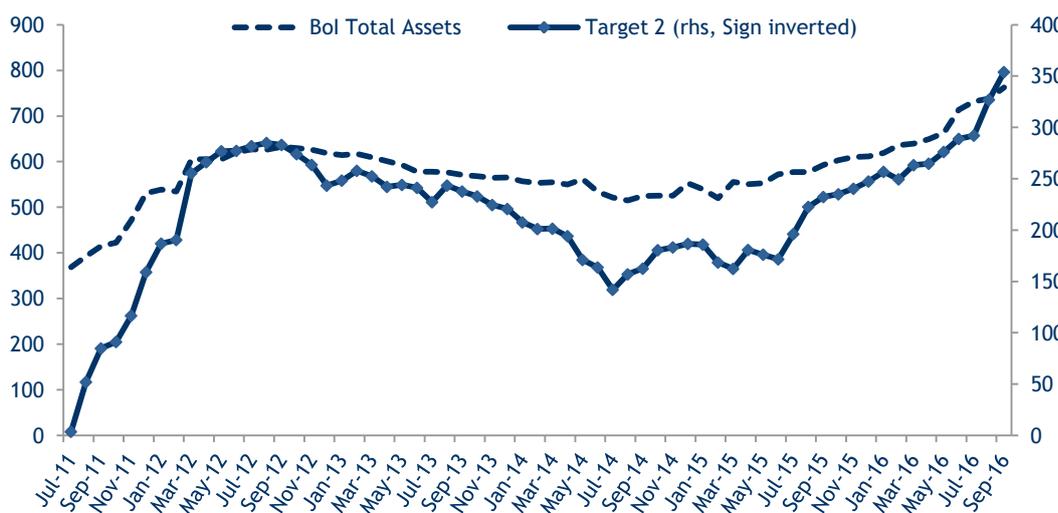
Current account - Main countries 2008-2Q2016 (€bn)



Source: Mediobanca Securities, Eurostat

Anyway, it should not be missed the strong correlation between the size of the ECB balance sheet and NCBs' Target 2 numbers. When the ECB inflates its accounts via expansionary measures, newly created money flows towards Eurozone banks that use it to regulate different kinds of transactions. When they are settled and accounted, these operations produce variations in the Target 2 net balances.

Correlation between NCBs' total Assets and Target 2 Balance 2011-09/2016(Eur Bn)



Source: Mediobanca Securities, Bank of Italy

In the recent past, the ECB's LTROs and other unconventional measures have supplied over €1 trillion to the Eurozone banks (€ 270 billion to Italy alone), that have been employed to finance the capital flight and transfer risk, mainly from the core banking system to the ECB. When LTROs repayments began in 2013, the ECB balance sheet gradually deflated along with the Target 2 net

balances. The cycle restarted in June 2014 when Mr. Draghi launched the new T-LTROs in an effort to revive the sluggish Eurozone credit growth. In March 2015, PSPP's launch accelerated the growth of ECB assets and had widened the spread between Target 2 net balances. New money flows reached Eurozone banks but only partially were employed to increase the exposure on national government bonds, as happened in 2012 with the original LTROs.

In summary, foreign investment by the non-banking sector played a larger role in dragging down the Target 2 balance. As of October 2016, over €220 billion has shifted from Italy towards mutual funds located in Luxembourg, Netherlands and Germany. Only 20% of them can be traced back to Italian entities (i.e., round trip funds). The hunt for yield in a unprecedentedly low interest rate environment can explain only part of this sustained capital flight, mainly towards Northern Europe. Subtle but persistent redenomination risk (the risk that a euro asset will be redenominated into a devalued legacy currency after a partial or total Euro break-up) is also behind the outflows of Italian assets in our view.

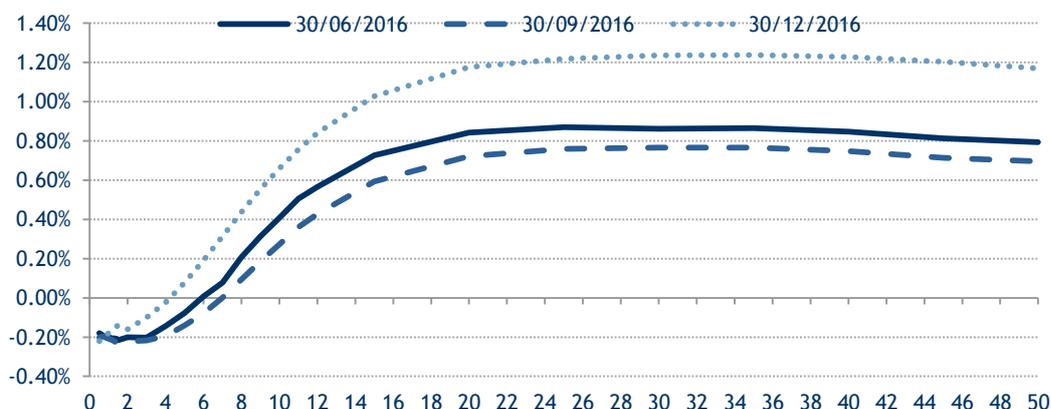
'Italexit' risk perception spiked at the end of 2016

Some >€200bn in govies will have to be refinanced in 2017, with new issuances and an estimated average cost, under current market conditions, of approximately 1.5% for the medium/long-term component, which represents the lion's share.

Tapering *de facto* already started

Several occurrences this year could reverse the low-yield scenario of the last few years. Besides the implications of the Fed's monetary tightening, what matters most is the fact that tapering started *de facto* by the ECB in December 2016 with the decision to extend the purchase programme of public debt securities until (at least) September 2017, but also to trim the size of the monthly average purchases from €80bn to €60bn. As shown below, this decision has already resulted in a significant upward shift of the Eurozone yield curve.

Eurozone yield curve at select dates - June, September and December 2016



Source: Mediobanca Securities, Istat, MEF

In addition, inflation data show the worst possible mix for Italy: the country ended 2016 in a deflationary state, at -0.1%, which *per se* does not help debt sustainability. At the same time, this happened in a general context of Eurozone's reflation (+1.1% yoy mainly driven by the German figure), which might prompt the ECB to announce monetary tightening this September, i.e., opting to end its purchases.

Cost of servicing the debt can only rise

Ultimately, such a scenario could contribute to increasing the refinancing cost of the Italian debt well above the 1.5% estimated under current market conditions, thus leading to a significant widening of the spread over the Bund, potentially making Italy vulnerable to speculative pressure. As shown below, in the final months of 2016, there were already signs of tension in the BTP-Bund spread, which are explained by the markets' reactions to the ECB's decision to taper and to the

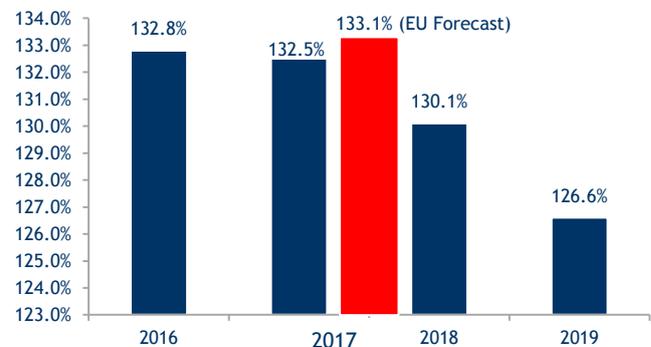
concerns surrounding the Italian banking sector. Although after the peak reached in late November 2016 (close to 190 bps), the spread has declined slightly, the trend experienced throughout 2016 was clearly negative: in January 2016, the yield spread on the Bund for the 10-year maturity was around 95 bps; at end December 2016, it was up to 165 bps.

10yr BTP-Bund yield spread - 2016



Source: Mediobanca Securities, Bloomberg

Debt/GDP estimates: Rome vs Brussels 2016-2019e



Source: Mediobanca Securities, EC, MEF

A voluntary debt re-profiling could be an option if no-growth persists . . .

It therefore looks most likely to us that debt sustainability will remain at the heart of the debate in Italy and that Brussels will continue to question the soundness of the public accounts of the country. The right-hand chart above shows the forecast of the debt/GDP ratio according to the Italian Treasury under the Programmatic Scenario (planned reforms will be successfully implemented). According to this forecast, the ratio should start to decline this year from 132.8% to 132.5%. But, the European Commission disagrees: in its latest forecast, the Commission expects that Italy's public debt vs. GDP will continue to increase, reaching 133.1%.

This situation might sooner or later prompt the country to consider some sort of re-profiling of its debt, we believe. In the next chapter, we attempt to estimate the room for manoeuvre on the re-denomination front when taking into account public debt issued under domestic vs foreign law, and when adding CACs to the equation.

A voluntary debt exchange offer could therefore be the most realistic way to return Italy's debt to a sustainable path. This could be achieved via maturity extension, via lowered coupons or via a combination of the two. A recent German proposal (Lars Feld and the German Council) suggests such a scenario as a pre-condition to accessing ESM support for the banking sector:

- ◆ Maturity extension required if debt/GDP ratio exceeds certain levels (60-90%);
- ◆ refinancing volumes exceed 15-20% of GDP;
- ◆ two to three violations of fiscal rules in the last five years;
- ◆ deeper restructuring required if debt/GDP ratio exceeds 90%; and
- ◆ new class of bonds to be issued with Creditor Participation Clauses with three key changes versus CACs bonds: 1) single limb voting for CAC to avoid holdouts (75% majority) and amendment to *pari passu* clauses; 2) enforced moratorium anchored in the ESM Treaty; and 3) phase-out of privileges for sovereign debt in banking regulation.

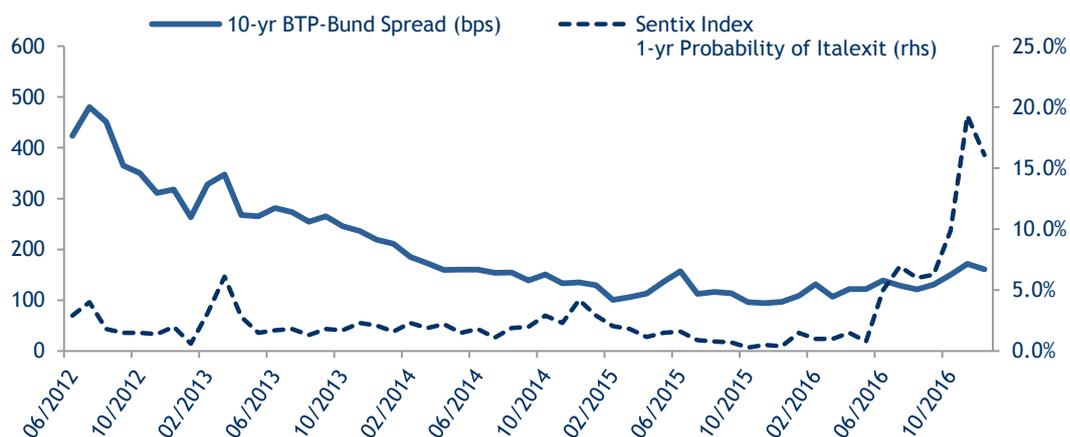
. . . or the 'Italexit' and re denomination debate will gather pace

Without these changes, the debate regarding a unilateral exit from the Eurozone and a consequent return to the lira looks likely to gain momentum based on the political situation in Rome post the next elections, which we expect to take place in spring 2018, and depending on the electoral outcomes in France and the Netherlands this spring. The redenomination of (a part of) the public debt and the psychological depreciation of the lira could support a substantial curtailment of the debt and, together with the new-found monetary sovereignty, could create the conditions for a genuine reboot of the Italian economy. However, our conclusions in the next chapter will show that

time has gone to cash in the benefit from re denomination given roughly half of the Italian debt is already constrained by CACs.

The market was already starting to signal signs of stress in 2H16. The *Sentix* index has recorded a jump from an average of 2.5% in the 2012-1H16 period to a maximum of 19.3% in November last year. The chart below compares the trend of the *Sentix* one-year probability of an Italexit with the pattern of the 10-year BTP-Bund spread over the June 2012-December 2016 period.

Sentix index (1-Yr probability of *Italexit*) and 10-year BPT-BUND spread -2012-2016



Source: Mediobanca Securities, BBG

Strategy options for the Government

It has to be considered that in a redenomination scenario the Government cannot ignore the need to preserve the access to financial markets in order to ensure that the Treasury's needs of debt refinancing will be successfully satisfied.

On that basis, it is quite likely that the Government will act as follows:

- ♦ it will not engage in litigations with the bondholders that have the “CACs requirements”, meaning sufficient stakes in bonds with CACs to block the redenomination;
- ♦ it will change the conduct of the Bank of Italy (by removing the “divorce rule” established in 1981) in order to ensure that the national central bank can manage its holdings of sovereign securities in order to favour the debt redenomination (despite the presence of CACs); and
- ♦ it will apply the *Lex Monetae* enshrined in Article 1277 of the Civil Code on all the remaining public debt securities governed by domestic law.

Based on these three assumptions, in the following chapter we quantify the potential losses and gains that might stem from a redenomination scenario on the Italian debt.

Quantifying the cost of redenomination

As a result of the ‘domestication’ that started in 2011 nearly two-thirds of the Italian debt is now held domestically (largely by financial institutions), which is well above the EU average. In theory, this should make any Italian debt redenomination easier to manage. In practice, however, the room for manoeuvre for any Eurozone country in redenominating its own debt is today a function of the freedom allowed by the so-called *Lex Monetæ* and the constraints recently introduced by the new EU discipline on CACs.

In order to quantify the potential magnitude of the redenomination problem, our analysis focuses on four sources of losses: 1) the €48bn Italian debt issued under foreign law and thus not allowing for any redenomination; 2) the €902bn in govies already affected by the recently introduced new ‘reserved matter’ CACs regime; 3) the €210bn in bonds held by the ECB under the QE programme; and 4) the €151bn in notional public debt derivatives carrying an implied €37bn MTM loss.

Assuming 30% FX devaluation in case of exit – i.e., 2x the cumulated inflation gap between Italy and Germany since entering the euro – implies a total €280bn redenomination loss today, broken down as follows: €184bn on CACs bonds, €11bn on foreign law bonds, €37bn on derivatives and €48bn on QE bonds due to no risk sharing. This contrasts to a €191bn gain from the *Lex Monetæ* which we apply to the bonds under domestic law. Assuming Italy will fight hard and obtain a green light from EU partners on inflating QE bonds away, the a net gain from redenomination would be just €8bn.

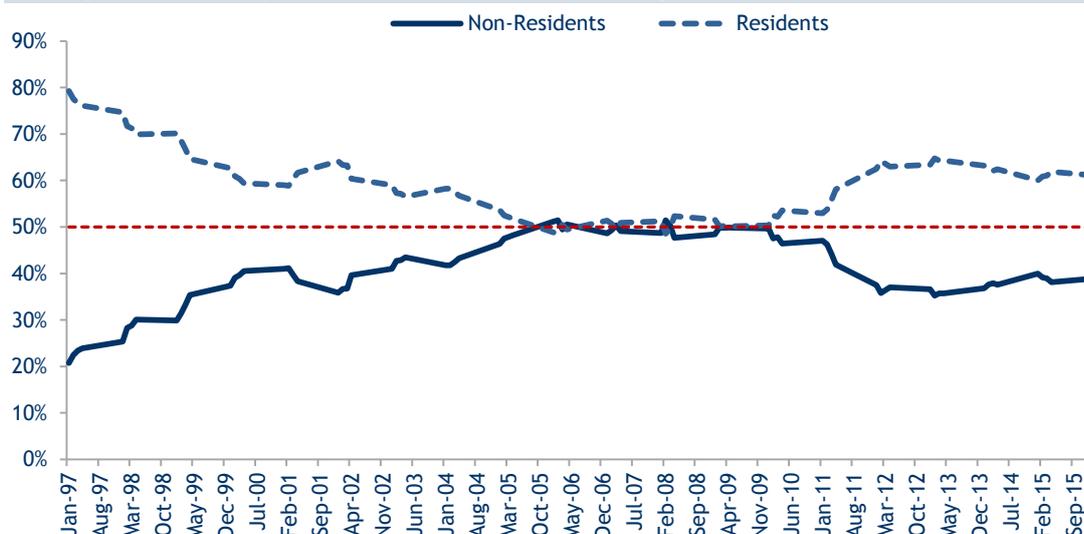
With the Decree of the Minister of Economy and Finance n. 96717 of 7 December 2012, Italy agreed on the mandatory implementation of CACs on every issuance of sovereign debt with maturity >one year. The result is that based on our estimates over the 2013-16 period nearly half of all outstanding Italian bonds, or €902bn, have included CACs. The migration of nearly half of its debt to CACs is why Italy is today sitting on a ‘point of neutrality’ between gains from *Lex Monetæ* and loss from CACs. We estimate that by 2022 all Italian bonds will be under CACs, which will move €30/40bn from gain to loss each year. This will result in a cost of redenomination of as much as €381bn in 2022 versus for instance a gain of €285bn in 2013 at CACs introduction. Time thus costs money for Italy’s redenomination. This is why on the one side we understand investors’ concern for Italexit as time goes by, since the lack of growth and the high unemployment rate potentially represent strong incentives to eventually exploit monetary sovereignty. However on the other side our analysis shows that purely on financial grounds the opposite is true: it is too late to benefit from redenomination; from now on it will actually cost money to the country. And this is even before adding the private debt to the equation, which would surely make things even less palatable.

Breaking down the ownership of Italian debt

The ‘*Domestication*’ of Italian debt started in 2011 . . .

In the chart below, we show the breakdown of Italian government securities between resident and non-resident investors in the 1997-2016 period. It is interesting to observe that from 1997 to 2006, due to the effect of Italy’s entry into the European Monetary Union, there was a net reduction of the home country bias and a consequent increase in the share of government bonds in the hands of foreign investors, from 20% to over 50%. The fifty-fifty allocation between resident and non-resident investors remained more or less constant until 2010. From 2011, a new phase started, characterised by the deleveraging of foreign investors, who progressively reduced their holdings of Italian government bonds, thus creating the so-called ‘domestication’ of the public debt, which has been experienced also by other peripheral Eurozone countries. Based on 30 November 2016 data published by the Ministry of Economy and Finance, we estimate that out of €1.9tn in government bonds, resident investors hold around €1.2tn, with non-resident investors holding the remaining €700bn.

Italian govies ownership - Resident vs non-resident holdings - 1997-2015

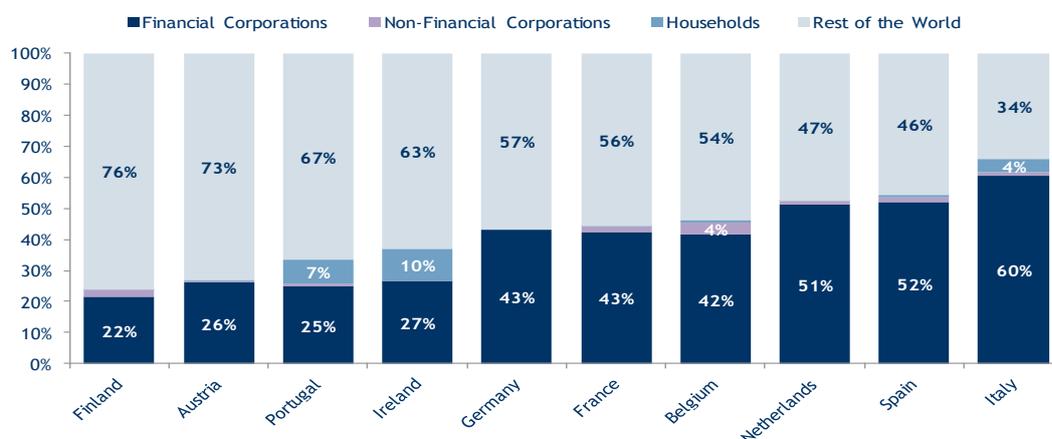


Source: Mediobanca Securities, Bank of Italy, Brugel

... leading to much higher domestic ownership vs EU peers ...

The nearly two-thirds domestic ownership of Italy's government debt compares with only 43% for Germany, 44% for France, and 52% for Spain.

General government gross debt by debt holder, 2015



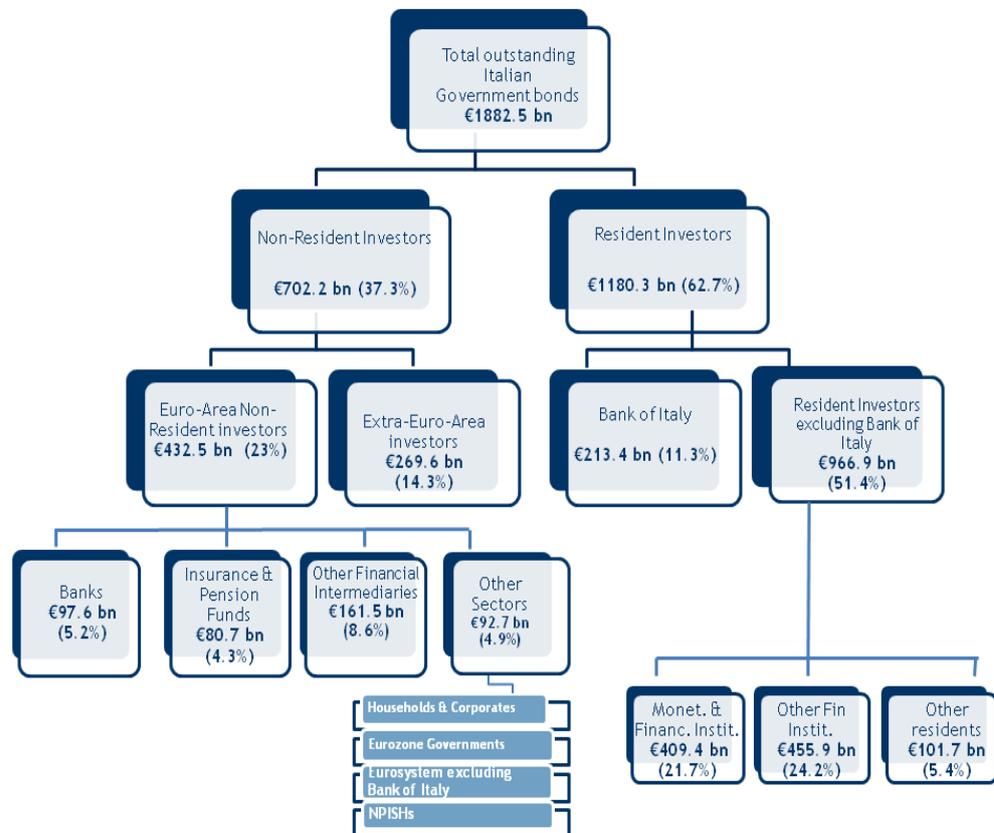
Source: Mediobanca Securities, Eurostat

... which is largely held by the banking sector

The breakdown of the two sub-categories in the case of Italy is shown in the following chart. This suggests that:

- ◆ among foreign investors, the Eurozone significantly outweighs the amount held outside the Euro area (23% vs 14.3%);
- ◆ the Eurozone's foreign creditors belong largely to the private financial sector (an 18.1% share), while the remaining 4.9% is distributed among households, corporates, governments, the Euro-system except for the Bank of Italy and NPISHs (Non-Profit Institutions Serving Households);
- ◆ among domestic investors, the private financial sector holds the largest share of Italian government bonds in circulation (45.9%), followed by the Bank of Italy (around 11%), with the remaining 5.4% held by other residents.

Italian govies' ownership - Resident vs non-resident - 2016



Source: Mediobanca Securities, ECB, IMF and Bank of Italy

Debt redenomination: *Lex Monetæ* and legal aspects

Governing law and CACs

The Greek PSI that occurred on March 2012 showed the importance of the legal aspects of safeguarding rights for bondholders in case of disruptive events on bond holdings, namely the law governing the securities and the relevance of the collective action clauses (CACs).

In a scenario of debt redenomination, a crucial point is represented by the *Lex Monetæ*. This general principle establishes that if a sovereign state changes the currency that is legal tender in that state, it is entitled to make the payments associated with its debt in this new currency.

Lex Monetæ in the Eurozone

The Euro area represents a unique case, however, given that its countries share a common currency, which raises doubts on whether the *Lex Monetæ* would be applicable. As such, the *Lex Monetæ* principle becomes controversial when a state adopts a new national currency following exit from a common currency area, as bonds issued by the leaving country are subject to two competing (and conflicting) *Lex Monetæ*s:

- ♦ the one of the newly adopted national currency; and
- ♦ the one of the currency that continues to be legal tender in the monetary union.

The solution generally agreed to in the relevant literature (Nordvig, Scott, Mann, among others) is that “the courts should apply the law specified in the legal instrument at issue”, i.e. the law of the contract.

“Given the principle of *Lex Monetæ* it is unlikely that local courts would ever enforce foreign judgments seeking payments in euros for local contracts. Even if foreign courts were to seek enforcement of claims in euros under the Brussels Regulation (EC Regulation 44/2001) dealing with the reciprocal enforcement of judgments, they would likely fail because the local courts in the payer’s jurisdiction would be prevented by legislation from recognizing as valid or enforcing

judgments which are not in its new post-euro currency” (from: <http://albertobagnai.it/wp-content/uploads/2016/02/Tepper2012.pdf>).

Only 2.5% of Italian bonds fall under foreign law

Typically the governing law of the contract is the local law, although (especially for countries which have already experienced episodes of debt distress) there is always a share of the total outstanding bonds issued by a sovereign entity that are under foreign law. On the basis of calculations carried out by crossing data from Bloomberg and Dealogic and taking also into account information disclosed by the Italian Treasury, we estimate that bonds under foreign law are about 2.5% of the outstanding total in the case of Italy, or €48bn. It follows that, at least on first glance, in the case of exit Italy could apply the *Lex Monetae* (as per Article 1277¹ of the Civil Code) on nearly all its outstanding government bonds without incurring any particular difficulties.

Triggering a credit event on CDS . . .

Under the Old ISDA Definitions of a credit event a redenomination could trigger a debt restructuring unless the new currency was not either one of the G-7 countries or of an OECD country top investment grade. In other words, Italy would have been able to return to the lira and rename the portion of the debt to which the *Lex Monetae* is applicable without triggering a credit event.

Today’s framework though is completely different: now a debt redenomination following an Italexit could be classified as a credit event under the applying ISDA definitions, hence triggering a technical default on the outstanding net USD16.2bn CDS contracts whose reference entity is the Republic of Italy. This has acquired particular relevance in recent years, especially in relation to the New ISDA Definitions of credit events in force since September 2014. Among the main innovations of the new definitions is a review of the conditions that identify the occurrence of a credit event (and, specifically, of a debt restructuring) when the issuer modifies the currency of the payments of interest and/or principal with respect to the currency originally set in the contract. Moreover, specific conditions have been provided precisely in connection with the hypothesis of an unilateral exit of a Member State from the Eurozone.

. . . in light of the new conditions in force since September 2014

Under this new framework the redenomination from the Euro to any currency other than reserve currencies (US, UK, Canada, Switzerland, Japan, China) will trigger a restructuring event (even in the absence of a deterioration in the creditworthiness of the reference entity²) unless both the following conditions are met³:

1. the redenomination occurs as a result of action taken by a Governmental Authority of a Member State of the European Union which is of general application in the jurisdiction of such Governmental Authority; and
2. a freely available market rate of conversion between euros and such other currency existed at the time of such redenomination and there is no reduction in the rate or amount of interest, principal or premium payable, as determined by reference to such freely available market rate of conversion.

Redenomination would trigger a restructuring event

Condition 1. simply represents the implementation of the *Lex Monetae*. As regards condition 2. it is organized in two subsequent layers:

- ♦ The first part of this condition means that the new currency “*must be allowed to settle to a tradable level before the obligations can be converted from the Euro without triggering restructuring*”⁴.

1 Article 1277 of the Italian Civil Code states: Article 1277 of the Civil Code reads: “The monetary debts are extinguished with legal tender in the State at the time of payment and for its face value. If the amount due was determined in a currency that is legal tender at the time of payment, this must be done in legal currency matched for value to the first”.

2 This condition is instead usually required to give raise to an event of debt restructuring.

3 See Section 4.7(b) (ii) of the ISDA 2014 Definitions.

4 See Macfarlanes (2014), “*Implementation of the new 2014 ISDA Credit Derivative Definitions*”.

- ◆ The second part completes the logic underlying this condition: if the successor currency is to depreciate against the Euro and to consequently inflict any losses to the bondholders, restructuring cannot be averted.

It follows that in a potential Italexit according to the 2014 ISDA definitions, the debt deflation induced by the foreseeable depreciation of the new currency with respect to the Euro would lead to the occurrence of a restructuring event. This would apply also to the Italian sovereign bonds governed by the domestic law.

Clearly the occurrence of a credit event is a risk to carefully assess before deciding whether or not to rename the debt. As already mentioned, currently the outstanding net CDS contracts whose reference entity is the Republic of Italy amount to USD16.2bn, about half the level in the summer of 2011 and in any case well below the theoretical debt relief that we estimate following the debt redenomination. Beyond these quantitative aspects is the reputational damage that is typically associated with the occurrence of a credit event. In fact, a default undermines the credibility of an issuer, making it undoubtedly very difficult, especially in the short term, to return on financial markets to place its bonds (at least at not prohibitive costs). On the other hand, it is equally true that the level of hostility of the markets will depend on the issuer's ability to quickly recover safe and sound financial conditions which, in the case of a sovereign state, means above all healing public finances and restoring a stimulus to GDP growth.

Four considerations in quantifying redenomination risk

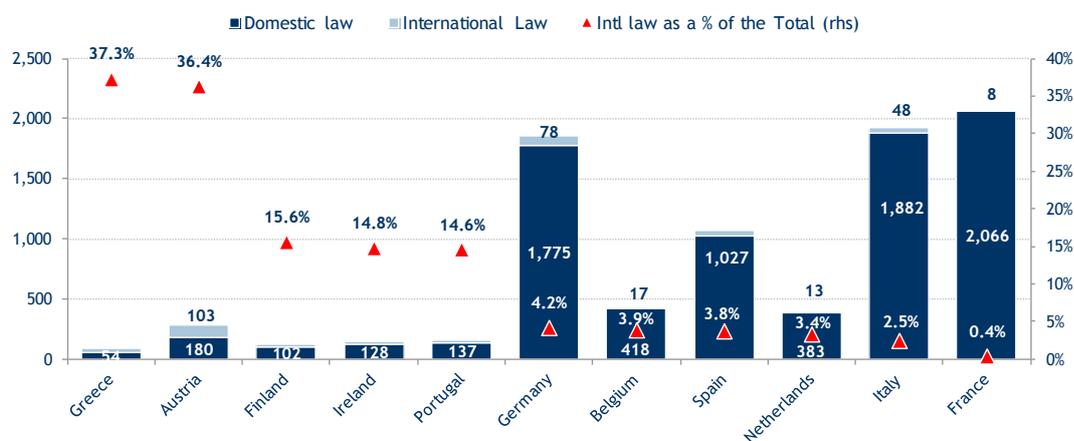
Given the above, in trying to assess the magnitude of the redenomination problem with regard to the Italian debt, we focus on four elements:

1. the government bonds issued under foreign law (€48bn);
2. the CACs constraints (currently applied to €902bn BTPs);
3. the legal nature of the bonds held by the ECB (€210bn); and
4. the public debt derivatives (€151bn notional carrying €37bn MTM loss).

Government bonds subject to foreign law account for 2.5% of the total €48bn bonds fall under foreign law . . .

In the chart below, we show the debt securities by country issued under international law as of 1H16 and thus facing a legal constraint on redenomination. Italy sits in the rhs of the chart with an aggregate exposure of 2.5% of the total, or €48bn.

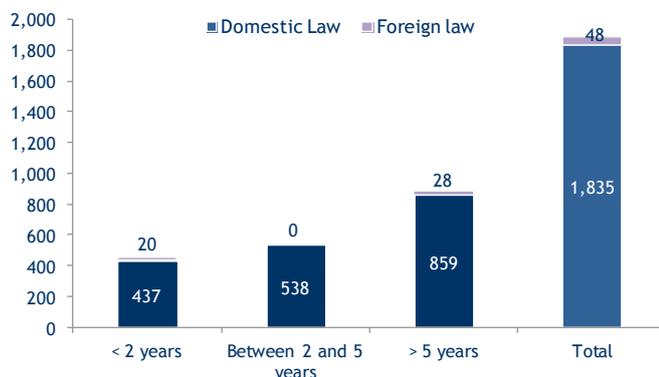
Government debt: Domestic law vs International law €bn and as a % of the total - 1H2016



Source: Mediobanca Securities, BIS, MEF

The breakdown below suggests nearly half of such foreign law bonds in Italy are less than two years in duration.

Government debt split between domestic and foreign law (€bn, 2015)



Government debt split between domestic and foreign law (As % of total, 2015)

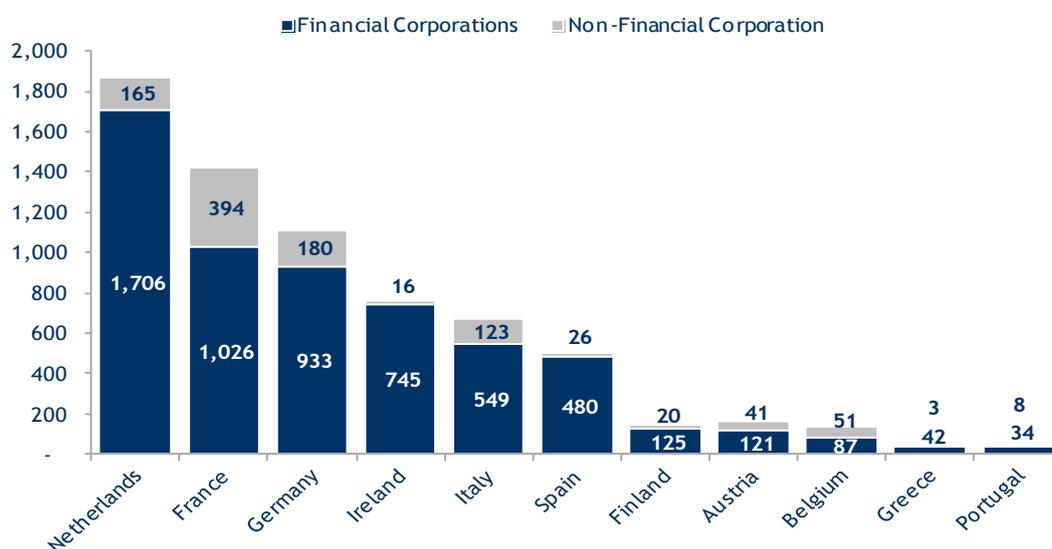


Source: Mediobanca Securities, MEF

... €672bn private-sector debt is covered by foreign law, or ~40% of GDP ...

Our analysis is focused on public debt. It is worth remembering though that the private sector would be biased towards foreign law much more than the public debt side. Out of nearly €1trn private debt, the chart below shows total private securities under international law standing at €672bn, largely in the financial sector (€549bn), followed by €123bn from the non-financial sector. This places Italy in the middle of the pack versus its EU peers. Analysing losses on private debt is outside of the scope of this research, but it is clear that with so much private debt covered by foreign law (roughly 70% of the total), the private sector would face significant losses.

Outstanding private debt securities under international law, by sector (€bn, 1H16)



Source: Mediobanca Securities, BIS

Collective Action Clauses (CACs)

EU members agreed on introducing standardised collective action clauses (CACs) in 2010 with the aim of safeguarding the financial stability of the Euro area by committing to apply such measures to all new Euro area government securities from the beginning of 2013. As reported by the EFC Sub-Committee on EU Sovereign Debt Markets, new CACs specify the following:

- ◆ be based on those used in the UK and US;
- ◆ be included in all debt securities with maturity greater than one year;

- ◆ have uniformity of application and on a level playing field among all members of the Union;
- ◆ allow a proposed modification of a Euro area government's securities to be made binding on all holders of the affected securities if approved by holders of the requisite principal amount of the affected securities;
- ◆ facilitate the agreement of private-sector bond holders to the possible modification of Euro area government debt securities that contain CACs; and
- ◆ not increase the probability of a Euro area issuer defaulting on or modifying its debt securities containing a standardised CAC.

The official aim of such measures is to facilitate debt restructuring by removing the possibility that minority holders in disagreement could disrupt or delay the restructuring process. These measures help create the conditions for an orderly resolution or restructuring.

“Reserved matter”

The new model CAC introduced a differentiation between reserved and non reserved matters. The reserved category involves the amendment of a security's most important terms and conditions. These include a reduction of the amount payable, a change in maturity, issuer's obligations of payments, change in guarantees and collaterals. It implicitly includes also debt redenomination. Regardless of whether it is a single series of bonds or a cross series of bonds, the CAC framework requires a quorum of 66.7% for meetings, whereas in order to approve any amendments, the threshold varies depending on whether it is a single series of bonds or a cross series, 75% vs 66.7%, and whether it is a meeting or a written resolution. "Non-reserved matter" refers to ordinary changes.

Collective Action Clause summary

	Single Series	Cross Series	Singles Series	Cross Series
	Meeting	Meeting	Written	Written
Reserved matter amendment				
Quorum	66.7%	66.7%	-	-
Threshold for approval	75%	75% of all affected series and 66.7% of each affected series	66.7% of outstanding securities	75% of all affected series and 50% of each affected series
Non-reserved matter amendment				
Quorum	50%	-	-	-
Threshold for approval	50%	-	50% of outstanding securities	-

Source: Mediobanca Securities, EFC Sub-Committee on EU Sovereign Debt Markets

One of the main purposes of the CACs is to implement a majority vote binding on all debt holders and overcome the so-called holdout problem. Indeed, when there is a restructuring ongoing, dissidents can create disruption and negatively affect the outcome of such an operation, potentially leading to the default of the debtor.

We assume CACs bonds do not allow for redenomination

It is unlikely in our view that any Government will decide to force the redenomination of debt covered by CACs because the resultant litigation would have a low probability of success. This would also prevent investors from punishing the Government in accessing the market for debt refinancing. It is one thing to redenominate the debt and cause a loss due to the unpredictable evolution of the Forex market; it is totally different to consciously determine losses to market counterparties.

Italian govies fully covered by CACs by 2022

With the Decree of the Minister of Economy and Finance n. 96717 of 7 December 2012, published in *Gazzetta Ufficiale* on 18 December 2012, Italy approved the mandatory implementation of CACs on

every new issuance of sovereign debt with maturity >one year. The result is that based on our estimates over the 2013-16 period nearly half of all outstanding Italian bonds, or €902bn, have included CACs. In the below table we estimate that all debt securities issued by the Italian government with maturities over one year will be covered by CACs by ~2022. We forecast the phasing in of such clauses as follows:

- ◆ We start by excluding debt securities with a less than one year maturity, i.e., BOT, which account for roughly 10% of the outstanding bonds.
- ◆ We estimate what would be the new issuance based on the government budget balance, keeping the trend constant between different maturities from the past issuances.
- ◆ We assume the Italian government will exploit the tap issued policy in a similar magnitude as it has done so far.

Estimates of Italian government bonds with CACs attached - 2016e-2022e (€bn)

	2016e	2017e	2018e	2019e	2020e	2021e	2022e
Government's fiscal surplus (deficit)	(2.40%)	(2.40%)	(2.50%)	(2.50%)	(2.50%)	(2.50%)	(2.50%)
Total debt securities outstanding	1,882	1,899	1,916	1,933	1,950	1,968	1,985
Bonds with maturity <1 year	10%	10%	10%	10%	10%	10%	10%
Bonds with maturity >1 year	1,694	1,709	1,724	1,740	1,755	1,771	1,787
Bond issuance	420	430	441	452	463	475	486
Issuance (maturity <1year)	183	187	192	197	201	206	212
Bond issuance with CAC Attached	78%	70%	60%	55%	50%	45%	40%
Issuance (maturity >1year) with CAC attached	185	170	149	140	131	121	110
Issuance (maturity >1year) with no CAC	52	73	100	115	131	147	165
Total debt securities outstanding with CAC attached at year-end as a% of Tot Securities	48%	57%	65%	72%	79%	85%	90%
Total debt securities outstanding with CAC attached at year-end	902	1,079	1,238	1,390	1,533	1,667	1,792
Total debt securities outstanding with CAC attached at year-end as a% of Securities >1y	53%	63%	72%	80%	87%	94%	100%

Source: Mediobanca Securities Estimates, MEF

The table below summarizes the situation as of end 2016: half of Italian debt is subject to some sort of redenomination constraint either due to foreign law or to CACs.

Breakdown by CAC, governing law and time to maturity, €bn 2016

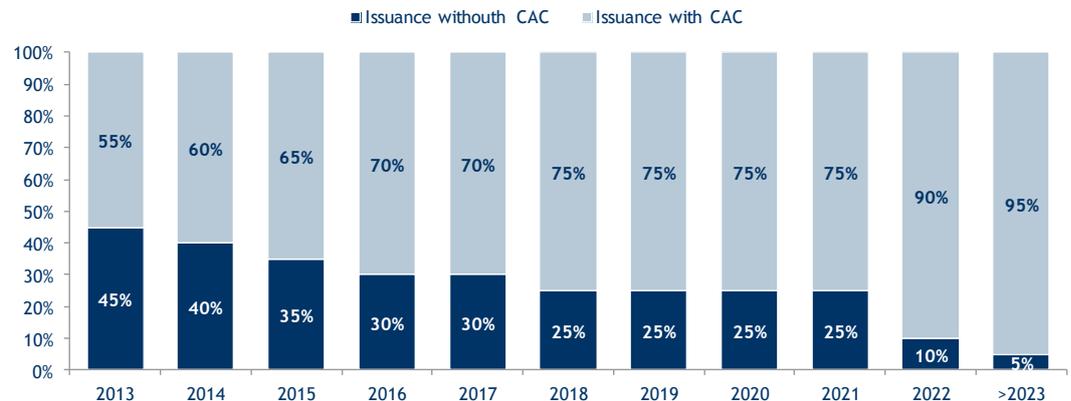
Maturity	< 2 years	Between 2 and 5 years	> 5 years	Total	Total as a %
Foreign law	20,215	-	27,657	47,873	2.5%
With CACs	215,340	240,763	446,166	902,269	48.0%
Redenomination without default	221,335	297,657	413,320	932,312	49.5%
Total	456,891	538,420	887,143	1,882,454	100.0%

Source: Mediobanca Securities, MEF

Tap issues minimum CAC requirements

In order to avoid the possible massive use of tapping issues to bypass the inclusion of CACs, the European agreements have established specific annual limits on the maximum amount of issues convertible into cash through re-openings. In the charts below, we show that by 2022, tap issues will reach close to 0% and all debt issuance should include CACs.

Tap issues minimum CAC requirements - 2013-2023



Source: Mediobanca Securities, EFC Sub-Committee on EU Sovereign Debt Markets

Looking at previous case studies

In the following two tables, we summarise previous cases of debt restructuring and the related legal issues.

Characteristics of main sovereign debt restructurings with foreign banks and bondholders - 2012

Case	Pre-emptive or post-default?	Default date	Announcement of restruct	Start of negotiations	Final exchange offer	Date of exchange	Total duration (mths)	Debt exchanged in US\$m	Cut in face value	Haircut estimate (Cruces/Trebesch)	Discount rate (Cruces/Trebesch)	Outstanding instruments exchanged	New instruments
Pakistan (Bank Loans)	Post-Default	Aug-98	Aug-98	Mar-99	May-99	Jul-99	11	777	0.00%	11.60%	0.132	Trade credits and debt arrears	1 Loan
Pakistan (Ext Bonds)	Pre-emptive		Aug-99	Sep-99	Nov-99	Dec-99	4	610	0.00%	15.00%	0.146	3 Eurobonds	1 Eurobond
Ukraine (Ext Bonds)	Pre-emptive		Dec-99	Jan-00	Feb-00	Apr-00	4	1,598	0.90%	18.00%	0.163	3 Bonds, 1 Loan	1 Eurobond
Ecuador (Ext Bonds)	Post-Default	Aug-99	Jul-98	Sep-99	Jul-00	Aug-00	25	6,700	33.90%	38.30%	0.173	4 Brady Bonds, 2 Eurobonds	2 Eurobonds
Russia (Bank Loans)	Post-Default	Dec-98	Sep-98	May-99	Feb-00	Aug-00	23	31,943	36.40%	50.80%	0.125	PRINs, IANs, debt arrears	1 Eurobond
Moldova (Ext Bonds)	Pre-emptive		Jun-02	Jun-02	Aug-02	Oct-02	4	40	0.00%	36.90%	0.193	1 Eurobond	1 Eurobond
Uruguay (Ext Bonds)	Pre-emptive		Mar-03	Mar-03	Apr-03	May-03	2	3,127	0.00%	9.80%	0.09	18 Ext. Bonds	18 + 3 New Benchmark Bonds
Serbia & Monten (Loans)	Post-Default	since 1990s	Dec-00	Sep-01	Jun-04	Jul-04	44 (since announcement)	2,700	59.30%	70.90%	0.097	Bank Loans, Arrears	1 Eurobond
Dominica (Bonds/Loans)	Post-Default	Jul-03	Jun-03	Dec-03	Apr-04	Sep-04	15	144	15.00%	54.00%	0.092	Bonds, short- and medium-term Loans	3 Bonds
Argentina (Ext Bonds)	Post-Default	Jan-02	Oct-01	Mar-03	Jan-05	Apr-05	42	60,572	29.40%	76.80%	0.104	66 US\$ and AR\$ denominated Bonds	US\$ and AR\$ denominated Bonds
Grenada (Bonds/Loans)	Pre-emptive		Oct-04	Dec-04	Sep-05	Nov-05	13	210	0.00%	33.90%	0.097	5 Ext. Bonds, 8 Dom. Bonds, 2 Ext. Loans	1 US\$ Bond and 1 EC\$ Bond
Iraq (Bank/Comm Loans)	Post-Default	since 2003	in 2004	Jul-05	Jul-05	Jan-06	20 (since announcement)	17,710	81.50%	89.40%	0.123	Loans, Supplier Credit, Arrears	Mostly Cash, 1 US\$ Bond, 1 Loan
Belize (Bonds/Loans)	Pre-emptive		Aug-06	Aug-06	Dec-06	Feb-07	6	516	0.00%	23.70%	0.096	7 Bonds, 8 Loans	1 Bond
Ecuador (Bond buy-back)	Post-Default	Dec-08	Jan-09	no neg.	Apr-09	June/Nov-09	12	3,190	68.60%	67.70%	0.13	2 Eurobonds	None (cash settlement)
Cote D'Ivoire (Ext Bonds)	Post-Default	Mar-00	Aug-09	Aug-08	Mar-10	Apr-10	21 (since announcement)	2,940	20.00%	55.20%	0.099	2 Brady Bonds, Arrears	1 Bond

Source: Mediobanca Securities, IMF

Legal characteristics of sovereign bond restructurings - 2012

	Pakistan	Ecuador	Ukraine	Moldova	Uruguay	Dominica	Argentina	Grenada	Belize	Jamaica
	1999	2000	2000	2002	2003	2004	2005	2005	2007	2010
Creditor structure	Dispersed	Concentr	Dispersed	Concentr	Dispersed	Dispersed	Dispersed	Concentr	Concentr	Dispersed
Dominant governing law	English	New York	Luxembo urg, German	English	New York	English	New York	New York	New York	Domestic
CACs and exit consents										
CACs in original bonds	Yes	No	Partly	Yes	Partly	Partly	Partly	No	Partly	No
CACs used in exchange	No	No	Yes	Yes	Yes	n.a.	No	No	Partly	No
CACs included in new bonds	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Exit consent used	No	Yes	No	n.a.	Yes	Yes	Yes	No	Yes	No
Holdouts and litigation										
Holdouts (in %)	1%	2%	3%	0%	7%	28%	24%	3%	2%	1%
Settlement with holdouts (including the continuation of debt service on old instruments)	Yes	Yes	n.a.	n.a.	Yes	Yes	Yes	No	Yes	Yes
Litigation cases (filed in the US or UK)	0	2	only domestic	0	1	1 (plus domestic)	more than 100 (incl. retail)	1	0	0

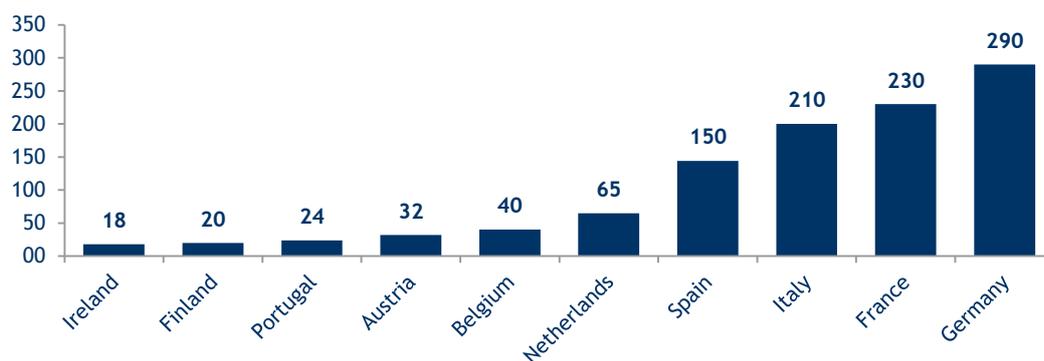
Source: Mediobanca Securities, IMF

QE bonds - Central banks bonds to be enfranchised

Holders of debt of which they are also the issuer are to be disenfranchised, so as to avoid a conflict of interest, and therefore treated as not outstanding for voting and quorum. As obvious as it may seem that any sovereign country has its own sovereign currency, in the euro area things are more complicated. The euro is at the same time an international and a domestic currency and therefore this could create a conflict of interest among certain institutions. The EFC Sub-Committee on EU Sovereign Debt Markets states that *“the legal status of euro area national central banks illustrates the Committee’s thinking on this issue. Article 130 of the Treaty on the Functioning of the European Union and Article 7 of the Statute of the European System of Central Banks and of the European Central Bank expressly prohibit euro area national central banks and members of their decision-making bodies from seeking or taking instruction from European Union institutions or bodes, from any government of a Member State of the European Union or from any other body.* It follows that in the Committee’s view, euro area national central banks have autonomy of decision on how to vote on the proposed modification of any euro area government securities so acquired, and their holdings of these securities will be enfranchised under the model CAC.

€210bn Italian bonds under QE to be subject to redenomination constraint

The ECB has been buying government bonds through domestic national central banks (90% of the total for NBCs and 10% ECB) for almost two years, reaching cumulated purchases for as much as €1.5tn, mostly concentrated in Germany, France, Italy and Spain, with €304bn, €241bn, €210bn and €150bn, respectively. We should therefore assume that the national central banks’ government bonds’ holdings are to be considered enfranchised and thus bearing votes in the eventuality of a restructuring plan.

Government Debt Owned by National Central Banks as of end-2016 (€bn)


Source: Mediobanca Securities, ECB

It is quite obvious that a Eurozone national central bank will not necessarily follow the CACs provision (i.e., to exercise the clauses) in case its Government decides to start a debt redenomination process. Under this process in fact it is likely that the Government will issue special rules in order to bind its national central bank to vote in favour of a debt redenomination. In the case of Italy this would mean to overcome the divorce between the Bank of Italy and the Italian Treasury agreed to in 1981.

Derivatives exposure

Government's hedging sovereign debt's interest rate

According to the Treasury, Italy uses derivatives, such as interest rate swaps, swap-option and cross currency swaps, with the aim of reducing interest rate risk. As shown below, MEF data point to a total exposure of €151bn, suggesting an implicit total €37bn MTM loss.

Italy's government derivatives underwritten- 2013-2015 (€bn)

	2013	2013	2014	2014	2015	2015
	Notional	MTM	Notional	MTM	Notional	MTM
IRS ex-ISPA	3.5	(0.8)	3.5	(1.5)	3.5	(1.4)
CCS (Cross Currency Swap)	22.1	(0.6)	21.3	1.1	13.8	1.6
IRS (Interest Rate Swap) - Coverage	12.3	0.3	12.3	0.6	10.338	0.7
IRS (Interest Rate Swap) - Duration	106.3	(23.8)	102.9	(33.1)	108.3	(31.5)
Swaption	19.5	(3.9)	19.5	(9.2)	15	(6.0)
Total	163.7	(28.8)	159.6	(42.1)	150.9	(36.7)
Government bonds outstanding	1,722.7		1,782.2		1,814.5	
Derivatives as a % of govt bonds	9.5%		9.0%		8.3%	

Source: Mediobanca Securities, MEF

The government's cost of hedging such positions has been approximately a cumulated €29bn in the last six years, accounting for 1.8% of GDP. Moreover, the potential MTM loss on such derivatives, which is a contingent liability with high chances to materialize, reached €37bn, or 2.2% of GDP.

Moreover, such derivatives are governed by either English or U.S. Law, so that they are not redenominable.

Italy's government derivatives underwritten 2006-2015 (€bn)

	Mark to Market - net derivatives	Negative flows	GDP	Negative flows as a % of GDP
2006	(22.8)	(0.1)	1,548.5	(0.0%)
2007	(18.1)	(0.1)	1,609.6	(0.0%)
2008	(26.8)	(0.9)	1,632.2	(0.1%)
2009	(21.4)	(0.8)	1,572.9	(0.1%)
2010	(18.8)	(2.0)	1,604.5	(0.1%)
2011	(27.6)	(2.4)	1,637.5	(0.1%)
2012	(34.3)	(5.6)	1,613.3	(0.3%)
2013	(29.0)	(3.5)	1,604.6	(0.2%)
2014	(42.1)	(5.5)	1,620.4	(0.3%)
2015	(36.7)	(6.8)	1,642.4	(0.4%)
2016		(5.5)	1,673.3	(0.3%)
MtM Potential Loss as a % of GDP 2015				2.2%
Cumulated Loss last 6 years				(29.2)
Cumulated Loss last 6 years as a % of GDP 2015				1.8%

Source: Mediobanca Securities, MEF, ISTAT

Italy's government derivatives underwritten -2006-2015 (€bn)

Derivatives will have to be repaid in euros

As regards outstanding derivatives contracts, it seems quite reasonable to assume that the Italian Treasury will incur a loss related to the unfeasibility of the redenomination in a scenario of Italexit. Indeed, should such scenario occur, a credit event in Italy would occur too, which most likely would make many (if not all) derivatives counterparties of the Italian Treasury eager to early terminate their contracts and cash in the MTM, by exploiting the clauses that are usually embedded in contractual terms and/or annexes exactly to manage credit events or, at times, even only downgrading events. It is unlikely that any increase in nominal interest rates on the public debt, now redenominated in Lire, can be hedged, thanks to the outstanding derivatives positions, signed under the Euro paradigm.

Redenomination: €232bn cost vs €239bn gain

In quantifying the magnitude of the problem we assume:

- ◆ Some 30% devaluation for the new currency;
- ◆ All non CACs bonds to benefit from the *Lex Monetae*, thus resulting in an implicit redenomination gain for the country;
- ◆ All CACs bonds and all bonds under foreign law to be reimbursed in Euros with the depreciated currency, hence generating a loss from redenomination for the country, i.e. no intention from the government to fight CACs bondholders;
- ◆ The MTM of derivatives to be paid in Euros, thus crystallizing a loss for its entire amount of €37bn;
- ◆ The €210bn QE bonds to be equally split between CACs and non CACs and the Bank of Italy to redenominated by overtaking the no risk sharing principle behind QE.

Cumulated inflation gap drives currency depreciation

Ideally, our attempt to quantify the cost of redenomination should reflect the potential FX of the new currency. Although a proper analysis of the many drivers behind such an answer is outside of the scope of this note, the gap between the cumulated inflation since Eurozone access between Italy and Germany offers a good proxy as a starting point. As shown below, this currently amounts to roughly 15%. We think that a new lira would eventually devalue much more, especially in the short term. As such, for the sake of simplicity we price in some 30% depreciation, or 2x the cumulated inflation gap.

Inflation between 1997-2015 (1997=100)

Year	Italy	Germany
1997	100	100
1998	102	101
1999	104	101
2000	106	103
2001	109	105
2002	112	106
2003	115	107
2004	117	109
2005	120	111
2006	123	113
2007	125	116
2008	130	119
2009	131	119
2010	133	121
2011	137	124
2012	141	126
2013	143	128
2014	143	129
2015	143	129
Increase/(Decrease) Between 1997 and 2015	43%	29%
Italy vs Germany	14p.p.	

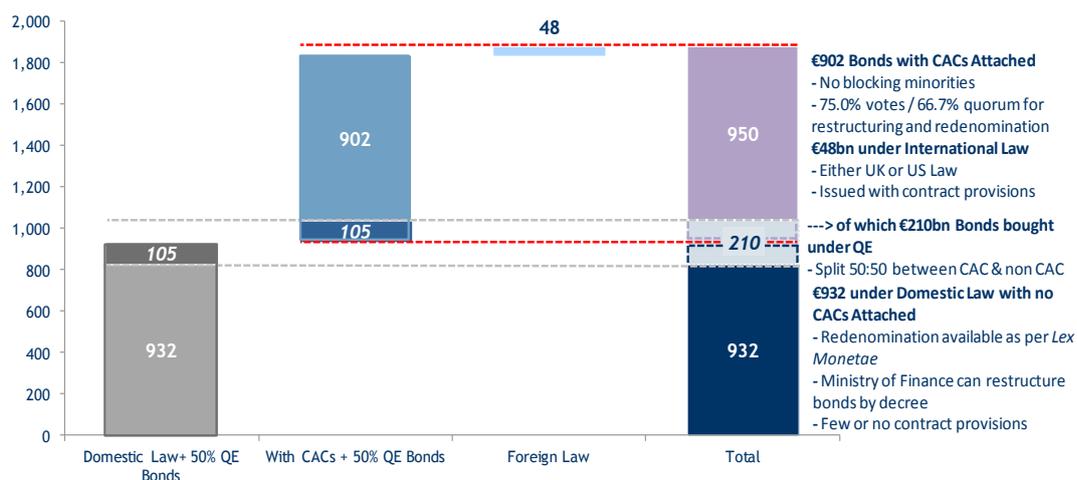
Source: Mediobanca Securities, Eurostat

€932bn non-CACs bonds versus €902bn CACs bonds

The table below breaks down the total €1,882bn BTPs in four categories:

- ◆ We start from €932bn domestic law bonds as of 2016;
- ◆ We assume domestic law bonds include also half of the bonds that the ECB bought under the QE programme;
- ◆ We add €902bn CACs bonds assuming they also include the other half of the QE bonds; and
- ◆ Finally we take into account €48bn foreign law bonds.

Italy's government bonds breakdown: CACs, non CACs and QE, 2016 (€bn)

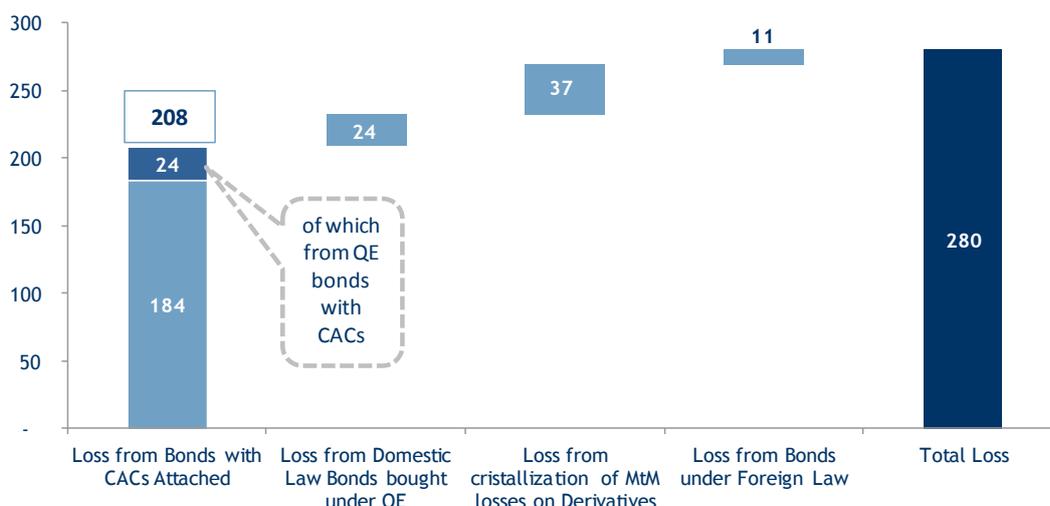


Source: Mediobanca Securities, MEF, Bloomberg, Dealogic

We start from €280bn loss from CACs, Foreign Law and QE bonds . . .

The first step in our exercise quantifies the loss stemming from a 30% new currency depreciation on the debt component which does not allow for redenomination. We convert the outstanding securities into the new devalued currency before reconverting them into Euros to express the loss. As regards the MTM on the derivatives, we assume the banks holding the contract will ask to close them and therefore crystallise the loss immediately for the entire amount of €37bn. The table below shows a €48bn loss from QE bonds: half of this is captured in the loss coming from CACs bonds which we assume includes €105bn of QE bonds; the other half adds to the loss even though it comes from domestic low bonds as we have assumed they are owned by the central bank and thus subject to the non-risk sharing constraint of QE.

Potential loss from re-denomination CACs, Foreign Law and QE (Eur bn) 2016e



Source: Mediobanca Securities estimates, MEF, Bloomberg

. . . we then assume QE bonds to offer a relief via Bankit QE debt monetization . . .

So far the Italian govies on the asset side of the Bank of Italy's balance sheet due to the Quantitative Easing programme amount to €210bn. This part of the programme is not risk-shared, since it resembles a CDS trade: the Bank of Italy funds itself at the ECB to purchase Italian govies and by doing so it is effectively guaranteeing the value of the purchased Italian public debt in front of the entire Eurosystem. As a consequence in case of Italexit the Bank of Italy would record a loss on the asset side due to the collapse of the value of the redenominated bonds while it should still be required to repay the full value of the ECB loan borrowed in order to buy the govies.

By end 2017 the Fiscal Compact should be incorporated into the legal framework of the European Union and Eurozone countries are required to take this decision unanimously. In this situation field, the Italian government could negotiate with the other members of the euro area into an agreement under which Italy would vote in favor of the Fiscal Compact (although properly amended in order to remove the pro-cyclical effects) to be transposed in the EU legal framework in exchange for the monetization (and, therefore, zeroing) of the Italian public debt held by the Bank of Italy under the QE umbrella. Of course we are well aware that the successful implementation of this kind of an agreement would be a very arduous undertaking. Nevertheless it is worth noting that this option would create a less costly scenario for Italy than a debt re-profiling of the 'extend and pretend' type imposed on Greece; at the same time, compared to a scenario of Italexit, this looks less costly for the overall universe of investors holding Italian sovereign bonds as well as for the other Eurozone members.

. . . and add the re-denomination gain on the domestic law bonds from the Lex Monetæ . . .

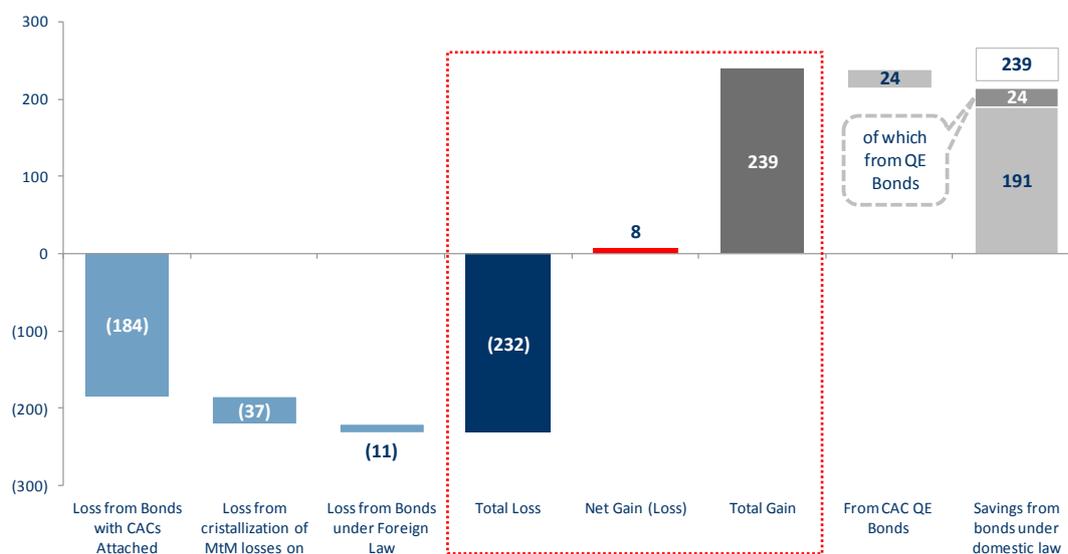
If Italy succeeded in getting its QE bonds inflated away it would reduce the losses estimated above. But a total calculation of net gains would have to take into account the benefit on €932bn bonds under domestic law from the Lex Monetæ and therefore exploit the gain from FX devaluation to lower the real value of the face value of those bonds.

. . . implying a €8bn final net gain from re denomination

The chart below summarises our estimate of €8bn net gain from re denomination, calculated as follows:

- ♦ €184bn loss from CACs bonds excluding the contribution from 50% of QE bonds we assume are in this bucket;
- ♦ €37bn loss from the MTM of derivatives;
- ♦ €11bn from €48bn bonds issued under foreign law;
- ♦ €191bn from lex monetæ on bonds under domestic law;
- ♦ €48bn gain from QE bonds when agreeing with EU authorities on inflating such debt away.

Net loss from Italexit - QE bonds re-denominable (Eur bn) 2016e



Source: Mediobanca Securities estimates, MEF, Bloomberg

Our €8bn net estimate is a function of what happens to QE bonds and where they sit.

- ♦ Scenario 1 - Assuming the Eurozone agrees on inflating debt away and all such bonds are with CAC (versus our 50-50 scenario) would increase the net gain from €8bn to €56bn;
- ♦ Scenario 2 - Alternatively assuming all such bonds are under domestic law turns the gain into a €41bn loss; or
- ♦ Scenario 3 - Finally and maybe more realistically, assuming the Eurozone does not agree on inflating Italian QE bonds away the €8bn gain becomes a €89bn loss.

Hypothetical Scenarios during Re-denomination (Eur bn)

Scenario 1: QE Bonds allocated 100% in CACs bonds		Scenario 2: QE Bonds allocated 100% in Domestic Law bonds		Scenario 3: Eurozone does not allow to inflate QE bonds away	
Loss from Bonds with CACs	(160)	Loss from Bonds with CACs	(208)	Loss from Bonds with CACs	(208)
Loss from crystallization of MtM losses on Derivatives	(37)	Loss from crystallization of MtM losses on Derivatives	(37)	Loss from Domestic Law QE bonds	(24)
Loss from Bonds under Foreign Law	(11)	Loss from Bonds under Foreign Law	(11)	Loss from crystallization of MtM losses on Derivatives	(37)
Total Loss	(207)	Total Loss	(256)	Loss from Bonds under Foreign Law	(11)
Savings from bonds under domestic law	215	CAC QE Bonds	48	Total Loss	(280)
CAC QE Bonds	48	Savings from bonds under domestic law	167	Savings from bonds under domestic law	191
Total Gain	263	Total Gain	215	Total Gain	191
Net Gain (Loss)	56	Net Gain (Loss)	(41)	Net Gain (Loss)	(89)

Source: Mediobanca Securities estimates

Time is money for Italy - disincentive to re-denominate as time passes

Every year it becomes more expensive to leave the euro . . .

The migration of Italian bonds under CACs is already halfway through. This is why we still manage to get to a neutral net impact from re denomination, as the gains from the Lex Monetae still available on nearly half of the public debt under domestic law offset the loss on the other half of the stock already under CACs. However, our projections suggest that by 2022 such a migration will be fully completed and all Italian debt will be constrained by CACs. Accordingly, every year the cost of re denomination increases while the benefit from the *lex monetae* decreases. In the table below we estimate €206bn extra re denomination loss by 2022, which essentially reduces in an exponential way the incentive to re denominate as time goes by.

Additional CAC Bonds issued

	2017	2018	2019	2020	2021	2022	Aggregate 2022-2017
Additional CAC Bonds issued	178	159	151	143	134	125	891
Hypothetical Loss after FX devaluation	(41)	(37)	(35)	(33)	(31)	(29)	(206)

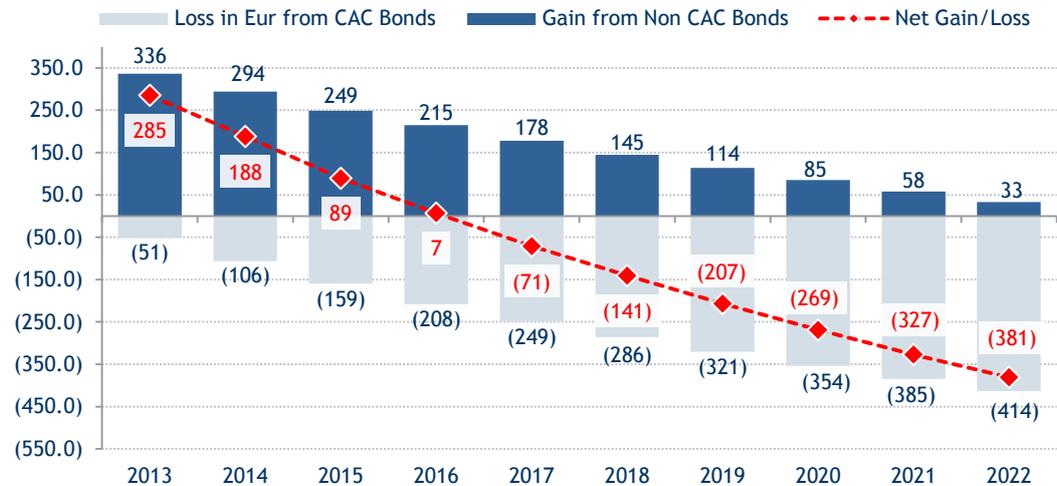
Source: Mediobanca Securities estimates

From an estimated €285bn gain in 2013 to a projected €381bn loss in 2022

Let us ignore derivatives and QE bonds and just focus on the CACs vs non CACs mix. The chart below illustrates why 'time is money' for Italy.

- ◆ In 2013 with no CACs bonds and thus full freedom to re-denominate its debt Italy would have realised some €285bn gain from re denominating basically all its debt bar €48bn bonds under foreign law.
- ◆ Today we sit in a position of neutrality.
- ◆ In 2022 it will essentially not be possible to exploit the Lex Monetae as all the debt with have CACs. This will result in a €381bn loss.

Net Gain (loss) from redenomination (Eur bn)



Source: Mediobanca Securities estimates

Financially, not economically, exit does not offer any reward, rather the opposite

Investors' concern for Italexit as time goes by is understandable on an economic basis. The lack of growth, the lack of competitiveness and the high unemployment rate represent strong incentives to eventually exploit monetary sovereignty.

However our analysis shows that on a financial basis the opposite is true: the financial benefit of entering in a re denomination scenario is no longer available and from now on it will actually cost money to leave. And this is before adding private debt to the equation, which will surely make exit even less desirable.

Assessing the risk perception from the market

The market prices in higher risk on non CACs bonds. We have compared pairs of Italian govies displaying similar features except that in any pair we contrast a bond which includes CACs with a bond which does not. The bonds are chosen to cover a wide range of the interest rate term structure. Our findings measure the amount of yield premium the market requires for holding non CACs bonds. There seems to be no direct correlation between the maturities of the bonds and the amount of spread. Such a lack of correlation could be interpreted as a confirmation of our finding that ‘time costs money’ for Italy: as time goes by the financial incentive to trigger the redenomination actually goes away. Indeed, our data suggest that 30bps yield gap on a 3.5yr maturity actually drops to 10bps on a 12yrs maturity.

We also looked at the so-called Quanto spread which captures the ‘convertibility risk’ implied in the premium between USD denominated CDS and Euro denominated CDS. The dynamics of the Quanto spread contain important information on the correlation between the probability of default of a country in the Eurozone, the decision of such a country to leave the single currency and, eventually, the occurrence of a Euro break-up. Our comparison of EU countries leads us to two conclusions: 1) at the end of last year, for the first time the 5yr Quanto spread of Italy exceeded that of Spain so the country exceeded the risk perception of Spain; 2) Italy plays a crucial role in the future of the Eurozone given estimated 90% correlation between the probability of Italexit and the probability of a Euro break-up.

Testing our conclusions: 30bps yield spread on non CACs bonds

CACs versus non CACs yield gap

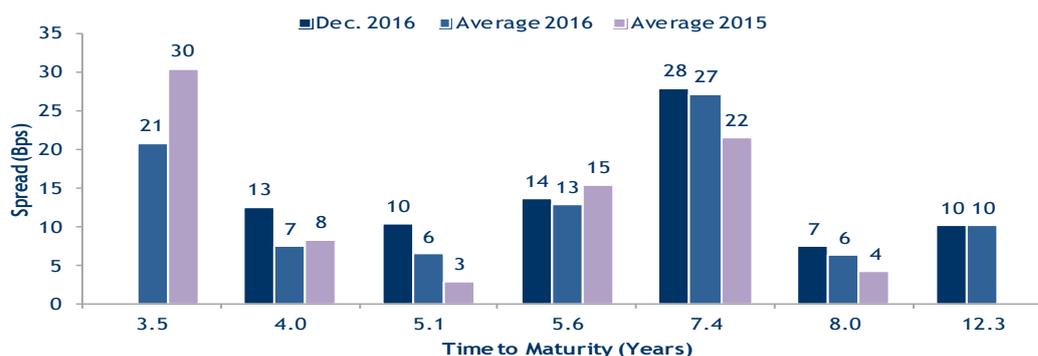
We have argued that the legal aspects matter when assessing the decision to redenominate the debt. In particular, we have discussed that sovereign bonds without CACs are easier to be converted into a new currency with respect to CACs bonds. Hence, it is interesting to investigate whether the market actually requires a risk-premium on non-CAC govies as a compensation for the higher risk to incur a loss due to the redenomination of the security in a new currency which is expected to fall in value with respect to the euro.

Our methodology suggests non CACs bonds require 30bps higher yield on average

To this aim we have compared pairs of Italian govies displaying similar features except that in any pair we contrast a bond which includes CACs with a bond which does not. Moreover the bonds are properly chosen in order to cover a wide range of the rates term structure. Our findings suggest:

- ◆ In all the examined samples we have observed the presence of yield spreads which confirms the circumstance that the market recognises a risk premium according to the CACs phenomenon.
- ◆ It is also evident from the chart below that the renewed concern of an Italexit at the end of last year resulted in a higher yield spread required on non CACs bonds in December 2016 compared to the average of 2016 and of 2015.

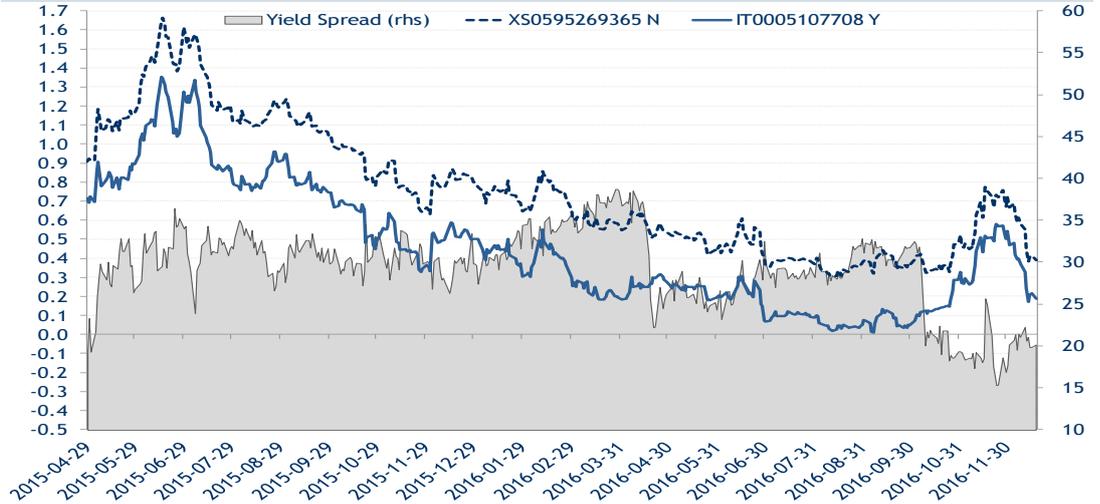
Non CACs yield spread versus equivalent CACs bonds on different maturities (bps)



Source: Mediobanca Securities, Bloomberg

- ◆ The observed spread gap is in the region of 30bps average on a 3.5yr maturity: 98bps on non CACs bonds versus 67bps on CACs bonds.

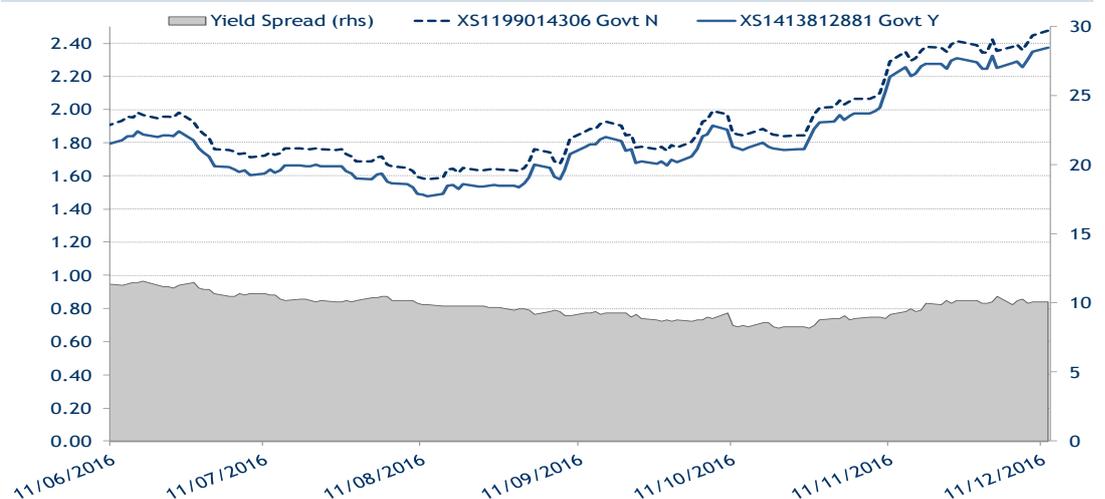
Government bonds with time to maturity of 3.5y and modified duration of 3.4y (N= without CAC; Y= with CAC) 2015-2016



Source: Mediobanca Securities, BBG

- ◆ Such a gap is not widespread over the entire term structure. This reflects to us the uncertainty on the concrete applicability of the CACs to the portion of the debt under these clauses both because the redenomination of debt without CACs will eventually trigger a default event (although in a “softer” manner) and because of the possibility that the Bank of Italy would not offer its contribution to the CACs exercise in order to be part of a redenomination strategy under the Government directorship.
- ◆ There seems not to be a direct correlation between the maturities of the bonds and the size of the spreads. The lack of correlation between yield gap and maturity could be interpreted as a confirmation of our finding on ‘time costs money’ for Italy: as time goes by the financial incentive to trigger the redenomination wanes. The 30bps yield gap shown above on a 3.5 years maturity actually drops to 10bps in the chart below on a 12yrs maturity: 1.92% average yield required on non CACs bonds versus 1.82% on CACs ones.

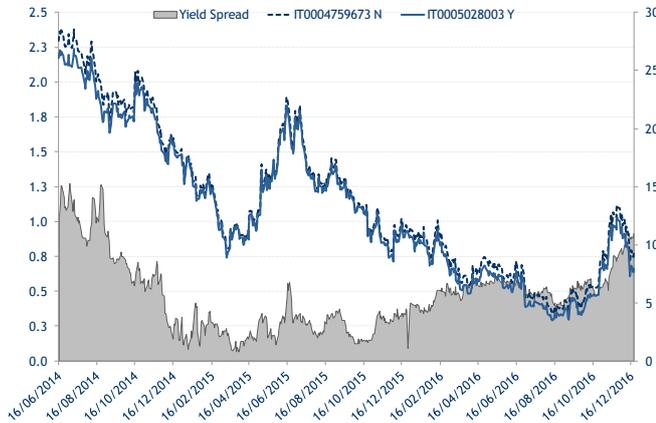
Government bonds with time to maturity of 12.3y and modified duration of 10.7y (N= without CAC; Y= with CAC) 2016



Source: Mediobanca Securities, BBG

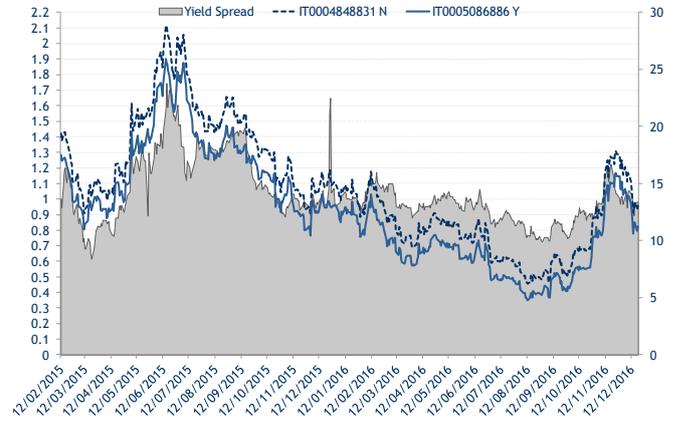
In the following four charts, we show the findings of our ‘pair bonds’ comparison on different maturities.

Government bonds with time to maturity of 5.1y and modified duration of 4.7y (N= without CAC; Y= with CAC) 2014-2016

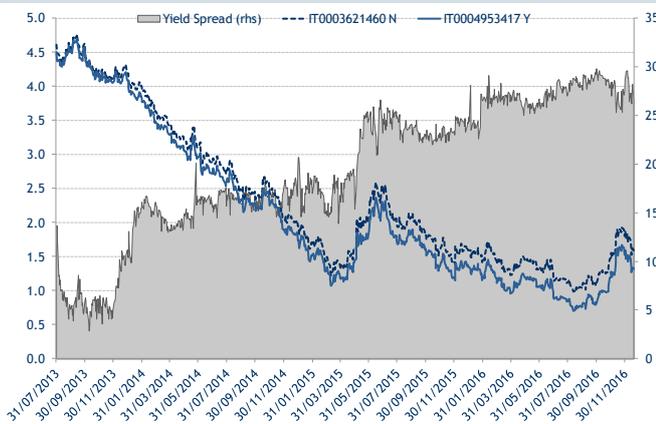


Source: Mediobanca Securities, BBG

Government bonds with time to maturity of 5.6y and modified duration of 5.1y (N= without CAC; Y= with CAC) 2015-2016



Government bonds with time to maturity of 7.4y and modified duration of 6.3y (N= without CAC; Y= with CAC) 2013-2016



Source: Mediobanca Securities, BBG

Government bonds with time to maturity of 8.0y and modified duration of 6.8y (N= without CAC; Y= with CAC) 2014-2016



The Quanto spread

The *Sentix* indicator is just a sentiment proxy . . .

During the second half of 2016 the general perception of the likelihood of an Italexit within a one-year period remarkably increased, jumping from a 0.8% probability measured at the end of May to a 5% probability at the end of June (due to the Brexit effect) and then continuing the uptrend to reach a peak in November at 19.3% probability. In December 2016 the *Sentix* index for Italexit slightly decreased to 16.1% probability mainly in the wake of the speed with which the Government crisis has been overcome and the measures taken by the new government to support the banking system with the allocation of a shield from €20bn euro provided by the Save-Savings Decree.

However, the *Sentix* index remains a behavioral indicator: it is estimated on the basis of polls of individual investors. This means that it necessarily incorporates elements related to the subjective feelings of investors and that have therefore little to do with the actual price of risk that is priced in.

. . . while a market-based indicator is offered by the Quanto CDS spread on Italy . . .

There is a very close estimated relationship between the default of a Eurozone country, the exit of that country from the Euro and the extreme event of a Euro break-up. In fact, the insolvency of a Member State (especially if large, like Italy) would certainly have serious repercussions on the value of the Euro, such as to cause a devaluation or worse, a dissolution.

. . . which captures the spread between USD and Euro denominated CDS

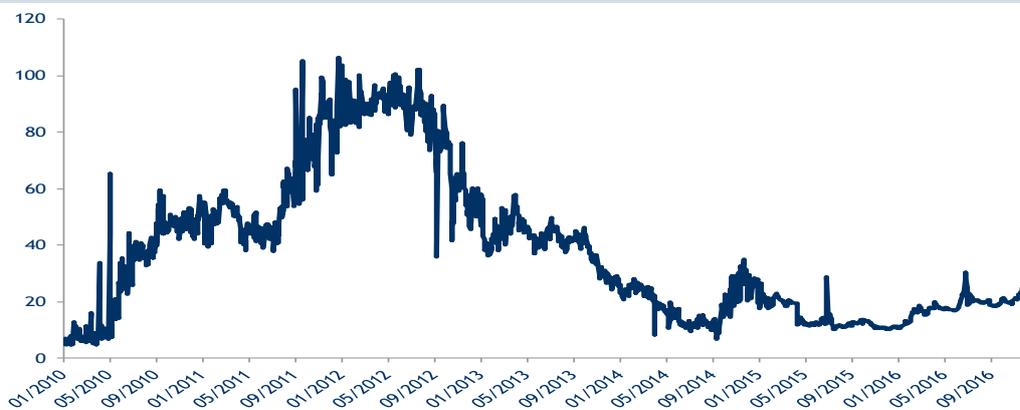
This phenomenon is known as “*convertibility risk*” and in order to hedge against such risk market operators buy CDS denominated in a currency other than the Euro, typically the US dollar. It follows that the high demand for such products drives up the premia which outpace those of the CDS denominated in euro. Such difference between USD and Euro denominated CDS is known as *Quanto CDS spread*.

The basis arbitrage allows us to overcome the problem of the small liquidity of Euro CDS

The data displayed do not take into account the level of liquidity of the CDS spread used for the calculation of the Quanto spread. In reality, from 2010 to 2011, Euro denominated CDS on sovereign risks of the principal Eurozone countries disappeared from the market transactions, becoming an extremely obscure financial instrument with few quotes. Therefore, the Quanto spread is often aligned with the CDS spread denominated in dollars. In order to increase the accuracy of our analysis we checked our data against implied CDS premiums determined according to the basis arbitrage relationship.

In particular, the *Quanto spread* of Italy reached its highest levels during the strong turbulence experienced in the second half of 2011. In that period, the market demanded between 60 and 100 bps more as a premium for the sale of CDS denominated in dollars that had as reference entity the Italian Republic compared to those denominated in Euro.

Quanto Spread ITA 5 Year (Bps)



Source: Mediobanca Securities, BBG< Reuters

Quanto spread for Italy is now higher than for Spain

In the chart below we compare the Quanto spread of Italy with those of its closest EU peers. The trend of the *quanto spread* of Spain for instance shows significant peaks in correspondence to the Iberian banking crisis in mid 2012, approximately exceeding the value of 150 bps. The comparison shows that the signs of stress on Italy at the end of last year made the country a worse perceived risk than Spain was, as captured by the Quanto spread.

Evolution of 5-Year *Quanto* Spreads (bps)

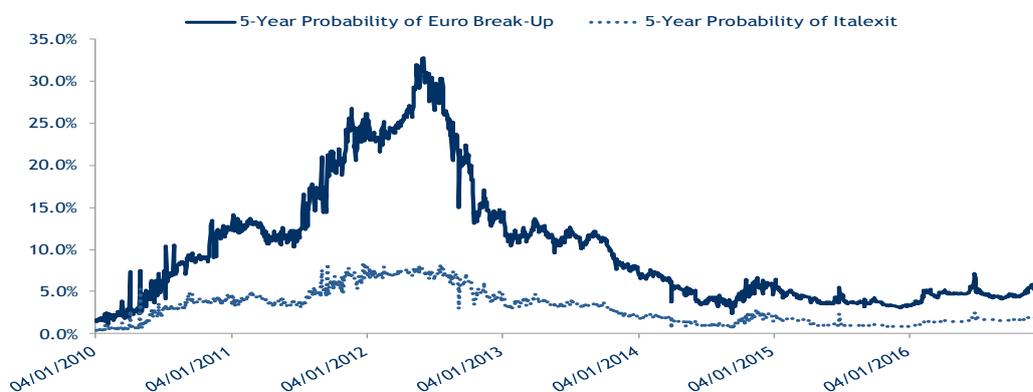


Source: Mediobanca Securities, BBG

Italy affects the *Quanto* spread of the Eurozone with 0.9 correlation

For each member country, the *quanto* spread can be interpreted as a proxy of the marginal contribution that the default of such country would give to the Euro break-up. It follows that, considering the probabilities implied in the *quanto* spreads of the four largest economies in the Eurozone, we show in the chart below a more refined assessment of the probability of a Euro break-up than our approximation based solely on the CDS spreads.

5Y Euro Break-Up Probability implied from *Quanto* Spreads



Source: Mediobanca Securities on Bloomberg data

This chart confirms the role played by Italy over time in projecting the likelihood of a Euro break-up. It shows a 90% correlation between the probability of Italexit and the probability of a Euro break-up, which is clearly visible from the chart as well. The chart also confirms that the tensions in the Eurozone have considerably mounted since July 2011, when the probability of a Euro break-up over a following five year period (implied in the differentials between the CDS spreads in dollars and in Euros), began to show a rising pattern going from values of around 10% (June 2011) to over 25% (November 2011) and up to 32% in June 2012 when the default of Spain was feared. After these peaks we observe an important reduction in this metric mainly due to the extraordinary policy interventions defined by the European institutions ECB *in primis*, i.e., OMT and QE. The new rules introduced in 2012-13 probably contributed to the reduction of such risk as they structurally reduced the possibility of a member state leaving the Euro area without incurring costs that become comparable to debt restructuring and re-profiling. We are referring not only to the CACs issue analysed in this work but also to the rules behind the ESM interventions or the Banking Union, specifically the Bail-in and the EU surveillance based on stress test techniques.

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