

The New Eurozone Risk Morphology

(Marcello Minenna*)

Ten years into the global financial crisis, the euro area is struggling to get back on a path of stability and growth. Leaving aside international factors, the underlying reasons come from within, ranging from the EMU architectural incompleteness to the reluctance to address some key issues, starting from the ECB mandate and the constraints. These reasons develop along two main 'backbones' that define the Eurozone risk morphology: large and persistent competitive gaps, which contrast center and periphery, and systematic risk segregation, which hinders any effective progress towards a fiscal union. The present paper analyzes these two 'risk backbones' and measures them through appropriate indicators that combine standard macro-economic variables (such as inflation differentials) with financial variables that have become relevant in the post-crisis period (such as sovereign yield spreads and Target2 balances). The critical values of these indicators highlight a matter of (un-)sustainability of the EMU membership, as confirmed by the rising Euro-skeptic debate and redenomination risk. The answer to these problems cannot be limited to a strengthening of the budgetary surveillance and the stability discipline of the private financial sector: it must open to risk sharing between member countries in order to definitively defuse centrifugal forces, remove financial and commercial imbalances, and create the conditions for a fiscal union with a federal budget, an unified debt market and a single finance minister^o.

KEYWORDS: *Competitive gaps, Real Effective Exchange Rate, Financial REER, inflation differentials, real sovereign yield spreads, Target2, risk segregation*

(J.E.L.: E02, E58, G01, H12, H63)

«IT IS ABSOLUTELY CLEAR THAT IN THE EURO AREA WE HAVE A SINGLE MONEY MARKET, BY DEFINITION, A SINGLE CURRENCY AND A SINGLE INTEREST RATE»

JEAN-CLAUDE TRICHET, 2008

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^o The views and opinions here expressed are those of the author and do not necessarily reflect the official policy or position of the opinions of the institution to which he belongs.

1. INTRODUCTION

Ten years into the global financial crisis, the Eurozone is struggling to get back on a path of stability and growth. The recovery seen in recent years is crunching in the wake of the slowdown in the international economic cycle [IMF, 2018] especially in relation to the tensions on world trade and the increased volatility of raw material prices.

However, the problems of the Euro bloc are also the result of a progressive stratification in which the original flaws and the architectural incompleteness of the monetary union have added to the inadequate anti-crisis policy measures. So far none of the open issues of the Euro area has been properly addressed, starting from the mandate and constraints of the monetary authority. The monetary orthodoxy of a central bank mandate only in terms of price stability and inflation target – and the (related) prohibition of monetary financing of governments' spending – is made particularly critical by the lack of serious forms of fiscal integration. In this framework the ECB inflation target («*below, but close to 2%*») is condemned to remain referred to the Eurozone as a whole and, therefore, to be pursued *on average* across member countries. This is equivalent to saying that the architecture of the Euro area admits inflation differentials between its components despite they share the same currency [Otero-Iglesias and Tokarski, 2018].

As long as credit risk has remained essentially unknown to financial markets, inflation heterogeneity has been regarded as the main divisive edge between Eurozone members. But the onset of the crisis has unveiled another stress factor: the possibility of outright sovereign defaults arising from the lack of a lender of last resort and the consequent dissolution of the single interest rate curve that had characterized the early years of the monetary union.

The above arguments allow to identify two main 'risk backbones' that have concurrently contributed to build up the current Eurozone risk morphology⁽¹⁾.

The first – which in this paper is called *competitiveness gap risk* – concerns the large and undue competitiveness gaps which over time have been accumulated across member countries because of inflation differentials and sovereign yield spreads. The winners/losers' divide produced by persisting gaps endangers the membership feeling of losers pushing them to look for alternatives. In order to gauge the size of these gaps the paper considers two indicators regarding the financial sector and the manufacturing sector, respectively: real (or inflation-adjusted) sovereign yield spreads and the *Financial Real Effective Exchange Rate* (F-REER) defined as the effective exchange rate after adjusting both for inflation and for differences in sovereign yields. The relevance of the first indicator is quite intuitive: core activity of banks and other financial players is primarily affected by their funding costs that are closely related to domestic inflation and to the credit worthiness of their national

⁽¹⁾ In this paper, the expression 'risk backbone' will be used to mean a source of divisiveness across the members of the European economic and monetary union. Therefore, it has nothing to do with common references to risk factors, such as: credit risk, counterparty risk, interest rate risk, exchange rate risk, etc..

governments. In turn, by affecting lenders' margin profits, these factors also influence the funding costs of industries resident in the different countries shifting the break-even point of their business especially in a bank-centered environment as the one of the Euro bloc. From this standpoint, the F-REER is an indicator that summarizes the different strength with respect to the terms of trade along with the competitive advantages associated with the opportunity to rely on lower interest rates. Information conveyed by these two indicators reveals huge distances between countries that – belonging to the same currency area – cannot rely on exchange rate adjustments to rebalance highly asymmetric situations.

The second 'risk backbone' is the *risk segregation paradigm* adopted by private investors resident in core countries and by the Eurozone ruling class since the notorious Deauville meeting in October 2010. Banks and other financial institutions located in the center of the Euro area have imposed a sort of 'quarantine' on the public and private sectors of peripheral economies: since 2008, Franco-German lenders have scaled down their peripheral exposures by over two thirds. This was a clear statement of mistrust for market participants who began to speculate against the survival of the Euro further deflating the market value of peripheral debts. Even *selective risk sharing* interventions agreed from time to time by the Euro-bureaucracy to the benefit of individual countries in the periphery have not been effective exceptions to the risk segregating attitude: rather, they have been *twin bailouts* that – by avoiding extreme outcomes in the beneficiary country – have allowed French and German banks to suffer losses on their exposures to that country and to gain the time needed to disinvest [Minenna, 2018a].

Extraordinary ECB measures – such as 1 trillion euros Long-Term Refinancing Operations (LTROs) and the Quantitative Easing (QE) – have contributed to gain time, but for timing, size and constraints have paved the way to pathological phenomena: nationalization of the government debt of peripheral States, negative yields, large and unprecedented Target2 imbalances.

Precisely Target2 is the last act of the risk segregation paradigm: as long as the Eurozone survives without losing 'pieces', Target2 imbalances matter little; but, in case of exit by a debtor nation, its National Central Bank (NCB) may be tempted not to settle the debit balances with the rest of the Euro-system, imposing a consequent loss on the NCBs of the other countries. Not surprisingly, the rise of Euro-skeptical forces in recent years in many member countries has preoccupied creditor countries, pushing them to elaborate various proposals to revise the Target2 system in order to get immunized from adverse events.

The landscape offered by the above described 'risk backbones' raises serious concerns about the compactness and resilience of the Eurozone. A confirmation comes from the recurrent surge of the redenomination risk in reaction to events that question the membership of a State, as happened recently in Italy and (to a lesser extent) France. These events are the result of a growing unsustainability of the current Eurozone set-up for several member

countries, precisely because of the imbalances and anomalies produced by the competitiveness gaps and systematic risk segregation analyzed in this paper.

The two issues qualify the risk morphology of the euro area and their analysis offers a useful map to orientate the EMU reform process and find adequate solutions.

A first area of intervention should address the ECB mandate and constraints. A few months after the end of its massive bond-buying program⁽²⁾, the monetary authority may soon consider a further stimulus to the Eurozone economy to counter the rise in downside risks occurred in early 2019. In this regard, it would be appropriate to reassess the engagement rules that define the scope of the ECB not only in terms of size of its interventions, but also in terms of ability to re-act to the sources of riskiness and fragmentation of the euro area.

An important move in the right direction would be to get rid of the capital key criterion in favor of a criterion that is more aligned with the actual needs of each State [Minenna, 2019]. A similar change could be implemented already within the reinvestment policy on bonds purchased under the QE, by directing all the liquidity obtained from principal re-payments (and, more in general, any additional liquidity injection) only to highly indebted countries. The ECB has already implemented a similar measure with the Securities Markets Programme (SMP), even if with a limited success because of the modest size and some technical details of the program. The success of a second SMP release would depend on how much risk sharing it embeds. To this aim, the program should be carefully calibrated with regard to the policy on coupon rebates, the residual life of purchased securities and the identity of the bond buyer (either the NCBs or the ECB). For example, a set-up where coupons are returned to the sovereign issuer and where NCBs purchase only very long term peripheral bonds as part of a coordinated intervention with national Treasuries would deliver a certain drop in sovereign yield spreads across member countries. Nevertheless, such a measure would hardly achieve a marked improvement of the Target2 imbalances due to the persisting risk segregation associated with direct NCBs' purchases, especially if the size of the intervention is limited to the roll-over of past asset purchases.

A more ambitious program would necessary require a centralization of the purchasing policy at the ECB (implying a full risk sharing on bonds held by the Euro-system) and a larger size of the intervention; this could be done – for instance – speeding up the intervention times: instead of waiting for the natural maturity of the securities purchased under the QE, a maxi swap could be set up to replace these securities with others with very long maturities.

Such a move would certainly have a greater impact in terms of normalization of Target2 balances as well as of the shape and the slope of the yield curves of the different States, favoring the return on a convergent path.

⁽²⁾ As of January 2019 the ECB stimulus is limited to the reinvestment of the principal payments from expiring bonds that are already in its portfolio.

It remains understood that a complete zeroing of sovereign spreads could hardly ignore a review of the institutional objectives of the ECB with a direct targeting in terms of interest rates as the Bank of Japan has decided in 2016⁽³⁾. In the multi-national environment of the euro area, such a target would operatively require country-specific interventions also to take into account the different inflation dynamics of the involved economies.

A similar revision of the ECB target would have a breaking effect on investors' expectations and interest rate dynamics, as happened in 2012 in reaction to the announcement of the anti-spread shield (the OMTs).

It goes without saying that the ECB cannot be charged alone with the whole responsibility of making the Eurozone sustainable again. As it was in the intentions of the founding fathers, the monetary union must be completed by a fiscal union, an ambitious goal but attainable provided that the right choices are made and they are implemented gradually.

In this regard, a practical and effective solution would be a step-by-step reform of the European Stability Mechanism (ESM) with the aim of realizing – in a reasonable timeframe – a complete mutualisation of Eurozone sovereign risks compliant with market rules and with conduct rules designed to minimize moral hazard.

As explained in a recent work [Dosi, Minenna, Roventini and Violi, 2018], this risk mutualisation would take the form of a supranational ESM guarantee with the ECB financial backing and would include, *inter alia*, the introduction of a non-redemption clause on government bonds that benefit from the guarantee. At the end of a transitional period in which – thanks to risk sharing, to the non-redemption clause and to the message they would convey to financial markets – sovereign yields of the member countries would be boosted to converge on a common trajectory, the Eurozone would finally be ready to become a fiscal union with a genuine federal budget and a federal debt managed by a single finance minister.

Hopefully the proposed solutions should gradually deflate the overall risks, bring to physiological levels the above identified indicators of the Eurozone risk morphology (i.e. real yield spreads, F-REER and Target2 imbalances) and ensure a long-term stability to the euro area.

⁽³⁾ See https://www.boj.or.jp/en/announcements/release_2016/k160921a.pdf.

2. COMPETITIVENESS GAP RISK

According to euro advocates, one of the strengths of the single currency would have been the elimination of the exchange rate risk between member countries and (with it) of unfair competition from economies whose growth model was based on competitive devaluations [Tilford, 2014] to pump exports to the detriment of their neighbors.

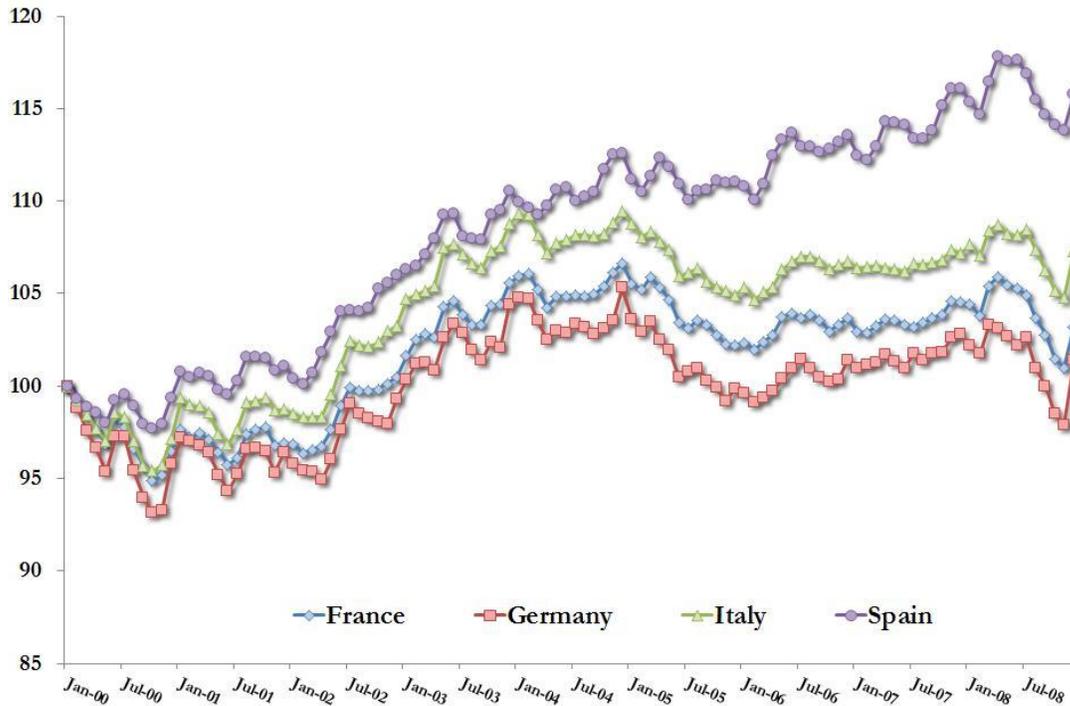
Facts have shown, however, that the Eurozone architecture – especially in the interpretation given by the European ruling class – is an equally fertile ground for the development of undue divergences in competitiveness between member countries than the former regime of flexible exchange rates.

The main cause is to be found in the inappropriate choice of a partial integration, evidenced by the adoption of the same currency without fiscal and labor market integration and with a common monetary policy that – having to mediate between so different realities – is subject to unavoidable operational limits, especially when considering inflation rates at the level of individual member States.

Compared to the pre-Euro phase, there has been a deterioration in the competitiveness of the Southern European countries (Italy, Spain, Ireland, Portugal and Greece) and a simultaneous increase in the competitiveness of the Central-Northern European countries (Germany, the Netherlands, Finland, Austria, Luxembourg, France and Belgium) [Engler *et. al.*, 2014]. In particular, the entry into the single currency has led to a huge commercial advantage for Germany, which has benefited from a substantial devaluation of its currency compared to the era of the Deutsche mark. The combination of this factor with a policy of wage restraint and low inflation has allowed the German manufacturing industry to steal important market shares from its European competitors (Italy in particular) and to consolidate a leadership position in the arena of global trade.

A good representation of this phenomenon is offered – limited to the pre-crisis period – by BIS data on Real Effective Exchange Rates (REER). Figure 1 illustrates the REER dynamics for selected Eurozone countries over the period 2000-2008. Apart from a somehow correlated pattern (especially up to 2004), most countries have experienced a deterioration in competitiveness, whereas Germany and its allied countries (Austria, Finland and the Netherlands) have enjoyed a devaluation of their REER along a path already undertaken in the immediately preceding years.

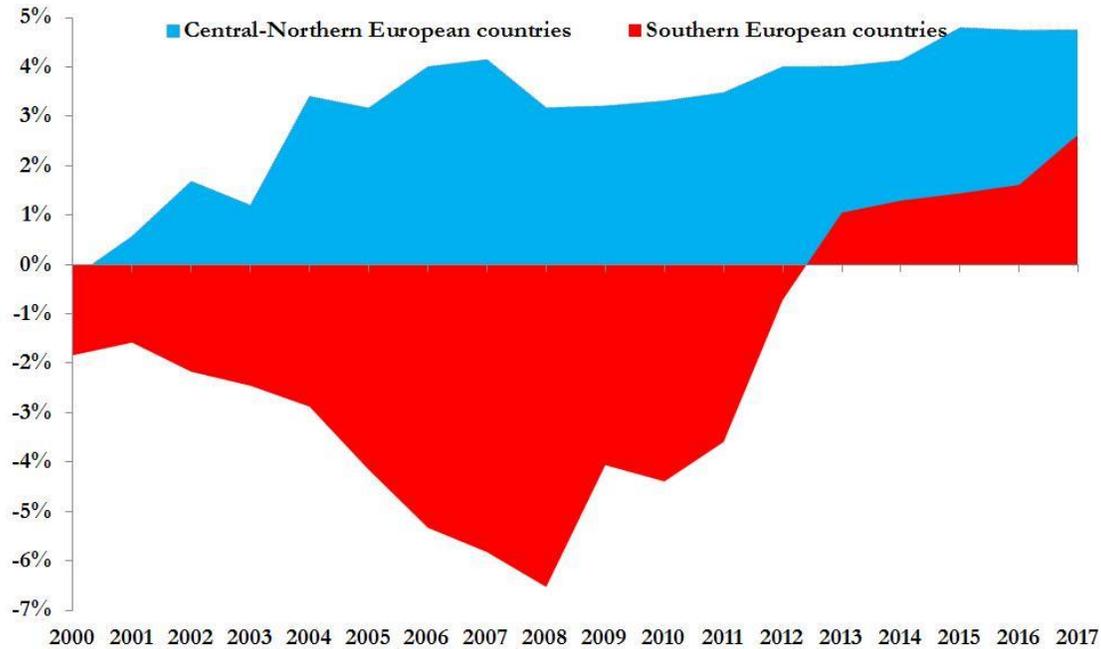
Figure 1 – Real Effective Exchange Rate for selected Eurozone countries: 2000-2008 (January 2000=100)



Source: BIS

In turn, larger competitiveness gaps have led to within-union external imbalances, as it results from the divergent dynamics of the current account balance of Southern and Central-Northern European countries. Figure 2 compares the current account balance (as percentage of GDP) of the two subsets of countries from 2000 to 2017, highlighting the prevalence of the described dynamics up to 2008. Then, some form of convergence has shown up, characterized by a recovery in the current account of peripheral countries that, however, should be associated mainly with the collapse of imports in the broader context of the collapse of domestic demand caused by the crisis and the austerity policies required by the Euro-bureaucracy.

Figure 2 – Current Account Balance (in % of GDP) of Central-Northern and Southern European countries: 2000-2017⁽⁴⁾



Source: Author's calculations on Eurostat data

Moreover, the contribution of the current-account surplus to the GDP of Central-Northern countries remains still significantly higher than the one seen in Southern countries: 4.7% against 2.6%.

Among Central-Northern countries, Germany deserves a special mention: since end-2000, its current account balance has posted an unprecedented growth that, after a temporary stop in 2009, has resumed to new record highs with values steadily over 7% of the GDP since September 2014. The maximum was reached in mid-2016 when – pushed by the euro devaluation with respect to the US dollar entailed by the ECB Quantitative Easing – it has arrived to 8.76% in GDP terms.

Entry into the euro area allowed Germany to successfully pursue the mercantilist vocation of its economy, supported also by the domestic financial system. In fact, in the pre-crisis period, banks and other professional investors resident in Germany have generously granted

⁽⁴⁾ Here, Central-Northern European countries include Germany, France, the Netherlands, Finland, Austria, Luxembourg and Finland; Southern European countries include: Italy, Spain, Greece, Portugal and also Ireland.

credit to neighboring countries in order to finance the external demand for ‘made-in-Germany’ according to a classic vendor financing scheme [Minenna, 2016].

The subsequent eruption of the crisis has pushed German lenders to close the credit taps to the Eurozone periphery, while it has reserved however other important advantages to the German manufacture on the financial field, which will be discussed shortly.

Despite the anomaly of the German current account data, the European officialdom has avoided decisive action in this regard [The Economist, 2018]. Formally, the European Commission recognizes that excessive and persistent current account surpluses cause an erosion of competitiveness. Since Autumn 2011 it also has set forth specific limits in this regard by including a 3-year backward moving average of the current account balance as percent of GDP over the +6% threshold in the list of macroeconomic imbalances that threaten the well-functioning of the monetary union as a whole⁽⁵⁾. Yet, so far, Germany has received only pale addresses from the European Commission, usually in the form of policy recommendations to stimulate domestic demand and imports. For its part, Germany has essentially been turning a deaf ear and its current account is expected to remain the world’s largest in 2018 at a value of about \$300 billion [CESIFO, 2018], a position that the country has been holding for many years, placing itself in front of large export-driven economies such as China and Japan.

Inflation differentials affect the relative competitiveness of countries also in relation to the funding costs effectively faced by the government, corporates and households and measured by real interest rates. Paraphrasing Boschen [1994], the real interest rate is the price at which current consumption/investment opportunities via savings can be converted into future consumption/investment.

Also from this point of view the euro is a particular animal compared to the other main currency areas. The major central banks around the world have an inflation target which is combined – more or less explicitly – with some kind of commitment on the real economy. In the case of the FED, for example, this combination takes the form of a dual mandate⁽⁶⁾ with a target both in terms of inflation and in terms of maximum employment. And even where the central bank’s mandate is stated exclusively in terms of price stability, still generally experts talk about ‘flexible inflation targeting’ precisely because the monetary authority also pursues employment and output stabilization together with the inflation target⁽⁷⁾.

⁽⁵⁾ There is also a bottom limit for the current account balance – namely a 3-year backward moving average lower than the -4% of the GDP – which is included in the list of macroeconomic imbalances.

⁽⁶⁾ For the sake of precision, since 1977 the FED formally pursues three goals: stable prices, maximum employment, and moderate long-term interest rates, though the last one is rarely mentioned in policy discussions. For this reason the Fed is commonly viewed as having only a ‘dual mandate’. See: https://www.federalreservehistory.org/essays/fed_reform_act_of_1977

⁽⁷⁾ See: <https://www.federalreserve.gov/monetarypolicy/monetary-policy-strategies-of-major-central-banks.htm>

In addition, even where they are formally independent from their respective Treasury Ministries, central banks can make open market operations to buy government bonds and, thus, finance government spending through more or less direct actions that obviously impact on inflation.

By virtue of this wide-spread set-up, monetary policy significantly affects the inflation rate and, through this, the riskiness of government debt. In other words, inflation represents an *endogenous* risk source for government bonds and, therefore, it is appropriate to examine their yields in nominal terms, i.e. including the inflation risk premium.

At the same time, in most currency areas, inflation is also the main source of risk for public debt securities, whose value for bondholders, in fact, suffers a deduction when money loses its purchasing power.

Inflation risk (together with the exchange rate risk) compensates for the substantial absence of outright default risk because the (more or less explicit) backing of the central bank that acts as a lender of last resort guarantees that the government repays its debt at maturity.

The euro area, however, obeys a different scheme. The ECB primarily pursues a price stability objective with an inflation target «*below, but close to 2%*». Subject to this objective, it can support the general economic policies of the European Union including those aimed at pursuing full employment and a balanced GDP growth.

More noticeably, the inflation target pursued by the ECB does not have a one-to-one correspondence with any national government, as it refers to the Eurozone as a whole and, thus, it is a weighted average value⁽⁸⁾ between the different member countries. In addition, the ECB is statutorily forbidden to monetize the public spending of any member government.

A prominent consequence of this peculiar set-up – which the same founding fathers of the European monetary union considered transitory pending the upgrade to a full fiscal and political union – is that, paradoxically, the effective ECB ability to affect the inflationary dynamics of individual countries is minimal⁽⁹⁾.

In practice these dynamics end up responding mainly to other impulses (e.g. labor cost, energy prices) which in turn are often driven by idiosyncratic factors at the national level. This makes the euro area naturally predisposed to inflation differentials across member countries.

⁽⁸⁾ The weight applied to the Harmonized Consumption Price Index (HICP) of each member country is based on the share of the Household Financial and Monetary Consumption Expenditure (HFMCE) in the total.

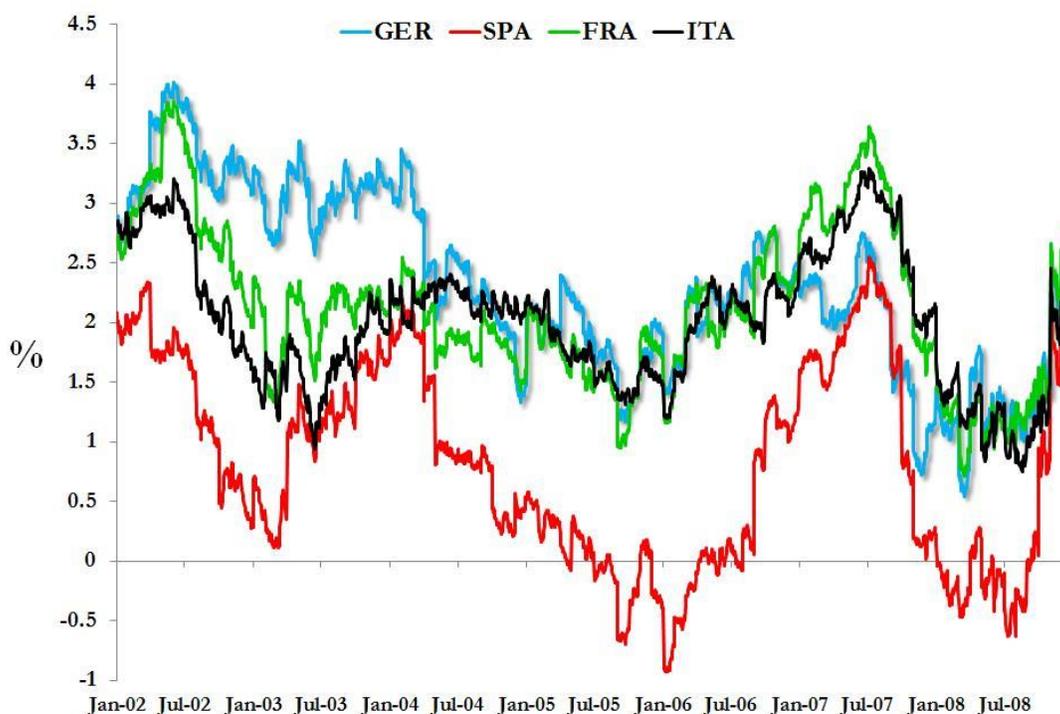
⁽⁹⁾ See also Dunbar [2018], who highlights this point with regard to the calibration of the QE tapering: «*This divergence [among national inflation trends] suggests that the Eurozone average is a misleading target for the purpose of QE tapering*».

Looking at the riskiness of public debts, inflation can be regarded as an *exogenous* source of risk for bonds issued by individual governments within the euro area. On the other hand, these bonds – not being guaranteed by the European Central Bank – are *endogenously* exposed to the insolvency risk of the respective national Treasury⁽¹⁰⁾⁽¹¹⁾.

For these reasons, the comparison between the sovereign yields of the member countries in real terms (i.e. after adjusting for inflation differentials) offers a more correct assessment of their different insolvency risk.

Looking at real sovereign yields over the pre-crisis period – when the odds of a sovereign default were essentially zero – it can be observed how, in a certain sense, even then the Eurozone was strongly fragmented (Figure 3).

Figure 3 – Long-term real interest rates for selected Eurozone countries: January 2002 - December 2008



Source: Bloomberg

⁽¹⁰⁾ Because of this set-up, the position of national governments joining the Eurozone is often resembled to that of emerging countries that issue debt in a foreign currency, usually the dollar, and that are exposed to the risk of sudden stops in capital inflows and, thus, of liquidity crises [De Grauwe and Ji, 2013].

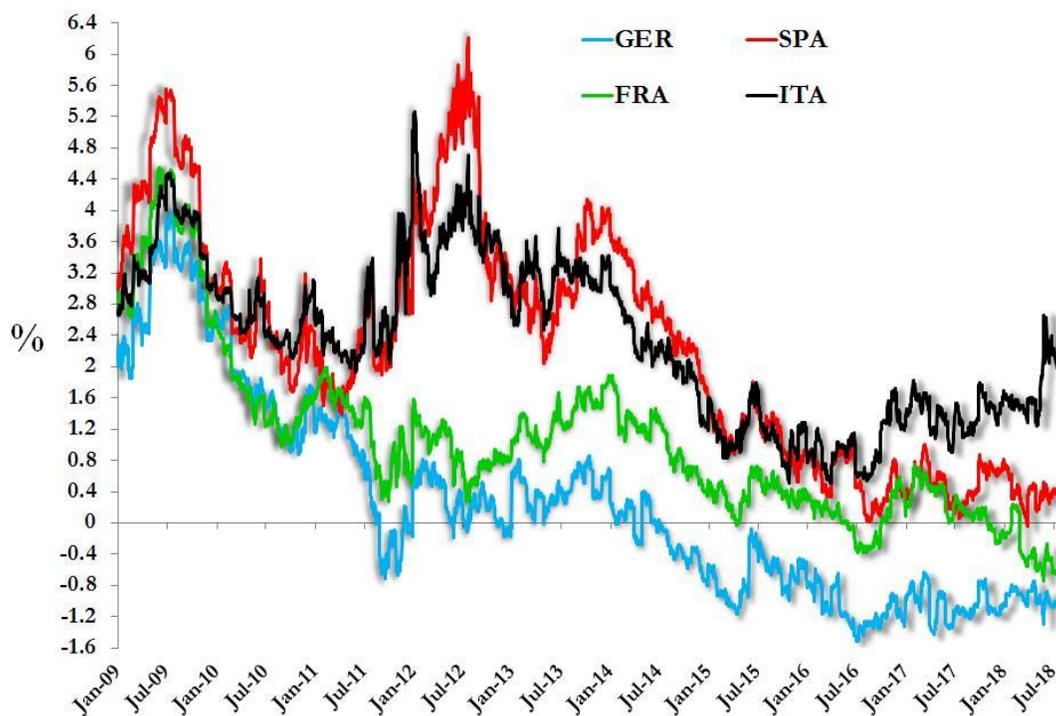
⁽¹¹⁾ On a similar line of arguments, Bofinger [2018] claims that euro area membership entails a specific insolvency risk.

On the one hand, in Germany the moderate price growth has entailed relatively high real yields and a reduction in the propensity to invest (without much critical consequences, given the export-driven orientation of the Teutonic economy). On the other hand, several peripheral economies (such as Spain, Ireland, Greece and Italy) have been over-heated by the low real interest rates resulting from a high inflation environment. Spain, for instance, has even experienced negative real interest rates that have contributed to boost the investment boom and the real estate bubble [Odendahl, 2014].

Precisely as predicted in 1986 by Alan Walters, the British economist who had advised Margaret Thatcher not to join the Exchange Rate Mechanism (the preparatory phase for the launch of the single European currency), highlighting the inherent instability of a fixed exchange rate system. In the absence of rebalancing mechanisms replacing bilateral exchange rate adjustments, such a system is vulnerable to large gaps between participating countries and to dynamics that amplify economic cycles at the national level.

The advent of the crisis has favored the progressive reversal of these trends, as it emerges at a glance from Figure 4 which shows the trend of 10-year real interest rates of selected Eurozone governments over the last decade.

Figure 4 – Long-term real interest rates for selected Eurozone countries: January 2009 - July 2018



Source: Bloomberg

Germany has got increasingly descending real interest rates, which – after having been hovering around the zero threshold for a while – are now steadily negative; similar pattern for France. Spain, Italy and other peripheral countries, instead, have seen rising sovereign yields in real terms as result of two driving forces: a widening credit risk premium – which has boosted their yield curve in nominal terms – and the shift to a deflationary environment.

It is a well-established fact that the crisis has brought to the attention of the financial markets the importance of credit risk not only for the private sector but also for the public sector, starting with the first Greek debt crisis of Spring 2010. Shortly thereafter, Germany and France have agreed that the best way to reduce the risk of contagion was to confine risks in the periphery, avoiding solutions based on risk sharing.

The consequences of this policy were the dissolution of the single Eurozone interest rate curve, the appearance of sovereign yield spreads and the *flight-to-quality*, i.e. the flight of investors from peripheral countries to redirect liquidity towards the German Bund, which has become the safe asset of the entire Euro bloc. At the same time, the crisis of confidence has gradually destroyed the inter-bank market of the periphery through a number of well-known phenomena including collateral discrimination and spread-based intermediation, forcing the ECB to intervene as liquidity supplier of monetary and financial institutions located in the South of the euro area [Minenna, 2016].

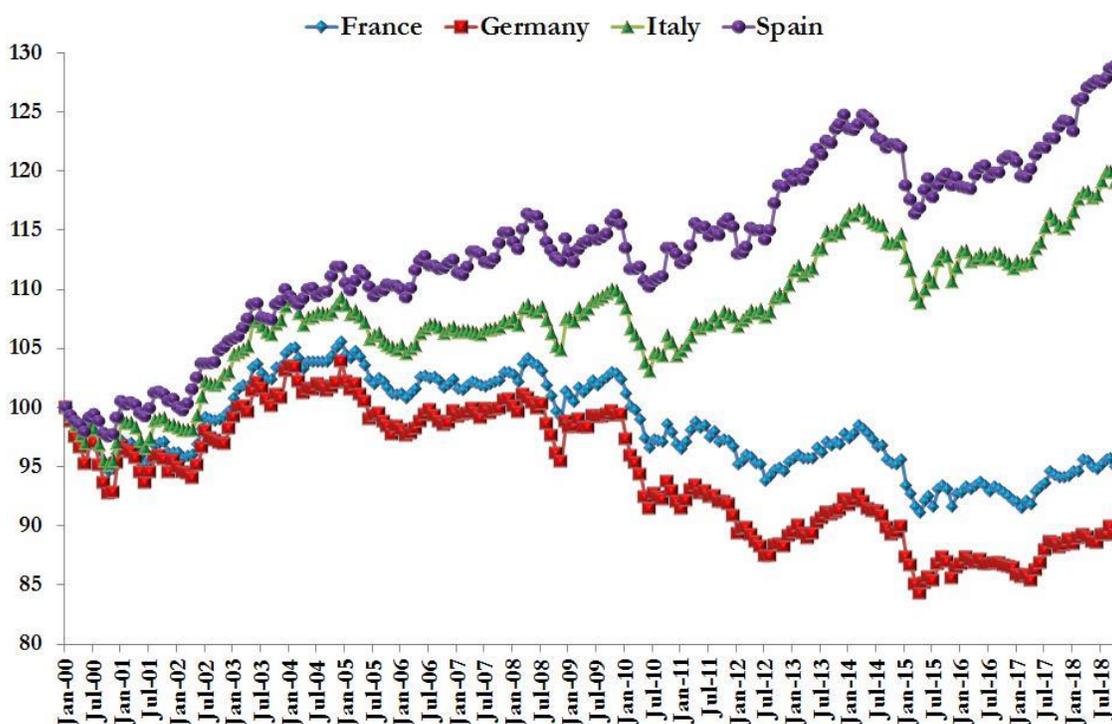
Through the inter-bank market the large and persisting divergence in sovereigns' funding costs has propagated to the banking sector: given the broad financialisation of modern economies and the high reliance of European businesses and households on banking funding, problems have promptly reversed also on the real economy leading to a prolonged credit crunch with profound recessionary implications. In turn, as in a classical vicious circle, the collapse in GDP growth has translated into higher debt-to-GDP ratios making it harder and harder for peripheral governments to remain compliant with a budgetary discipline that – in accordance with the continental predicament for fiscal virtue – was being made even more binding (with amendments to the Stability and Growth Pact and with the Fiscal Compact) despite the foreseeable pro-cyclical effects.

In order to take into account the joint effect of the above described disaggregating factors (inflation differentials and sovereign yield spreads) on the relative competitiveness of the real economies of Eurozone members, it is useful to adjust the real effective exchange rate for the part of the sovereign yield of any given country exceeding a threshold that is common to all countries within the monetary union (for instance, the weighted average of the sovereign yields of all member governments). The indicator obtained in this way can be baptized Financial Real Effective Exchange Rate (in brief, F-REER).

Figure 5 reports the evolution of the Financial Real Effective Exchange Rate for selected Eurozone countries, highlighting the progressive consolidation of large competitive gaps. In

mid-2018 the gap between Spain and Germany was around 40% in favor of the second, that between Italy and Germany of around 30% (again in favor of Germany).

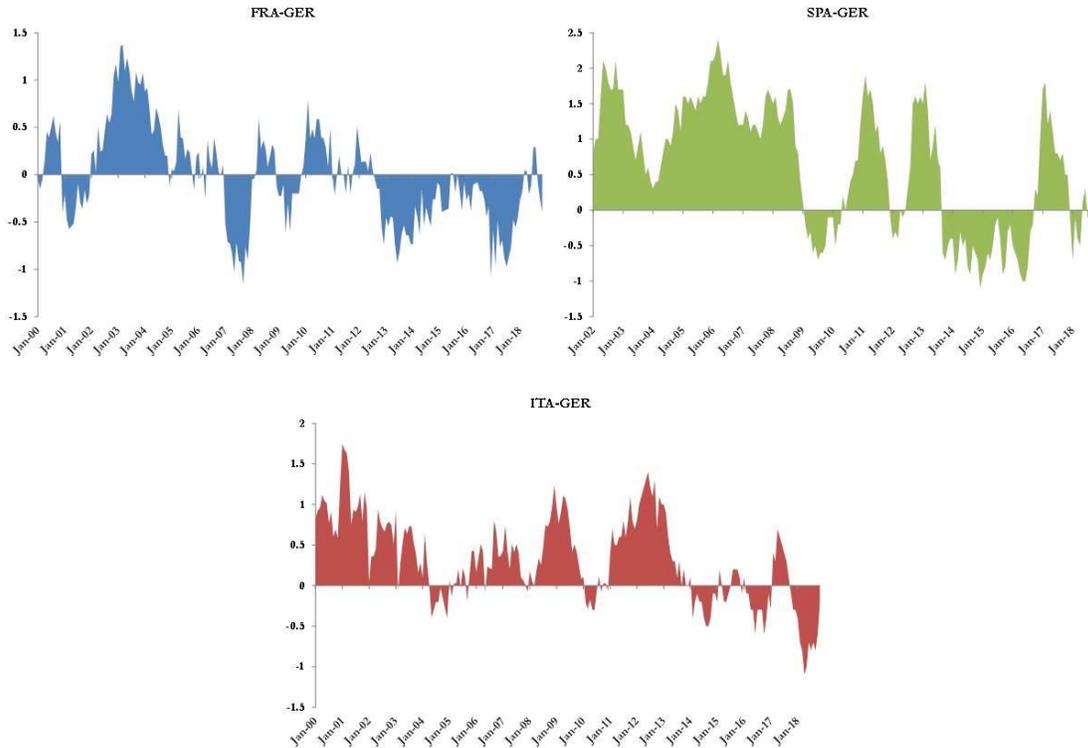
Figure 5 – Financial REER for selected Eurozone countries: 2000-2018
(January 2000=100)



Source: BIS, Bloomberg

Until 2008-2011, inflation differentials have been the main cause of the growing competitive gaps between member countries. In the following period, however, the contribution of the sovereign spreads became predominant, in line with the market assessment of the credit risk but also – starting from mid-2013 – because of the deflationary impact that the crisis and the fiscal containment policies have had on the peripheral economies. Consequently, inflation differentials between Central-Northern European and Southern European countries have progressively shrunk and then, even, changed their sign. As shown by Figure 6, this is particularly evident if considering inflation differentials with respect to Germany.

Figure 6 – Inflation differentials of selected Eurozone countries w.r.t. Germany: 2000-2018



Source: Bloomberg

In the new set-up that took shape in the last 5-6 years German inflation is among the highest in the Eurozone, also because of the recent abandonment of the wage containment policy. Meanwhile, the Bund has retained its preferred status as a safe haven and, therefore, interest rates on German sovereign bonds have remained very low if not negative also thanks to the effect of the Euro-system's purchases under the PSPP, where the capital key criterion has guaranteed to Germany the highest share of the ECB's monetary stimulus [Minenna, 2019].

The combination of low nominal interest rates and steady but controlled inflation ensures the German State the opportunity to borrow at highly negative real interest rates. Conversely, the high real interest rates environment limits government spending and hinders economic recovery within the Eurozone periphery.

This is the new face of competitiveness gaps in the post-crisis era and suggests that the real sovereign yield spread is a very good indicator to measure these gaps.

A similar measurement is of particular interest for Italy with respect to Germany. The latter is considered the safest issuer of the euro area, whereas the former has often been referred to as the sick of Europe, because of the huge public debt-to-GDP ratio. Nevertheless, Italy is

also the only peripheral country which has never received customized financial assistance packages from the European Official Sector; rather it has joined as third contributor after Germany and France to all aid packages granted to the rest of the periphery. And, precisely because of the huge public debt, Italy has also been required to make domestic reforms (encompassing the job market, the retirement expenditure, the budget for public investments, etc.) which have heavily hit its economic and social landscape.

Figure 7 reports the real yield spread between 10-year Italian BTP and 10-year German Bund from January 2011 to November 2018.

Figure 7 – Yield spread between 10-year BTP and 10-year Bund adjusted for the inflation differential between Italy and Germany: 2011-2018



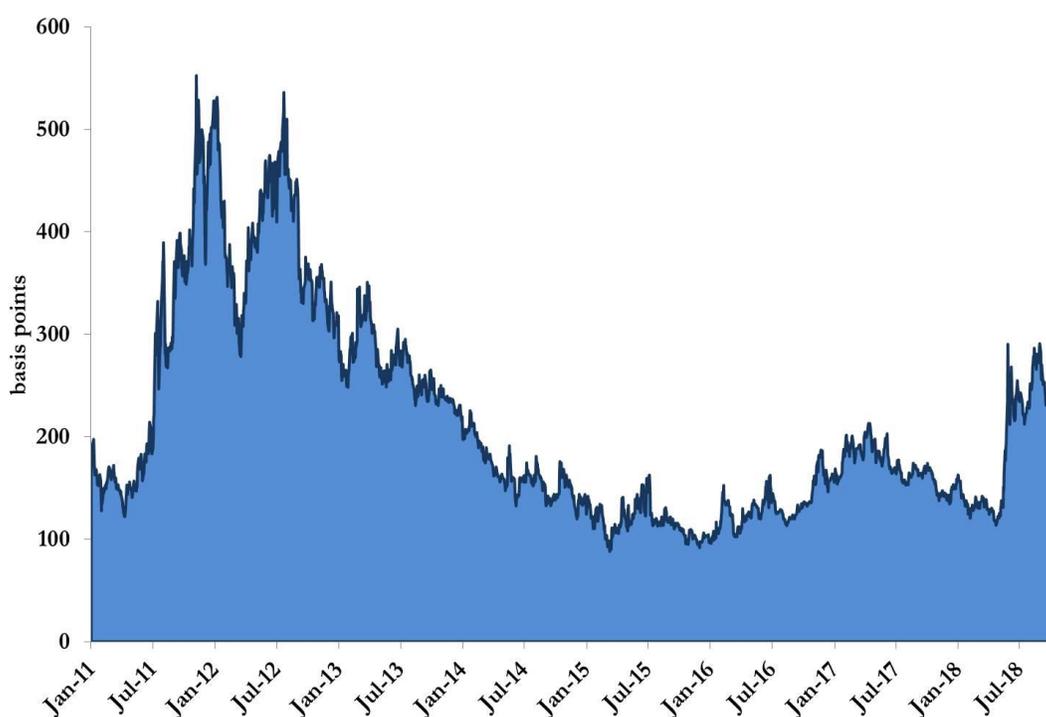
Source: Bloomberg

Impressively, it can be observed that recent levels of the real BTP-Bund spread are very close to those experienced at the peak of the crisis (late 2011-early 2012). At that time, this indicator had an average value of 350 basis points, more or less the same as the one recorded over the last 4 months of the observation period.

Apart from a bit of volatility, Italy's real sovereign spread has not significantly improved over the last seven years: it never went below the 150 basis points floor since mid-2011 and has been permanently over 200 basis points since the end of 2016.

Information conveyed by this indicator returns a snapshot of Italy's risk profile which is less oscillating than the one provided by the corresponding nominal indicator (see Figure 8), revealing that – despite the crisis management toolkit deployed at the European level – Italy's risk profile has remained critical with little improvement since the peak of the Eurozone sovereign debt crisis.

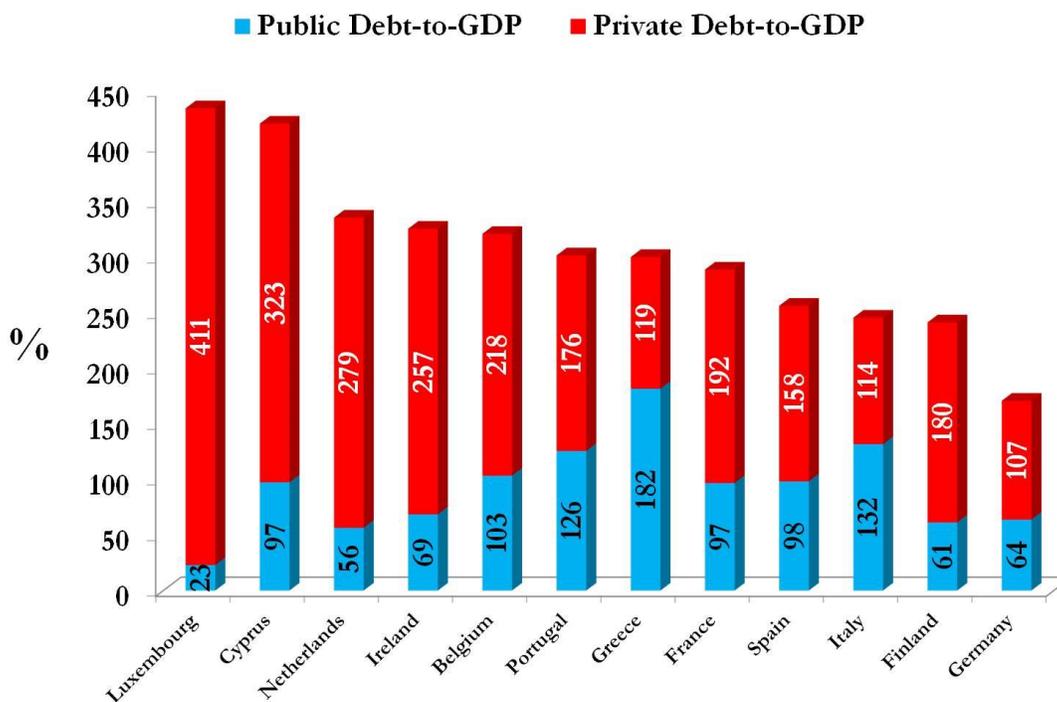
Figure 8 – Nominal yield spread between 10-year BTP and 10-year Bund: 2011-2018



Source: Bloomberg

Nor the situation is significantly better elsewhere. It holds for the rest of the periphery, but also for some core country (e.g. France, Luxembourg and the Netherlands) whose total debt (public plus private) significantly exceeds the Italian one in GDP terms (see Figure 9).

Figure 9 – Total debt (public and private) to GDP for selected Eurozone countries: year 2017



Source: IMF

Actually, as soon as one widens the eye to other key indicators, such as the NCBs' imbalances on the Target2 system, it is straightforward to see how no country (not even Germany) is immune. Still, we are all in the same boat.

The ECB Quantitative Easing has temporarily reduced the distances between member countries; but inflation data still display large differences across national economies, and the lack of a fiscal, political and (authentic) economic union remains the main fragility of the Eurozone as confirmed by the rising consensus recently gained by Euro-skeptic political movements in several member States.

Persisting divergence becomes more and more a disaggregating factor and needs to be addressed by the ongoing reform process of the euro area not disregarding the resort to out-of-the blue solutions.

3. RISK SEGREGATION PARADIGM

The second ‘backbone’ of the Eurozone risk morphology is the *risk segregation paradigm* adopted by the private sector and by the EU institutions since the eruption of the crisis.

Private investors resident in core countries – Germany, France, Luxembourg and the Netherlands – have moved first in this direction. After having contributed to spread the crisis within Euro area borders because of their large exposures to US-made structured finance products, banks located in the center of the Eurozone have suddenly cut their credit supply to indebted peripheral economies making them hard to sustain their current account deficits (see previous section).

Then it was the time of the official institutions. At the Deauville meeting of October 2010, the leaders of the first two Eurozone economies confirmed the strengthening of the budgetary surveillance on national governments and the principle of Private Sector Involvement which subordinates any European financial assistance to the participation of private creditors to losses. The losses on the debt issued by bankrupted banks and corporates as well as those on government bonds in case of sovereign default. The latter despite the prudential regulation continued to consider risk-free all government bonds held by banks, insurance and asset management companies.

The official argument for risk segregation is that each country must be virtuous and rely only on itself, leaving no wiggle room to supranational fiscal transfers or concrete stabilizing facilities in favor of a member hit by asymmetric shocks. It is the well-known argument against a transfer union, which appears more or less explicitly in the positions expressed by economists coming in prevalence from the core countries. This is the case of the manifesto signed by 154 German economists and published by the FAZ in May 2018⁽¹²⁾; but even more moderate and reformist economists are still hesitant to accept concrete steps towards a fiscal policy framework that includes a federal budget and automatic transfers to member countries [Baglioni *et. al*, 2018]

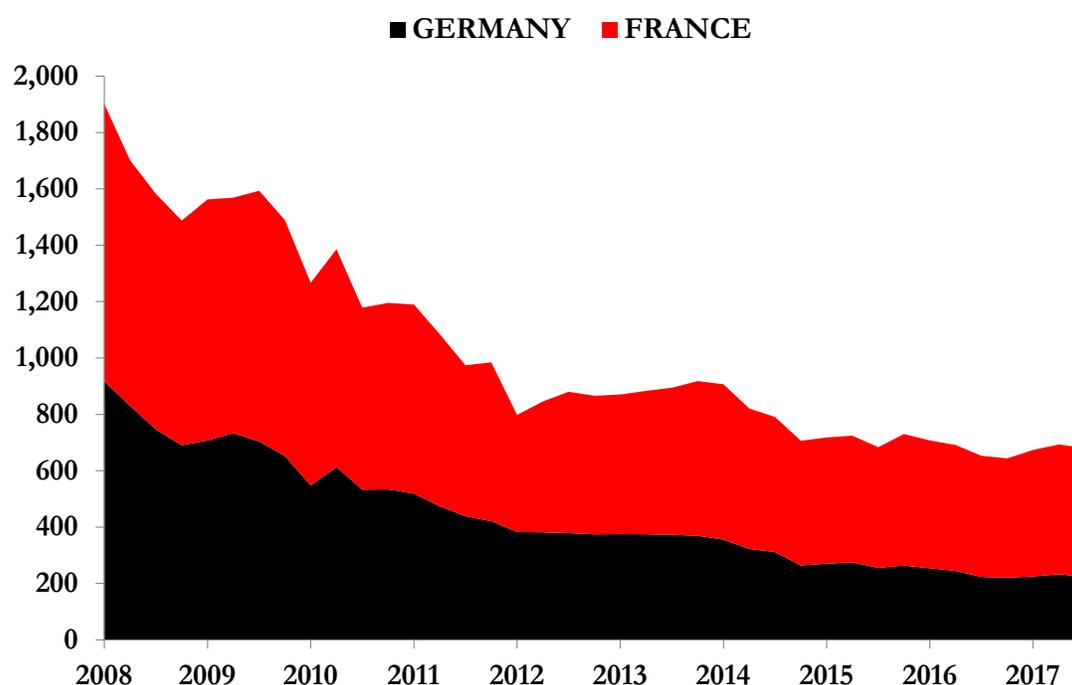
The *true* version of the story has to be researched in the unwillingness of core countries to undertake authentic risk sharing solutions. In order to preserve themselves from the turmoil in the periphery, these countries have used their influential position within the key Eurozone institutions to strengthen the fiscal discipline in the currency area, pretend harsh internal reforms by Southern countries and let their banks getting rid of the large exposures towards the periphery that had been accumulated in the run-up of the crisis.

A look at BIS statistics on Franco-German banks claims against peripheral economies (Italy, Spain, Portugal, Greece and Ireland) provides for clear-cut evidence of these dynamics: from

⁽¹²⁾ See: <https://www.faz.net/aktuell/wirtschaft/eurokrise/oekonomen-aufruf-euro-darf-nicht-in-haftungsunion-fuehren-15600325.html>

2008 to 2017 these banks have scaled down their exposures by almost two-thirds (see Figure 10).

Figure 10 – Consolidated exposure of Franco-German banks to counterparties resident in the Eurozone periphery⁽¹³⁾



Source: BIS

It is commonly agreed [Alcidi and Gros, 2013] that the flight of private investors was offset by public capital inflows to the benefit of peripheral countries in the form of official loans and unconventional ECB interventions. This set of measures is usually referred to as risk sharing at the level of the European public sector (apart from the IMF involvement) [Milano, 2017].

A less emphasized point is that, by means of these risk sharing episodes, the Eurozone leadership has favored the deleveraging of peripheral exposures by lenders from the core countries. German banks, in particular, had intermediated the excess saving arising from the large current account surplus by redirecting those funds to countries such as Ireland and Spain where they were used to boost real estate and investment bubbles [Schelkle, 2017].

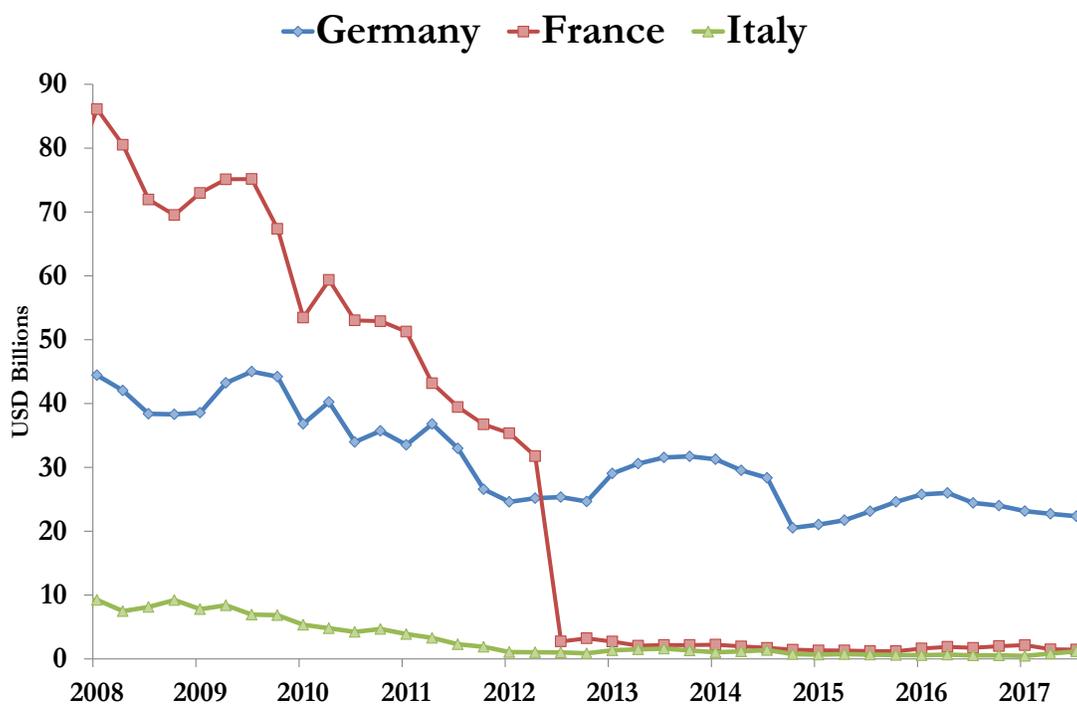
⁽¹³⁾ I.e.: Greece, Ireland, Portugal, Italy and Spain.

When the crisis arrived, governments in Germany and France had to face a hard choice to save their banks from the danger of huge losses on their claims towards the periphery: either resorting to funds from their public budgets (at the expense of their taxpayers) or agreeing on financial assistance programs to be granted at the European level to the individual peripheral country that, time-by-time, had arrived close to sovereign default or banks' collapse [Thompson, 2013].

Obviously, they selected option n. 2 by which risky exposures to the periphery were transferred to the *whole* public sector of the monetary union, and, thus, to *all* Eurozone governments, including those whose private financial sector had negligible exposures to the beneficiary country up to then.

This '*twin bailout*' policy began with the first Greek bailout in 2010 [Fuhrmans and Moffett, 2010]. In February of that year the consolidated exposure of French and German credit institutions to Greece was of 120 billion dollars, over ten times that of their Italian and Spanish colleagues (see Figure 11).

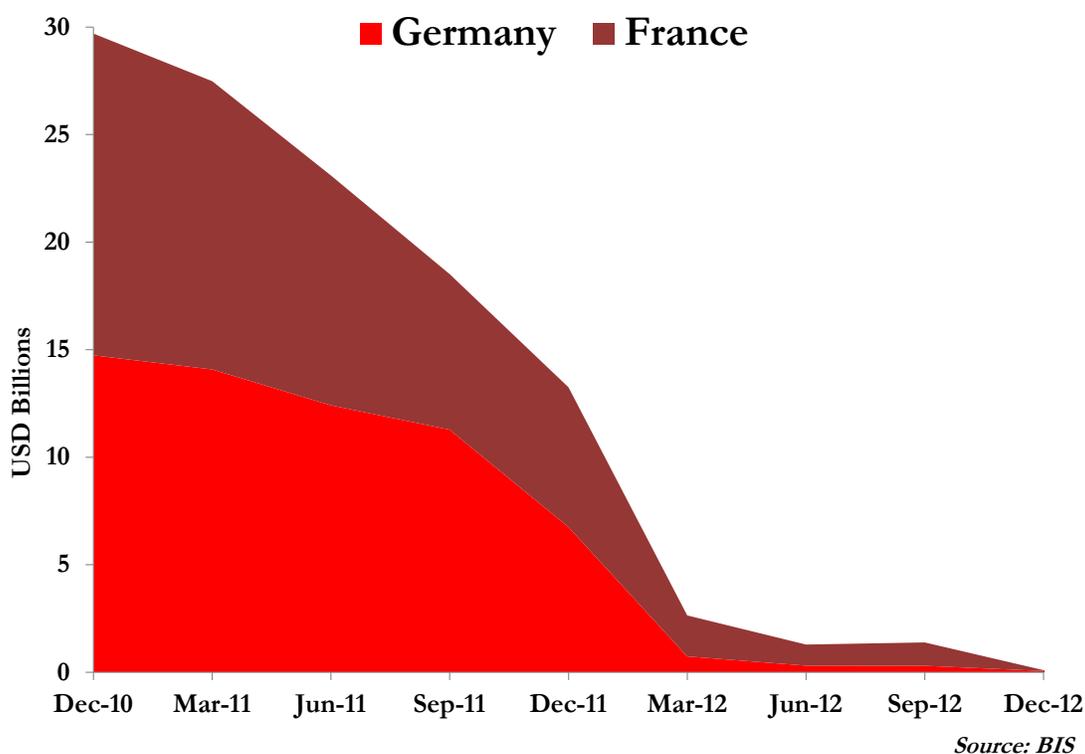
Figure 11 – Consolidated exposure of German, French and Italian banks to counterparties resident in Greece



Source: BIS

In May 2010 the Euro-group gave the green light to 80 billion euros⁽¹⁴⁾ of financial aid to the Hellenic Republic, which took the form of bilateral loans by Eurozone governments (*Greek Loan Facility*): this way, the Greek risk was redistributed also on countries that were essentially unexposed such as Italy and Spain. The disbursement for the French government (€11.38 billion) has been just slightly higher than that of the Italian government (€10 billion). And, thanks to this bail out by the official sector, French and – more smoothly – German financial institutions had the time to get rid of their ‘toxic’ Greek claims: as shown in Figure 12, by March 2012 they had almost completely dismantled their sovereign Greek exposures.

Figure 12 – Consolidated exposure of Franco-German banks to counterparties resident in Greece: December 2010-December 2012

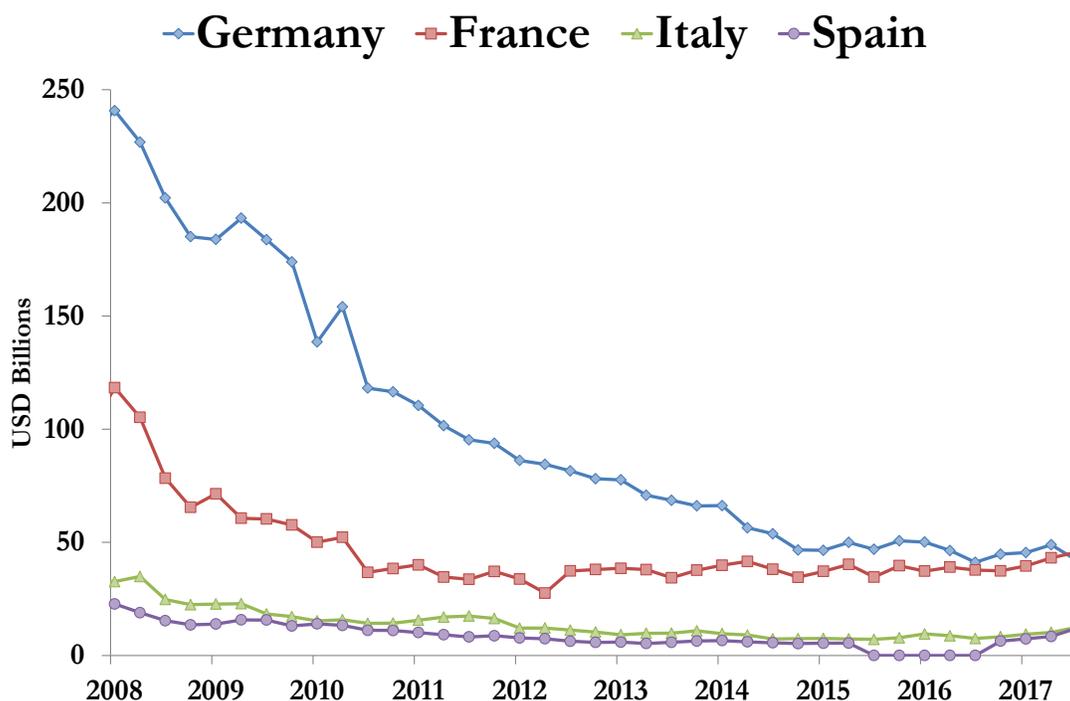


After Greece, it came the Irish rescue. The Celtic country had stopped its impressive performance in 2008 following the burst of a massive property bubble inflated by reckless credit. When the collapse in property prices turned most of this easy credit into bad loans,

⁽¹⁴⁾ The amount effectively disbursed was 52.9 billion euros.

the Irish government had to intervene. Nevertheless, in September 2010 Irish banks were on the brink of the bankruptcy with 26 billion euros (one-fifth of the country's national income) coming due [Boone and Johnson, 2010]. German and French credit institutions had an aggregate exposure of over 200 billion dollars, whereas claims of Spanish and Italian banks to Irish counterparties amounted to less than 30 billion dollars (see Figure 13).

Figure 13 – Consolidated exposure of German, French, Italian and Spanish banks to counterparties resident in Ireland



Source: BIS

Instead of letting private creditors bear some of the losses associated with their unwary lending policies, the Official Sector granted Ireland an 85 billion euro aid package: of these, 45 billion were disbursed by the two bailout funds EFSF⁽¹⁵⁾ and EFSM⁽¹⁶⁾ under the financial backing of the European countries. In this way banks of the core countries were safeguarded and risks were transferred to the taxpayers of *all* member countries. This time it was Germany to reduce its private exposure more with a deleveraging of 58.7 billion dollars

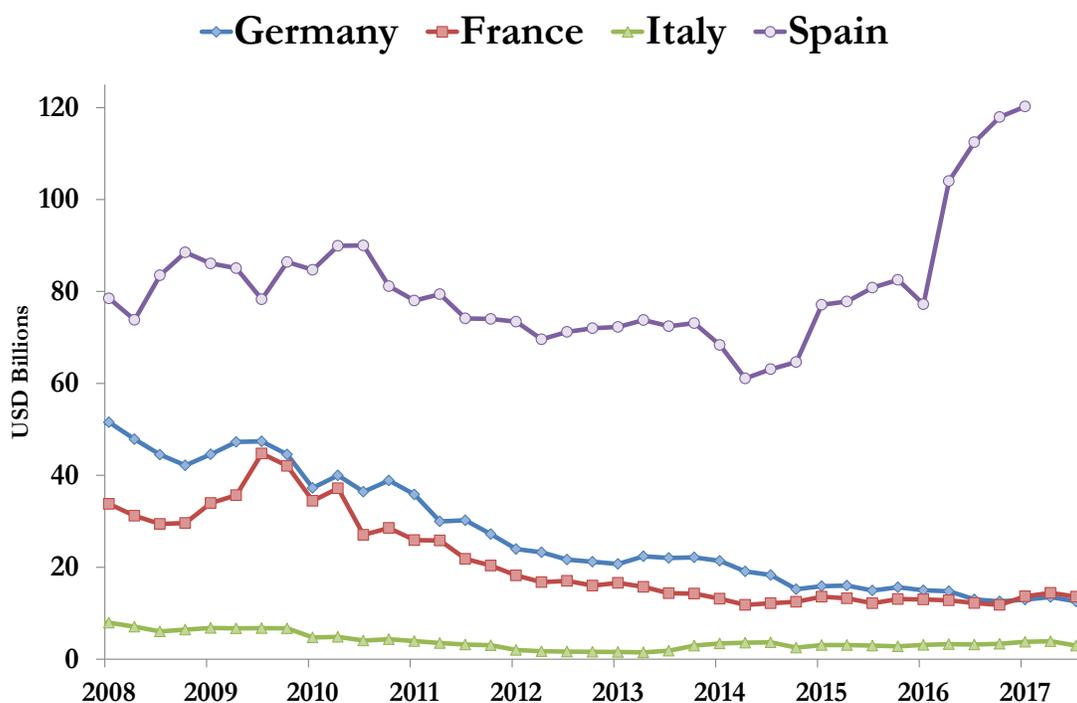
⁽¹⁵⁾ The European Financial Stability Facility, which was created as temporary crisis resolution mechanism for the euro area and later replaced by the ESM.

⁽¹⁶⁾ The European Financial Stability Mechanism, the emerging funding programme guaranteed by the European Commission.

between the end of 2010 and the end of 2011, while the indirect involvement of the German government (through the two bailout funds) amounted to less than 15 billion euros.

In mid-2011, it was the turn of Portugal that – to overcome a sovereign debt crisis, a large part in the hands of foreign investors – applied for and received a 78 billion euro financial rescue package, two-thirds of which came again from European governments through funding from the two bailout funds, EFSF and EFSM. At the time, French and German lenders had a total exposure to the Lusitanian country of about 70 billion dollars, second only to that of Spain (first European partner of Portugal); while elsewhere (e.g. Italy), the exposure of the financial system to Portuguese counterparties was laughable (see Figure 14). Aid from the Official Sector allowed Portugal to emerge from the crisis and Franco-German banks had the time to halve their exposure abundantly.

Figure 14 – Consolidated exposure of German, French, Italian and Spanish banks to counterparties resident in Portugal

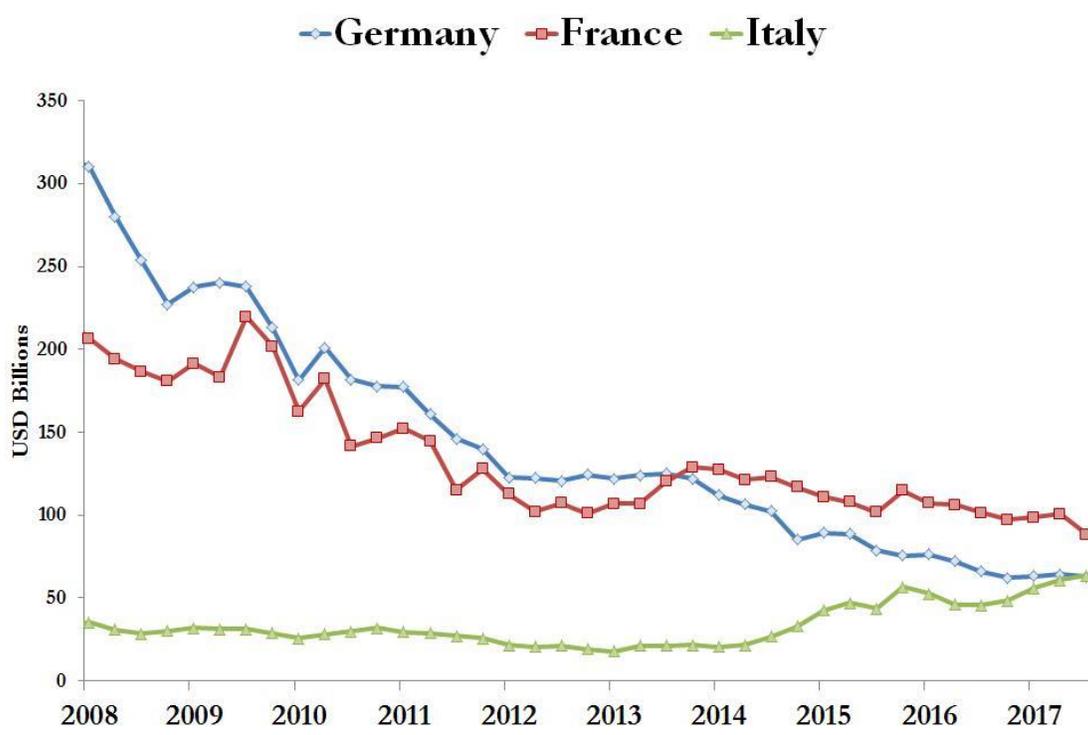


Source: BIS

Same story with the rescue of the Spanish banking sector in 2012. A bankruptcy of Spanish lenders would have caused large impairments to their Germany and French peers, exposed for 140 and 128 billion dollars, respectively (see Figure 15). Not surprisingly Moody's had

cut the rating outlook of six German institutions from stable to negative [Gore and Roy, 2012]. In such scenario the Euro-bureaucracy gave the green light to the transfer of the assets of distressed Spanish banks to a government-owned bad bank (SAREB) whose intervention capability, in turn, was guaranteed by the support of the European Stability Mechanism (ESM), established in those months with the contribution of all countries of the euro area. In December 2012, the ESM provided 41 billion euros for the indirect recapitalization of Spanish banks: funds that, in part, served to repay to the German counterparties the loans generously granted before the crisis. Meanwhile countries with a marginal exposure to the Spanish financial sector were called to play their part: 14.4 billion euros the bill for Italy.

Figure 15 – Consolidated exposure of German, French and Italian banks to counterparties resident in Spain



Source: BIS

Apart from these episodes, the risk segregation paradigm has recurrently inspired the measures adopted by the Euro-bureaucracy after the emergency years of the crisis. The most striking example has been the second Greek bailout: in March 2012 the Private Sector Involvement has been designed to cut by 74% the Greek debt not held by the EU and the IMF.

Looking at the whole Eurozone the list of measures that – calling for risk reduction – took care of confining risks within the periphery is long. With regard to the financial sector, it includes the shift to a regulatory framework aimed at legalizing the PSI principle. In August 2013 – after that banks of core countries had been secured also through more or less direct interventions of their respective governments⁽¹⁷⁾ – it has entered into force the Communication of the EU Commission on the banking sector⁽¹⁸⁾ that has introduced burden sharing provisions to address banking crises. In essence, in case of bank collapse, any involvement of public funds is conditioned upon a prior reduction in the value of receivables held by shareholders and holders of subordinated debt.

Starting from 2016, the discipline governing this matter has become even more rigid: the Bank Recovery and Resolution Directive⁽¹⁹⁾ has established the bail in, which extends the plethora of private investors called to bear the losses from bankruptcy prior any public sector involvement also to holders of senior bonds and large deposits. In both cases, a main side effect has been the request of a larger risk premium by private investors to fund banks, especially if located in the periphery. At the same time stress tests and asset quality reviews conducted by the European banking supervision have exerted an enduring pressing for fast disposals of non-performing assets, forcing many credit institutions of the Eurozone periphery to fire sale troubled assets to vulture funds and suffer large impairments. And, last but not least, there has been the systematic postponement of the European Deposit Insurance Scheme (EDIS), despite it had to be the third pillar of the Banking Union. In such an adverse context it becomes understandable that banks located in the peripheral countries have long maintained the credit to the real economy at subdued level by acting on both the cost and the availability of funds.

The risk segregation paradigm has encompassed also the public sector, by means of an extended list of provisions and practices that, ultimately, have spoiled the uniqueness of the yield curve for Eurozone members and fueled the nationalization of the public debts of peripheral governments with critical implications also for the balance sheets of both private banks and National Central Banks.

The argument is delicate and deserves a flash-back to the origins of the euro. The birth of the single currency had spread among market participants the belief in the safe status of *all* central government debt [Arghyrou and Kontonikas, 2010; Orphanides, 2018]. Such a belief was the result of the equal treatment of all Eurozone governments' debt securities within the ECB collateral policy and also of the prudential provisions for banks and asset management companies, that assign zero risk to sovereign exposures. But in the mid-2000's the ECB has

⁽¹⁷⁾ Governments' support to the domestic banking sector has been provided through a wide mix of measures, including capital injections, guarantees on banks' liabilities and impaired assets measures. German State, in particular, has been quite profligate with its banks, providing them up to 240 billion euros of fresh funds, plus another 20 billion euros in the form of contingent liabilities.

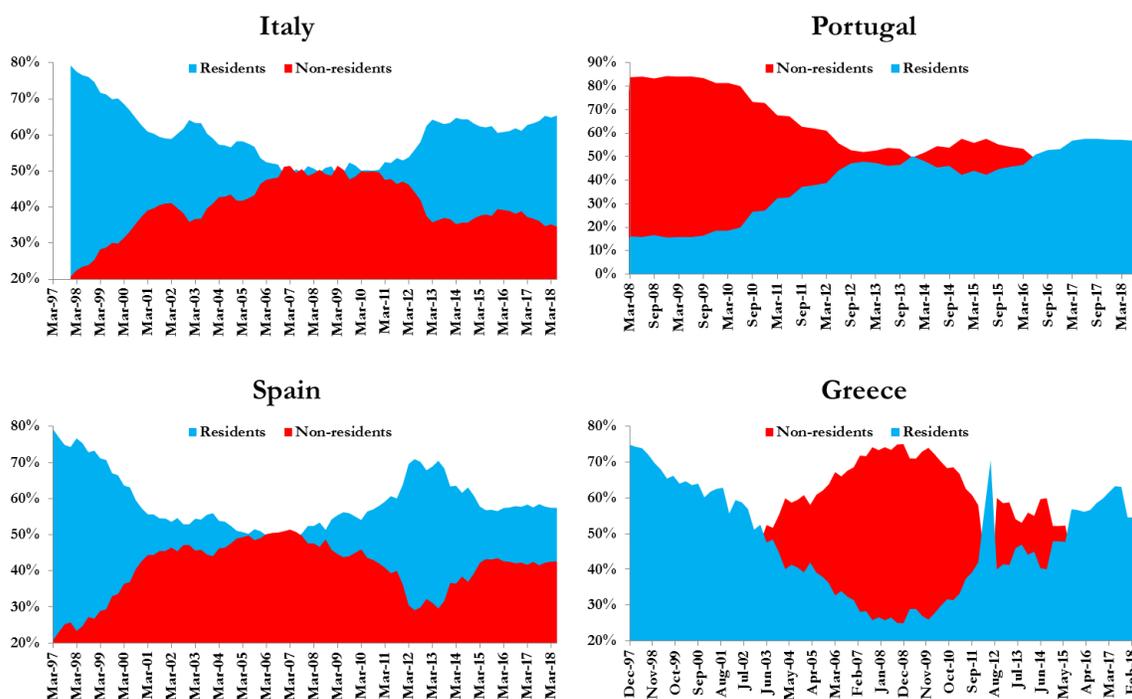
⁽¹⁸⁾ See Communication of the EU Commission n. 2013/C 216/01.

⁽¹⁹⁾ Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014.

introduced a minimum credit-rating threshold to collateral eligibility, which – after the Deauville meeting – has led the monetary authority and the interbank market to apply different collateral haircuts to the bonds issued by different member States. This collateral discrimination and the deleveraging by banks resident in Central-Northern European countries have reinforced each other, contributing to the dissolution of the single yield curve of the monetary union and to the above mentioned nationalization of the public debts of Southern European countries.

Faced with the discrimination of bonds issued by their domestic governments, credit institutions within the periphery have been forced to ‘patriotically’ take over these sovereign exposures. Figure 16 offers a graphical evidence of this phenomenon, reporting the evolution of the share of public debt held by resident and non-resident investors for Italy, Portugal, Spain and Greece. The share held by non-resident investors has steadily increased up to 2007-2009, then it started declining for several years during the Eurozone sovereign debt crisis; eventually, since the beginning of the Public Sector Purchase Program (PSPP) in March 2015, it has essentially stabilized on levels that, however, remain lower than those pre-crisis.

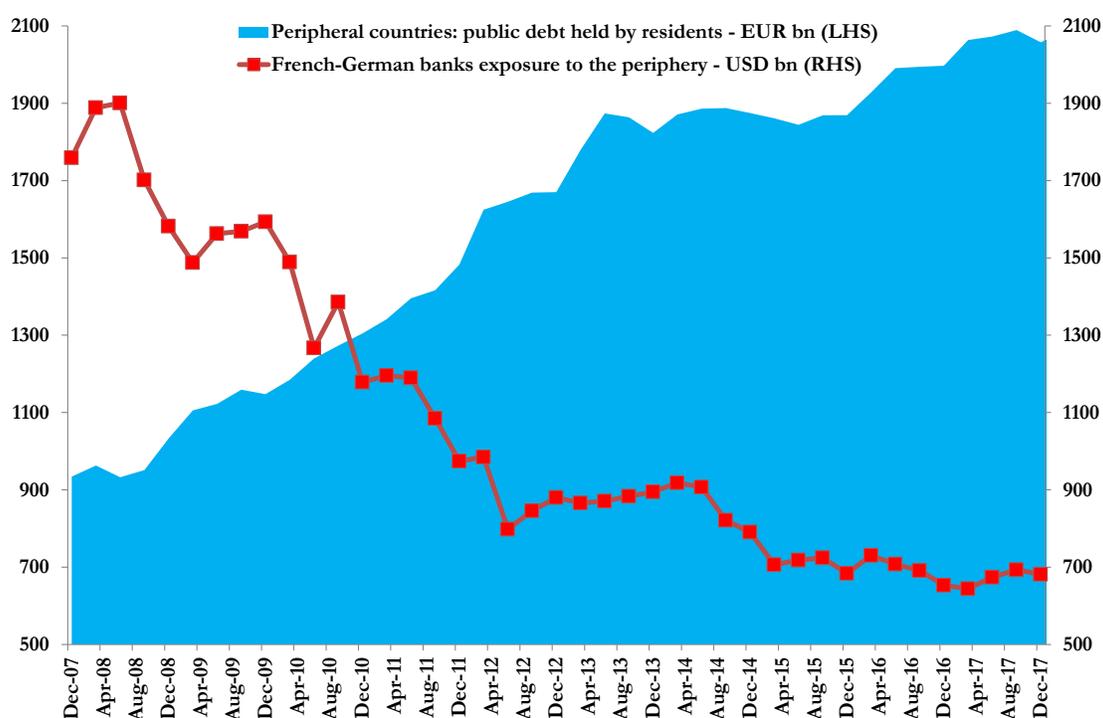
Figure 16 – Breakdown of public debt of peripheral countries held by resident and non-resident investors



Source: Bruegel Database on Sovereign Debt Holdings

Figure 17 provides an aggregate picture of the public debt domestication in the periphery and shows graphically that it has been inversely correlated to the deleveraging by Franco-German banks.

Figure 17 – Public debt nationalization in the Eurozone periphery and deleveraging by French-German banks



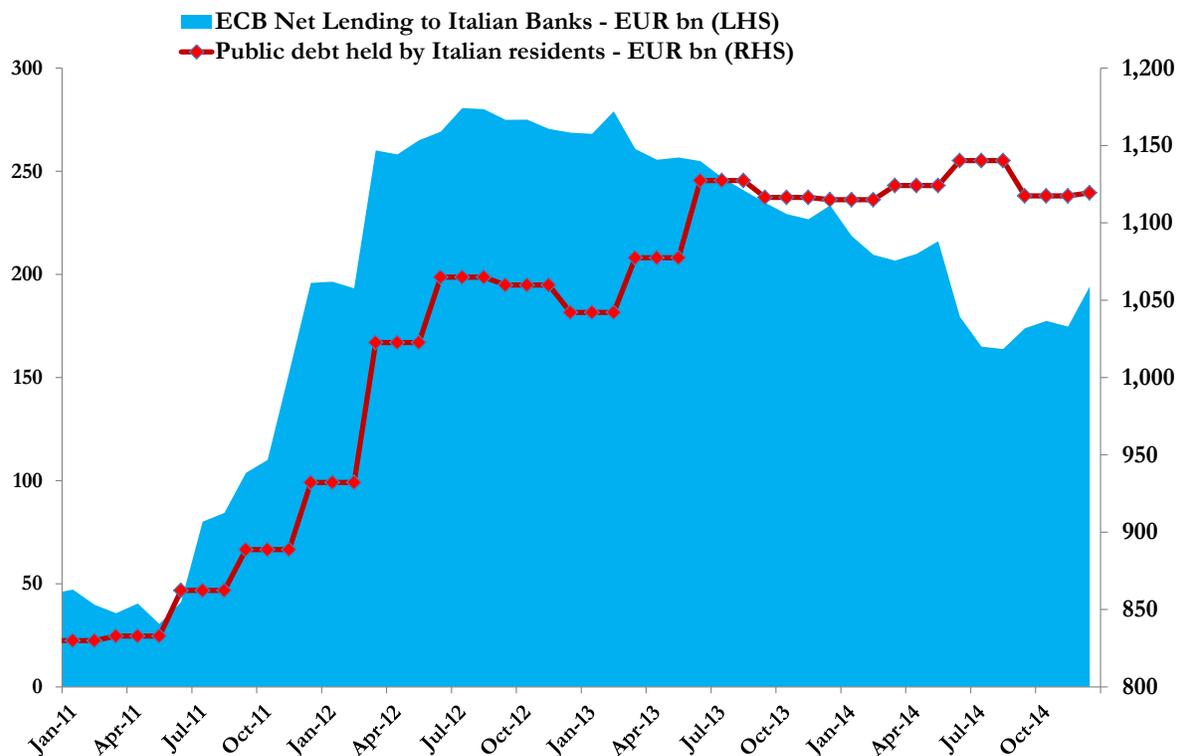
Source: Bruegel database on sovereign debt holdings, BIS

The nationalization process took place in two main stages that essentially overlap with the most famous ECB's extraordinary interventions of the last decade: the Long-Term Refinancing Operations (LTROs) and the Public Sector Purchase Programme (PSPP). Consistently, the nature of the resident investors (i.e., private banks and National Central Banks, respectively) that have played a leading role in each stage is strictly related to the specific features of the intervention by the monetary authority.

With the two exceptional LTROs of December 2011 and February 2012, the ECB has injected 1 trillion euros in the banks of the monetary union in the form of central bank reserves. Most of this liquidity was taken up by peripheral credit institutions to cope with the sharp contraction of inter-bank funds. In particular, banks located in Italy and Spain had an aggregate uptake of approximately the 68% of the total aggregate uptake [Daetz *et al.*, 2016]. A large part of this central bank money was redirected to the purchase of domestic government securities that Franco-German banks were selling off; the remaining part was used to settle commercial liabilities owed to those same bank and to face the collapse of domestic deposits, which were departing for Northern Eurozone destinations [Minenna, 2018a].

These dynamics have been particularly manifest for Italy: as shown in Figure 18, Italian lenders have taken up about 280 billion euros of LTROs and have used most of this amount to support the market value of the debt issued by their central government. A significant part of the remaining funds made available by the ECB was used to settle the commercial liabilities owed to banks located in Central-Northern European countries as these banks were scaling down also their exposures to Italian businesses and households.

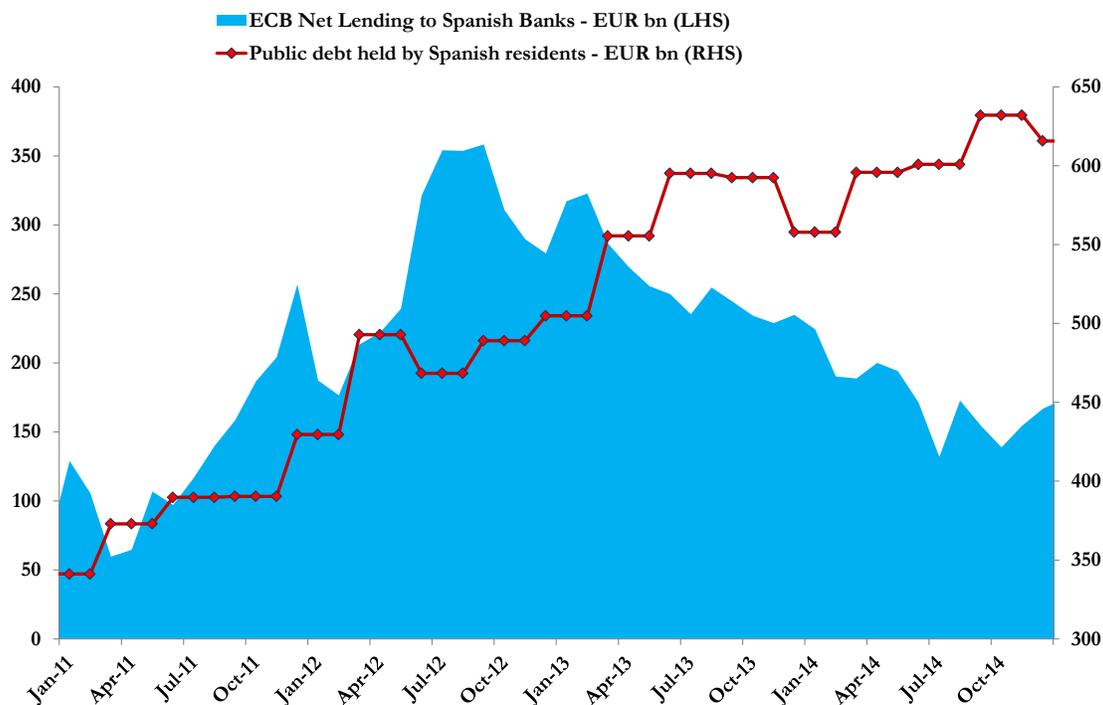
Figure 18 – Public debt nationalization in Italy and ECB lending to Italian banks



Source: Bloomberg, Bruegel database on Sovereign Debt Holdings

In the case of Spain (see Figure 19), correlation between the variables at stake is less pronounced but still present. Net ECB loans have soared by 300 billion euros from March 2011 to September 2012, supporting the increase in the exposures of domestic banks to the Spanish government, even if the biggest slice has served to settle commercial liabilities with banks located in other Eurozone countries.

Figure 19 – Public debt nationalization in Spain and ECB lending to Spanish banks



Source: Bloomberg, Bruegel database on Sovereign Debt Holdings

Of course, it could be argued that by bearing the insolvency risk of peripheral banks on the enormous amounts disbursed with the LTROs, the European Central Bank has mutualized that risk across all member States. But, in this way, it has also allowed the segregation of risks inside the balance sheets of peripheral banks.

The targeted loans (T-LTROs) arrived between September 2014 and March 2017 have allowed peripheral lenders to turnover most of the LTROs liquidity and keep the degree of public debt nationalization at high levels.

The PSPP did the rest. There is no doubt that, by ensuring a stable and large demand for government bonds, the ECB has played a leading role in the narrowing of sovereign yield spreads, hence putting peripheral countries safe from the risk aversion of the markets. Nevertheless, at least two peculiar features of the PSPP architecture have been pivotal to the design of segregation of risks within the periphery: the capital key as criterion to allocate securities purchases across member governments and the negligible amount of risk sharing admitted on these purchases.

As known, the capital key represents the subscription share of each National Central Bank (or NCB) in the ECB capital and it has a direct correspondence with the contribute of each country to the population and economic growth of the European Community. The allotment of securities purchases in proportion to the capital key has favored countries (e.g. Germany

and France) where deflationary pressures were much less relevant than in other countries (e.g. Italy and Spain) which, however, had a smaller capital key⁽²⁰⁾.

Notice that – by accepting to act with different intensities on the economies participating in the monetary union – the capital key criterion implicitly confirms the argument exposed in the previous section about the predisposition of the Eurozone to the existence of inflation differentials between countries that share the same currency⁽²¹⁾.

The other specificity of the PSPP is the very limited risk sharing: only the 10% (initially only the 8%) of the purchases allotted to the debt of each member government is carried out directly by the ECB, whereas NCBs are appointed to buy the remaining 90% with funds borrowed from the ECB. As a consequence, each NCB results the only entity exposed to the default risk of its national government on purchased securities: consequently, in such an extreme scenario, it would bear the related losses while remaining obligated to repay to the ECB the full nominal amount borrowed. Precisely, what in finance is called Credit Default Swap (Minenna, 2015), where, indeed, NCBs act as protection sellers of the sovereign risk of their respective country to the rest of the Euro-system.

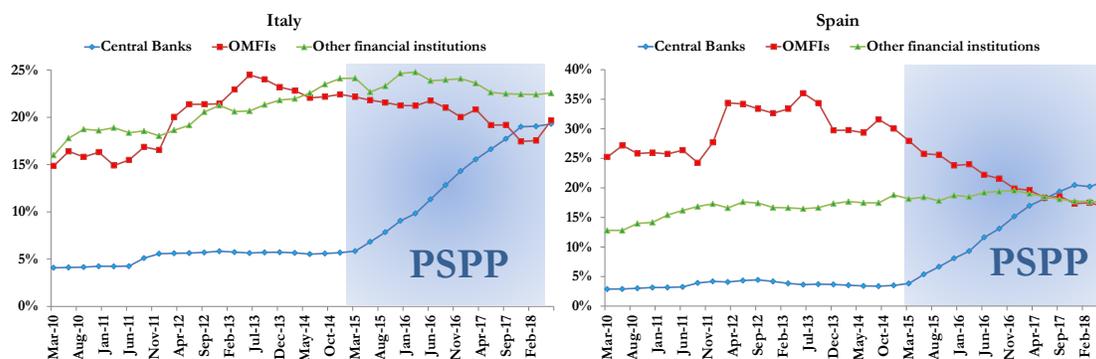
In this perspective, the main novelty of the PSPP with respect to the LTROs is that this time the nationalization of public debts takes place inside the balance sheets of National Central Banks rather than inside those of private banks.

Figure 20 highlights the trend just described for Italy and Spain, showing how from March 2015 (beginning of the PSPP) to June 2018 the sovereign debt held by the National Central Banks has climbed from around 5% to around the 20% of the total, accompanied by a downsizing (more marked for Spain) of the share of public debt held by the private financial system.

Figure 20 – Public debt nationalization in Italy and Spain: the role of National Central Banks during the PSPP

⁽²⁰⁾ Not to mention the decision to exclude Greece from the program.

⁽²¹⁾ In the past the ECB had instead carried out targeted bond-buying programs, intervening selectively in support of the peripheral countries. In particular, under the Securities Markets Program (2010-2012), it had purchased €218 billion of Italian, Spanish, Greek, Portuguese and Irish securities.



Source: Bruegel database on sovereign debt holdings

Apart from this novelty, risk segregation remains at work resulting in massive capital flights from Southern to Central-Northern European countries and in the abnormal phenomenon of negative yields, particularly pronounced for Germany because of its privileged position of as bond purchases' recipient by virtue of the capital key criterion.

Besides the nationalization of the public debts of the peripheral countries, the Euro-bureaucracy has also carried out a series of initiatives aimed at immunizing as much as possible foreign investors (especially those belonging to the Official Sector) against the sovereign risk of the peripheral States. These initiatives include not only the tightening of the European rules on public budget and debt sustainability (through the Six Pack and the Fiscal Compact) but also provisions aimed at facilitating the restructuring/reprofiling of the public debt of the countries with excessive debt.

In particular, the ESM establishing treaty has stipulated that, starting in January 2013, a growing share of new issues of Eurozone government bonds with maturity beyond the year would embed Collective Action Clauses (CACs) to make it easier to unlock resolution or restructuring solutions that are welcome by the Official Sector. In addition, CACs allow a qualified minority of bondholders to hinder the potential attempt of the issuing State to redenominate in a new currency government bonds that include such clauses [Minenna, 2018b and 2018c].

In more recent times, as part of the debate on the reform of economic and monetary union, various proposals⁽²²⁾ have been presented aimed at harnessing within national borders possible episodes of public debt crisis, for example by strengthening the institutional and legal underpinnings of sovereign debt restructuring [Bundesbank, 2016; Andritzky *et al.*, 2016; Schäuble, 2017; Sapir and Schoenmaker, 2017; Bénassy-Quéré *et al.*, 2018]. Some of these proposals have gone even up to suggest the adoption of automatic restructuring

⁽²²⁾ For a detailed taxonomy of these proposals see Comitteri and Tommasino, 2018.

mechanisms. This way, the restructuring solutions liked by the European establishment – which are typically those inspired by the 'extend-&-pretend logic applied, for example, to the third Greek 'bailout' – would automatically activate in front of predetermined trigger events without the need to achieve the green light from qualified majorities of bondholders⁽²³⁾. At the time of writing this paper, the solution launched at the Euro-group of December 2018 – and endorsed in the same month by the European Council – provides for the switch of the CACs voting procedure from the current two-limb procedure to the single-limb procedure starting from 2022⁽²⁴⁾. With the new voting procedure, the consensus expressed by a qualified majority of the holders of all affected bonds would be enough to give the green light to a restructuring proposal without the need to reach also a qualified majority of the holders of each bond series involved in the restructuring project (as instead currently foreseen)⁽²⁵⁾.

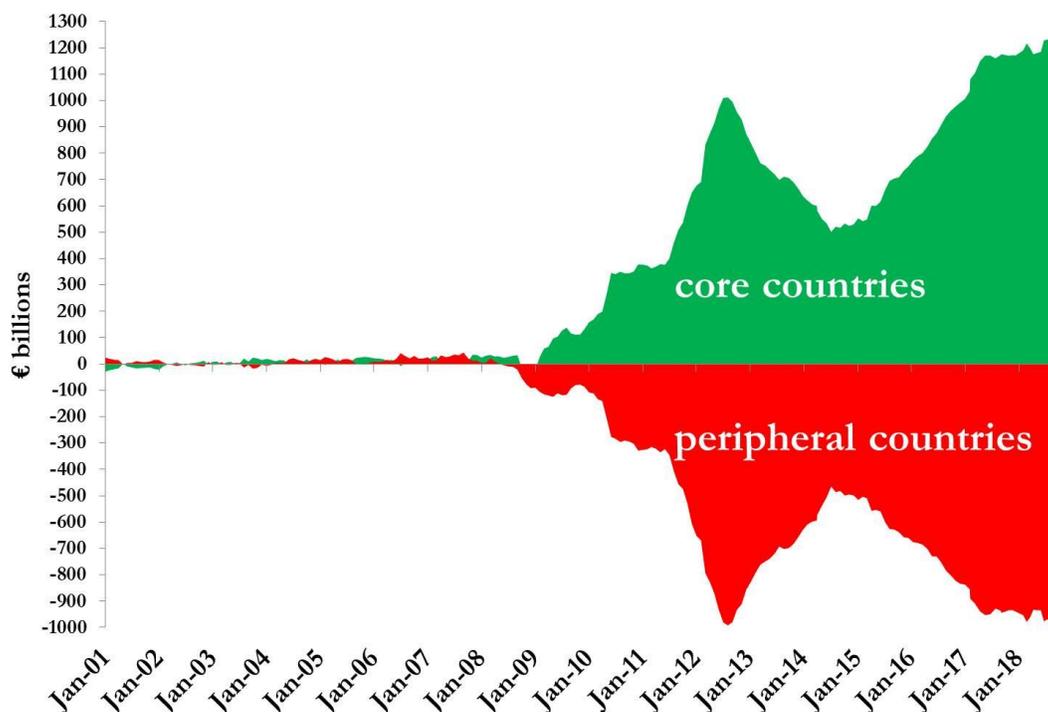
The best indicator of the high degree of risk segregation in the euro area are the net Target2 balances of the different National Central Banks participating in the Euro-system. Target2 is the real-time cross-border interbank payment system for the Euro-system. Before the crisis, Target2 balances were essentially nil because the easy availability of interbank borrowing to banks to replenish shortfalls of their reserve accounts allowed an offsetting between current account and capital account [Cecchetti *et al.*, 2012]. But the crisis and the collateral discrimination policies made increasingly difficult for banks in peripheral countries to access to interbank funds. As a consequence, interbank payment transactions between banks residents in different Eurozone countries began to involve their respective National Central Banks, which, in turn, began to experience increasing imbalances in their Target2 official settlements balance with the ECB. More precisely, as shown by Figure 21, National Central Banks of peripheral countries experienced growing Target2 deficits whereas those of core countries growing Target2 surpluses [De Grauwe *et al.*, 2017; Cesaratto, 2017].

⁽²³⁾ It is worth remembering that several experts have underlined the inappropriateness of such proposals, highlighting their destabilizing potential for the Eurozone [Tabellini, 2017; Boitani and Bordignon, 2018].

⁽²⁴⁾ For details see: <https://www.consilium.europa.eu/en/press/press-releases/2018/12/04/eurogroup-report-to-leaders-on-emu-deepening/> and <https://www.consilium.europa.eu/en/press/press-releases/2018/12/14/statement-of-the-euro-summit-14-december-2018/>

⁽²⁵⁾ It is also reasonable to expect that the revision of the CACs technical features in the near future could explicitly address also the redenomination risk, for example by excluding this option from the set of available choices to the sovereign issuer.

Figure 21 – Evolution of the net Target2 balances of Eurozone core and peripheral countries



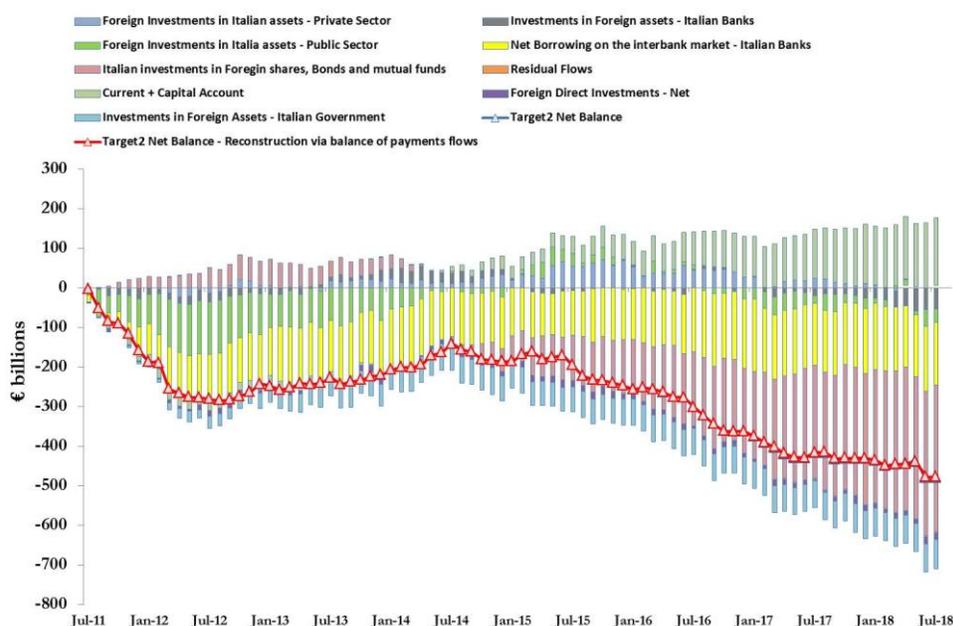
Source: ECB

In detail, it is possible to identify two distinct phases of enlargement of the imbalances on the Target2 system [Minenna, 2017a and 2017b]: the first one takes place between 2009 and 2012-2013, while the second one starts in 2015. These timings are not random and, in fact, should be read and interpreted along with the main ECB moves in the last ten years. In particular, the first diverging pattern overlaps with the above mentioned exceptional ECB lending activity (LTROs); in that period, the liquidity injected into the system by the ECB has *de facto* replaced the interbank funding for banks of the Eurozone periphery. The subsequent phase of re-absorption of the Target2 imbalances starts in sync with the announcement of the Outright Monetary Transactions (second half of 2012) and with the begin of LTROs' repayments. As for the second divergent pattern, it is chronologically superimposed on the launch of a new targeted loan program for European banks (T-LTROs) and of the QE, whose largest chunk is represented by the PSPP with the direct involvement of the National Central Banks in the bond-buying activity as above seen.

A compared analysis with the main components of the balance of payments offers interesting insights about the drivers of the Target2 imbalances [Dosi, Minenna and Roventini, 2018]. The larger and larger deficits displayed by Southern countries between 2009 and 2012/13 essentially reflect the flight of foreign investors from the peripheral risk, the related

nationalization of the public debts of peripheral governments and the collapse of the interbank funding opportunities for banks all around the Eurozone periphery.

With regard to the second sharp deterioration of the Target2 balances of peripheral NCBs, the comparison with the data of the balance of payments reveals a new phenomenon: the flight of domestic capitals towards safe havens located in Central and Northern Europe. As of March 2015 (beginning of the PSPP), non-financial private investors resident in countries such as Italy or Spain have moved their financial wealth from domestic assets – such as domestic government bonds – to foreign bonds, mutual funds and shares. Another salient feature of the second divergent pattern is the close correlation with the trend in the share of government bonds held by the National Central Banks. This confirms what was said above about the fact that the poor risk sharing allowed by the PSPP has favored the nationalization of public debts while the pass-through effect of the monetary policy to the real economy has been rather limited since the liquidity deriving from the sale of government bonds to the NCBs has fled abroad [Minenna, 2017a and 2017b; Dor, 2016; Dosi, Minenna and Roventini, 2018].

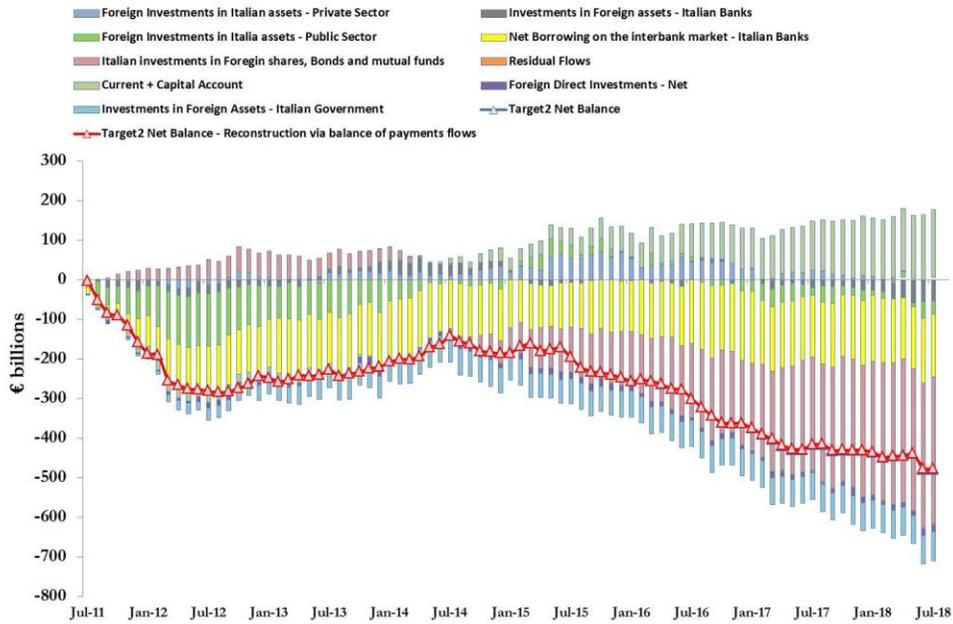


Source: ECB and Bank of Italy

Figure 22 and

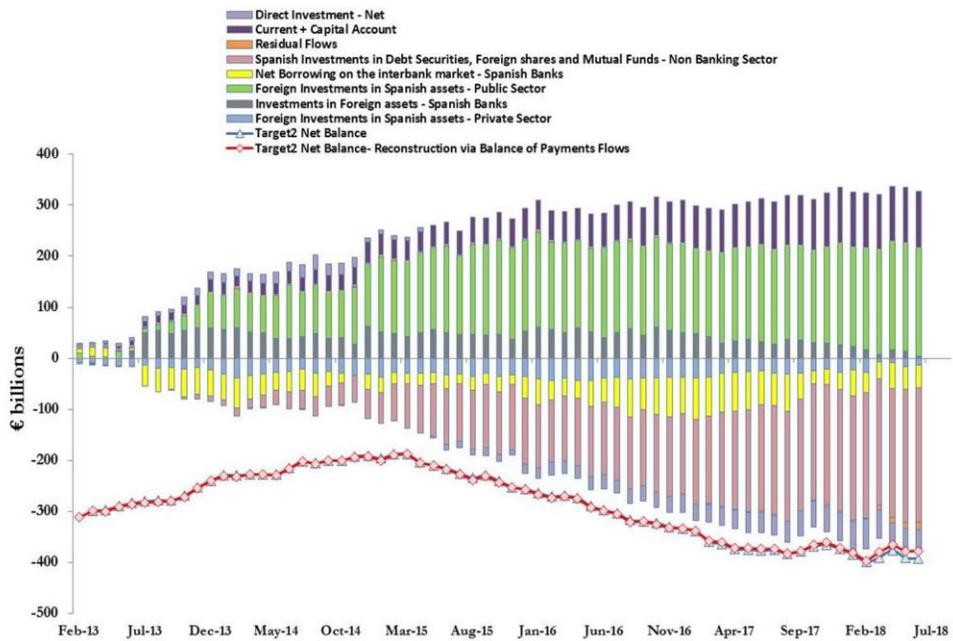
Figure 23 give a graphical representation of the above described relationship between Target2 balances and the components of the balance of payments for Italy and Spain, respectively.

Figure 22 – Italy: Target2 Net Balance – Decomposition via balance of payments flows



Source: ECB and Bank of Italy

Figure 23 – Spain: Target2 Net Balance – Decomposition via balance of payments flows



Source: ECB and Banco de España

The other coin side of the large negative imbalances of peripheral NCBs is the huge Target2 surplus recorded by the Bundesbank and other NCBs of core countries, such as Luxembourg, Finland and the Netherlands.

Target2 imbalances are among the strongest proofs of the systematic risk segregation that has characterized the European monetary union in the last decade and are at stake with the other anomalies discussed in this paper, such as the nationalization of peripheral public debts and the exceptional performance of the German current account.

As long as the integrity and compactness of the euro area will be preserved, Target2 imbalances will remain accounting entries among the NCBs joining the Euro-system⁽²⁶⁾. However, the situation would change if the Eurozone would break-up or a State would leave the monetary union. In an exit scenario, a ‘debtor’ National Central Bank might consider not to settle its Target2 liabilities with the rest of the Euro-system. This explains why Target2 imbalances have become one of the hottest issues of the scientific and institutional debate within the Eurozone.

The position expressed by the ECB President⁽²⁷⁾ is that if a country were to leave the Eurosystem, its National Central Bank’s claims on or liabilities to the ECB would need to be settled in full.

In practice, however, no one can know in advance what would really happen in a similar scenario. Indeed, the central bank of a secessionist country with a high Target2 deficit could refuse to settle all or part of its ‘debt’ with the Euro-system, thus imposing a loss on the central banks of countries with a positive balance. And besides, if the settlement of cross-border inter-bank transactions in the euro area took place directly at the ECB (without involving its national branches), the Target2 balances of the NCBs would be negligible.

Several political and economic representatives from core countries have a completely different view: they claim that – since the advent of the crisis – Target2 has become an hidden bailout system for the periphery at the expense of the center of the Eurozone [Homburg, 2011; Sinn, 2011; Bagus, 2012]. Consistently, they interpret the Target2 surplus of their NCBs as a credit to the periphery and have developed numerous proposals aimed at minimizing the risk of loss on these credits; for instance by freezing the current negative balances and introducing a new Target3 system subject to periodic settlement and backed by high-quality collateral [Sinn, 2018; Frankfurter Allgemeine Zeitung, 2018].

Yet, these proposals seem not to consider the actual causes of the huge Target2 imbalances, and of the divergent paths between the center and the periphery of the monetary union. In fact, the dynamics recorded by the Target2 system reflect large trade and financials

⁽²⁶⁾ Technically, Target2 balances are – depending on their sign – uncollateralized perpetual claims or liabilities of the NCBs with respect to the ECB.

⁽²⁷⁾ See the reply of the ECB President to the question posed by some members of the European Parliament: https://www.ecb.europa.eu/pub/pdf/other/170120letter_valli_zanni_1.en.pdf.

imbalances that have progressively consolidated in the Eurozone as well as the big distrust of peripheral assets among private investors⁽²⁸⁾.

These imbalances make membership in the Eurozone less and less sustainable for peripheral countries and represent a constant concern for core countries and for financial markets. No coincidence that in recent times – with the end of the QE and the rise of Euro-skeptical political forces – some experts have discussed about the need for an exit clause from the Eurozone⁽²⁹⁾.

In such an environment there are essentially two alternatives: either the Eurozone will break up as a result of a painful disintegration process (perhaps preceded by the exit of one or more member States) or it will have to deeply revise its architecture through a gradual reform process capable of removing the imbalances that have consolidated over time and to restore the conditions for a shared growth among the member countries as foreseen by the Treaties.

4. RISING REDENOMINATION FEARS

Large competitiveness gaps and persisting risk segregation raise serious concerns about the compactness and resilience of the Eurozone. The overall landscape is made even more complicated by further sources of uncertainty – such as tensions on international trade – that have increased downside risks to global growth.

Faced with such a complex scenario, markets resumed their risk aversion towards Eurozone periphery: this has led to a new spike of the *redenomination risk* (also called *convertibility risk*), that is the risk that euro-denominated government bonds could be converted into the newly minted national currency of a hypothetical secessionist country. Indeed, according to the *Lex Monetae* [Mediobanca Securities, 2017], the leaving country could convert its government bonds in the new currency, especially if this currency is expected to depreciate against the euro/mark⁽³⁰⁾, as this would mean a relief on the debt burden. In addition, a similar argument could also hold for the Target2 liabilities of the NCB of a leaving country.

A first boost of the redenomination risk for peripheral countries had already occurred during the Eurozone sovereign debt crisis (2010-2012) [Minenna, 2014] and it began to deflate

⁽²⁸⁾ This distrust first manifested itself with the massive deleveraging enacted by foreign investors resident in Central-Northern European countries, and subsequently with the flight of domestic investors from Southern European countries as precautionary strategy against the risk of capital controls associated, for instance, to a mandatory collateralization of Target2 deficits [Brousseau, 2017; Minenna, 2017c], but also against the redenomination risk associated to the foreseeable devaluation of their new national currency with respect to the euro/mark in case of exit.

⁽²⁹⁾ On March 2018 the ESMT business school of Berlin has hosted a conference on the euro sustainability; in that venue a panel entitled “*Thinking the unthinkable*” has addressed the opportunity of introducing an exit clause from the single currency.

⁽³⁰⁾ In case of exit of a member country, the monetary union could stay alive, or it could break up, with the consequent return of national currencies. In the latter case the new Deutsche mark would reasonably replace the euro as benchmark European currency.

essentially since summer 2012 when the ECB made it clear that it was preparing the anti-spread shield. Subsequently, the drop in yields and sovereign spreads (especially in nominal terms) induced by the Quantitative Easing helped to keep investors' concerns under control.

However, from 2017, redenomination risk has surged episodically in sync with critical events in a given member country with a partial contagion to its neighbors. It has happened in France, in the first half of 2017, when an electoral victory of Euro-skeptical political forces was feared, and a few months later in Spain during the Catalan crisis. In 2018 it has been the turn of Italy where one of the triggers was the rise to the government of parties that are critical towards Europe and towards the European constraints on the public budget. In late 2018 there has been also a new surge of the redenomination fears on French public debt in relation to intensified social tensions expressed by the protest of the yellow vests⁽³¹⁾.

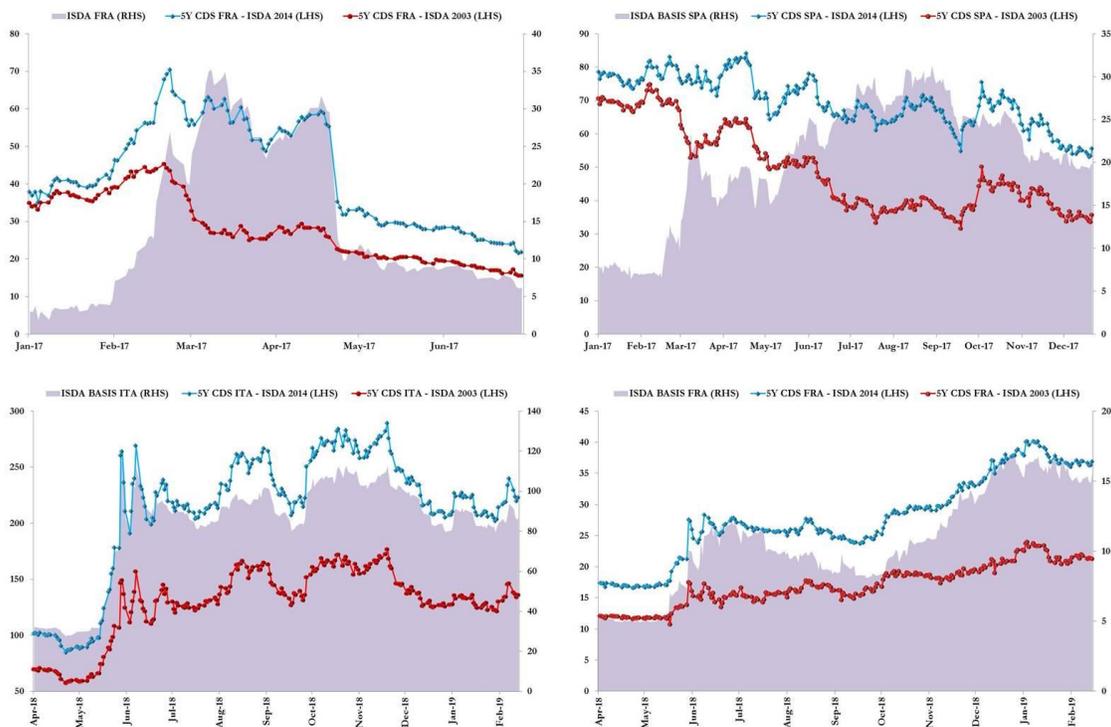
A good proxy for redenomination risk is the so-called *ISDA basis* [Minenna, 2017d], which is the basis between the premium on the sovereign CDS contract under the 2014 ISDA standard and the premium on the same contract under the 2003 ISDA standard. The different pricing of the two contracts depends on the fact that only the 2014 standard includes debt redenomination – provided that it involves a loss for investors – among the events triggering a restructuring and, consequently, the protection offered by the CDS⁽³²⁾.

Figure 24 shows how the movements of the ISDA basis for France, Spain and Italy over the critical periods mentioned above have indicated the soaring redenomination risk perceived from time to time by markets participants.

Figure 24 – 5-year CDS according to ISDA 2014 and ISDA 2003 standards, and ISDA Basis for France, Spain and Italy (bps)

⁽³¹⁾ As early as May 2018 markets have begun to signal an increase in French-risk for fears of contagion with the Italian situation, also because of the high exposure of French banks to Italian assets.

⁽³²⁾ During the first Eurozone sovereign debt crisis, a good proxy for the increased redenomination risk was the widening of the *Quanto-CDS spread*, i.e. the difference between the premium on the USD-denominated sovereign CDS and the premium on the EUR-denominated contract, due to the better hedging offered by the first contract [Minenna, 2014]. However, precisely because of the poor hedging offered by the EUR-denominated contract, it has subsequently become less and less liquid and its prices have become unavailable.



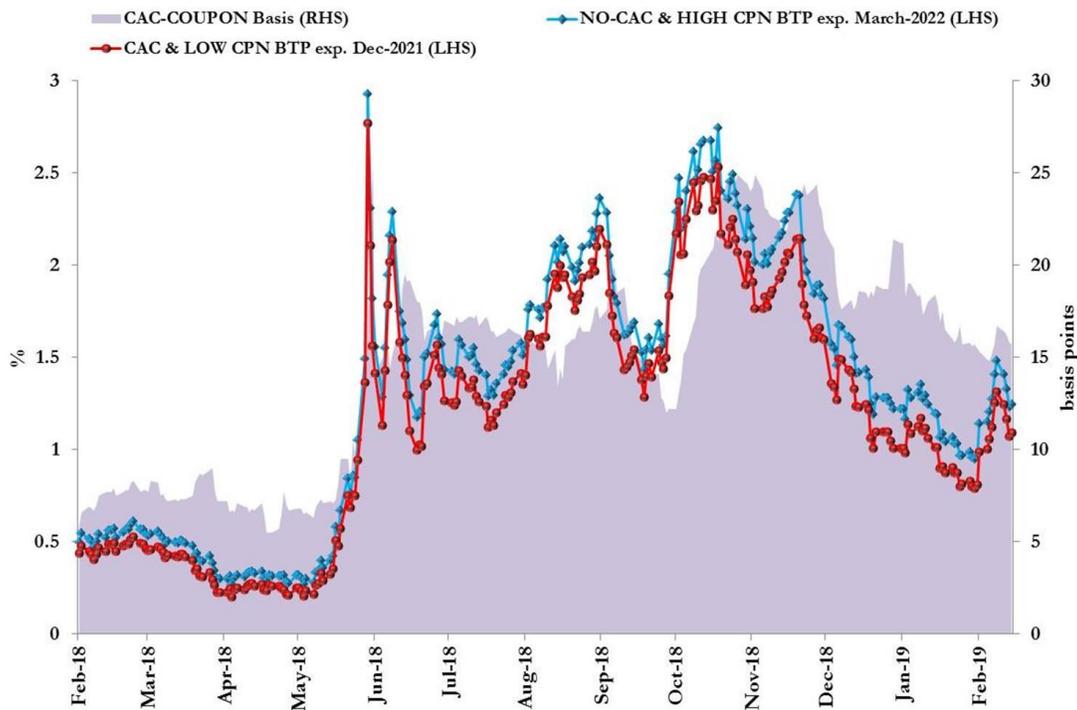
Source: Bloomberg

Another proxy of the redenomination risk is the *CAC-coupon basis*. As already mentioned⁽³³⁾, since 2013 a growing share of government bonds issued by the Eurozone countries embeds standardized CACs standards that make certain resolution or restructuring solutions easier after the Greek default of March 2012. When investors' main concern is a redenomination outcome, CAC bonds are perceived as safer than non-CAC bonds as a qualified minority of their holders may hinder the issuer's willingness for such a contractual change. The ECB unconventional interventions occurred since 2014 (just over a year after the introduction of the new CACs) have reduced yields in the euro area: as a consequence, CAC bonds typically also present lower coupons than securities issued before 2013. Other things being equal, a lower coupon generates a lower loss for bondholders in case of a credit event; thus, low-coupon securities are considered less risky than high-coupon securities [Morgan Stanley, 2017]. The joint effect of these two factors (CACs and low/high coupon) suggests to investigate the presence of a *CAC-coupon basis* in the pricing of sovereign bonds; indeed, it is reasonable to expect that CAC bonds with low coupons trade higher than non-CAC bonds with high coupons issued by the same sovereign entity.

This insight is confirmed by Figure 25, which displays the CAC-coupon basis for a pair of Italian government bonds with similar time to maturity.

⁽³³⁾ See § 3.

Figure 25 – CAC-coupon basis for a pair of comparable Italian government bonds

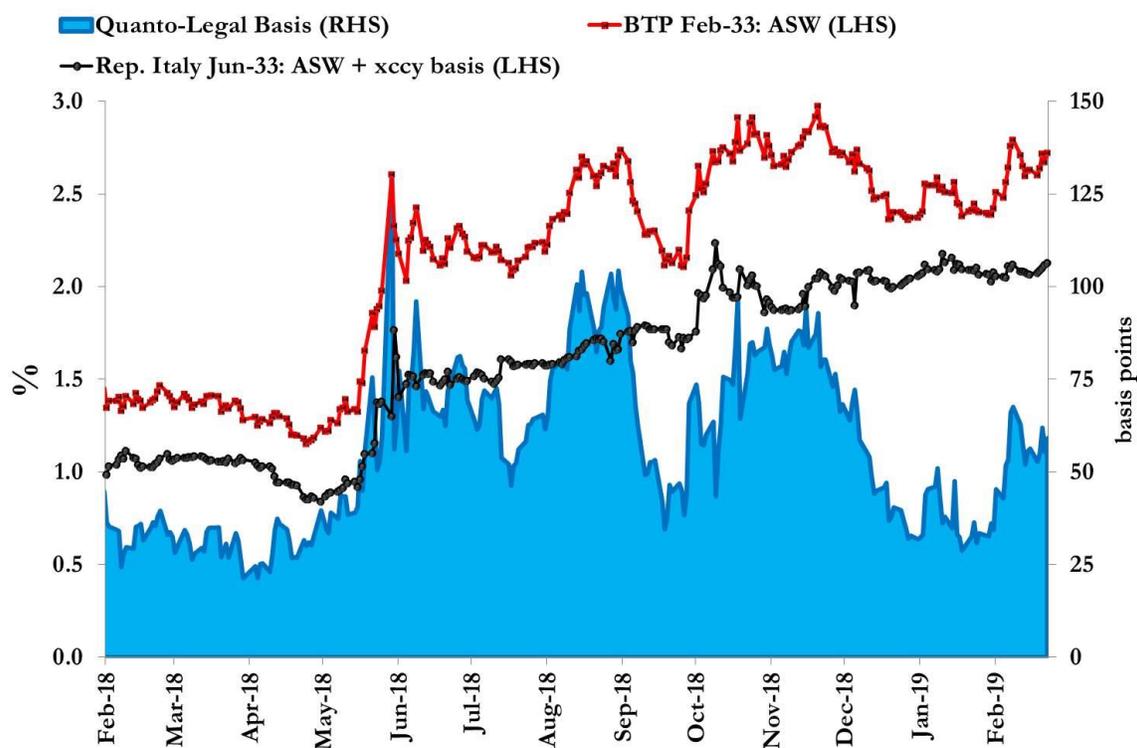


Source: Bloomberg

A third market indicator of the redenomination risk is the *Quanto-Legal basis* [Minenna, 2018c], that is the yield spread between USD-denominated Foreign Law bonds and Euro-denominated Local Law bonds of the same sovereign issuer. In pressure times Foreign Law bonds trade comparatively higher than Local Law bonds because the former are not subject to the *Lex Monetae* and, in addition, the USD-denomination represents a contractual hedge against the depreciation risk of the currency of denomination (the same does not necessarily apply to EUR-denominated bonds). This leads to a yield spread, which can be called *Quanto-Legal basis*. In order to properly compare bonds denominated in different currencies (and, thus, priced with respect to different risk-free curves) a standard metric is their asset swap spread, adjusted for the cross-currency basis.

Figure 26 displays the *Quanto-Legal basis* for a pair of Italian government bonds expiring in 2033: a euro-denominated Italian-Law BTP and a USD-denominated bond issued by the Republic of Italy under an international issuance program and subject to New York law. Clearly, since second quarter 2018 the bigger uncertainty surrounding the future of Italy as a member of the euro area has pushed investors to short the first security and go long on the second.

Figure 26 – Quanto-Legal basis for a pair of Italian government bonds expiring in 2033



Source: Bloomberg

The recrudescence of the redenomination risk – which more and more often is related to the rise of Euro-skeptical political forces – is the result of a growing unsustainability of the current Eurozone set-up for many member countries, precisely because of the imbalances and anomalies produced by the competitiveness gaps and the systematic risk segregation analyzed in this paper.

As long as these two risk backbones continue to operate, the euro area will be constantly exposed to centrifugal forces and will live in a situation of structural instability.

5. PROPOSALS TO AMEND THE EUROZONE RISK MORPHOLOGY

The present work has analyzed the two backbones that characterize the current Eurozone risk morphology: large competitiveness gaps and systematic risk segregation. These two sources of divisiveness are measured by the critical values of some indicators: real (or inflation-adjusted) sovereign yield spreads, financial (or inflation-adjusted) real effective exchange rates and Target2 (im-)balances.

Unfortunately, the latest steps taken by the European institutions⁽³⁴⁾ in the ongoing Eurozone reform process include not enough guidance to remove the sources of instability in the economic and monetary union. Some timid progress has been made⁽³⁵⁾, but most of the key issues (such as the European Deposit Insurance Scheme or the adoption of a stabilization function) are still on the table. The Euro-bureaucracy continues to focus on its historic workhorses: strengthening of the budgetary surveillance⁽³⁶⁾ and promotion of the debt sustainability in the euro area with the shift to single-limb CACs on government bonds to make debt restructuring or reprofiling easier.

Given also the numerous references to risk reduction and to the need of ensuring appropriate levels of conditionality to any support provided by the ESM, the overall impression is that the Eurozone continues to play defense in a climate of mutual mistrust between its members.

But the revision of EMU architecture requires a much deeper rethinking, which takes into account the anomalies in the financial and trade flows between the center and the periphery, and that has the willingness to remove their causes through a road map able to guarantee the gradual transition to a *true* fiscal and political union.

A first area of intervention should regard the ECB. A few months after the end of a €2.5 trillion bond-buying program, Eurozone downside risks are increasing again, and rumor has it about the possibility of forthcoming ECB interventions, may be in the form of a new round of targeted long-term loans to the banking system [Ashworth, 2019].

While it is undeniable that part of the difficulties of the Euro bloc come from international problems such as the escalation of tensions on global trade, on the other hand it is clear that some problems are instead completely endogenous to the Eurozone. Starting right from the ECB mandate and constraints: a monetary policy exclusively focused on price stability is flawed especially if there is no fiscal union charged with redistribution and stabilization functions. The proof comes from the persistent inflation and interest rate differentials between countries that cannot rely on exchange rate adjustments to remove competitive imbalances. The unwillingness to undertake effective risk sharing measures fits into this context making it even more difficult to overcome the current fragmentation of the Euro area.

Looking at the ECB – also in light of the possibility of new interventions already in the short term – a first step in the right direction would be to get rid of the capital key criterion when calibrating the intensity of the monetary stimulus between countries in favor of a criterion that is more in keeping with the actual needs of each State [Minenna, 2019]. This change could be already introduced as part of the QE reinvestment policy or in case of a re-opening

⁽³⁴⁾ The reference is to the Euro-group and to the EU Council of December 2018.

⁽³⁵⁾ Especially with regard to the operationalization of the common backstop to the Single Resolution Fund.

⁽³⁶⁾ In particular, the ESM competence on the assessment of the financial stability risk has been enlarged, providing that the Mechanism will contribute to the overall assessment of the European Commission, especially with regard to the public debt markets and the related sovereign financing aspects.

of the net purchases program by deciding to concentrate the monetary stimulus on the most indebted countries, including Greece.

The ECB has already implemented a similar measure with the Securities Markets Programme of years 2010-2012 when it has purchased more than 200 billion euros of securities, most of which were government bonds of the peripheral countries. The SMP had limited success mainly because of the small size and some technical details of the program, including a partial short-term sterilization and the distribution of coupons on the debt purchased among the National Central Banks of the Euro-system according to the capital key.

The success of a second release of the program would depend on how much risk sharing it allows for. Thus, a first difference with respect to the SMP 1.0 should concern precisely the policy on coupon rebates: rather than transferring funds from the periphery to the center of the Euro area, the program should prescribe that coupons are returned to the sovereign issuer. In addition, it should provide for a long lasting support to the price of the government bonds of Southern European countries: a possibility could be targeting securities with a long residual life (in a coordinated action with the issuance policy of national Treasuries). This way, a good chunk of the public debt of peripheral governments would be frozen within the balance sheet of the central bank. By mitigating the refinancing problems faced by peripheral States, this would deliver a certain drop in sovereign yield spreads between Eurozone members⁽³⁷⁾.

However, as long as purchases will remain decentralized at the National Central Banks to keep risks segregated, it will be difficult to see a normalization of the Target2 balances, especially if the intervention will be limited to the reinvestment of the principal payments of purchased securities under the past program.

In this regard, a more ambitious program would necessarily require the centralization of the bond purchases at the ECB – meaning a full risk sharing on sovereign bonds held by the Euro-system – and a larger size of the intervention. This could be done – for instance – accelerating intervention times: instead of waiting for the natural maturity of the securities currently purchased under the QE, the ECB could set up a maxi swap to replace these securities with others with very long maturities.

Since the main share of purchases is represented by government bonds currently held by the National Central Banks, a similar swap should provide for a triangulation of the transactions between ECB, NCBs and the secondary market, in order to ensure that the ownership of the new long-term securities involved in the deal is transferred to the ECB balance sheet.

⁽³⁷⁾ These spreads are inflated also because the large amount of Bunds involved in the PSPP has reduced the free float, hence contributing to fuel a scarcity effect that keeps yields on German sovereign paper at subdued levels.

Such a move would certainly have a greater impact in terms of normalization of Target2 balances as well as of the shape and the slope of the yield curves of the different States, favoring the return on a convergent path.

It remains understood that a complete zeroing of sovereign spreads could hardly ignore a review of the institutional objectives of the ECB with a direct targeting in terms of interest rates as the Bank of Japan has decided in 2016. In the multi-national environment of the Euro area, such a target would operatively require a constant monitoring of the sovereign financing conditions – in both nominal and real terms – and, therefore, the implementation of country-specific interventions also to take into account the different inflation dynamics of the involved economies.

A similar revision of the ECB targets would have a breaking effect on investors' expectations and interest rate dynamics, as happened in 2012. Then, the announcement of the anti-spread shield (the OMTs) has pushed market players to make convergence trades across sovereign bonds of different Eurozone governments as in the pre-crisis period [Arghyrou and Kantonikas, 2010].

On the other hand, even a complete ECB reform in the terms described above in the long run could not solve all the Eurozone problems and constantly curb the centrifugal forces generated by imbalances in macro-economic, financial and trade variables. The only antidote to these imbalances – as understood by the founding fathers – is a greater integration among the member countries, starting from the fiscal union because *«without decisive progress to foster fiscal risk sharing, EMU will continue to face existential risks»* [Berger, Dell'Ariccia and Obstfeld, 2018].

Clearly a fiscal union is an ambitious goal but still attainable provided that the right choices are made and they are implemented gradually.

In this regard, a practical and effective solution would be a step-by-step reform of the European Stability Mechanism with the aim of realizing – in a reasonable timeframe – a complete mutualisation of Eurozone sovereign risks compliant with market rules and with conduct rules designed to minimize moral hazard.

As explained in a recent work [Dosi, Minenna, Roventini and Violi, 2018], this risk mutualisation would take the form of a supranational ESM guarantee with the ECB financial backing and would provide for a non-redemption clause to be embedded in government bonds that benefit from the guarantee. Compliance with market rules would require that – in exchange for the guarantee received – countries pay the ESM a periodic premium proportional to their excess risk over the average Eurozone sovereign risk, to be calculated from the current market price of liquid financial products such as sovereign CDS premia and implied yields on governments bonds. The premia collected from member countries would be directed to the recapitalization of the Stability Mechanism that today displays a large discrepancy between subscribed and paid in capital with the risk of running a liquidity

squeeze in the moment of greatest need. In addition, a recapitalization would allow the ESM to raise funds on the financial markets through the issuance of debt securities without affecting its current low-leverage and low-risk profile (unless of extreme outcomes requiring it to meet its guarantor obligations). The proceeds of this new fund-raising activity could be used to finance profitable public investment projects concentrated in the weakest regions of the EMU (predictably the same that will be called to contribute more to the ESM recapitalization because of their higher risk). This way, the Stability Mechanism would give a concrete stimulus to the real economy of peripheral countries, favoring the realignment of the economic cycles among the EMU members and, therefore, also of their risk profiles.

At the end of a transition period in which – thanks to risk sharing, the non-redemption clause and their powerful message for financial markets – sovereign yields of the member countries would be boosted to converge on a common trajectory, the Eurozone would be ready to become a fiscal union with a genuine federal budget, a unified debt market and a single finance minister.

Hopefully the proposed solutions should gradually deflate the overall risks, bring to physiological levels the above identified indicators of the Eurozone risk morphology (i.e. real yield spreads, F-REER and Target2 imbalances) and ensure a long-term stability to the euro area.

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