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*Public debt and financial crises: connections and attempted solutions*

**ABSTRACT:** This paper traces the actions that have been taken to address the numerous waves of crises that have repeatedly hit the financial system since 2007, from the perspective both of public debt managers and financial regulatory authorities.

In particular, in the first part emphasis is placed on the need for DMOs to adapt promptly methods and strategies of issuing government bonds, combining flexibility, transparency and consistency in their market

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approach, at the same caring the smooth functioning of secondary markets.

Thus, it is illustrated the remedies adopted to deal with the many phases of crisis, of varying nature, that have succeeded one another since the emergence of the subprime bubble. Such solutions had to be implemented in a very harsh environment, especially during the sovereign debt crisis in Europe, when the uncertain process of addressing problems by the EU institutions induced further deterioration to market sentiment. The new approach adopted by the ECB since the second half of 2012 favoured a gradual normalisation of market conditions, even if new difficulties emerged in a context of rapid structural changes. But the outbreak of the pandemic and the recent geopolitical tensions have continued to produce challenges to debt managers, forced to increase the volume of bond issuance and ensuring a smooth refinancing process. Therefore, it is important for DMOs to maintain a long-term perspective that can reassure market participants, while the risk potential inherent in a high level of debt must never be neglected.

The second part introduces the fact that the European regulatory framework post-2008 was shaped by the need to break the "doom loop" between sovereign debt and banking instability. This vicious circle highlighted deep weaknesses in Eurozone governance, where the freeze in cross-border capital flows often led banks to hold excessive amounts of domestic public debt, amplifying mutual vulnerabilities.

To address these challenges, the Banking Union was launched in 2012, based on three pillars: the Single Supervisory Mechanism (SSM), the Single Resolution Mechanism (SRM), and a Single Deposit Guarantee Scheme (SDG). While the first two have harmonized supervision and crisis

management, the third remains incomplete due to the persistent link between public funding and national banking systems.

Basel reforms further strengthened the system by introducing stricter capital and liquidity requirements (prudential buffers) to increase loss-absorbing capacity. Simultaneously, the latest regulatory efforts (such as CMDI and the SRB) aim to move beyond the "too big to fail" logic, reducing the burden on taxpayers through long-term debt instruments that can be written down or converted during a resolution.

In the context of "permacrisis," a sovereign's stability remains inseparable from its banking health: strong banks ensure effective monetary policy transmission and financing for the real economy, while sound fiscal policies protect bank assets. The final challenge remains the implementation of a common safety net (EDIS) to fully complete the European financial architecture.

**KEYWORDS:** Public debt; financial crises; regulatory framework for crises; Europe; 2008

**SUMMARY:** 1. Introduction. – 2. Public debt management in response to financial crises. – 3. The regulatory framework for crises in Europe after the 2008 financial crisis.

## 1. Introduction

Since 2007, we are living in a period where the world has been hit by a sequence of unexpected shocks that has required an exceptional adaptation effort by the entire financial system. These shocks had different

origins, but they all had a severe impact on the global economy and on the relationships between the various operators in the financial market.

It all began with the subprime crisis in the United States, which quickly overflowed into many countries of the Western world and resulted in the Lehman Brothers default on September 15, 2008. After the following financial turbulence and the consequent economic recession, the sovereign debt crisis in Europe produced another severe pressure to the financial system, and even after the series of countermeasures taken by regulators, central banks and public institutions, several actions needed to be adopted to give stability and safety to the market, in a context remained difficult and volatile.

The outbreak of the Covid 19 pandemic was then disruptive to the global economy, while the most recent geopolitical changes continue to keep markets under pressure, having dramatically altered the relations and international equilibrium.

This paper, composed of two sections, retraces the actions undertaken to face the above-mentioned challenges, on one side from the point of view of public debt managers and, on the other side, that of the financial market regulatory authorities.

## **2. Public debt management in response to financial crises**

During the past 18 years several waves of financial crisis occurred, deeply affecting the market and pushing public debt managers to promptly and properly react. In this section, we are retracing their responses to the various phases of the crisis, with a special focus to Italy, framed in the Eurozone context.

It all began with the subprime crisis in the US. In August 2007, the numerous defaults in the instalment payments of mortgage loans produced a serious crisis of the commercial paper market, strictly connected to the regularity of such payments. The near-paralysis of the money market quickly spread from the US to the rest of the world, and to Europe in particular.

The immediate consequence was the unexpected and sudden rise in short-term rates, pushing the ECB to a massive liquidity injection, in order to avoid the complete draining of the money market.

In that moment, the only relevant impact for the Italian government debt management was the decoupling between six-month T-bills rates and the Euribor with the same maturity, which jeopardised the efficiency of the secondary market of CCTs<sup>1</sup> and, consequently, reduced their demand in auction. Indeed, while yields in auction declined, the Euribor jumped by over 50 basis points, enlarging the spread between the two rates from usual 15 bps to a level around to 80 pbs, furthermore triggering a certain volatility during the time. The Italian Treasury acted to correct such a situation repurchasing CCTs through several buy-back and bond exchange transactions.

While initially the spread between Italian and German 10-year bonds increased only 10 bps (in the summer 2007 moved from 30 to 40 bps), during the first half of 2008 the turbulence in the international banking sector pushed it repeatedly at the 60-bps level, especially in correspondence of quarterly reporting dates. Such a volatility determined

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<sup>1</sup> Floating rate notes paying a semi-annual coupon indexed to the yield of 6-month BOTs (Italian T-bills) achieved at auction.

a net contraction of the volumes traded on the MTS platform<sup>2</sup> and, after the Lehman collapse, an additional impressive jump of the BTP-Bund spread brought its year-end level to 160 bps.

Nevertheless, although in a troubled background, auctions of government bonds were fully covered, even in presence of increased funding needs. Some flexibility in the DMO's approach to the market, with the availability of re-opening off-the-run bonds, facilitated positive outcomes of the issuances.

On September 15, 2008, the Lehman default<sup>3</sup> completely overwhelmed the banking system, contracting the banks' capability of buying new assets, including government bonds. At the same time, however, only sovereign securities were perceived as safe assets, because only interventions at government level (better if in a context of international coordination) could help to overcome the crisis. Nonetheless, DMOs must adapt their behaviour to the extreme volatile environment. For instance, the Italian Treasury changed its auction system, not offering anymore a fix amount of each bond, but announcing a range within which to cut the size of placement, at the same time profiting of the faculty of deciding the right level of the allotment price. In this way the reputational risk of an auction not fully covered was averted.

Another element of flexibility adopted by several DMOs was the growing use of syndicated issues, which allowed a stricter dialogue with final

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<sup>2</sup>The wholesale regulated market where EU government bonds (and the Italian ones in particular) are traded in a transparent manner, representing a general reference of current market prices.

<sup>3</sup> It is worth to note that in the Lehman case was not a full-fledged default, but it was activated the Chapter 11, a U.S.A. procedure which allows to manage in an orderly manner the termination of contractual relationships.

investors, ensuring to the new bond both a higher final size and a price supporting its secondary market liquidity in the following days.

In the Eurozone, countries with a high level of debt-to-GDP ratio faced some deterioration of their credit perception, highlighted by the widening of spreads against German bonds, particularly relevant for Greece and Ireland (whose banking sectors showed serious fragilities), but also material for Italy, Spain and Portugal.

During 2009, the recession brought about by the credit crisis caused a relevant increase of government bond issues, but the market sentiment seemed to recover gradually as a result of regulatory actions adopted by governments and international supervisory bodies. In Italy, record volumes were well absorbed also thanks to the resilience of the Italian secondary market, which became the less volatile in Europe, as supported by the transparency of the MTS platform.

But at the end of that year, the "Greece case" broke out, triggering the sovereign debt crisis in the Euro Zone. The discovery of a hidden debt highlighted the fragility of Greek public accounts. Consequently, the market reaction caused a liquidity crisis for Greece, that during 2010 turned into in a solvency one, largely due to the European institutions' indecisiveness on how to intervene. In particular, the creation of the ESFS<sup>4</sup>, the fund that should have to help EU member states in difficulty, was universally considered weak and insufficient.

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<sup>4</sup> *European Financial Stability Mechanism*, announced on May 9, 2010, and established the following June 7 as a temporary tool to deal with the Greek crisis, and prospectively that of other EU countries. The structure of such a fund, based on guarantees issued by each single member state on securities issued to build the capital (440 €bn) needed to finance its support interventions, was so weak that Eurostat did not recognise it as an autonomous entity. Then the guarantees were charged on national debts, in proportion to their amount and markets judged the measure inadequate, both quantitatively and for the large numbers of constraints and conditionalities to its use.

At the same time, even other Eurozone countries showed big problems in their banking sectors, in particular Ireland and Portugal, whose spreads of their 10-year government bonds against Bund respectively jumped up to 600 and over 400 basis points at 2010-end. The situation of Italian bonds, even with a spread BTP-Bund fluctuating between 100 and 200 bps, remained relatively more resilient and significantly better than the Spanish one. This also thanks to the ability of the Italian DMO to exploit all mechanisms of flexibility and innovation in its supply policy, like the change in indexation parameter for floating rate securities (from T-bills rate to Euribor).

At 2010-end another unexpected shock upset European sovereign bond market: the Eurogroup communiqué of 28 November, where the principle of the necessary involvement of private investors in Eurozone crisis resolution processes was stated. Even if accompanied by the announcement of the will of overcome the ESFS limits by means of a new permanent fund to support member states in difficulty (ESM: European Stability Mechanism) and the reaffirmation that no Eurozone state would default, it was also announced the introduction of CACs (Collective Action Clauses) in all government bonds since 2013, aiming at an orderly debt restructuring. Moreover, also stringent requirements to access to ESM resources were confirmed.

The market perception of such contradictory statements was the permanent loss of risk-free status for euro government bonds.

The immediate consequence was a further flare-up of spreads against Bund, hitting principally Ireland and Portugal, that lost the market access and had to rely on the ESM support, accepting its heavy conditionalities. In a first moment, Italy and Spain (the former especially) were less affected, but in June 2011 rating agencies started to put in negative outlook

the creditworthiness of the Italian Republic, highlighting two aspects in particular: the very high level of public debt and the long-lasting weakness of economic growth. During the summer the perception about Italy's perspectives deteriorated quickly and with a growing intensity, creating serious problems to debt management. The Italian Treasury was forced to abandon its long-term bond (over the ten-year maturity) supply, replacing it with multiple reopening of shorter off-the-run bonds, often announcing for them a cumulative range of minimum-maximum volumes. In such a manner, the issuer kept a higher level of flexibility.

On August 8, 2011, the ECB decided to start the SMP (*Securities Markets Programme*), a programme of purchase of Italian and Spanish bonds, whose spreads against Bund had reached 400 bps. But this programme did not prove to be effective, because the purchases were directed at a too limited basket of instruments: only nominal fix-rate bonds with a residual maturity between 2 and 10 years. Then, no T-bills and other zero-coupon bonds, no floating rate notes, no inflation linkers. Moreover, of course no bonds to be auctioned, but even no bonds with similar expiring dates, and the ECB split purchase orders among many of bank traders. Considering that in each auction the issuer's supply was spread over several bonds to compensate the lack of the long-term ones, the ECB intervention was failing just when it should be more important. Therefore, in October the entity of purchases was drastically reduced and in November stopped.

In the meanwhile, the trading desks of primary dealers were not anymore authorized to keep risk in their portfolios; in absence of enough final investors, the coverage of auctions was relying more and more on the most speculative funds. In this context, several negative actions from rating agencies occurred, every auction was recording higher yields, and the spread BTP-Bund overcame 550 bps in November, forcing a change in

the Italian government. Nevertheless, in such a context, extremely turbulent, the Italian Treasury was able to cover all auctions, but was also obliged to reduce the size of its supply.

Notwithstanding the new prime minister Monti immediately adopted severe austerity measures and a drastic pension reform, the market reaction, although positive, was reflected only slowly on yields and spreads. Probably, initially the improvement was so modest also in consequence of the behaviour of rating agencies, that repeatedly published negative comments far from rating actions. Moreover, in mid-January 2012, just a couple of hours before an auction of BTPs, S&P downgraded two notches the Republic of Italy's rating.

In the following months similar cases involved other Eurozone sovereign issuers, pushing EU regulators to elaborate new rules on the rating agencies' communications, transfuse in a Regulation issued in May 2013<sup>5</sup>. While the inclination of the Italian yield curve recovered quite promptly, returning positive after the approval of the new budget law at the 2011-end, the absolute level of government bond rates started to reduce only since the end of January 2012, and with a very slow pace, also as a consequence of the extremely high margins to settle transactions in Italian bonds requested by central counterparties (Clearnet and CCG) since November 2011<sup>6</sup>.

However, among Italian savers the turbulence of last quarter 2011 highlighted a sentiment favourable to the investment in government bonds, pushing the Treasury to study carefully how to take advantage of

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<sup>5</sup> Regulation (EU) No 462/2013. In particular, in the article 8a Credit Rating Agencies were obliged to publish (and respect) an annual calendar of their rating actions, limiting the possibility of exception to extraordinary and unexpected new occurrences.

<sup>6</sup> Only since the end of 2014 margins on the shortest maturities recovered to levels similar to 2010, while on medium-long term maturities they stabilised on higher values, on average.

it. Then, in March 2012 a special bond, with a number of innovative features, was launched to attract retail investors, the BTP Italia: an inflation linker (linked to the domestic consumption prices), whose capital uplift was payable semi-annually together with the coupon, purchasable at par price, and also directly on-line on the MOT platform (the regulated market for retail size transactions). Moreover, only for retail owners, it was added a fidelity premium paid at redemption, provided that the bond had been purchased during the placement period and held until maturity. It was a success.

In three months the BTP-Bund spread gradually declined to 300 bps from the over 500 recorded at the end of the previous year, but afterward market tensions raised again. In Italy because of the lack of confidence in the continuation of the reform process by the Monti government; to an even more marked extent in Spain, due to the serious deterioration of its the banking system problems. Indeed, ESM available resources (750 € billion), if useful to manage crises for small countries like Ireland and Portugal, were too limited for big ones like Spain and Italy. Furthermore, the majority requested for the approval of any decision of this body was again the unanimity, jeopardizing the promptness of intervention essential to represent a true solution.

At the same time, the exhausting stop and go of the Greek debt crisis management confirmed the market diffidence in the capacity of the Euro-system of surviving to the crisis. In this context, spreads against Bund of Spanish and Italian bonds jumped again, the downgrades of the rating agencies were repeated and DMOs were facing difficulties in their issuance activity, also because secondary market transactions continued to show high bid-offer prices and modest volumes traded.

In particular, in July the Italian Treasury had to manage an unexpected downgrade of two notches from Moody's that, at the end of the month, would have brought Italian inflation linkers out of the Barclays index (the benchmark followed by a large number of investors). The launch of a switch-bond transaction, where the repurchase-leg was represented by BTP€is, avoided the disruption in such market segment. In the same days, BTP-Bund spread touched again 520 bps and the Bonos-Bund one reached its absolute record-high level (633 bps), while the ECB's president Mario Draghi, during an interview announced allegedly that the European Central Bank would have done "whatever it takes" to preserve the Euro, concluding his speech with this sentence: "And believe me, it will be enough". On the following September 6 the ECB's Council made concrete this claim announcing the OMT (*Outright monetary transactions*) programme, which included the purchase of government bonds with a maturity up to three years of Eurozone's countries in difficulty, without quantitative limits. Even if conditionalities were maintained<sup>7</sup>, the market reaction was immediate and extremely positive, thanks to a couple of factors: the acceptance of the *pari passu* principle, making the ECB at the same level of the other creditors (that was missed in the case of the Greek debt restructuring) and the finding that the Council's decision was taken by majority. The latter, in particular, made clear the existence of a European institution able to decide promptly without the paralysis induced by unanimity.

Since then, international investors gradually but constantly returned to buy peripheral bonds and spreads showed a remarkable decline, allowing Italian and Spanish DMOs to offer again long dated securities. 2013 and

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<sup>7</sup> A country wishing to benefit of such a support would have to be part of a recovery programme under the aegis of the ESFS or the ESM, promptly respecting the relevant requirements.

2014 were years characterized by a funding activity more and more effective and smooth.

The 2012 was a crucial year also for the introduction of other relevant regulatory novelties.

To contrast speculative behaviours prejudicial to the European financial system, stringent limits to the short selling were introduced<sup>8</sup>, but for the government bond market they were applied only partially, in order to avoid unintended consequences on auctions. Indeed, the short selling was necessary to prepare the auction by market makers, not allowed anymore to keep bonds in their portfolios by new risk prevention rules. This peculiarity was clarified to European regulators by DMOs during the discussion in preparation of the new Regulation.

Another important measure, welcome by DMOs, was the ban of using Credit Default Swap (CDS) of a sovereign in absence of a direct exposure to the issuer<sup>9</sup>. The rationale was to prevent that sovereign CDSs were used both speculatively and to cover, as a proxy, exposures of private entities of the same country, translating to the sovereign their own risks and, in such a manner, creating additional tension in critical phases of the market. Finally, 2012 was also the year of the implementation, since the beginning of 2013, of Collective Action Clauses on all Euro government securities, as announced in November 2010. Although the purpose was to regulate in an orderly manner a possible process of debt restructuring, the market perception was not unambiguous: some analysts were welcoming the innovation because it was introducing clarity in an event until then

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<sup>8</sup> Regulation (EU) No 236/2012 of the European Parliament and Council, Commission Delegated Regulation (EU) No 826/2012 and Commission Delegated Regulation (EU) No 918/2012.

<sup>9</sup> Commission Delegated Regulation (EU) No 918/2012.

undisciplined, but others feared it could push borrowers to not honour the debt, having opened an unprecedented possibility of restructuring. Such a twofold stance was source of additional uncertainty and did not help market climate.

Nevertheless, when in January 2013 CACs were introduced market players did not showed to be inclined to really differentiate new bonds from the old ones, either in a positive or negative sense. At the same time, the new ECB policy in force since September 2012 favoured a remarkable improvement for peripheral funding, especially for Italy, with a continual reduction of yields and spreads and new investors' appetite for long dated securities.

After the 2007-2008 crisis, prudential rules adopted by regulators caused to banks difficulties in playing their role of market makers and absorbing large sell-off movements. At the same time, through a series of A&M operations, certain big investment funds had increased further their size, becoming benchmarks for a plurality of other institutional investors and drivers of sudden market changes, sometimes disruptive. This was the case on October 15, 2014, when, waiting for the start of the Fed tapering, in few minutes US Treasury prices collapsed of 25 basis points and the volatility persisted high for a while.

After this flash crash, in the Eurozone arose concerns about the safety of bond markets and the ECB was pressed to not limit anymore its intervention to TLTRO<sup>10</sup> liquidity injection and reduction of monetary rates (already negative), but starting to buy government bonds, like Fed and Bank of England had done yet. In January 2015 ECB announced the start, since the following month of March, of the PSPP (*Public Sector*

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<sup>10</sup> *Targeted Longer-Term Refinancing Operations*, a programme of long-term subsidized financing granted by the ECB and aimed at providing credit to households and non-financial firms.

*Purchase Programme*), a large programme of quantitative easing of at least 19 months of duration. The market welcomed very positively this decision, for a series of reasons. First of all, the size of the intervention: a total of 1 € trillion, and 60 €billion per month on average. Second, the amplitude of the spectrum of securities available for purchase: all bonds with a maturity up to 30 years, including, for the sovereign ones, fix and floating rate bonds, zero-coupon bonds and inflation linkers too. Finally, it was also specified the commitment to limit purchases of each individual security below the majority threshold for the CACs activation and confirmed the *pari passu* creditor status of ECB and national central banks.

As a consequence, in the first half of 2015 bond yields fell sharply and BTP-Bund and Bonos-Bund spreads went down to the 100-bps level for a while. During the summer some tension was generated by the debate on a possible abolition of the zero-risk weight for investment-grade sovereign bonds in bank portfolios. When this possibility was averted, spreads recovered in area 100 bps and stabilized for one year, with Italian bonds performing better than the Spanish ones.

This context allowed the Italian DMO to launch, between 2015 and 2016, new benchmarks with long and ultra-long maturities: not only the usual 15 and 30-year bonds, but also 20 and 50-year bonds, very well received by investors. Concurrently, Italian government securities up to the 3-year maturity were placed at negative rates, deepening their absolute value over the time until April 2018, when the difficult and controversial process of forming a new government after the general elections brought about new uncertainty and tensions in the market, with a dramatic pick of volatility at the end of May - beginning of June. Although the situation later eased, the climate remained disturbed until the end of the year, when the dialogue with the European Commission became more peaceful and constructive.

During 2019, gradually BTP-Bund spread recovered from levels near to 300 bps of the beginning of the year to around 150 bps (i.e. not far from the pre-election values), but a new wave of crisis overwhelmed Europe, starting just with Italy in March 2020: the COVID-19 pandemic.

Again, the role of the ECB was crucial. While the first statement of madame Lagarde in March 12 (“We are not here to close spreads”) created big troubles in the market, one week later she announced a new large programme of purchase of public securities (750 €bn), further increased twice later on (up to 1,850 €bn), and with a flexibility never seen before.

But the impact of the pandemic was so deep that it requested a new stance of the European Commission too, that launched two large sets of interventions financed by common funds: first SURE and then the RRF (the Recovery and Resilience Facility to support Next Generation EU plan). For the latter, the Commission was allowed to issue European common debt. These initiatives, carried out resolutely, reassured financial markets, which digested the massive volume of government bond issuance, in 2020 even higher than the previous maximum recorded in 2009, also thanks to the enormous liquidity made available by the ECB's monetary policy. In this context, interest rates became negative all along the curve up to the 10-year maturity for Germany, but also all the other EU countries benefited of an extreme low cost of their indebtedness.

In particular, in Italy yields at issuance were negative up to the 3-year tenor. Nevertheless, the costly measures to face recession requested an effort of innovation to the public debt management. Increasing funding needs were covered by an additional recourse of syndicated transactions - able to ensure larger placements – in some case even with double tranche issues. Moreover, the channel of retail investors was largely exploited, with a revival of BTP Italia issues (particularly successful in face of the

inflationary flare produced by the pandemic) and the launch of other bonds specifically addressed to private savers, which continued to be offered also in the following years, in less critical environments (BTP Futura, BTP Valore, etc.).

The consequence of the pandemic crisis has been the surge of public debt levels, partially re-absorbed quite quickly. Nevertheless, it is still not easy to ensure the resumption of a reduction path of debt to GDP ratio for certain countries (like Italy, UK or France), whilst some success is also present, like Portugal. Such difficulties are in part due the never-ending context of new factors of crisis: climate change on one hand, and severe geopolitical tensions on the other (i.e. Russia-Ukraine and Palestina wars), whose impacts on the economy have been already not negligible and risk to increase further.

In Europe, and in Italy too, sovereign issuers entered the green bond market, emphasising the public budget contribution to contrast the climate change and protect the natural environment. At the same time, this type of bonds is enlarging the base of investors. Indeed, the awareness about the seriousness of environmental problems is now largely present both in the public opinion and among investment funds sensitive to these aspects, that have grown considerably and persist even after the new approach of the USA policy in this regard.

In conclusion, the world has become increasingly complex. It seems that, still for many years, public funding needs will remain historically high, the control of public debt level cannot be neglected, and at the same time, the professionalism, transparency and accountability of public debt management should be preserved and valorised.

### **3. The regulatory framework for crises in Europe after the 2008 financial crisis**

The crisis of the European Economic and Monetary Union (EMU), which followed the international financial crisis at the end of 2009, is not yet fully over, and from May 2011 to July 2012, it was fed by the vicious circle between the sovereign debt crisis in the peripheral Member States and the crisis in the majority of the European banking system.

The aim of this section is to show how regulatory responses to the relationship between sovereigns and banks that were born during crises have evolved over time, which legislative projects have been implemented and which have been put behind cumbersome political brackets.

This vicious circle has highlighted the weaknesses of financial regulation/supervision as well as the economic governance of the euro area. In the background, the idea remains that the fragmented banking system and the "vicious circle" between banks and sovereigns amplified the EU sovereign debt crisis that followed the banking crisis. All the responses to adjust sovereign treasury policies and the constant adjustments by international regulators aimed at strengthening the banking system's capital requirements seek a more or less temporary solution to that problem. Juxtaposing the delicate changes in sovereign positioning in response to crises with banking system reform efforts thus sheds new light and provides new perspectives.

The key aspect of a phenomenon observed in 2008 among European Union member states, often highlighted by academics — namely, that the blockage of cross-border capital flows corresponded to a continuous flow of capital within countries — represented a deepening of the relationship between banks and sovereigns. The response, in the form of efficient

sovereign placement, not always balanced by sound capital requirements of a domestic banking system, has triggered ongoing concerns that banks are holding proportionally excessive amounts of national public debt.

The Banking Union was an important component of the attempt to resolve both these matters. In June 2012 the formal proposal of a Banking Union by the European Council was launched, made up of three pillars: the Single Supervisory Mechanism (SSM), the Single Recovery and resolution Mechanism (SRM), and the Single Deposit Guarantee Scheme (SDG). The institution of the SSM and the SRM aimed to create a level playing field in the banking regulation of EMU countries voluntarily applying to the BU; SDG was intended to create a protection mechanism at the European level in favour of bank depositors. To summarize the analysis, the latest regulatory responses appear to be partial solutions to this general problem, which evolves in the context of multiple crises and is constantly adjusted over time. Some policy solutions (the ESM backstop) have reached the end of their useful life, mitigated by the growing push to reform prudential requirements, which increasingly ensure solid and well-capitalized financial institutions with sharply declining non-performing loan ratios despite adverse economic cycles. At the same time, the latest regulatory effort (CMDI) to bring resolution decisions for banks with a "regional impact" into a unified supervisory framework (SRB) has certainly provided a further element of stabilization. The analysis begins with a study of the European regulatory framework, its prudential aspects, and then the integration of the Basel reforms into the EU legal system, all the way up to the green transition. It continues by analysing the response to banking crises, the resolution of structural problems, and the structural and cyclical limits to the banking sector's resilience

The relationship between banks and sovereigns is less stable, where a concept of sovereignty still overdetermines the fate of the Banking Union, where a common safety net financed by industry (EDIS) cannot find its natural purpose due to the strong link between public funding and banks

If a banking system is strong, the sovereign's ability to manage the supply and demand for financing in the markets will be equally effective, so that efficient fiscal policies find, in a solid banking system, the ideal link for conveying growth prospects to families and businesses.

While the profession of managing the balance of state finances, like a two-faced Janus, with one eye on debt reduction and the other on efficient placement in secondary markets, has sought to achieve a constant and challenging equilibrium during crises, banks have similarly sought their own center of gravity in the same turbulent macroeconomic environment if not linear, then at least elliptical.

The "profession" of managing public debt (the sovereign) and the "profession" of banks exist in a unique and inseparable relationship for obvious reasons: the first, and not the least important, rests on the fact that banks' uniqueness is rooted in their primary function, namely "maturity transformation." They mobilize savings, provide liquidity to other institutions, rationally allocate assets to finance projects, and act as a channel for the transmission of monetary policy. This makes banks different from other sectors. In particular, during crises, their fate has increasingly become intertwined with that of the sovereign, so much so that the health of public finances cannot be separated from the health of its banking system. During banking crises, economic activity suffers, as does the government's fiscal position. Governments' responses to crises dictate austerity measures that depress economic activity, paving the way

for high default rates and a credit crunch that triggers a downward spiral for the banking system.

In "normal" times, this relationship is rooted in banks' direct exposure, through their holdings of sovereign bonds on their balance sheets. Secondly, they participate in the system of explicit and implicit guarantees from the state and the central bank, facilitating the transmission of monetary policy. By directly financing the real economy (households and businesses), they have a hand in the fiscal game; therefore, in all these cases, the deterioration of the banking system can lead to a deterioration of fiscal policies. To describe this relationship, the literature has coined the term "doom loop." The nexus between sovereign debt and banks acts as a multiplier and accelerator of vulnerabilities in both sectors. The lesson learned over the last 15 years is that a banking crisis can arise from a sovereign debt crisis and that a sovereign debt crisis is conditioned by a banking crisis. Furthermore, it has been demonstrated that the onset of sovereign stress directly influences bank's stability.

Since the great financial crisis of 2008, the regulatory framework at the cross-jurisdictional (with international standards bodies) and European levels has sought to safeguard the sovereign-bank nexus by placing constant attention on standards and legislative solutions to three key aspects: 1) the adoption of macro- and micro-prudential buffers that strengthen and solidify banks' capital structure (Basel reforms) to increase their loss-absorbing capacity by increasing capital, liquidity, and leverage requirements; 2) scrutinizing policies that favour sovereign holdings (an attempt by the Basel Committee to introduce positive risk weights and exposure limits on banks' sovereign holdings has failed miserably) ; and 3) adopting effective resolution frameworks with appropriate treatment of systemically important institutions and moving away from the "too big to

fail” scenario by introducing long-term unsecured debt instruments that can be written down or converted into equity in the event of resolution and thus minimize the need for taxpayer financing .

Over the past 15 years, the global financial system has experienced multiple economic crises, so much so that analysts today employ terms such as "permacrisis" or "poly-crisis" (the constant persistence of a crisis situation, sometimes determined by geopolitical factors, sometimes by economic and financial factors). This is part of a "complex" system where the interconnectedness of systems is such that any crisis in one of these systems will generate a crisis in all the others, where "the whole is even more dangerous than the sum of its parts" (Tooze).

Each crisis defines a new "paradigm," scientists change their minds on fundamental problems, and this can be achieved through a "reorientation" of knowledge that leads to a transformation of observations and data.

The rapidity with which crisis occur seems to leave structural challenges unanswered. In the banking sector, the third pillar of the Banking Union is slow in arriving, and the onset of exogenous challenges such as the pandemic and the Russian-Ukrainian war appear to be slowing down the full implementation of the Basel framework, paradigms born with the Great Financial Crisis (GFC) of 2008 .

The paradigms of the Great Moderation that characterized the last two decades of the 1990s through reduced macroeconomic volatility guided central bank monetary policy interventions in the following years, including the global financial crisis, in a context of low interest rates and accommodative liquidity policies.

The above observations are forced into an abrupt "reorientation" (excluding the shortcomings), establishing a new paradigm and with it new regulatory implementation tools.

Monetary and fiscal policy support has been too broad and too long-lasting. The era of cheap money is over. Quantitative tightening and rate hikes implemented in concert by all central banks in all jurisdictions have stressed the financial system and caused a final aftershock. We will attempt to demonstrate whether, against the backdrop of the turbulent economic environment, the regulatory framework for the resolution and liquidation of the banking system is fit for purpose and effectively contributes to mitigating friction between sovereigns and banks.

In early 2023, the UK government bond market saw a sharp rise in yields and a sudden evaporation of liquidity, as leveraged investment vehicles through which pension funds were matching the duration of their liabilities were forced to sell to meet margin calls. Around the same time, several regional banks in the US (tech lender Silicon Valley Bank SVB, cryptocurrency sector lender Signature Bank, and First Republic) collapsed due to a combination of accumulated losses on long-dated assets, especially government bonds, as well as sudden runs. The speed and scale of deposit withdrawals have been a feature, not a cause, of recent US bank failures. We live in a world where a wide range of communication tools text messages, group chats, and social media posts—have enabled faster, if not increasingly accurate, dissemination of information.

Permissive" regulatory approaches, derogating international standards, have opened the door to new banking crises. The repeal of the Dodd-Frank Act in 2018, which exempted certain banks with assets of up to \$250 billion from the Fed's strictest supervisory measures, including stress tests and capital and liquidity requirements, especially for certain categories of banks (large regional banks are not "systemic" and "do not require close regulatory and supervisory oversight"), would have allowed SVB to be more resilient in the face of the crisis .

Amid fragile confidence, Credit Suisse — a global systemically important bank (G-SIB) — failed, suddenly losing market access following long-standing concerns about its business model and risk management. Eurozone banks' funding costs related to the issuance of senior bonds and AT1 instruments have increased significantly and remain at elevated levels following the Swiss authorities' decision to write down Credit Suisse Group's AT1 instruments before the equity capital (CET1) has been exhausted. This situation implies a transfer of value from the holders of these AT1 bonds to their shareholders. While isolated write-downs are feasible in many jurisdictions, the unintended consequences associated with the use of this mechanism (designed to absorb losses on a going concern basis) could lead authorities to write down only these bonds during resolution. This has prompted a debate about whether it is appropriate to continue regulatory work to increase transparency and disclosure of the characteristics of AT1 instruments.

The banking turmoil of the first quarter of 2023, including the failure of a global systemically important bank (G-SIB), the most significant failure since 2008, has brought the health of the recovery and resolution framework, established in the wake of the Great Financial Crisis, back into focus. The framework was established by the Financial Stability Board (FSB) at the G20 meeting with the aim of making the expected costs of potential failures lower than the costs of a public bailout, including the effects on moral hazard.

In its current form, the European system has not suffered any contamination, perhaps a sign of a certain robustness of its regulatory framework, which, it must be said, is building and solidifying over time. While prudential consolidation through the Basel III endgame adds another piece to the picture, resolution policies show some room for

integration and refinement, as demonstrated by recent regulatory adoptions. Let's take stock.

The regulatory framework of the European banking system is made up of three pillars: i) prudential framework: capital requirements to absorb losses on banking activities based on the Capital Requirements Directive and Regulation (CRR and CRD); ii) supervisory framework: cooperation supervisory framework that harmonizes the application of the prudential rules defined in the Single Supervisory Mechanism (SSM) Regulation; (iii) crisis management and deposit insurance (CMDI) framework: rules for determining and implementing solutions for failing or likely to fail (FOLTF) banks, as defined in the Single Resolution Mechanism Regulation (SRMR), the Bank Recovery and Resolution Directive (BRRD), and the Deposit Guarantee Scheme Directive (DGSD). It includes early warning procedures for insolvency or resolution, bank rescue, including decision-making procedures and respective responsibilities. It establishes industry-funded safety net mechanisms and resolution funds that are industry-funded, i.e., funded by all banks. The framework requires Member States to establish national deposit guarantee schemes (DGSs).

The Banking Union (BU) is based on: i) the Single Supervisory Mechanism (SSM) and ii) the Single Resolution Mechanism (SRM). The SSM directly supervises significant banks in the euro area at the European level, while the SRM resolves failing banks in an orderly manner with minimal costs to taxpayers and the real economy. The third element, a European Deposit Insurance Scheme (EDIS), was a legislative priority for 2021, but the EU Council (June 2022) identified strengthening the common CMDI framework for less significant banks (LSIs) as the next step towards completing the banking union. The EDIS will be evaluated in the future.

The CRR, together with the CRD, establishes the prudential regulatory framework for credit institutions operating in the Union. This prudential framework is complemented by rules on bank resolution, such as the orderly exit of all or part of a banking business to avoid the destructive impact of failures where relevant and possible. The latest update to the bank resolution framework ("BRRD2") entered into force in 2019, but problems requiring further corrections were subsequently identified. The nature of these critical issues lies primarily in the overlap between prudential and resolution tools, the improvement in the non-overlap between recovery and resolution plans, and the interaction between capital buffers and minimum requirements, which has been the subject of recent interventions by the European legislator.

A significant issue underlying the failure to review the macroprudential framework, as we have previously mentioned, highlighted one of the key aspects of the resolution framework: Buffer overlap. Some trends emerging during the consultation phase aimed to fill gaps in usable reserves through higher levels of releasable reserves. One possible solution is to modify the composition of the capital instruments through which the recapitalization amount of the MREL requirement must be met, so as not to affect the supervisory ratios (CET 1). As previously mentioned, the Basel III endgame, with the introduction of the Output Floor, will reduce the difference in RWA density among banks, especially for large banks using the most advanced IRB models. This will reduce buffer overlap, although, as noted, micro-prudential measures for idiosyncratic risks are not always adequate to address problems arising from systemic risks.

Furthermore, inconsistencies have emerged regarding the interactions between the BRRD and CRR provisions. The EBA has noted that instruments eligible to meet the minimum own funds requirement and

eligible liabilities (internal MREL or i-MREL) issued by a subsidiary through an intermediate parent undertaking and indirectly subscribed by the resolution entity (parent company) hinder the smooth implementation of the resolution strategy. Such methods should consist of "a deduction regime or an equivalently robust approach" and should ensure, among other things, for entities that are not themselves the resolution entity, "an outcome equivalent to that of a full direct subscription" by the resolution entity of eligible i-MREL instruments. The CRR stipulates that an instrument must be risk-weighted unless it is deducted from own funds, including for the purposes of calculating MREL under the BRRD. The "total risk exposure amount" (TREA), referred to in the BRRD (Article 45, paragraph 2, subparagraph a), must be "calculated in accordance with Article 92, paragraph 3, of the CRR. The CRR does not allow the application of the necessary prudential treatment, since the rules for the deduction of participations of eligible liabilities do not capture all daisy chain situations. To overcome this obstacle, in October 2021 the Commission proposed, in the broader 2021 Banking package to implement the Basel finalization, also the so-called Daisy Chain proposal which modifies the resolution framework for Union banks through an i) MREL regime channelled through an intermediate entity in the context of their upstreaming within complex resolution groups, nicknamed "Daisy Chains". Under the interim agreement, a revised deduction regime is introduced, specifically to avoid double counting of MREL items at the intermediate entity level, thus ensuring that EU banking groups always maintain robust loss-absorbing capacity in line with their MREL declarations. A review clause is added to account for the impact on different types of banking group structures. These potential improvements will be assessed in the ongoing BRRD revision proposal;

(ii) further align the treatment of groups of global systemically important institutions (G-SIIs) with a multiple-point-of-entry (MPE) resolution strategy with the treatment outlined in the FSB's Total Loss-absorbing Capacity Term Sheet (the "TLAC standard"); and (iii) clarify the eligibility of instruments under the domestic TLAC framework.

Of the four legislative proposals that comprise the CMDI, the one relating to the Daisy Chain update founded a provisional agreement among the European co-legislators. This is a targeted amendment to the BRRD and the SRMR to include targeted proportionality requirements for the treatment of the "internal MREL" in bank resolution groups. As we recalled, this is a deferral of the October 2022 regulation aimed at addressing the disproportionate negative impact on certain banking group structures, namely those operating under a parent holding company and certain operating company structures. It aims to empower resolution authorities to set the internal MREL on a consolidated basis under certain conditions. If the resolution authority allows a banking group to apply this consolidated treatment, intermediate subsidiaries will not be affected and will not be obliged to deduct their individual holdings from the domestic MREL, thus avoiding the detrimental effect.

The legislative process in the EU has continued, most recently in resolving other outstanding issues that emerged in the 2021 FSB report regarding continued state support for failing banks, which can potentially undermine the feasibility and credibility of resolution. Public funds continue to be used to support small and medium-sized banks, even in jurisdictions with well-developed resolution frameworks. The issue concerns the definition of public interest, an element incorporated into the recent Crisis Management and Deposit Insurance (CMDI) framework, which is currently being finalized in trilogues.

The existing doctrine governing the use of public funds outside of resolution (in the form of liquidation aid) states that "it is up to Member States to decide whether they consider that the exit of a bank would have a serious impact on the regional economy, for example on the financing of small and medium-sized enterprises in the regional economy, and whether they intend to use national funds to mitigate these effects. The current framework could lead to a situation where the views of national authorities could contradict those of the SRB." Pointing to the liquidation of Veneto Banca S.p.a. and Banca Popolare di Vicenza S.p.a. in 2017 as examples of divergent assessments, the SRB considered no public interest in resolution, but the Italian State nevertheless considered it to be in the public interest to mitigate the effects with public funds. The Commission's roadmap for the review of the banking crisis management framework in November 2020 highlighted the incentives for the use of tools outside of resolution, driven by a restrictive approach to the so-called "public interest assessment" (PIA). The EU crisis management framework envisages resolution as the exception rather than the norm. The decision to initiate resolution is based on a number of conditions, one of which is the public interest assessment. As stated in the SRB's approach, the SRB must (i) consider whether liquidating the bank in question under normal insolvency proceedings would achieve the same objectives (in particular, i) continuity of critical functions, prevention (support and protection of depositors, investors, and customer funds), and (ii) comparing the expected effects of the chosen resolution strategy with the expected effects under normal insolvency proceedings. Article 32(1)(c) of the BRRD provides that "resolution action shall be considered to be in the public interest if it is necessary to achieve and is proportionate to one or more of the resolution objectives referred to in Article 31 and if, in

liquidation, the institution under normal insolvency proceedings would not achieve those resolution objectives to the same extent."

Within the Banking Union, the Single Resolution Board (SRB) assesses whether a resolution would be necessary to ensure one or more of the resolution objectives mentioned in the Single Resolution Mechanism Regulation (SRMR), with objectives identical to those included in the BRRD. The PIA is bank-specific and time-specific. The assessment is carried out annually as part of resolution planning for each bank within the SRB's mandate.

In 2021, the SRB revised its approach to the Public Interest Assessment (PIA) policy in resolution planning to take into account, when identifying the preferred resolution strategy and tools in the resolution plan, that a bank's failure can occur not only in an idiosyncratic scenario but also in the event of broader financial instability or system-wide events (SWEs). The SRB's revised approach consists of a single assessment and a single conclusion, which considers two sets of circumstances: (i) normal market conditions and (ii) system-wide events. According to the SRB, this enhanced PIA policy is being implemented in the current resolution planning cycle. Furthermore, the consideration of SWEs occurs according to the following subsequent steps, in addition to those provided for by the existing PIA framework: (i) assessing the impact on the five resolution objectives of a bank's failure under normal insolvency proceedings and in a scenario where other banks are weakened by a SWE; (ii) selection of preferred and alternative resolution strategies; and (iii) assessment of whether liquidation of the bank under ordinary insolvency proceedings meets the resolution objectives.

The extension of a bank failure to systemic causes, or rather to a system-wide event (SWE), is the expansion of the definition of public interest

introduced by the SRB. This definition is based on the stress test scenarios adopted by the EBA and the ECB to assess capital absorption (CET 1) due to macroeconomic factors affecting the system, assessing how a single deterioration has direct and indirect contagion effects on other operators. In light of this expansion in the definition of PIA, in 2022 the SRB improved its approach to assessing the deposit protection objective.

In its 2022 resolvability assessment report focusing on banks in the Banking Union, the SRB developed 103 resolution plans for banks under its direct mandate. The results show that resolution remains the preferred course of action in 88 plans (85% of the total), representing 97% of total risk exposure (TREA). Winding-up is planned for 15 plans (15%), representing 3% of TREA, mostly consisting of public development banks and smaller banks with specific business models. As in the 2021 cycle, most plans envisage resolution at the level of the consolidating parent entity (Single Point of Entry Strategy), meaning that this action is taken only at that level. For some banking groups operating in subgroups that are financially, legally, or operationally independent from other parts of the group, resolution action is instead envisaged at the subgroup level, as part of a multiple entry point strategy (9 banks follow an MPE strategy). Bail-in remains the preferred resolution tool for 82% of plans. Asset sales remain the second-most preferred resolution tool. Alternative strategies should address circumstances where the preferred strategy would not be feasible or credible. Asset sales are the most common alternative to bail-in initiation, while a bridge institution is often used as an alternative to asset sales, in combination with bail-in.

The report finds that banks are steadily improving their resolvability, even in challenging market conditions. Two-thirds of banks within the SRB's mandate have achieved their 2025 MREL target. At the same time, banks

are improving their preparedness for bail-in operations, emphasizing internal loss transfer and recapitalization mechanisms. Banks should have addressed any shortcomings in their resolvability by the end of 2023.

Regulatory interventions in the area of prudential requirements after the financial crisis provide an answer to questions from international standards bodies. They also further contribute to the coordination of recovery and resolution plans; they improve the interaction between capital buffers and minimum requirements, and provide a more transparent framework for information sharing between micro-prudential and resolution authorities, on the one hand, and macroprudential authorities, on the other.

Efforts to end the "too big to fail" world are a step in the right direction. Limits on public guarantees and private loss-sharing arrangements for bank resolution reduce excessive risk-taking and the direct fiscal cost of bank resolution. A robust resolution framework with broad resolution powers and tools, effective cross-border cooperation, and robust early intervention powers are essential to mitigating the bank-sovereign nexus. Although the completion of the third pillar of the Banking Union with the adoption of the EDIS remains pending, the answer to the question of whether the prudential and resolution frameworks essential for maintaining a healthy relationship between sovereigns and banks are up to date is encouraging.

The sovereign's balanced management of public debt finds its link with the financial system as the link to the real economy, which can multiply and accelerate vulnerabilities in each sector and lead to negative vicious circles.

The underlying axiom underlying the analysis is that larger fiscal buffers and better public debt management improve debt sustainability and reduce

the risk of sovereign-related banking distress. Larger capital buffers and improved prudential frameworks strengthen banks and reduce the risk of bank-induced sovereign distress.

To verify these assumptions, we have attempted to analyse in this chapter, using the most recent legislative proposals, whether the banking system has reached its most effective regulatory configuration to ensure a lasting, solid, and stable link between sovereigns and banks over time.

The effectiveness of sovereign debt management, especially during crises, cannot be separated from the banking system's response to these crises. Designing effective reforms requires a clear understanding of the interaction and extent of the connections linking the fate of sovereigns and banks.

If the structuring of a prudential and resolution framework are among the most important components needed to lessen the nexus between banks and sovereigns, then it is worth emphasizing that regulatory evolution, especially recently with the finalization of the Basel II framework, along with the attempt to address green challenges at the prudential level and the changes to the crisis management framework, represent appropriate solutions in the times of crisis and uncertainty we are experiencing. Some issues remain in the background and will require policy solutions for the foreseeable future: banks hold some sovereign bonds as a natural feature of the system; therefore, the desired calibration would involve weighing the costs and benefits of these holdings, including the disclosure exercise, which would strengthen market discipline. Furthermore, another contribution to reducing the nexus could occur if banks were fully diversified across countries and had access to a supranational safety net, while the lack of effective mechanisms for cross-border resolution complicates the issue.

After all, seeking perfection in banks' prudential frameworks is almost as complicated as seeking balance in states' fiscal discipline.