The tangled web: do capital requirements and loss absorption capacity foster a systemic risk free, pro-growth banking environment?

by Giorgio Barba Navaretti[1], Giacomo Calzolari[2] and Alberto Franco Pozzolo[3]

The debate on capital requirements for large banks is nested around the presumed trade-off between hedging systemic risk on the one side and expanding lending to the real economy and fostering economic growth on the other. This first issue of *European Economy - Banks, Regulation and the Real sector*, is devoted to disentangling this debate and discussing its key ingredients.

All regulatory changes following the financial crisis of 2007 have been aimed at strengthening banks' balance sheets, to a large extent by reducing leverage and increasing capital buffers. As we show in the 'Numbers' section of this issue, on average Tier 1 capital ratios on risk weighted assets (RWA) have increased from approximately 8% to above 12% and leverage (measured as total assets on equity) has gone down from 21 to 17 for the four large Euro countries between 2008 and 2014.

On top of these requirements, regulators are identifying classes of liabilities that can be explicitly targeted in terms of their loss absorbing capacity to bail-in banks in distress, like the minimum requirement for own funds and eligible liabilities for bail-in (MREL) identified by the European Bank Restructuring and Resolution Directive (BRRD). The bail-in principle implies that shareholders and some classes of creditors will take the bill in the occurrence of a bank's restructuring or resolution, instead of being bailed-out by other sources of funds.

1. University of Milan
2. University of Bologna
3. University of Molise

Extra requirements have been imposed on Globally Systemically Important Banks (G-SIBs), justified by the systemic dimension of their activities and by the moral hazard concern implicit in the 'too big to fail' (TBTF) argument: the presumption that tax payers' funds would always be at hand to bail out systemically relevant financial institutions. In the period 2008-2012, the overall volume of State aid used for capital support measures alone amounted to €591.9, equivalent to 4,6% of EU 2012 GDP (European Commission, Economic Review of the Financial Regulation Agenda, 2014). As for loss absorbing capacity, the Financial Stability Board is issuing a specific regulation (still under definition as we write) requiring systemic banks to hold extra layers of bail-in-able liabilities, the so called Total Loss Absorbing Capacity (TLAC).

How effective can additional capital requirements be in reducing systemic risk? What is their impact on lending to the real economy and on economic growth? Is the bail-in principle effective in enhancing the resilience of banks and reducing the occurrence of bail-outs with tax payers funds? Is there a discontinuity between equity capital and other loss absorption liabilities? Are these measures neutral to different banking business model? Are there alternative measures to achieve the same outcome? Is a differential treatment for large and small banks justified?

These are some of the key questions addressed in this issue. The bottom-line is that the answers are not straightforward: all capital requirements and loss absorption measures are necessary but also imperfect tools for achieving financial stability, and under several circumstances they may indeed hinder growth. For this reason, the specific provisions and the design of these measures must be assessed and understood with care and balance. Especially crucial is the discussion on TLAC, given that its regulatory framework is still under definition and that this measure is sizeable and expected to have a major impact on the structure of banks' liabilities (according to its Consultative Document of November 2014 the FSB envisages a common Pillar 1 Minimum TLAC requirement between 16% and 20% of risk weighted assets, more than double than the Basel III minimum total capital requirements, and rising to up to 19.5% to 25% of RWAs if other regulatory capital buffers are included).

This bottom-line conclusion reflects the common thread across the contributions to this issue, even though with a differentiated degree of support for capital requirements and loss absorption measures: three leading articles

by very distinguished and influential academics: Jean Charles Rochet (University of Zurich), Thorsten Beck (Cass Business School - City University of London) and Jan-Pieter Krahnen (Goethe-University Frankfurt) and the notes in the (Q&A) section by three key institutional figures with leading roles in the implementation of the new regulatory framework (Andrew Gracie, Executive Director, Resolution Bank of England; Laurent Clerc, Director Financial Stability Banque de France; and Carmelo Salleo, Head of Macro-Financial Policies Division, European Central Bank) and a representative of the industry, Santiago Fernandez de Lis, Chief Economist for Financial Systems and Regulation at BBVA.

We believe that this first issue of our journal provides a balanced discussion of capital requirement and loss absorption measures for large banks and in general, and it will help the policy debate focussing on the most critical questions. This editorial summarises some key findings and discusses the most controversial issues emerged. Given its relevance, a specific section is devoted to the TLAC issue. The editorial is also followed by three sections reporting the key numbers, the key institutional and regulatory measures and the key readings concerning this issue, prepared by the Junior Editor of the journal, Maria Teresa Trentinaglia.

1. The trade-off: reducing systemic risk vs. financing the real economy

The aim of equity capital requirements and of the other bail-in-able liabilities is essentially to create buffers capable to absorb losses and increase the resilience of banks during distress (Gracie and Clerc in this issue). To a large extent, the banking industry and other commentators have challenged capital increases on the ground that these would have forced banks to reduce lending and total assets so as to meet regulatory capital ratios. Indeed, lending to non-financial enterprises and banking assets shrank along with capital increases since 2011 (see the Numbers section**)**. But the jury is still out on how far the former is a consequence of the latter. As discussed explicitly in the first leading article of this issue by Jean Charles Rochet, we do not yet have adequate theoretical models and structural empirical estimations able to address this issue in an adequate way. Also, trends in assets and lending are very divergent

across European countries and for most of them levels are still higher than at the beginning of 2006 in nominal terms (see the Numbers section).

The extent and the nature of this trade-off has been hotly debated. Its mere existence has been put into question by some; others, at the opposite side of the spectrum, have taken the negative impact of capital requirements on lending for granted. We believe that the nature and the extent of this trade off rest on a large number of details: timing of implementation, size of capital requirements, risk weighting provisions, definition of eligible capital instruments, market frictions, etc. Moreover, given that requirements are the outcome of several layers of frequently overlapping and sometimes inconsistent regulations, the web is pretty tangled.

Is capital neutral? The Modigliani Miller debate

In principle, risk declines with lower leverage, because of the loss absorption function of equity capital (and to some extent of other bail-in-able liabilities). If there were no frictions, markets should be able to factor in the reduction in risk and shareholders accept a lower return on equity. Consequently, advocates of the approach based on the Modigliani Miller theorem (one of the most frequently quoted examples is the influential book published in 2013 by Admati and Hellwig "The Bankers' New Clothes: What's Wrong with Banking and What to Do about It") argue that bankers should have no problem in meeting more stringent regulatory requirements, and that their claim of the contrary (i.e. that they are unable to raise capital because of insufficient returns and therefore they are forced to meet requirements by shrinking their assets and lending) is misplaced. This argument has been very influential also at the policy level and is reflected in several official documents and position papers (see for example the literature cited in the Key readings section and by Beck, in this issue).

Although the neutral impact of increased capital requirements might hold in the longer term, several contributors to this issue argue that the impact on lending might be severe in the short term because of market frictions (e.g., Rochet and Beck in this issue). Also, several contributions, based on dynamic general equilibrium models, find an inverted U shape relationship between bank lending and capital requirements and estimate that the optimal level of regulatory capital should be in the range of 8 to 14%: capital requirements

above these values may have an inhibiting effect on the real economy activity (see Clerc in this issue).

The evidence shows that even though capital increases have been sizeable, banks have met the new capital requirements also partly by reducing their assets and rebalancing their portfolio towards asset classes with a lower risk weight, particularly in the aftermath of the sovereign crisis (see the ECB Financial Stability Review of November 2014 and the Numbers section in this issue).

This evidence does not say much on the relationship between capital requirements and lending. Banks have restructured their balance sheets also for reasons strictly inherent to market conditions, rather than just because of regulatory requirements. Yet it is certainly true that the rise of risk aversion, the large uncertainty in banks' fate and the dramatic increase in non-performing loans and in the consequent capital absorption have made raising fresh capital rather difficult and expensive during the downturn.

As we report in the Numbers section, the Average return on Equity has gone down from over 10% to below 5% for banks in the large Euro area countries between 2007 and 2014 and even to lower values for some among them. At the same time, according to the ECB Financial Stability Review of 2015, the estimated cost of bank equity has been in the 8% to 10% range for most banking institutions in the Euro area throughout the crisis and diverging since 2011 between Northern and Southern European countries, mostly driven by bank equity risk premium.

Capital requirements and asset allocation

Another crucial issue affecting the trade-off between safety and lending is how capital requirements impact on asset allocation. Two opposite scenarios are possible here. In principle, banks could pursue a low risk strategy to minimize the capital absorption of their assets, as some large banking groups did during the crisis, particularly after 2011 in the EU. This indeed implies avoiding risky loans to the private sector, especially to SMEs, and investing in safer assets, such as loans to large corporations or sovereign securities.

However, an opposite move is also conceivable as a consequence of increased requirements. A key function of banks is of course transforming illiquid risky assets into liquid and safe liabilities (see Salleo in this issue). Regulators

should not aim at sterilizing banks from market risks, as failure is part of the market process and a potentially effective disciplinary device (as argued by the contributions of Krahnen, Beck and Gracie in this issue). The inherent riskiness of banking implies that however well capitalised are balance sheets, there is a floor in the level of the returns on equity that shareholders would accept to fund risky assets like loans to the private sector. Indeed, equity per se is neither safe nor especially liquid, given its junior status in the hierarchy of banks liabilities (see above on the estimates of the cost of equity for EC banks). As a consequence, increased capital requirements might induce banks to invest in riskier assets, with higher expected returns but also more severe tail risks.

This could expose banks to higher risks. In addition, from a systemic point of view, there is the further issue that more risky activities could end up being carried out through non regulated shadow vehicles. The threats to the stability of the financial system of a move in this direction are difficult to evaluate, but cannot and should not be underestimated.

An important factor here is the accuracy of risk weighting rules in assessing the real risk of asset allocation. If risk weighting rules work adequately, risk taking should be fully reflected in capital requirements. If risk weighting is not accurate enough, banks might end up with risky asset allocations not matched by an adequate capitalization. As argued by Beck in this issue, pre-crisis risk weighting failed to predict clearly the riskiness of asset allocation and the health condition of banks' balance sheets. Precisely because of the difficulty in identifying fully accurate metrics for risk weighting, the Basel III framework, and also the provisions for TLAC, impose target leverage ratios.

Incentives: the ex-ante tackling of systemic risk

The aim of the regulatory frameworks we are considering is to set incentives to mitigate excessive risk taking patterns. According to the IMF Global Financial Stability Report (April 2014), the estimated implicit TBTF subsidy granted to euro area G-SIBs in 2011-12, in terms of funding cost advantage was between $ 90 to 300 billion. Aligning incentives between shareholders and bondholders on one side and management on the other, and reducing the TBTF moral hazard problem is the key mechanism through which capital increases and bail-in measures are expected to rein in excessive risk taking behaviour. After all, shareholders require an adequate return to the risk they are

taking, but they are not necessarily risk lovers. Neither the holders of bail-in-able debt. Therefore, even though a lot of emphasis is given to the ex post loss absorbing function of capital and other bail-in-able liabilities, incentives are expected to play a fundamental role in defining ex-ante the trade-off between safety and lending to the real economy. The mechanism of bail-in-able liabilities should indeed bring back market discipline: risks on the shoulders of shareholders and creditors. Krahnen and Moretti in this issue see the bail-in-able principle as a 'greenhouse' to nurture market discipline. But applying this theoretically appealing nurturing principle to the real world, they argue, is very difficult and very much depends on the design of the bail-in mechanism. As we will discuss below in the section on TLAC, the alignment of incentives might be effective in reducing risk taking only to the extent that shareholders or holders of bail-in-able liabilities have an adequate and effective saying in the management of banks, which in practice is not always the case.

Bail-in and absorptive capacity: the ex post tackling of systemic risk

A final issue is how far the measures under discussion are able to provide an adequate buffer for loss absorption, and of course this is especially crucial for large systemic banks, affected by the TBTF syndrome that makes the use of taxpayers funds ever more likely. The key issue here is the size of these buffers. On the one hand, bail-in-able liabilities and equity should have an adequate size to preserve the crucial activities of a bank even after a major distress. On the other hand, buffers should be sufficient to avoid externalities on other components of the financial system and to protect taxpayers. This will very much depend on the nature and the size of the systemic crisis and on the characteristics of the holders of the bail-in-able liabilities, as we discuss extensively in the TLAC section below (see also Krahnen and Moretti in this issue).

2. TLAC specific issues

Rationale and implementation

Several contributions to this issue discuss TLAC extensively (Beck, Krahnen and Moretti, Clerc, Gracie, Salleo and Fernandez de Lis). The piece by Gracie provides a thorough descriptions of the key features of TLAC and a clear

discussion of its rationale and expected effectiveness. This can be compared to the other pieces in this issue, which take a more nuanced view and highlight several critical features of this measure.

TLAC at the moment is the key topic in the policy debate on loss absorbing requirements. This for three reasons. First because it is still under definition: the FSB is still revising its term sheet following a first round of comments and is carrying out an impact assessment exercise. Second, because provisions are very sizable: banks should hold a minimum amount of regulatory capital (Tier 1 and 2) plus long term unsecured debt that are together at least 16%-20% of their risk weighted assets, at least twice the Basel III total regulatory capital of 8%) and the leverage ratio cannot be below 6% (twice the Basel III leverage ratio). Third, because it only applies to G-SIBs. For this reason we devote a section of the editorial to discussing its key ingredients (see also the section on the regulatory framework).

In the words of the FSB (2103), TLAC has been explicitly proposed as a measure to address the TBTF problem that "arises when the threatened failure of a systemically important financial institution leaves public authorities with no option but to bail it out using public funds to avoid financial instability", therefore encouraging ex-ante these intermediaries "to take excessive risks". Indeed, the additional capital and absorptive capacity identified by TLAC requirements should allow a bank that is negatively affected by a shock to have sufficient loss absorbing and recapitalization capacity so that, during and after a resolution, it continues to provide its critical functions at no cost for the taxpayers and without affecting the stability of financial markets.

The general principle to achieve this desirable outcome is that of bail-inable liabilities, i.e. financial instruments held by G-SIBs that can be written down or converted into equity in case of resolution. In particular, whenever Basel III minimum required capital is eroded, there should be a sufficient amount of TLAC-instruments that can be written down or converted into equity so that the G-SIB, or part of it, still complies with the Basel III minimum capital standards, and can thus continue its critical activities.

Effectiveness

While the rationale supporting TLAC is indeed solidly grounded in economic theory, whether its practical application will achieve the final objective

of reducing the TBTF problem is still the object of passionate discussions. In particular, it is not clear if TLAC would avoid the emergence of a crisis like that of 2008. And, even if it did, it is not clear if it is the most effective way of achieving such an objective.

With respect to TLAC's ability to limit the probability of a new financial crisis, the problem hinges on its power to achieve two intermediate objectives: limiting ex-ante the moral hazard problems that might lead to excessive risk taking and therefore increasing the risk of a financial crisis, and contrasting ex-post the systemic effect of the default of a G-SIB on the entire financial system.

As it is argued by Jean-Charles Rochet (this issue), moral hazard problems typically plague managers' risk taking attitudes, rather than those of shareholders or holders of bail-in-able securities. Indeed, the ample literature on the agency problems of corporate control suggests that a much more effective regulatory tool to reduce banks' risk taking should focus on managerial incentives, rather than on shareholders' and bondholders' incentives to control managers' decisions. Clearly, the transparency of the potential losses faced by shareholders and holders of bail-in-able securities is a crucial aspect affecting TLAC effectiveness in limiting moral hazard. As argued by Gracie in this issue, also imposing higher standards of governance to managers and defining a framework where individuals are held accountable for their decision is an important complementary tool to affect banking behaviour (see also the Bank of England's Fair and Effective Market Review Report).

A further question is how far TLAC provisions are able to achieve the second intermediate objective, i.e. whether privately funded bail-ins can act in the same way as publicly funded bail-outs and therefore creating an effective shelter for tax payers. We should recall that a key objective of the TLAC provision is distributing more equitably the costs of the distress of a TBTF institution. In this respect, numerous issues emerge.

First, there is an issue of *size*. Will each bank's TLAC suffice to avoid disruption of the bank's critical activities? Depending on the perspective one takes, TLAC provision could either be too large or too small. If only a strict perimeter of crucial activities will have to be preserved the size of the buffer does not need to be exceedingly large. According to Clerc, the empirical evidence suggests that the need for recapitalisation of distressed systemically

important institutions has been historically and on average in the range between 4 to 6 percentage points of total assets.

Yet the adequacy of the size of the shelter will very much depend on whether we are dealing with idiosyncratic versus systematic shocks. The contingency of the potential default of one or few G-SIBs may be controlled by TLAC. But the effects in the event of a crisis hitting a large set of intermediaries exposed to similar systematic risks might be impossible to face with TLAC, because of the undeniably large negative impact on the financial system of a large number of conversions and write-offs. In principle, this argument calls for a large, as large as possible, size of TLAC. Yet, this involves a high cost of funding with possible negative effects on lending, growth and welfare, as argued above (see also Clerc in this issue)

A further counterargument to having an as-large-as-possible buffer is related to the problem of *risk shifting*, which is a *second* crucial issue per se. TLAC requirements will lead to the issuance of a large amount of CoCos (contingent convertible securities) and other subordinated debt liabilities. The expectation is that large investors with a wide capacity of risk diversification across time and sectors will buy these bonds. Mind goes directly to large pension, insurance and investment funds. However, as argued by Persaud (2014), large institutional investors with these characteristics are not uniformly spread across developed countries, and may not have the capacity or the willingness to acquire the amount of financial assets that will be issued. Given that other large banks are obviously penalized by regulations when they acquire TLAC-instruments issued by other G-SIBs, it is not unlikely that a significant chunk will end up in the portfolio of hedge funds. But the management style of these financial intermediaries is unlikely to help stabilizing the financial system in the event of distress. And even if large institutional investors were able to subscribe the majority of TLAC-instruments issued by G-SIBs, it is not clear what would be the impact of a large crisis on the value of their assets. A significant drop in the value of the portfolio of the ultimate holders, the households, might in the end make a bail-out using the taxpayers' money very likely, precisely as in the case of banks' bail-outs.

TLAC seems therefore adequate for saving the functioning of a few G-SIBs that might eventually get into troubles from default, but, notwithstanding its size, probably inadequate to avoid a global crisis like the one of 2008, that

was not caused by the default of a single financial intermediary but by the faults of a business model in which credit and maturity risks were largely hidden and underestimated. In such a scenario, even with TLAC, public intervention would be unavoidable.

A *third* key issue related to TLAC has to do with the *complexity* of contingent financial instruments.

Financial instruments that are eligible for external TLAC requirements are unsecured subordinated liabilities, some of which are convertible, and more senior liabilities (see the Regulatory framework section). These instruments will become an intermediate category between common equity and more general or operational liabilities. The former will be used to absorb losses before insolvency, and the latter will be converted into new common equity to recapitalize the surviving entity, or will be written off. The problem is that the management and the identification of these instruments also raises several difficulties. Even though conversion of bail-in-able debt into equity is probably a superior option than writing down debt from an incentive point of view, CoCos are complicated financial instruments, possibly rather opaque, prone to speculative attacks when the bank is in proximity of the trigger point for their conversion. Undeniably, their characteristics are not yet well understood, the more so in the event – in the *contingency* – of a financial crisis. While the mechanism of increasing bank capital after conversion is straightforward, its impact on the ex-ante probability of a self-fulfilling idiosyncratic or even systemic default requires credible mechanisms of market or regulator induced triggers, as extensively discussed by Krahnen and Moretti in this issue. .

Moreover, also other forms of subordinated debt may be expensive and markets not sufficiently large to absorb the capital shortfall of GSIBs. According to Clerc in this issue the current size of the market for bail-in-able debt is roughly €100 billion, and the shortfall with respect for the TLAC requirements is estimated to be more than €1000bn. As shown in the number section, the ratio of subordinated debt on total assets is very small, for banks in the largest four EU countries. In contrast to this view, Gracie in this issue argues that UK G-SIBs have recently been able to issue TLAC eligible liabilities at prices similar to their wholesale funding.

A further complexity issue is that the set of eligible instruments that banks can use (and consequently the likely cost of their TLAC liabilities) is not neu-

tral with respect to their business and organizational model. This stems from the fact that, with respect to the explicitly identified excluded liabilities (see the FSB Consultative Document, November 2014), TLAC-instruments eligible for bail-in must be either structurally subordinated (i.e. issued by an entity that does not have excluded liabilities, for example a holding company), or contractually subordinated, or statutorily subordinated (i.e. junior in the statutory creditor hierarchy to the excluded liabilities). This implies that banks organized as holding companies are free to use senior debt which has a much deeper market than subordinated debt, if they do not have excluded liabilities in their balance sheet. In contrast, banks organized as operative companies issue also excluded liabilities which rank *pari passu* to senior debt. In this case senior debt is eligible for TLAC requirements only if it is explicitly identified as junior to the excluded liabilities by contract or statutorily, i.e. by law or if authorized by the resolution authority. In case of statutory subordination, senior debt would satisfy TLAC requirements only up to 2.5% of risk weighted assets, as of the FSB Consultative document.

Even though Gracie in this issue argues convincingly that in the longer term returns on different types of eligible TLAC liabilities will tend to equalise, it is true that presently market conditions for these debt instruments differ, and that the adjustment is likely to be more costly and cumbersome for banks not organised as holdings. Clear cut neutral rules for all types of banks would reduce the complexity in the implementation of the instrument and favour a level playing field regulatory environment.

A *fourth* and related issue is that the implementation of TLAC is also *non neutral* with respect to the banks' business models and how they will evolve in the future. Broadly, two organisational frameworks for the implementation of TLAC have been envisaged: the "Single point of entry" (SPE) and the "Multiple point of entry" (MPE). As extensively discussed by Krahnen and Moretti in this issue, under SPE only the top-level holding company of the group would be resolved and recapitalized. As a consequence, TLAC requirements will fall on that holding company for the entire group. With MPE it is instead explicitly recognized that G-SIBs operate in different countries in which they have subsidiaries that for example can issue their own debt. In this case, TLAC requirements would be imposed to those subsidiaries, in order to allow for independent resolution in different countries. Along this process, such subsidiaries might indeed

become no longer affiliated to the original holding group. Krahnen and Moretti argue that even if the MPE organisational model might in principle limit the risk of contagion across different subsidiaries of the bank, it might at the same time limit important opportunities for risk diversification, increase TLAC requirements and also favour ring fencing across financial markets.

At this stage of the debate it is not clear yet what the final decision concerning the implementation of TLAC along these two separate models will be. But it is unquestionable that a biased approach might favour one organisational structure with respect to another, creating an unlevelled playing field for different banks in the short run and possibly fostering costly reorganizations in the medium to long run. As convincingly argued by Fernandez de Lis (this issue), it is therefore crucial that authorities develop "a business model-neutral TLAC approach", where the interplay between the level at which TLAC is required and the interaction between different national supervisory authorities are carefully considered.

A *final* issue is the potential overlap between *different layers of regulation*, not always fully consistent one with the other. TLAC requirements are similar in scope to the minimum requirement for own funds and eligible liabilities for bail-in (henceforth MREL) within the Bank Restructuring and Resolution Directive (BRRD), which applies to all banks (not only G-SIBs). MREL is discussed at length by Gracie and Krahnen and Moretti. MREL are in fact conceived by the European authorities to have shareholders and creditors sharing most of the burden of recapitalizations. Similar to TLAC-instruments, MREL liabilities will be written down to recapitalize an unviable bank so that the critical functions of the bank are kept ongoing. The main difference with TLAC requirements, though, is that MREL requirements are defined specifically at the level of each single institution and depend on the resolution plan that it has adopted. For these reasons, MREL requirements will be imposed either at the level of holding company or at the subsidiaries' level, depending on the provisions of the resolution plan. MREL and TLAC must therefore be made fully consistent.

Alternatives to TLAC

If there are limits and critical issues in the potential effectiveness of TLAC in absorbing losses of large banks and avoiding systemic events, the question then turns to whether there are other, more effective or complementary means

of achieving the same objective. The answer to this question clearly hinges on a proper identification of systemic risk, that would require a too long discussion for the purposes of the current analysis. However, it is worth mentioning that the recent literature on contagion has casted many doubts on the possibility that the default of a single bank may spread to the entire financial system. The systemic risk posed by the default of a G-SIB seems to be much less relevant than the systematic risk caused by the exposition of a large number of intermediaries to a common global shock. Since the latter can be better controlled by macroprudential policies than by a time invariant capital surcharge like TLAC, the issue comes to whether TLAC is an effective and more equitable way of distributing the costs of the default of one or two G-SIBs.

Assuming, as it is likely to be the case, that even with well defined living wills, recovery and resolution procedures are insufficient to guarantee that in the event of a crisis a G-SIB can continue to provide its basic services (deposit, lending and payments system), at least two alternatives, or complements, to TLAC can be considered: recovery and resolution funds, possibly funded by the industry, or a strict separation between traditional and safe retail banking activities from the riskier investment bank activities.

Recovery and resolution funds, especially if financed by the industry, are a fairer way of saving a large G-SIB from default than using taxpayers' money. As such, they provide an alternative, or a complement , to TLAC to distribute more equitably the costs of TBTF. However, two issues should be considered when comparing the efficacy of Recovery and Resolution funds with that of TLAC. First, the overall costs for banks of a large enough recovery and resolution fund might be very similar to that of TLAC. Second, each bank's contribution to the fund should be proportional to its riskiness, that is always difficult to assess. In this respect, while recovery and resolution funds are a cornerstone of any strategy to limit the impact of banks' default, TLAC might be a complementary tool, that is already calibrated to each bank's risks and facilitates recovery and resolution procedures by making some decisions contractually agreed and binding ex-ante.

The second alternative to TLAC is a stricter separation between traditional banking activities and riskier investment banking activities, along the lines suggested by Vickers (2011). Since traditional banking activities are not per se risk free and pose themselves moral hazard problems, as shown for example

by the saving and loans crisis of the Nineties in the United States, TLAC might indeed provide an additional tool for limiting the costs of a default also for the traditional, retail arm of a G-SIB. Krahnen and Moretti in this issue show that there are large complementarities between these 'structural reforms' and the TLAC requirements, but the nature of these complementarities rests on the way TLAC requirements are implemented and designed.

We think the current policy debate on capital requirements for large banks is a challenging and exciting arena for discussion and interaction between economists, decision makers and the industry. It is indeed an unique opportunity to clarify the different positions and views of many different actors. We hope that the contributions of the different authors in the first issue of the new journal "European Economy" will provide food for thought to our readers. Have fun!

References

Admati, A. and Hellwig, M., 2013. The Bankers' New Clothes: What's Wrong With Banking and What to Do about it? Princeton, Princeton University Press.

Bank of England, 2015. Fair and Effective Markets Review Report, June.

European Commission, 2014. Economic Review of the Financial Regulation Agenda. May.

FSB Consultative Document, 2014, November

Persaud, A., 2014. Why Bail-In Securities Are Fool's Gold. Policy Brief 14-23, Peterson Institute for International Economics.

Vickers, J., 2011. Final report of the Independent Commission on Banking, United Kingdom.