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**BANK CAPITAL STRUCTURE AND  
FINANCIAL INNOVATION:  
ANTAGONISTS OR TWO SIDES OF  
THE SAME COIN?**

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## **BANK CAPITAL STRUCTURE AND FINANCIAL INNOVATION: ANTAGONISTS OR TWO SIDES OF THE SAME COIN?**

This article examines the challenges to banking capital regulation posed by ongoing financial innovation through regulatory capital arbitrage. On the one hand, such practice undermines the quality of regulatory capital, eroding prudential capital standards, but most importantly it creates a distortion in the regulatory capital ratio measures, which prevents investors and regulators from identifying the bank's real underlying risks. Opportunities for regulatory capital arbitrage arise as a consequence of the inherent mismatch of accounting goals, corporate law and prudential regulation – all interacting with the notion of capital for banks.

On the other hand, financial innovation is the result of banks' risk-management policies. In order to reduce the cost of capital and compliance banks engage in derivatives, structured finance and hybrid instruments, altering the risk/return of their cash flow and the information released to the market for disclosure.

In a way, regulation is the solution but also part of the problem. For this reason, new regulation strategies for banks need to be implemented. Systemic risk and balance-sheet risk need to be tackled respectively with macro- and micro-prudential regulation. This would involve an international harmonization of the accounting standards and individualised capital adequacy requirements for banks. The regulation has to be functional for the market under examination. The regulator should therefore consider the adoption of prudential filters to make static variables such as accounting rules, which are normally focused on evaluation, more dynamic to give banks some financial flexibility in their risk-management policies.

JEL Classification: F15, N93

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## I. Introduction

The most recent global financial crisis revealed important shortcomings in certain areas of financial regulation, such as the prudential regulation of financial institutions and intermediaries. Although the aim of prudential regulation should be to ensure the safety of depositors' funds and maintain the stability of the financial system, it has instead been shown that the implemented banking capital regulation has partly contributed to exacerbating systemic risks.<sup>1</sup>

Banks have been criticized for taking excessive risks, primarily because these do not reflect their true economic exposure.<sup>2</sup> The inherent maturity mismatch makes any bank's funding structure particularly fragile by typically requiring a constant rollover of short-term liabilities funding long-term-assets.<sup>3</sup> This permanent funding need makes banks extremely sensitive to changes in the market's perception of their solvency, primarily measured by credit ratings. However, credit rating agencies (CRAs) failed to correctly evaluate the risks associated with banks' changed business models, especially due to the application traditional risk-assessment models to new, far more complex financial instruments.<sup>4</sup>

The entire system of prudential regulation has been judged to be inherently pro-cyclical by design, leading to excessive lending during economic booms instead of the accumulation of necessary reserves to face an economic downturn.<sup>5</sup> Ideally, a well-designed regulatory system should see capital rising during periods of high profitability and should apply more relaxed capital requirements during recessions. During the decade before the crisis, as a consequence of the steady rise in liquidity and the ease of access in financial markets, banks relaxed their predominance as intermediaries between savers and borrowers and thus their monitoring role. This has led to a consolidation in the banking sector, with banks growing ever larger and turning into real conglomerates, but it has also prompted them to explore new, more profitable business models. The resulting search for yields can partly explain why banks increased their exposure to the sub-prime mortgage market and started originating loans solely for the purpose of securitizing and selling them on the market.<sup>6</sup> Moreover, most of these systems of credit intermediation involved entities and activities outside the regular

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<sup>1</sup> Ferran, Moloney and Payne (2015) at pp. 54 ss.; Danielsson (2013) at pp. 309 ff.; Gordon and Mayer (2012); Morrison and White (2010) at pp. 26-27; Stiglitz (2009) at pp. 25-61; Ferran, Moloney, Hill, Coffee Jr. (2012) *passim*.

<sup>2</sup> See The New York Centre for the Study of Financial Innovation (CSFI) (February 2012) Survey of bank risk: Banking Banana Skins, n.105. The CSFI survey indicates macro-economic risk, credit risk, liquidity and capital availability as the four most important concerns of the crisis followed by political interference and regulation. See the New York CSFI Survey at pp. 7-9. See also OECD (June 2009) Corporate Governance and the Financial Crisis: Key Findings and Main Messages, Paris, at 12; French et al. (2010).

<sup>3</sup> Hopt (2013) at pp. 236 ff.; Davies (2013) at pp. 288 ff.; Allen and Gale (2008) at p. 59, 142 and pp. 204-213; Freixas and Rochet (2008) Ch. 1.

<sup>4</sup> In the view of the Financial Stability Forum (FSF) "[...] *poor credit assessment of complex structured credit products by CRA contributed to both the build-up and the unfolding of the financial crisis*", in 'Report of the FSF on Enhancing Market and Institutional Resilience' (7 April 2008), at: [http://www.financialstabilityboard.org/publications/r\\_0804.pdf](http://www.financialstabilityboard.org/publications/r_0804.pdf); see also Committee of European Securities Regulators (CESR), 'CESR's Second Report to the European Commission on the compliance of credit rating agencies with the IOSCO Code and the role of credit rating agencies in structured finance, update to the code of conduct' (May 2008), at [www.cesr-eu.org/data/document/CESR\\_08\\_277.pdf](http://www.cesr-eu.org/data/document/CESR_08_277.pdf); The European Securities Markets Expert Group (ESME) (June 2008) Report to the European Commission, Role of Credit Rating Agencies, at [http://ec.europa.eu/internal\\_market/securities/esme/index\\_en.htm](http://ec.europa.eu/internal_market/securities/esme/index_en.htm); Committee on the Global Financial System (CGFS) (2008) Ratings in Structured Finance: What Went Wrong and What Can Be Done to Address Shortcomings? CGFS Paper n.32; Financial Services Authority (FSA) (London, 2009) The Turner Review: A Regulatory Response to the Global Banking Crisis. For an analysis see Weber and Darbellay (2008) 1; Partnoy (2010) 4; Partnoy (2009).

<sup>5</sup> See for all Goodhart (2005) at p. 118.

<sup>6</sup> This is usually referred to as the 'originate to distribute' model (as opposed to the 'originate to hold' model). For a discussion see eg Turner et al. (2010).

banking system, beyond the surveillance of financial supervisors. Like the CRAs, the regulatory system failed to assess the additional risk associated with this behaviour.<sup>7</sup>

Most important, at the time of the financial crisis, the banks' capital was revealed to be only partially loss absorbent and thus inadequate for protecting depositors from the risk of bank failures. The sophisticated maths and modelling, which underpins Basel II and III calculations, has blinded creditors, markets, regulators and bank managers to what capital is really for. This article argues that this has undermined the essential character of regulatory capital. The heightened complexity of large banks' risk-taking activities could be due to the expanding scope of so-called *regulatory capital arbitrage* (RCA). RCA is the process through which banks avoid the cost of conforming to specific regulatory standards, i.e. the cost of capital, by exploiting the gap between the economic substance of a given transaction (or a financial instrument) and its legal treatment.<sup>8</sup> Opportunities for arbitrage exist on both sides of the balance sheet: assets with equivalent economic risks are treated differently depending on their legal form (e.g. loan portfolios vs. securities essentially representing such loans); capital granting essentially the same claims to their providers is treated as being of different "quality" depending on economically insignificant (mostly legal) variations. This may cause capital ratios, as calculated under the existing rules, to become near meaningless.<sup>9</sup>

Empirical research has demonstrated that variables that only affect economic capital – such as the intermediation margin and the cost of capital – could account for large deviations from regulatory capital. But in a perfect market hypothesis, the strategy of banks would be to generate significant capital buffers above the minimum capital required by law (regulatory capital).<sup>10</sup> Instead, practice indicates that markets are far from being perfect and market discipline mechanisms are limited for banks. This is why banks normally choose to maintain a level of capital as close as possible to the regulatory capital, minimizing the cost of their financial structure.<sup>11</sup>

From a different point of view, regulatory capital arbitrage can be seen as a key driver of financial innovation.<sup>12</sup> Most of the new hybrid instruments and structured finance transactions that we have seen developing in recent years are attempts to respond to the increasing risk in the markets. Users of these financial instruments were de facto altering the risk/return profile of their future cash flows, which at its most general level means they were engaging in *risk management*.<sup>13</sup> Deeply subordinated irredeemable loans and cumulative (convertible) preference shares can reduce leverage, that is the percentage of financial capital raised through the sale of debt securities. In this way, fluctuations in the firm's return on invested capital result in smaller fluctuations in the return on equity capital. Similarly,

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<sup>7</sup> See Adrian, Ashcraft and Cetorelli (2013); Financial Stability Board (FSB) (27 October 2011) Shadow Banking: Strengthening Oversight and Regulation, Recommendations of the Financial Stability Board, at [http://www.financialstabilityboard.org/wp-content/uploads/r\\_111027a.pdf?page\\_moved=1](http://www.financialstabilityboard.org/wp-content/uploads/r_111027a.pdf?page_moved=1) (accessed the 6<sup>th</sup> November 2015); Stiglitz (2009) at p. 21 ff.; Hellwig (2010) at p. 6 ff.

<sup>8</sup> Fleischer (2010) p. 3. See Merton (1995). The process of unbundling and repackaging risks incurs costs, which are a key determinant of a bank's willingness to engage in regulatory capital arbitrage: the lower these structuring costs, the greater the incentives to undertake it, other things the same. See also Cumming (1987) at pp. 11–23.

<sup>9</sup> As Blundell-Wignall and Atkinson (2010) at p. 12 observe: 'There is a massive incentive in financial markets to use 'complete market' techniques to reconfigure credits as capital market instruments to avoid capital charges and reduce tax burdens for clients...[Further] banks can shift ['promises' eg credits] beyond the jurisdiction of bank regulators'. This is especially true for the bank's ability to short credit through a CDS. See on this point, Partnoy (1997) at pp. 211, 227.

<sup>10</sup> Elizalde and Repullo (2007).

<sup>11</sup> See Jones (2000) at pp. 35-58; Jackson (1999). For this reason, lower leverage and higher bank safety are not always appealing if they imply a big sacrifice in lending efficiency and growth potential. See Allen and Gale (2003) at pp. 83-111.

<sup>12</sup> See Romano (2010); Calomiris (2009) at p. 65 ff.

<sup>13</sup> Cebenoyan and Strahan (2004) at pp. 22-23.

derivative securities can alter the distribution of cash flows, essentially consisting of combinations of options and forward contracts. The claims of these securities are linked in the sense that one can, for example, replicate the cash flows from a forward contract by simultaneously buying certain options and selling others. Finally, securitization is one of the best tools of structured finance to facilitate bank lending as it allows a bank to unlock additional finance, reducing the risk of defaults on the loans. Financial innovation has often been facilitated by regulatory fragmentation, which incentivizes companies to sidestep regulatory restrictions that would otherwise generate additional costs or limit their strategy. In this sense, RCA creates an incentive for more efficient regulation where regulators respond to companies' attempts at arbitraging rules or jurisdictions.<sup>14</sup>

In the particular case of banking capital regulation, RCA is the result of an inherent natural conflict in prudential regulation. Banks develop their activities through limited liability companies and therefore comply with corporate law, and disclose their results and reports according to International Accounting Standards. However, company law, accounting rules and prudential regulation for banks all pursue a different goal in relation to capital regulation: banking capital regulation is concerned with the solvency of financial institutions and the creation of a safety net for the financial system; accounting law is targeted to a valuation of corporate assets; company law facilitates the development of an activity by allocating financial and administrative rights to the parties involved in the business. This mismatch of goals between the legal disciplines interacting in banking capital regulation creates a misalignment in the definition of capital that needs to be addressed by the regulator.<sup>15</sup>

Banking capital regulation has been designed to bridge legal and economic capital in order to pursue the unique purpose of solvency. One way to achieve this purpose is to make the regulatory capital for banks more resilient; another is to develop and promote risk-management policies among bankers. The recent measures proposed by Basel III regulation – targeted to build high-quality capital – strengthen the resilience of banking capital and liquidity risk coverage as a whole.<sup>16</sup> However, it is argued here that merely implementing stricter capital requirements or standardizations of risk-management policies to address this issue, without addressing more fundamental shortcomings, are bound to fail.

This analysis begins by outlining the role of capital adequacy requirements in creating a safety net for financial markets, and the costs of having too strict regulation (Part II). The assessment of neoclassical economic theories and subsequent considerations demonstrate that, today, a theory of optimal prudential regulation does not exist, and legal intervention in the market produces incentives that influence participants' financial decisions in ways that may not always be desirable. The regulator has the twofold duty of keeping up with rapid changes in financial innovation and markets in continuous evolution while reconciling economic principles with social goals. Part III looks at the opportunities for RCA, highlighting three main problematic areas for capital regulation. Part IV discusses regulatory strategies to make banking capital more resilient in case of systemic failures. Part V draws some conclusions from the preceding analysis.

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<sup>14</sup> See Romano (2010); Merton (1995) at p. 463 ff.

<sup>15</sup> Sasso (2013) at pp. 70 ff.; Schoenmaker (2015) at pp. 10-12.

<sup>16</sup> In EU the initial Capital Requirements Directives (2006/48/EC and 2006/49/EC) - amended in April and July 2009 with Directives 2009/27/EC and 2009/83/EC (CRD II) and in November 2010 with Directive 2010/76/EU (CRD III) – have been replaced by Directive 2013/36/EU (CRD IV) and Regulation (EU) No. 575/2013. The current regulation has recently been object (July 2015) of a public consultation on its potential impact on bank financing of the economy. See also BCBS, 'Strengthening the resilience of the banking sector' (Consultative Document December 2009). Compare with the proposals of the CEBS, 'Guidelines on Hybrid Capital Instruments' (December 2009) and the FSA, 'Strengthening Capital standards 3' (CP, December 09/2009).

## II. The economic rationale for banking capital regulation

### II.1. The role of capital requirements in maintaining financial stability

In the literature on capital adequacy, scholars tend to agree that capital adequacy requirements are necessary to control *moral hazard* problems.<sup>17</sup> These problems occur when those who take risks (*the bankers*) come to believe that they will not have to carry the full burden of losses. Capital, like collateral, counteracts the tendency of banks to take additional risks at the expense of debt-holders, because it increases shareholders' sensitivity to downside risk of liquidation. Thus, capital adequacy requirements are indirectly justified by the desire to prevent financial crises. Nevertheless, the assumption that adequate capital is necessary to prevent excessive risk-taking does not provide sufficient argument for capital adequacy requirements. Prominent empirical studies have demonstrated that, in the absence of capital adequacy regulation, *reputation* might ensure that banks do not take excessive risks in a situation of moral hazard.<sup>18</sup> After all, it should not be for the regulators to determine how much risk banks can take, nor to set out the particular way that they assess such risks so long as any loss from adverse outcomes is *internalised* among banks and their professional investors.<sup>19</sup>

For the same reasons, economists have criticized deposit insurance since its appearance in the 1930s in the US as a way to enhance financial stability and protect small unit banks located in poorer areas.<sup>20</sup> Because banks rely on customer deposits that can be withdrawn at little or no notice, they are prone to bank runs, where depositors seek to quickly withdraw funds ahead of a bank's possible insolvency. Critics of deposit insurance say this safe provision encourages both depositors and banks to take excessive risks. This is because without deposit insurance, banks would be in competition for deposits, and depositors would prefer safe banks to risky banks to guard their money. Conversely, with the existence of deposit insurance depositors do not fear for their deposits' safety and banks can continue to take excessive risks.<sup>21</sup> The supervisor should in principle be in a position to assess the relative risk of the provision of such insurance, and should charge an appropriate levy or premium for doing this. In practice however, this has never happened because of the impossibility of accurately measuring risk in an uncertain world. Instead, insurance *premia* have usually been related, on a flat rate basis, to total insured deposits at a low, historically related, level.<sup>22</sup>

Similarly, since prudential regulation is targeted to control the default risk of banks, it could be argued that liquidity risk coverage should also be introduced. A strong argument against worrying about liquidity is the Black, Scholes and Merton theory. In their fictional framework,<sup>23</sup> the authors demonstrate that, under certain assumptions, it is always possible to hedge a position and therefore eliminate the related default risk because all assets would be

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<sup>17</sup> A large literature, devoted to regulatory questions about moral hazard and risk in banking, investigates the effect of capital adequacy requirements on risk taking; see Repullo (2004) at pp. 156-182; Hellmann, Murdock and Stiglitz (2000) at pp. 147-165. Although research showed that the incidence of financial crises might be socially optimal in a system where regulation does not exist, see Allen and Gale (1998) at pp. 1245-1284.

<sup>18</sup> Bhattacharya (1982) at pp. 371-384; Klein and Leffler (1981) at pp. 615-641.

<sup>19</sup> Allen and Gale (2003), at pp. 83-111.

<sup>20</sup> The deposit insurance is a measure now implemented in many countries to protect bank depositors, in full or in part, from losses caused by a bank's inability to pay its debts when due. Banks lend or invest most of the money deposited with them. However, if a bank fail to recover its loans when due, all its creditors, including its depositors, risk losses.

<sup>21</sup> Hellmann, Murdock and Stiglitz (2000) at pp. 147-165.

<sup>22</sup> Goodhart (2010) at pp. 179-183.

<sup>23</sup> The authors assume that no riskless profit – and therefore no arbitrage effect – exists, interest rates on finance lent or borrowed are risk free and constant, security price follows a stationary process and no other fees or costs of trading incur. See Black and Scholes (1973) at pp. 637-654; Merton (1973) at pp. 141-183.

perfectly “liquid” according to this logic. Unfortunately, in the real world interest rates are not risk free or constant over time and, therefore, security prices may sometimes be extremely volatile. In addition, there are the costs of trading, which often present an insurmountable barrier for banks facing the decision to liquidate assets without incurring great losses. Having access to different information, potential investors and bank managers are subject to information asymmetry. Therefore investors – lacking the private information needed to correctly value the bank’s investments – will ask for higher interest to take the risk. This phenomenon, known as *adverse selection*, increases the moral hazard, which is an incentive for bank managers to indulge in excessive risk, weakening any attempt to promote risk-management policies.<sup>24</sup>

It could be argued that a market mechanism of control would provide incentives for bank managers. In particular, bondholders could monitor and discipline managers by pushing them to increase equity capital when a risk of debt default materializes. This reasoning is a direct consequence of the rightly famous Modigliani and Miller theorem,<sup>25</sup> the basic intuition being that as equity capital increases proportionality, the risk premium on debt should fall away *pari passu*. Vice versa, as equity capital decreases proportionality, the risk premium on debt should increase. The arbitrage effect guarantees that a company will take on debt as long as the lower cost of capital reaches the point at which the company’s cash flow is unable to repay the passive interests on debt. Accordingly, the company’s investment choices will be shaped by the trade-off between the cost of capital and the cost of insolvency. Therefore, in financial distress, the bank could by itself hedge the risk of insolvency by raising additional equity capital when the cost of debt becomes unsustainable, or it could suffer the consequences of winding up.<sup>26</sup>

Although this is true in theory, we have seen how limited the extent to which market forces discipline bankers’ conduct is in reality. For instance, product market competition is typically not intense, even less so after the recent crisis, and the managerial labour and, due to bank opacity, capital markets have a less significant disciplinary effect on bank company managers. Moreover, the market has quite a weak role in the corporate control of banks where takeovers and change of control transactions are very rare. Not surprisingly, it has been revealed that shareholders and equity market investors were as focused on growth as banks managers, while debt-holders relied on explicit and implicit government guarantees (deposit insurance and anticipated bailouts), for which they did not pay. The limited ability of the market to correctly price bank debts seriously reduced managers’ accountability for their performance vis-à-vis other stakeholders, including global taxpayers, leaving them no other choice than to satisfy shareholders’ greedy wishes and thus increase the risk.<sup>27</sup>

The governments of several western countries and their respective central banks played the role of “lenders of last resort” to save their national financial institutions from insolvency by providing large amounts of new finance to support their credit. These funds contributed to the banks’ equity and were public, as was the cost of these transactions, which was sustained entirely by citizen taxpayers.<sup>28</sup> However, this was quite a necessary decision in order to avoid

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<sup>24</sup> Calomiris (2012) at pp. 3-7.

<sup>25</sup> Because of taxation law, which allows passive interests on debt to be deductible for tax, because of insolvency law, which gives the creditors the right to ask for the liquidation of the company if their and because of the information asymmetry in the markets. See F. Modigliani and Miller (1958) at p. 26.

<sup>26</sup> Compare with Hellwig (1981) at pp. 155-170.

<sup>27</sup> Davies (2015); Schuster, Kershaw, Ferreira and Kirckmaier (2013).

<sup>28</sup> A clear example of this is the action that the Bank of England took in relation to the troubled financial institution Northern Rock in 2007. It was these systemic concerns that led the Bank of England to provide Northern Rock with a liquidity facility and then in February 2008 to nationalise the institution. This was not the only bank nationalized at the time of the crisis: the British government had to take an 81 per cent of the share capital in the RBS Group. See MacNeil (2010) at pp. 493-500 and 504 f., 509 f.; Goodhart (2008) at pp. 351-358; Lastra (2008) at pp. 165-186; A. Turner speech at The Economist’s Inaugural City

a much larger crisis in the global economy. Pumping funds through the economy, banks are the heart of the economy and they are vital for the health and financial stability of the markets. Nowadays, in such interconnected financial markets, several banks have become large conglomerates and therefore systemically important financial institutions (SIFIs). For this reason they have been judged “too-big-to-fail”. These banks – in case of insolvency – externalize rather than internalize their losses, making the cost mostly social.<sup>29</sup>

The risks of such “externalities” and their cost to the economy as a whole, although difficult to quantify, are greater than the cost to the firm whose actions are creating the risk. That is why concerns about systemic risk and negative externalities that can arise from a bank’s failure and asymmetric information about its financial wealth are the main rationale for capital adequacy requirements, and they are all related to market confidence and consumer protection.<sup>30</sup> Because investors do not monitor or attempt to discipline banks as they do other kinds of companies, regulators must intervene, and minimum capital ratios are among their most important tools for oversight. However, although (liquidity and) capital requirements appear to be one clear way to discipline banks and their managers, they are both meaningless in the absence of a default risk and market discipline.<sup>31</sup>

## II.2.Potential consequences of too severe capital and liquidity requirements

The Basel III framework includes a new capital proposal, which was implemented in 2012, a leverage proposal, which should be implemented in 2018, as well as the possibility of introducing some liquidity requirements, in particular the Liquidity Coverage Ratio in 2015 and the minimum standard for the Net Stable Funding Ratio in 2018.<sup>32</sup> The Basel III capital proposal begins by narrowing the definition of Tier 1 capital, which remained unchanged from Basel I to II. It engenders more reliance on pure equity stating that Tier 1 capital will be the predominant form of regulatory capital: a minimum of 6 per cent (compared to 4 per cent under Basel II) and at least 50 per cent of total capital. Within Tier 1 capital, *common equity* will be the predominant form of capital: at least 4.5 per cent (compared to 2 per cent under Basel II). As a consequence the predominant proportion of common equity in Tier 1 capital and the proportion of Tier 1 capital in total capital (Tier 1 plus Tier 2), which was 50 per cent under Basel I and II, has increased to 75% under Basel III, improving the overall level of high quality capital in the banks. Additionally, innovative features in non-equity capital instruments are no longer acceptable while Tier 3 capital has been completely abolished.<sup>33</sup>

While the overall strength of banking capital has surely improved, it would be wrong to think that simply setting stricter standards will eliminate all the problems (the systemic risk) in global financial markets. Focusing on legal requirements without creating the right conditions and incentives for counteracting the bank managers’ risk-taking trend would only

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Lecture, 'The financial crisis and the future of financial regulation', at [http://w3.cantos.com/09/econ\\_cit-901-eywxa/video/turner\\_econ.pdf](http://w3.cantos.com/09/econ_cit-901-eywxa/video/turner_econ.pdf) (last visited 11 March 2011). Some European countries such as France and Italy were significantly less impacted by the financial crisis. For an analysis of the legal strategies adopted in France to face the crisis see Conac (2010) at pp. 325 ff. For Italy see Capriglione (2009) at pp. 57 ff. For Germany see Hopt, Kumpan, Steffek (2009) at 525 ff., 543 ff.

<sup>29</sup> Avgouleas (2009) at p. 23; Schwarcz (2009) at p. 549.

<sup>30</sup> Goodhart (2010) at pp. 179-183.

<sup>31</sup> For a critic of the Liquidity Coverage Ratio requirements introduced by Basel III and an evaluation of available strategies for reducing the incidence of liquidity shocks in banking activities see Davies (2013) pp. 298 ff.; see also Scott (2005).

<sup>32</sup> BCBS, Basel III: A global regulatory framework for more resilient banks and banking systems, <http://www.bis.org/publ/bcbs189.pdf> (visited September 2015) to be implemented by 2019.

<sup>33</sup> The package of rules introduced by Basel III through Directive 2013/36/EU (CRD IV) and Regulation (EU) No. 575/2013 applies as of 1 January 2014. Some of the new provisions will be phased-in between 2014 and 2019.

result in increasing the regulatory capital arbitrage, and banks would simply move their activities into the shadows, leaving little to regulate. Furthermore, higher levels of liquidity and capital may reduce banks' default risk, but this has to be counterbalanced with the related market cost for having a zero risk policy. Higher capital requirements are higher capital to assets ratio. In order to comply with the new rules, banks have to either increase the amount of capital in the numerator of the ratio, namely contribute new equity finance, or reduce the quantity of assets in the denominator, i.e. reduce lending.<sup>34</sup>

Since – as empirical research has demonstrated – banks in need of additional finance prefer to issue debt rather than equity, or reduce their lending because of the adverse selection costs,<sup>35</sup> any severe capital or liquidity requirement would lower the default risk at the price of a loan-supply contraction in the market with disastrous consequences for the economy. This reasoning is supported by the *picking theory*, which shows how debt finance – and especially short-term debt – would be a desirable form of finance for banks because it reduces the free cash flow available to managers, limiting opportunities for abusive behaviour. However, short-debt finance generally comes at a higher price (interest rate) for the company, thus worsening the margin of intermediation for banks, forcing it to increase the interest rates on lending. In other words, the social gain of reducing the systemic risk in the financial markets needs to be matched with the social cost of reduced bank lending in the markets and increased lending rates on loans in order to comply with the new restrictions. Establishing effective capital requirements may not be merely a matter of setting the required ratio high enough.<sup>36</sup> Finally, too heavy regulation of banks, which is both a cause and effect of their specificity, creates the special need to coordinate regulatory and governance mechanisms that are often antagonistic rather than complementary.<sup>37</sup>

### II.3. The function of capital for banks

Despite their tangible economic rationale, the Basel Accords issued by the Basel Committee on Banking Supervision (BCBS) does not give a clear definition of what bank capital is for. The Basel III document defines in detail what shall be considered high quality capital as common shares and retained earnings, but it fails to reflect on what it is for.<sup>38</sup>

Bank capital is for *unexpected* losses while *expected* losses are expensed through the income statement in the form of loss provisions. Adequate capital to cover asset losses and adequate liquidity against depositor runs are keys to the bank's stability, durability and longevity. Such a funding strategy is the essential component of a bank's success. It generally requires the bank to exercise extreme caution, and therefore a prudent approach. However, it cannot be standardized. It is bank-specific as it may differ from bank to bank.<sup>39</sup> Unexpected losses do not originate only from risk but also uncertainty, which is what bank capital is for.

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<sup>34</sup> Calomiris (2012) 7 ff. *Contra* Admati, DeMarzo, Hellwig and Pfleiderer (2012) at p. 37 where the authors claim that “the biggest credit crunch in recent memory, the total freezing of credit markets during the recent financial crisis, was not due to too much equity but to the extremely high levels of leverage in the financial system. In other words, credit crunches arise when banks are undercapitalized”.

<sup>35</sup> Aiyar (2011).

<sup>36</sup> Aiyar, Calomiris and Wieladek (2012) at pp. 30-31.

<sup>37</sup> Kokkinis (2015) at paras 1.41 to 1.56.

<sup>38</sup> BCBS, Basel III: *A global regulatory framework for more resilient banks and banking systems*, <http://www.bis.org/publ/bcbs189.pdf> (visited September 2015). In contrast, the US Federal Reserve at least acknowledges its purpose:

“Bank capital serves as an important cushion against unexpected losses. It creates a strong incentive to manage a bank in a prudent manner, because the bank owners' equity is at risk in the event of a failure. (Loan loss reserves are generally intended to cover expected losses.) Thus, bank capital plays a critical role in the safety and soundness of individual banks and the banking system.” see Federal Reserve Bank of San Francisco, *What is capital and what are the levels of tiers of capital?* September 2001.

<sup>39</sup> Turner (2014) p. 182.

The distinction between risk and uncertainty lies at the heart of the debate over the Basel risk-weighted model and the appropriateness of simpler concepts. Risk is measurable, uncertainty is not. In other words, if something is measurable then it is not uncertain. Basel requirements set capital levels according to measurable risks. However the capital is for unmeasurable uncertainties.<sup>40</sup>

In this sense, Basel III proposals envision the building of *capital buffers* through capital conservation. Accordingly, banks should hold capital equal to 2.5% of the risk-weighted assets above the regulatory minimum in good times. The proposal, which will be introduced from 2016, gives national regulators the option of requiring up to another 2.5% of capital as a discretionary counter-cyclical buffer during periods of high credit growth. For the bank being adjudged by the supervisory authority as having approached or approaching the point of non-viability – when capital has been drawn down – discretionary pay-outs of earnings, such as dividend distributions or share buybacks, should first be restricted. Then the financial instruments representing the capital buffers should be either written off or converted into common equity to provide loss absorbent capital.<sup>41</sup>

The amount of capital that a bank needs for unexpected losses is a function of two variables: the amount of risk embedded in the asset side of its balance sheet, and how much of that risk is transferred away from bank creditors through the financial safety net. Asset risk covers primarily credit risk losses or defaults on loans, securities or other financial assets, both on and off balance sheet. The financial safety net covers the extent to which risks are ultimately borne by the state, namely the taxpayers. Such safety nets put in place by the national authorities comprise several elements: deposit insurance schemes, bank resolution procedures such as bail-in and bail-out, regulation, supervision and the central bank's lender of last resort role. In other words, it covers the transfer of risk from the creditors through deposit insurance schemes and bank resolution regimes. This confirms that the function of capital for banks is one of a security, a cushion for creditors and for the entire financial system.<sup>42</sup>

Nevertheless, this task is complicated by the fact that balance sheet risk and financial safety nets are *strictly* linked. The stronger the safety net (deposit insurance, anticipated bail-out and resolution regimes) the more the risks are borne by the taxpayers, and the stronger the incentives for a bank to take more risks on the asset side of its balance sheet. However, while balance sheet risk is bank-specific, namely *idiosyncratic*, the financial safety net is a *systemic* issue. The first is dealt with by the regulator through micro-prudential regulation; the second through macro-prudential regulation. These two regulatory approaches have different implications. Micro-prudential regulation is designed to enhance the stability of individual financial institutions, while macro-prudential regulation is concerned with the stability of financial markets and systems. Therefore macro-prudential implies a high degree of coordination and harmonization of regulation across institutions and countries that should *not* exist in micro-prudential regulation. Financial institutions should instead be allowed more scope to manage their risk and therefore departures from Basel rules.<sup>43</sup> In fact, if all financial institutions were discouraged from engaging in particular activities by being required to provide more capital against a particular class of risks, they would all be exposed to the same risks for which protection has not been provided.<sup>44</sup>

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<sup>40</sup> Allen and Gale (2008) pp. 40-47 and p. 194; F.H. Knight (1921) *passim*.

<sup>41</sup> Calomiris and Herring (2013) pp. 21-44; Calomiris and Herring (2011); Avdjiev, Kartasheva and Bogdanova (2013).

<sup>42</sup> Anderson N, Chappell J (12 June 2013) European Banks Capital: Misunderstood, misused and misplaced. Berenberg Equity Research, at p. 15 ff.

<sup>43</sup> Romano (2014) at 14 f.

<sup>44</sup> Gordon and Mayer (2012) at p. 12. Basel III strengthens the capital requirements for counterparty credit exposures arising from banks' OTC derivatives, repo and securities financing activities. In particular, it

Bank capital should be designed as a regulatory mechanism less focused on rules and numbers and more on incentives for managers to develop their risk-averse behaviours under the supervision of the financial authority. This implies that there should be less risk-related minimum capital and a less intrusive system at the level of micro-prudential regulation, and financial institutions should be able to set their own capital requirements, which means acknowledging that capital is available for unmeasurable uncertainties and not measurable risks.<sup>45</sup>

### III. Opportunities for regulatory capital arbitrage

Banks and financial institutions attempting to lower the cost of capital or to boost their risk-based capital ratios (which imply that there will be less capital to set aside) have two options for achieving these ends under the Basel Capital Accords. The first is to increase the measures of regulatory capital counting as equity (tiers of capital), that is increase the numerator of the ratio equity/debt. The second is to decrease the regulatory measures of total risk counting as debt and appearing in the denominators of the total risk-weighted asset ratios. Evidence suggests that, in some circumstances, banks have successfully attempted to boost reported capital ratios through purely cosmetic adjustments, which boost regulatory capital levels only temporarily and do not correspond to any real increase in banks' capacity to absorb future unexpected losses.<sup>46</sup> In particular, these adjustments involve artificially inflating the measures of capital appearing in the numerators of regulatory capital ratios, or artificially deflating the measures of total risk appearing in the denominators with the permission of the applicable accounting standards or supervisory policies. The bank's willingness to incur various structuring costs to reduce (or increase) substantially its regulatory measure of risk (or equity provision), with little or no corresponding reduction (or increase) in its overall economic risks (or equity provision) is the process termed "regulatory capital arbitrage" (RCA). The intuitive consequence is that these artificial capital transactions can very likely mask deteriorations in the true financial conditions of banks.<sup>47</sup>

At the time of the crisis, many financial instruments – part of the equity capital of banks – were revealed to be not equity or, in any case, not loss absorbent. For banks it was sufficient to make a few cosmetic adjustments, filling financial instruments with legal provisions of equity to have a security granting essentially the same claims of a bond to their providers while being treated as equity for prudential regulation. Part of this financial innovation reflected the lack of harmonization between International Financial Reporting Standards (IFRS) and US General Accepted Accounting Principles (US GAAP), but especially the inherent conflict in the definition of capital for prudential regulation that does not consent to

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requires more counterparty risk where OTC derivatives are not centrally cleared, while concurrently setting a "modest" 1 to 3 % risk weight on those that are centrally cleared. This provision will surely reduce the risk of defaults or credit crunches across the financial system but also strongly promote the use of Central Clearing Counterparties (CCPs) for certain transactions and potentially move the risk from the banks to the CCPs.

<sup>45</sup> Alexander, Dhumale and Eatwell (2005) at pp. 174 ff.

<sup>46</sup> See Jones (2000) at pp. 35-58 and especially at the Appendix A. Regulatory capital arbitrage; Examples; Jackson et al. (1999) at p. 22.

<sup>47</sup> Bank of England, Financial Stability Report (June 2010) at <http://www.bankofengland.co.uk/publications/fsr/2010/fsrfull1006.pdf> (last visited 11 March 2011); Banque Centrale du Luxembourg, 'Revue de Stabilité Financière' (2010), at [http://www.bcl.lu/fr/publications/bulletins\\_bcl/Revue\\_de\\_stabilite\\_2010/Revue\\_de\\_stabilite\\_2010.pdf](http://www.bcl.lu/fr/publications/bulletins_bcl/Revue_de_stabilite_2010/Revue_de_stabilite_2010.pdf) (last visited 11 March 2011); Banque Centrale de France, 'Revue de Stabilité Financière' (2010), at <http://www.banque-france.fr/fr/publications/revues/revue-stabilite-financiere/telechar/2010/juillet-2010/revue-stabilite-financiere-de-juillet-2010-produits-derives-innovation-financ-et-stabilite.pdf> (last visited 11 March 2011).

reconcile the economic substance and legal treatment of the very same financial instruments. In fact, the supporting principles and concepts on which accounting standards and company law are based are not always in line with those underpinning banking regulation. Accounting and regulatory objectives also diverge specifically in the areas of asset valuation and provisioning, which extends to the definition of capital.<sup>48</sup>

The UK legal definition of (share) capital cites equity capital as

“its issued share capital excluding any part of that capital which, neither as respects dividends nor as respects capital, carries any right to participate beyond a specific amount in a distribution”.<sup>49</sup>

Preference shares are normally, although not always, entitled only to a fixed return by way of both dividends and capital. They do not, therefore, constitute equity share capital although they may do so if the return on dividends or capital is not fixed (or deferrable).<sup>50</sup>

Conversely, for accounting rules, a broader notion is the generally accepted definition as reflected in the International Accounting Standards documents where “equity” is defined as the residual interest in the assets of an enterprise after deducting its liabilities.<sup>51</sup> The accounting rule-makers have chosen not to make the definition of equity conceptually based, but simply based on an arithmetic calculation. This divergence is justified by the different purpose these two disciplines want to fulfil. Corporate law tries to facilitate the investor-owned firm by allocating financial and administrative rights to the parties involved;<sup>52</sup> meanwhile accounting standard setters are concerned with the valuation of the company. However, the main objective of prudential regulation is the stability of financial institutions and of the financial system as a whole. So, on the one hand, it is concerned with the solvency of financial institutions and with the consequences of the failure of a firm; on the other hand, it has to contribute to macroeconomic stability, thus avoiding situations that could deepen the recession or exacerbate the boom.<sup>53</sup>

The objectives pursued by accounting standards and prudential regulation also clash with regard to the disclosure rules applicable to banks and banking capital (introduced by Pillar III of Basel II). Good accounting standards are targeted to guarantee any stakeholder or potential investor a “fair and true view” of a company’s financial position, performance and capacity for generating cash flow. Therefore, accounting rules favour transparency that contributes to well-functioning markets. However, disclosure is not always a synonym for transparency, as discussed below. In such circumstances, it has been argued that less disclosure may be better.<sup>54</sup> There are three sensitive areas in RCA: hybrid financial instruments, asset valuation and provisioning, and compulsory disclosure rules.

### **III.1. Hybrid financial instruments**

Hybrids provide bank managers with an extremely flexible tool of corporate finance to raise fresh funds and lower the cost of the capital structure. By modulating financial and administrative rights attached to a financial instrument it is possible to obtain the optimal mix of equity and debt instruments created ad hoc for a transaction. Claims on the company’s

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<sup>48</sup> BCBS (2015) at p. 3-4.

<sup>49</sup> Companies Act 2006, s 548.

<sup>50</sup> Davies (2008) at pp. 815-820; Kershaw (2009) at pp. 643 and 649.

<sup>51</sup> That is, knowing assets and liabilities, equity can be inferred. See IASB, F. 49(c).

<sup>52</sup> Davies (2010); Armour, Hansmann and Kraakman (2009).

<sup>53</sup> Goodhart (2010).

<sup>54</sup> BCBS (2015) p. 24.

assets generally feature a combination of certain criteria such as term, type of return, voting rights and their corresponding attributes: fixed term vs. perpetual life, fixed vs. variable return and positive or negative covenants. Shares and bonds strongly differ in the intensity of their claims.<sup>55</sup> However, in between these two distinct categories, there is a myriad of hybrid financial instruments that mix characteristics generally associated with straight equity and straight debt, making their classification as a dichotomous structure of capital very problematic.<sup>56</sup> In a way, recognizing all the interests on the credit side of the balance sheet is consistent with the conclusion that the credit side of the balance sheet comprises only “claims” that differ in their intensity.<sup>57</sup>

It is exactly this capacity of hybrids to blur any arbitrary classification that has made them a perfect tool of RCA. Difficulties in classifying claims into the equity-debt scheme arise especially when single characteristics point in different directions. For example, capital claims that include participation in gains and losses – generally associated with ordinary shares – but are at the same time repayable at a fixed date – generally associated with bonds. Or vice versa, capital claims that give the right to a fixed return like ordinary bonds while not having the maturity or rights in liquidation of ordinary shares. It is thus possible to replicate any typical characteristic of equity or debt with hybrid financial instruments while obtaining a different classification.<sup>58</sup>

The required levels of capital were firstly introduced by the Basel Accords (Basel I) in 1988 to create minimum standards – the so called “level playing field” – for banks without undermining their creativity in the development of innovative risk-management practices. The BCBS established for Basel I regulation a capital requirement of 8 per cent as a “one-size-fits-all” measure focused on credit risk. However, this approach was seen as providing a crude and simple methodology for assessing capital adequacy. The risk weighting approach was limited to only four risk “buckets” (of 0, 20, 50 and 100 per cent). While a 100 per cent risk weight meant a full capital charge equal to 8 per cent of that value, a 50 per cent risk weight meant a capital charge of 4 per cent of that value.<sup>59</sup>

This simple structure has had the unintended and unexpected consequences of pushing banks into riskier business encouraged by RCA. Banks were careful enough to structure their funds in order not to (formally) exceed the 8 per cent benchmark, while assuming risk incommensurate with the 8 per cent benchmark in real economic terms. This was notably possible through the structuring of securitization and hybrid financial instruments. Accordingly, every time the 8 per cent of capital presented a too heavy burden for any incurred low-return investment, a financial institution was able to sell a part of these loans, in particular one of better quality, and with the proceeds lent to riskier borrowers so as to increase the expected returns on its portfolio with no change in capital requirements.<sup>60</sup>

Although in countries with the most developed financial markets, a principles-based regulation was developed for banks and financial institutions to reduce RCA, in practice voluminous application guidance was needed to apply the principles of banking regulation,

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<sup>55</sup> Pro-active accounting activities in Europe (PAAinE), Discussion Paper *Distinguishing between liability and equity*, January 2008, available at <http://www.iasplus.com/efrag/0801liabequitydp.pdf> (accessed March 2012).

<sup>56</sup> Tufano (2003) at pp. 307-335. See also Allen (1994) *passim*;

<sup>57</sup> Pope and Puxty (1991) at p. 895.

<sup>58</sup> Godfrey, Chalmers and Navissi (2010) at pp. 110-124.

<sup>59</sup> For a multifaceted critique of the Basel proposal, including a collection of authorities critical of the use of private credit rating agencies, see US Shadow Financial Regulatory Committee, 'A Proposal for Reforming Bank Capital Regulation' (Statement No. 160, 2 March 2000). See Altman and Sanders (2001) at pp. 25-46.

<sup>60</sup> Baer and Pavel (1988) at p. 3; Ramsay (1993) at p. 169; Greenbaum and Thakor (1987) at pp. 379-401; Pennacchi (1988) at pp. 375-396; Jackson et al. (1999) at p. 1; Jones (2000) at pp. 35-58.

due to the complex nature of the myriad of newly created hybrid financial positions. For instance, previous banking regulation in the UK acknowledged up to seven tiers and sub-tiers of capital, as the old Financial Services Authority (FSA) created new sub-divisions in response to minor variations in the characteristics of capital instruments.<sup>61</sup>

As a response to these problems, the BCBS developed a more risk-sensitive approach entitled *International Convergence of Capital Standards: A Revised Framework*, or “Basel II”, to better limit their risk of exposures.<sup>62</sup> This was achieved through the requirement of more capital for holding risky positions. Linking capital charges to the risk of exposures tends to preclude banks from taking excessive risks. Pursuant to this revised framework, Basel II set forth a “three pillar” framework encompassing: (1) minimum risk-based capital requirements for credit risk, market risk and operational risk; (2) supervisory review of capital adequacy; and (3) market discipline through enhanced public disclosures. In particular, Pillar I provides two broad methodologies for calculating bank capital requirements: the standardized approach and the internal rating-based approach. The standardized approach is based on set parameters, under which transactions are ascribed risk weightings based in turn on external assessments of risk relevant to the counter-party, where the external assessment is carried out by the authorized CRAs. As an alternative, the competent authority allows banks to develop their own assessment of risk through internal ratings systems for a number of categories of exposures.<sup>63</sup>

Although Basel II regulation was aimed at reducing banks’ risk-taking by forcing their managers to set aside higher capital provisions for higher risk, the result was unexpected. With the introduction of new buckets of risk and types of capital, the possibilities of RCA for managers increased. Some institutions engaged in RCA abuse of excessive securitization structures, while others used over-the-counter derivatives to mask or distort their true leverage.<sup>64</sup> Increasing the complexity of regulation and adding new mechanisms makes banking regulation more difficult to understand and enforce, and therefore easier to avoid or manipulate. For example, the internal ratings based capital standards for credit can sometimes be so complex that banks have to educate their examiners on the details of their compliance programs before the examiners can carry out their duties.<sup>65</sup>

In light of their failure to recognize the risk and alert the market before the financial

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<sup>61</sup> Tier I is sub-divided into core tier I, non-innovative tier 1 and innovative tier I. Tier II is sub-divided into upper tier II and lower tier II. Tier III is sub-divided into upper tier III and lower tier III. The UK General Prudential Book (GENPRU) at part 2.2 contained over 270 rules and guidance together with six annexes. See Sinclair and Crisostomo (2008) at p. 461; Roith, Sinclair and Khoo (2009) at pp. 225-226; Hellwig (2010) at pp. 5-6.

<sup>62</sup> The Capital Requirements Directive of the European Community (CRD) EC Directive 2006/49/EC, OJ L177/201 30/6/2006 incorporating the rules and standards on capital measurements and risk-based supervision contained in the Basel II Accord into the legal framework of the common market was transposed into national law by the Member States from January 2007 onwards. This Directive consists of two directives: the Banking Consolidation Directive (BCD), which applies to credit institutions, and the Capital Adequacy Directive, which applies various parts of the BCD to investment firms. Prior to the BCD, the position in the EU with respect to the regulation of banks was laid down by an earlier banking consolidation directive: EC Directive 2000/12/EC, which consolidated a number of earlier instruments, including the Own Funds Directive (89/229/EEC OJ L124/16 5/5/1989) the Solvency Ratio Directive (89/647/EEC OJ L386/14 30/12/1989) and the Second Banking Directive (89/646/EEC OJ L386/i 30/11/1989) and by two Capital Adequacy Directives: EC Directive 93/6/EC, OJ L141/1 11/6/1993 and EC Directive 98/31/EC.

<sup>63</sup> See McKnight (2007) at pp. 327-340.

<sup>64</sup> Fullenkamp and Rochon (2014) pp. 4-9; Capie and Wood (2013) at p. 12.

<sup>65</sup> Haldane A (2012) The Dog and the Frisbee. Speech at the Federal Reserve Bank of Kansas City’s 36<sup>th</sup> Economic Policy Symposium, Jackson Hole, Wyoming; Tarullo DK (October 2008) Banking on Basel: the Future of International Financial Regulation. Peterson Institute for International Economics. These issues are not solved with Basel III. Although the definition of Tier 1 equity is simplified, multiple new mechanisms are added and many existing others are modified to address problems that were exposed during the crisis. See Fullenkamp and Rochon (2014) pp. 4-5.

crisis exploded, the CRAs' role in banking capital supervision has been brought under discussion.<sup>66</sup> The standardized approach, which was by far the most used approach by banks to evaluate their solvency, entailed an explicit recognition of the CRA in the development of capital standards.<sup>67</sup> Indeed, over the years, the role of these rating agencies has evolved due to the great importance that rating acquired on the financial markets, and also thanks to an increase in rating-based regulation.<sup>68</sup> Rating, which was initially conceived as an opinion of financial journalists, became with Basel II a real seal of approval giving rise to favourable regulatory treatment.<sup>69</sup> A favourable credit rating has two primary advantages for the bank: it renders the issue of capital appealing to the market (investors) and it makes the balance sheet of banks appear safer, increasing their share value and boosting their capacity to raise additional debt.<sup>70</sup>

This has weakened the monitoring role of banks as financial intermediaries and provided a great incentive for engaging in creative financial engineering, that is structuring and packaging credits into innovative finance products just to obtain a higher credit rating, without spending time on verifying the quality of the underlying assets.<sup>71</sup> In addition, ratings have been said to be “through the cycle” indicators. The riskiness of assets varies over the business cycle and risk assessments based on external evaluation by CRAs reflect this pro-cyclicality. The pro-cyclical approach of ratings creates a similar pro-cyclical approach in capital charges, with the implication that banks hold less capital or over-lend at the cusp of a cycle – exactly when the danger of a systemic crisis is largest – while they hold too much capital or under-lend during the downturn – when macroeconomic stabilization requires an expansion in lending.<sup>72</sup> In response to this the US and EU have developed a convergent approach. In the US, the CRAs were regulated and their involvement regarding the credit risk assessment of several counter-party risks or exposure types has been reduced and replaced by risk weights based on OECD country ratings.<sup>73</sup> In the EU, the regulator has strengthened the regulatory control of CRAs making them more accountable for their assessments while also reducing the over-reliance on credit ratings.<sup>74</sup>

### **III.2. Asset valuation and provisioning**

Financial service authorities and other regulatory bodies rely heavily on accounting numbers as controls over regulation. The compliance of banks and financial institutions with Basel's capital adequacy requirements is measured and controlled through the use of accounting principles. Basel Accords and international financial reporting standards interact at different levels: a main area of friction – in addition to recognition – is the valuation of financial instruments, in particular for traded instruments such as bonds, shares and

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<sup>66</sup> Lastra (2004) at pp. 225-239; Hunt (2009) at pp. 146-147.

<sup>67</sup> Jackson (2001) at p. 314.

<sup>68</sup> For example, many state rules governing investment by public pension funds reportedly require investments in instruments that carry high credit ratings, as do rules of the National Association of Insurance Commissioners which monitors the financial condition of insurers in US States.

<sup>69</sup> Banks and broker-dealers also use credit ratings in calculating their own risk portfolios or, at least, they rely on CRA ratings as a “check” against their own analysis. See Partnoy (2006) at pp. 81-83.

<sup>70</sup> Partnoy (2009); Weber and Darbellay (2008) at p. 10 ff.

<sup>71</sup> Frame and White (2009) at pp. 6-9; Weber and Darbellay (2008) at p. 18; Shin (2008) at pp. 328-329.

<sup>72</sup> Goodhart (2008) at pp. 351-358. See the Financial Economists Roundtable (FER), 'Reforming the Role of the Statistical Ratings Organizations in the Securitization Process' (Statement released the December 2008, Philadelphia).

<sup>73</sup> In 2006 the US Congress passed the Credit Rating Agency Reform Act.

<sup>74</sup> EU Reg. n. 1060/2009 of the EU Parliament of September 2009, as amended in June 2013.

derivatives as well as the level of provisions for such securities. This concerns both the asset and liability sides of the balance sheet with indirect effects on the capital ratios because it inflates or deflates the denominator (debts) on the capital side of the balance sheet. A problematic area of valuation is the so-called Level 3 assets, which include the most illiquid and hard to value financial assets and liabilities. Under IFRS, banks are required to hold all financial assets at *fair value*, except for loans, which can be carried at amortized cost. In particular, banks and their auditors have three options to evaluate their loans.<sup>75</sup> When the loans have an observable market price, for instance because they are listed in an official market, they need to be valued at their official price: *mark-to-market*. Where there is no market price, a value can be computed based on a known cash flow from the asset and an observable discount rate: *market-to-model*. This is quite indisputable in the case of real estate or simple options. However, when the loans to be valued include derivatives, exotic options and private equity investments, the valuation becomes very subjective, and if the bank is short of capital it will presumably have a strong incentive to overvalue its investments.<sup>76</sup>

Furthermore, with regard to fair value, the accounting rules, which are applicable to banks, have been criticized for contributing to pro-cyclical behaviour in banks' decision making. According to a part of the large doctrine on the topic, fair value accounting and loss loan provisioning contributed to default contagion in the financial crisis.<sup>77</sup> More specifically, fair value accounting is blamed for creating a mechanical link between the decrease in asset prices due to market overreaction, accounting losses and the resulting asset selling incentive – also called “asset fire sales” – generated by the need to satisfy regulatory constraints. The reasoning is as follows: a bank can accommodate a shock to asset prices either with a sufficiently high liquidity buffer or by selling assets to improve the denominator of the regulatory capital ratio. However, contagion arises because the drop in the price of the illiquid asset leads to regulatory constraints on some banks in the network, which are forced to liquidate the asset depressing prices even further.<sup>78</sup>

However, this might not have happened in reality. In fact, banks were largely refinanced by government bail-outs when the crisis materialized, and accounting rules were amended soon after the crisis<sup>79</sup> and mitigated by prudential filters called “circuit breakers” in order to allow banks to reclassify a large part of their assets out of the fair value category into historical cost. Because banks had strong incentives to hold the assets, hoping to recover their value instead of liquidating them – a phenomenon labelled “gambling for resurrection” – that is most likely what they did.<sup>80</sup>

Finally, more serious concerns were raised about the loan loss provisioning practices adopted by banks in relation to traditional bank loans valued at amortized costs. Regulators require banks and financial institutions to cover expected losses either with provisions or with capital. If banks are required to cover expected losses with provisions, then they have to take a forward-looking approach to establishing provisions for latent losses in their portfolio that

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<sup>75</sup> IFRS 13 establishes that fair value can be obtained from three levels: Level 1: observed market prices; Level 2: values indirectly obtained from markets; and Level 3: data obtained from models.

<sup>76</sup> Allen and Carletti (2008) at pp. 2-6.

<sup>77</sup> Strampelli (2011); Sasso (2010) at pp. 1112-1114; Repullo and Suarez (2012) at pp. 453 ff. See also “Report on addressing procyclicality in the financial system”, the Financial Stability Forum (2009); BCBS (2013).

<sup>78</sup> See Gorton (2012) at pp. 182 ff.; Schoemaker (2015) at p. 479; Shleifer and Vishny (2011) at p. 30 define a fire sale slightly differently as “a forced sale of an asset at a dislocated price”; Allen and Carletti (2008) at pp. 1-6.

<sup>79</sup> The IFRS amendment from October 2008 allowed banks to reclassify assets from the fair value to the amortised cost category, provided they had the intent and ability to hold these assets to maturity.

<sup>80</sup> Laux and Leuz (2009) at pp. 829 ff.

have not yet crystallized.<sup>81</sup> This approach is, however, hard to reconcile with the approach being taken by accounting standard setters. The models employed by the IASB and FASB are predicated on an incurred loss model. This requires one or more “trigger events” to have occurred that change the level of credit risk of a financial asset such as a loan, or a group of financial assets such as a portfolio of loans, and therefore change the value to be placed on the asset.<sup>82</sup> These are called incurred loss models because the loss is calculated only if incurred.<sup>83</sup>

From the accounting point of view, a provision is a loss reflected in the income statement, while capital does not have this nature, feeding on retained earnings and/or new issues. However, from the point of view of prudential regulation, which is targeted to guarantee a primary loss-absorbing capacity, capital and reserves are a resource to meet future losses, both expected and unexpected. The academic literature has cited several reasons for the use of provisioning other than purely providing a realistic valuation of outstanding loans. Since these accounting provisions are treated as regulatory capital, bank managers generally use them to manage reported capital (capital ratio) and earnings.<sup>84</sup> This discretion gives managers the ability to adapt their accounting provisions to comply with their capital requirements. Not surprisingly, empirical analysis shows that the discretionary use of provisioning is frequently associated with the practice of earnings management.<sup>85</sup>

The consequences of delays in expected loss recognition, influenced by the desire of bankers to manage reported capital and earnings, are various and all targeted to increase the pro-cyclicality of bank lending. Economic research has demonstrated that banks postpone provisioning when faced with a favourable business cycle and income conditions until negative conditions start to set in.<sup>86</sup> Such changes – unrealized gains or losses – have to be booked either directly into equity (via “other comprehensive income”) or are recognized in the income statement, depending on the respective accounting rule. This phenomenon is called loan *forbearance* and it happens when a bank chooses to restructure a loan to negotiate a longer repayment period or a lower interest rate, or both, from a creditor in order to be able to service or repay its loan – assuming an economic recovery. Forbearance cannot be sustained forever and if an economic recovery does not set in, a bank must eventually recognize the true quality of its loans. By restructuring a loan, the bank hopes to keep it out of the non-performing category and thus reduce provisioning requirements. Therefore, there is a good incentive for banks to renegotiate their loans in bad economic times. Now, if asset

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<sup>81</sup> At least one member state, Spain, already requires its institutions to establish prudent provisions *ex ante*, based on a statistical approach (often referred to as ‘dynamic provisioning’). The regulatory authorities in a growing number of other member states are warming to this sort of approach for regulatory purposes. However, this approach would allow two criticisms associated with the current accounting standards to be overcome, notably that potential credit losses remain hidden until signs of deterioration are evident and that market participants have insufficient information about the interest rate risk profile of banks. See the opinion of the European Central Bank (ECB), ‘Fair Value Accounting in the Banking Sector: comments on the Draft standard and basis for conclusions - financial instruments and similar items’ (issued by the Financial Instruments Joint Working Group of Standard Setters 08/11/2001), at <http://www.ecb.int/pub/pub/prud/html/index.en.html>

<sup>82</sup> IAS 39, para 59 provides various examples of objective evidence supporting the occurrence of a loss event for use in determining whether impairment has occurred. Conversely, in the US GAAP, FAS 115 recognises an impairment loss when the decline in fair value is other than temporary.

<sup>83</sup> They prompted the IASB and FASB to replace their methods, the IASB published the final version of IFRS 9 “Financial Instruments” on 24 July 2014 to replace most of the guidance in IAS 39. As part of IFRS 9, the IASB has introduced an expected-loss impairment model that requires more timely recognition of expected credit losses. IFRS 9 will come into effect on 1 January 2018 with early application permitted.

<sup>84</sup> According to both the Basel II and Basel III part of the general provisions qualify for inclusion in Tier 2 capital for banks that adopt the standardised approach, see BCBS (2011) at paragraph 60.

<sup>85</sup> Wall and Koch (2000) at p. 9; Hasan and Wall (2004), Bouvatier and Lepetit (2008) at pp. 513-519; Leventis et al (2011).

<sup>86</sup> Leven and Majnoni (2003) at pp. 181-183; Bushman and Williams (2012) at pp. 3-5.

values are overstated due to forbearance, then so are equity values and banks' capital levels.<sup>87</sup>

### III.3. Disclosure rules for banks' transparency

At the time of the crisis, many banks proved to be opaque in their financial position and risk-taking practice. This opacity magnified uncertainty about the underlying value of bank assets and on- and off-balance sheet exposure to structured products. Both regulators and international supervisors had a distorted view of the real risk assumed by those banks, and so therefore did the investors. A distinction has been made between disclosure and transparency. While disclosure is the act of providing information to the market, transparency only occurs if the information is reliable, and appropriately interpreted and used by the market. It is this concept of transparency that underpins effective market discipline. In other words, market discipline is the mechanism that allows market participants to monitor and discipline bank managers' risk-taking behaviour through price and quantity responses.<sup>88</sup>

Transparency directly impacts on banks' capital. In fact, banks' regulatory capital is a function of the amount of risk embedded in the bank's assets and how much of that risk is transferred away from bank creditors through the financial safety net. It can be inferred that market discipline is inversely proportional to expectations of government support – the stronger the market discipline the safer the entire financial system. Unfortunately, this is not the only variable affecting transparency – companies also play an important role in being information providers. Possible conflicts arise during more difficult economic conditions, when the incentives for managers to hide or shade information disclosures are particularly high. In such circumstances, the banks' management may alter or manipulate information through the use of accounting and regulatory discretions, in order to manage market responses or dampen a potential market overreaction. For example, they may withhold negative news and reveal only the good news, thus biasing the information collected by supervisors. Much also depends on how managers perceive market participants will use and act on disclosed information. In fact, the ability of the market to process the information correctly is another possible impediment. Managers can obfuscate reported information through discretionary accounting and regulatory choices such as valuation methods, International Rating-Based (IRB) model parameters, loan loss recognition and thereby dampen the supervisory relevance of reported information to the point that doctrine has wondered whether less disclosure would be better.<sup>89</sup>

Accounting rules and principles are not that targeted to enhancing transparency by providing a "true and fair view".<sup>90</sup> Therefore, disclosure rules and accounting rules are aligned. However, because the regulatory objectives of accounting standards and prudential regulation clash, bank managers may use their accounting discretion to engage in RCA.<sup>91</sup> Furthermore, similarly to capital adequacy requirements (Pillar I), regulatory disclosure

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<sup>87</sup> See Bank of Spain, *Financial Stability Report* (May 2013) Working paper 05/2013 at p. 31 where it is reported: 'There is a high dispersion across institutions [in the refinancing and rescheduling of loans] ... These differences may be indicative of different business and risk-management models, though they may also be the result of differences in banks' accounting practices'.

<sup>88</sup> BCBS (2015) at pp. 21 ff.

<sup>89</sup> *Ibid.* at 25 f.; Goldstein and Sapra (2013) p. 14 ff. examine this debate in the context of stress test results. Other literature showing the regulator's trade-off when deciding whether to disclose capital shortfalls in crisis times is contained in the BCBS (2015) at p. 28.

<sup>90</sup> IASB (2008) IASB amendments permit reclassification of financial instruments, press release, 13 October, [www.ifrs.org/News/Press-Releases/Documents/PRreclassifications.pdf](http://www.ifrs.org/News/Press-Releases/Documents/PRreclassifications.pdf).

<sup>91</sup> Evidence suggests that banks were not forced to engage in excessive write-downs in 2008 but rather that they used accounting discretion to report asset values above market prices. See Laux and Leuz (2010) at pp. 114 ff.; Barth and Landsman (2010) at pp. 406-411; Securities and Exchange Commission 2008.

policy (Pillar III) has been alleged to be a cause of pro-cyclicality in banking capital regulation, to the point that it should be seriously asked whether a supervisor should withhold some of the information collected from banks to promote a socially optimal strategy.

#### **IV. The regulator's approach and the primacy of the loss-absorbent function of capital**

The Basel Committee has responded to the problems of RCA in two ways. On the one hand, there is a process of converging international accounting rules to harmonize accounting standards, in particular those related to hybrid financial instruments, hedge accounting and cash flows. This will guarantee a major comparability and reliability of information available to the global markets. On the other hand, prudential filters have been introduced for regulatory capital to bridge accounting and banking regulation approaches, in the attempt to reverse banks' risk-taking activities; however this approach has recently been changed.

##### **IV.1. The harmonization of accounting standards with regard to the recognition of hybrid financial instruments**

The current accounting requirements governing the classification of financial instruments as liabilities or equity under both IFRS and US GAAP have been criticized for lacking a clear and consistently applied set of principles and for not distinguishing between equity and non-equity in a manner that best reflects the economics of the transactions involving those instruments.<sup>92</sup> Responding to these concerns, in February 2006, as part of their Memorandum of Understanding, the IASB and FASB agreed to undertake a joint project on financial instruments with characteristics of equity to improve and simplify the financial reporting. The project includes classification and measurement of financial instruments, impairment of financial assets and hedging. However, the boards have not converged on each element, so there are expected to be differences in the final standards. Regarding what matters most for our purposes – the classification and measurement of financial instruments – the boards decided to defer further work on this project in 2011 in order to give priority to IFRS 9 (IAS 39) and ASC 815 (Derivatives and Hedge Accounting), and only very recently reactivated it.<sup>93</sup>

According to the International Accounting Standards, it is IFRS 7 (IAS 32) that deals with whether an instrument or security issued by a company should be classified as debt or equity in the liabilities column of its balance sheet.<sup>94</sup> The fundamental principle is that on initial recognition, a financial instrument is classified either as a financial liability or as an equity instrument according to the substance of the contract and not its legal form.<sup>95</sup>

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<sup>92</sup> See FASB, Preliminary Views, Financial Instruments with Characteristics of Equity, file reference no. 1550-100, [www.fasb.org](http://www.fasb.org). According to the FASB, US-GAAP currently contain 60 pieces of related literature, and the FASB itself views those as “inconsistent, subject to structuring, difficult to understand and apply” and acknowledges that “the complexity has caused many questions and numerous restatements over the past few years”. See IAS 32 on 'Financial Instruments Puttable at Fair Value and Obligations Arising on Liquidation', par. 50 (b) and 51 of the Basis for Conclusions to IAS 32 (rev. 2008), which refer to “counter-intuitive accounting” and a “lack of relevance and understandability”.

<sup>93</sup> Several papers have been issued in the years, see the Pro-active Accounting Activities in Europe Initiative (PAAinE) of EFRAG and the European National Standard Setters, Discussion Paper, April 2007; IASB Discussion Paper, *Financial Instruments Puttable at Fair Value and Obligations Arising on Liquidation*, February 2008; IASB Discussion Paper, *Financial Instruments with Characteristics of Equity*, February 2008. IASB Exposure Draft, *Classification of Rights Issues* proposing to amend IAS 32 on August 2009; IASB Amendments, *Offsetting Financial Assets and Financial Liabilities (Amendments to IAS 32)* on December 2011. For the more detailed agenda look at <http://www.iasplus.com/agenda/liabequity.htm>.

<sup>94</sup> Reg. (CE) n. 2237/2004, in Official Journal 31st of December 2004.

<sup>95</sup> In UK, the international standard IAS 32 was first implemented by FRS 25 and then by FRS 29 which has the effect of implementing the amended disclosure requirements of IFRS 7 Financial Instruments:

Therefore, IAS 32 shifts the view from equity interests to equity instruments. It defines equity instruments as “any contract that evidences a residual interest in the assets of the company after deducting all its liabilities”.<sup>96</sup>

In contrast, a financial liability is defined as

“any liability that is a contractual obligation (either explicit or indirectly through its terms and conditions) on the issuer of an instrument either to deliver cash or another financial asset to the holder, or to exchange financial instruments with another entity under conditions that are potentially unfavourable”.<sup>97</sup>

Financial liabilities include derivatives that can be various contracts that will or may be settled in the entity’s own equity instruments. Therefore, under IFRS, differentiation between a liability and equity depends on whether the issuer has a contractual obligation either to deliver cash or another financial asset to the other party, or to exchange financial assets or financial liabilities with the holder under conditions that are potentially unfavourable to the issuer.<sup>98</sup> This definition excludes economic compulsion, that is the circumstance in which the terms and conditions of an instrument oblige an entity to act in a certain way even in absence of any contractual obligation. For instance, an entity may be economically compelled to exercise a right to repay a liability that is legally a perpetual instrument – if the terms of the contract contain a clause that the interest rate payable on this instrument will quintuple at a certain point in time. However, as IAS 32 covers only contractual obligations, the financial instrument would be classified as equity.<sup>99</sup>

There are some exceptions to this principle represented by the so-called “fixed for fixed” rule and the recent amendment on *puttable* financial instruments. Where a non-derivative financial instrument may be settled by issuing shares, classification will depend on whether the number of shares to be issued is fixed or variable. If the entity is obliged to issue a fixed number of own equity instruments in exchange for a fixed amount of cash, the obligation is not recognized as a financial liability, but as equity. Conversely, if a variable number of equity instruments is delivered or if delivery is against receipt of a variable amount of cash, the instrument is a financial liability.<sup>100</sup> Similarly, in order to avoid classification as a financial liability, a derivative financial instrument must be settled by an entity issuing a fixed number of shares or a fixed amount of cash from its own equity instruments. The derivative instruments that meet the “fixed for fixed” test, fall outside the scope of IAS 39 and are treated as equity.<sup>101</sup> The reasoning underlying this exception is that the financial position of the contract holder is, due to the exchange relation being fixed, somewhat similar to that of a present holder of equity instruments. Assuming that the entity is a going concern and is still in business when the contract is settled, the accounting reflects the outcome as if the contract had already been settled.<sup>102</sup>

The other exception concerns *puttable* financial instruments. Although they are

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Disclosures', issued by the IASB in August 2005. FRS 29 is applicable for accounting periods beginning on or after 1 January 2007.

<sup>96</sup> IAS 32 para 11.

<sup>97</sup> Ibid.

<sup>98</sup> Ibid.

<sup>99</sup> IAS 32 para 20.

<sup>100</sup> IAS 32 paras 16(a) and 16(b).

<sup>101</sup> In addition, rights, options or warrants to acquire a fixed number of the entity’s own equity instruments for a fixed amount of any currency are equity instruments if the entity offers the rights, options or warrants pro rata to all existing owners of the same class of its own non-derivative equity instruments.

<sup>102</sup> In other words, by fixing upfront the number of shares to be received or delivered on settlement of the instrument in concern, the holder is exposed to the upside and downside risk of movements in the entity’s share price. A contractual right or obligation to receive or deliver anything other than a fixed number of the entity’s own shares will result in liability classification of the instrument in concern.

generally classified as financial liabilities, because the right to put an instrument back to the issuer gives rise to an obligation on the side of the entity, the IASB amended IAS 32 with respect to the balance sheet classification of puttable financial instruments and obligations that arise only on liquidation.<sup>103</sup> The rationale for this amendment was to improve financial reporting of particular types of financial instruments that meet the definition of a financial liability but represent the residual interest in the net assets of the entity. These financial instruments entitle their holders to either put the instrument back to the issuer at the fair value of a pro rata share of the net assets of the entity, or receive a pro rata share of the net assets of the entity upon liquidation. As a result of the amendments, subject to specified criteria being met, these instruments would be classified as equity, whereas under the previous requirements they were classified as financial liabilities. The most critical conditions are that the instruments are in the most subordinated class of instruments with a claim to the entity's net assets. All instruments in this class have equal terms and conditions and apart from the holder's right to put, there are no other obligations.<sup>104</sup>

In contrast with the IASB's IAS 32, the FASB's Accounting Standard Codification 480 (FAS 150) restricts the definition of equity, leaving the liability category as a default basket for most of the hybrid financial instruments. Generally speaking, three types of obligations may require liability treatment under ASC 480-10-25. These are the mandatorily redeemable financial instruments – obligations to repurchase the issuer's equity shares by transferring assets and obligations to issue a variable number of shares. Regardless of how certain features are labelled (for instance an agreement may or may not use the words *mandatorily redeemable* or *puttable*), the financial contracts should be reviewed carefully for obligations on the issuer to redeem instruments for cash or other assets, or the rights of the holder to return certain instruments to the issuer for cash or other assets (preferred stock and warrants respectively). Under ASC 480-10-20, mandatorily redeemable financial instruments are defined as “any of various financial instruments issued in the form of shares that embody an unconditional obligation requiring the issuer to redeem the instrument by transferring its assets at a specified or determinable date (or dates) or upon an event that is certain to occur”.<sup>105</sup>

In considering this definition, it must be pointed out that term extension options or similar provisions that defer redemption until a specified liquidity level is reached do not affect the classification of a mandatorily redeemable financial instrument as a liability.<sup>106</sup> As long as the obligation of the issuer to redeem the instrument is unconditional, the instrument will be classified as a liability. This means that there may be a continuous need for reassessment as instruments are conditionally redeemable if the event occurs, the condition is resolved, or the event becomes certain to occur.<sup>107</sup> If a conditionally redeemable instrument becomes mandatorily redeemable, the instrument is adjusted to fair value, reclassified as a liability, with equity reduced, recognizing no gain or loss on the reclassification.<sup>108</sup>

There are several exceptions to ASC 480-10-25. For instance, if the redemption is required to occur *only* upon the liquidation or termination of the reported entity, or death or

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<sup>103</sup> See IASB (2009) Amendments to puttable financial instruments and obligations arising only on liquidation. Working paper February 2009. The amendments are effective for annual periods beginning on or after 1 January 2009.

<sup>104</sup> IAS 32 para 16. The greatest impact of this amendment will be in the fund management industry and those jurisdictions where local law permits or requires entities to have a limited life. Mutual funds, and other entities that allow investors to withdraw their interest at a *pro rata* share of net assets, previously recognised liabilities equal to the assets in the fund.

<sup>105</sup> ASC 480-10-20.

<sup>106</sup> ASC 480-10-25-6.

<sup>107</sup> ASC 480-10-25-5 and 7.

<sup>108</sup> ASC 480-10-30-2.

termination of the holder, the instrument is classified as equity because its life does not have a specified limit and either cannot be required to be redeemed or can be required to be redeemed only if the entity decides or is forced to liquidate its assets and settle claims against the entity, or if the holder dies.<sup>109</sup> Similarly, redeemable instruments that are convertible into ordinary shares of the issuer are generally not considered to be mandatorily redeemable during the conversion period as redemption is conditional upon the holder not electing to convert. For this purpose, non-substantive or minimal features – such as a very high conversion price in relation to the current share price – are disregarded.<sup>110</sup>

The second type of obligations are represented by the obligations to repurchase the issuer's equity shares by transferring assets. When the instrument under consideration is a freestanding financial instrument such as a warrant, which means it is not intertwined with preferred or other shares, this financial instrument is accounted for as a liability – whether it embodies a conditional or unconditional obligation to repurchase the issuer's equity shares, and does or does not require the issuer to settle the obligation by transferring assets.<sup>111</sup> Under existing US GAAP, no specified-for-specified criterion is associated with the assessment of whether contracts concerning an entity's own equity should be accounted for in equity. Therefore, a derivative to issue a mandatorily or puttable equity instrument would be classified as a liability.<sup>112</sup>

The third type of obligation, classified as a liability, is the financial instrument that embodies an unconditional obligation or other warrant or right that embodies a conditional obligation, that the issuer must or may settle by issuing a variable number of its own shares, if – at the inception – the monetary value of the obligation is based solely or predominantly on “a fixed monetary amount known at inception; a variation in something other than the fair value of the issuer's equity shares; a variation inversely related to changes in the fair value of the issuer's equity shares.”<sup>113</sup>

The rationale behind these criteria is that to be considered and therefore classified as equity, an obligation should expose its holder to essentially the same risks and benefits of a shareholder. This means that any risks or benefits of changes in the obligation must stem directly from changes in the fair value of the issuer's equity shares. For instance, if a warrant or preferred stock requires settlement by the issuance of shares for a certain amount on the settlement date, the number of shares to be issued varies based on their fair value at settlement. Conversely, if the preferred stock is convertible into shares at the holder's discretion it does not fall within the scope of ASC 480. If an equity-linked instrument does not fall within the scope of ASC 480, consideration will generally next be given to ASC 815 “Derivatives and Hedging” to determine if the instrument or any embedded features should be accounted for as a derivative at fair value with changes in fair value recognized through income.<sup>114</sup>

Finally, the Securities and Exchange Commission (SEC) has issued a special section, ASC 480-10-S99, for its registrants (public companies). Of course, its application is also recommended for non-public entities' instruments that meet the same criteria. ASC 480-10-S99 provides guidance on when temporary rather than permanent classification is appropriate. The section is also relevant for determining the classification of any amounts associated with convertible debt that are otherwise classified as equity. According to ASC 480-10-S99, ownership instruments such as common shares or preferred stock that are redeemable at a

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<sup>109</sup> ASC 480-10-25-4.

<sup>110</sup> ASC 480-10-55-12.

<sup>111</sup> ASC 480-10-25-8.

<sup>112</sup> See ASC 480-10-55-33.

<sup>113</sup> ASC 480-10-25-14.

<sup>114</sup> ASC 815-10-15-83.

fixed or determinable price on a fixed or determinable date, at the discretion of the holder, or upon the occurrence of an event that is not solely within the control of the issuer (i.e. puttable shares), are classified as temporary equity, mezzanine equity or otherwise permanent equity.

#### **IV.2. Prudential filters to bridge accounting and banking regulation in the areas of asset valuation and provisioning**

The set of prudential filters in Europe was introduced by the Capital Requirements Directive of 2006<sup>115</sup> and the Guidelines, which were published by the Committee of European Banking Supervisors (CEBS) in 2004.<sup>116</sup> Accordingly, a few mandatory prudential filters were turned into EU legislation, which was mainly targeted to eliminate the effects of fair value changes on own funds and reduce the volatility of equity capital. In particular an institution will exclude from any element of own funds increases in equity that result from securitized assets, all gains and losses resulting from valuing liabilities at fair value due to changes in own credit standings, and the fair value reserves related to gains and losses on cash flow hedges of financial instruments that are not valued at fair value, including projected cash flows. In addition, in order to proceed to a qualitative upgrading of own funds, an institution will make some adjustments to capital from the balance sheet to neutralize certain items like intangible assets (goodwill and capitalized costs for software) and deferred tax assets.<sup>117</sup>

Fair value accounting of financial assets has direct consequences for the equity capital of a balance sheet as unrealized gains or losses have to be booked either directly into equity or are recognized in the profit and loss (P&L) accounts depending on the respective accounting rule. As P&L is overly influenced by ongoing market conditions, which could be of a very temporary nature, recognizing unrealized gains and losses in the P&L could generate undue artificial volatility. The increase in recorded fluctuations could also give rise to greater regulatory risk. In this sense, prudential filters reduce volatility, accepting only materialized gains and losses as affecting capital while excluding the unrealized part that may never materialize or may disappear within a very short time period as a consequence of favorable or unfavorable events. To this end, in the EU, IAS 39 introduced a residual category of financial assets called “available for sale” (AFS). Generally, financial instruments, which are not measured at amortized costs like assets “held-to-maturity” and “loan and receivable”, need to be measured at their fair value. These are normally assets “held for trading” (HFT) like derivatives, interest rate swaps, options etc., and assets AFS such as financial assets held for investments that do not enter any other category. IAS 39 created an alternative to the recognition of gains and losses originating from fair value: while a fair value change of an HFT instrument is recognized in the P&L account, that of an AFS instrument has to be recognized in “other comprehensive income” (OCI). This particular item – except for impairment losses or if the sale takes place – was filtered out of regulatory capital. OCI includes all net changes in unrealized gains and losses on AFS assets, cash flow hedges and translation of net foreign operations, and it is a very useful tool for the financial analysis and evaluation of large corporations. Its goal is to improve the comparability, consistency and transparency of financial reporting.<sup>118</sup>

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<sup>115</sup> Directive 2006/48/EC.

<sup>116</sup> CEBS (2004) Guidelines on prudential filters for regulatory capital. CEBS became the European Banking Authority (EBA) in 2011.

<sup>117</sup> Blundell-Wignall and Atkinson (2010) at pp. 15-16.

<sup>118</sup> The FASB's and IASB's technical definition of comprehensive income included in the Statement of Financial Accounting Concepts n. 6 para 60 is “the change in equity [net assets] of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners.”

The P&L statement is an indicator of a company's capacity to generate profits, but because the earnings growth is one of the primary determinants of a firm's share price performance, the statement remains a subjective measure that is open to manipulation. By recognizing a further distinction with OCI, it is possible to separate realized and unrealized gains and losses in the P&L. This distinction can be useful for banks and insurance companies because it allows a better valuation of the fair value of a company's investments. Looking at OCI could also provide insights into many essential sectors of a bank, such as the amount of overseas revenue for foreign banks and their related currency hedging, the impact of their obligations on corporate retirement plans or of their unrealized gains or losses in their investment portfolios. This could be an important tool especially for analysts and supervisors, who could combine both statements in their financial models to extrapolate a clearer picture of banks' risk exposure.<sup>119</sup>

Unfortunately, the Basel Committee approach has changed in recent years in anticipation of the IFRS 9 replacement of IAS 32, and with the introduction of the Basel III framework. IFRS 9, the application of which was meant to be in 2013 but will only become effective for annual periods beginning after 2018, will eliminate the category of AFS assets and simplify the categories of financial assets. Accordingly only two categories for debt securities will remain: fair value through profit or loss, and amortized cost. The ASF – especially the plain vanilla debt held for the collection of contractual cash flows – will be in large part measured at amortized cost under IFRS 9. However Basel III, while postponing the introduction of IFRS 9, has already agreed to eliminate almost all prudential filters, retaining only those for unrealized gains and losses arising from cash flow hedges and for changes in the value of liabilities (debt instruments and derivatives) due to changes in own credit risk. The Basel III approach is targeted to provide banks with capital capable of fulfilling its loss-absorbing function at all times, i.e. in going-concern scenarios. While unrealized losses could in theory recover, they still hinder recapitalization and do not reflect the real value of the regulatory capital. Therefore they must not be filtered out in order to maintain the same quality of capital. Conversely unrealized gains, because of their precarious value, may also distort the market's perception of regulatory capital, which cannot fulfill its loss-absorbing function. This is why the BCBS has left jurisdictions free to maintain a prudential filter on unrealized gains.<sup>120</sup> In Europe these new rules for bank capital were enacted by the EU Capital Requirement Regulation (CRR), which came into force in January 2014.<sup>121</sup>

As a consequence many concerns were raised among financial institutions and associations regarding possible volatilities in their Tier 1 capital, as well as too burdensome requirements. More important, empirical research has shown that cross-country treatments of prudential filters affected incentives to engage in RCA during the crisis.<sup>122</sup> The Basel III approach assumes that without prudential filters and more volatile regulatory capital, financial institutions will prefer to hold larger capital buffers in order not to risk going below the minimum regulatory capital. Under an unfiltered approach, banks would be induced to increase their capital buffers in good times and reduce them in bad times. However, in the

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<sup>119</sup> Dhaliwal, Subramanyam and Trezevant (1999) at pp. 43-67.

<sup>120</sup> BCBS (2011) Basel III: A global regulatory framework for more resilient banks and banking systems, <http://www.bis.org/publ/bcbs189.pdf>. This has been the case especially after that European Banking Authority in 2013 has recommended the introduction of prudential filters for unrealized gains see European Banking Authority (2013) Discussion Paper on Technical Advice on possible treatments of unrealised gains measured at fair value. EBA Discussion paper 2013/03.

<sup>121</sup> Regulation EU n. 575/2013 on prudential requirements for credit institutions and investment firms (CRR) and Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (CRD IV).

<sup>122</sup> Bischof, Brüggemann and Daske (2011) at pp. 9-15, they find that prudential filters that temper the link between fair value accounting and regulatory capital reduced the incentive to use the reclassification option from HFT to ASF assets to mitigate the recognition of fair value losses.

expansionary part of the cycle, their increased lending capacity results in more credit being offered to the market, thus creating pro-cyclicality. It has been argued that fair value valuation of long-term investments in time of crisis when markets are illiquid creates a pro-cyclical effect whereby mark-to-market adjustments reduce regulatory capital, forcing banks to sell off investments, which further depress prices and thus lead to bank instability.<sup>123</sup>

From empirical analysis it has also emerged that any change in the accounting rules that influences regulatory capital ratio impacts directly on banks' behavior and eventually on their risk management strategies. During the financial crisis and the subsequent elimination of prudential filters by the Basel Committee, large financial institutions reclassified their financial investments from HFT to ASF assets in order to avoid fair value and benefit from amortized cost accounting.<sup>124</sup> Their aim was to reduce the volatile regulatory capital. Knowing banks' adverse volatility in regulatory capital and that they dare to reduce the cost of compliance, imposing a fair value for all financial assets could push them to shorten the maturities of debt instruments in their portfolios and discourage them from engaging in investment activities used as an important asset-liability management tool. Similar distorting incentives could be created if an asymmetric filter is established, for instance unrealized gains not being included, or only partially, and losses being completely deducted. The bank will have the incentive to sell and reacquire the same assets just to realize all possible gains that count as Tier 1 capital. In contrast, if the bank decides to keep the same assets with unrealized gains, which are not included in Tier 1 capital, it will be worse off from a solvency perspective, while having an identical balance sheet value.<sup>125</sup>

Finally, including unrealized losses and gains in the capital may give a clearer picture of its real value but it will not necessarily achieve the goal of reversing the risk-taking trend or reducing RCA. On the contrary it may create additional scope for RCA and risk, affecting investment portfolio management. When symmetric filters are established, volatility is reduced, but the amount of capital available to absorb losses can be overestimated as unrealized losses are not deducted. The risk-management strategies of banks are a function of the economic value of their capital, which is in turn a function of the accounting rules interacting with prudential regulation. If there are unrealized gains or losses on investment securities that are *not* recognized in either equity or earnings, decisions on sales will influence reported equity or earnings as banks may or may not realize the unrealized gains by selling the related assets or by using an adequate hedging strategy.<sup>126</sup> Conversely if unrealized gains or losses were automatically recognized in equity, banks would lack this discretion and would be deprived of a tool of risk management. While risk-management strategies could be affected by unfiltered unrealized gains and losses, RCA would not be reduced. As discussed above, fair value accounting increases the discretion of the banks with regard to the evaluation of their assets, especially in the case of financial assets that do not have a market price or struggle to enter into standardized objective models of valuation, leaving bank managers the incentive to develop shadow banking structured finance to hold their investments.

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<sup>123</sup> For a recent look at fair value and financial stability, see E. Menicucci, *Fair Value Accounting: Key Issues Arising from the Financial Crisis*, (Palgrave Macmillan Studies in Banking and Financial Institutions 2015) 96 ff.

<sup>124</sup> Bischof, Brüggemann and Daske (2012); see also E. Menicucci, *Fair Value Accounting: Key Issues Arising from the Financial Crisis* (Palgrave Macmillan Studies in Banking and Financial Institutions 2015) 88 ff.

<sup>125</sup> See BCBS (2015) at p. 20. This phenomenon called "gains trading" is widespread among life insurer companies that face regulatory capital constraints and may engender distortions in key regulatory metrics with negative financial consequence for unrelated markets. See Ellul et al (2012) at 3-5.

<sup>126</sup> If hedging is perfect, filtered capital measures will be accurate as the changes in values of securities and hedging resulting from moves in interest rates will offset. See BCBS (2015) p. 20.

## V. Concluding remarks

This article has discussed the challenges to regulators and supervisors posed by RCA and shadow banking. Such practice undermines the quality of the regulatory capital, eroding prudential capital standards, but most importantly, it creates a distortion in the regulatory capital ratio measures that prevents investors and regulators from identifying the bank's real underlying risks. RCA originates from the inherent mismatch of goals of different disciplines, i.e. accounting, corporate law, disclosure rules and capital requirements, which interact to influence the capital structure choices of banks.

In recent years, Basel and International Accounting Standards have moved closer together; however, conceptual differences remain between the accounting standards that are used by financial institutions for the purposes of financial disclosure and the prudential standards applied in terms of the capital adequacy framework. Accounting standards are predominantly structured on a going-concern basis for the operations of an entity, whereas the prudential standards of the capital adequacy framework are biased more heavily towards liquidation. In simplistic terms, the prudential standards seek to ascribe a realizable recognition and measurement basis for assets and capital supporting a bank's operations. These differences are evident with regard to the issues of valuation and provisioning, namely how to provision for credit losses and value loans on a balance sheet. In such a scenario banking capital regulation has become too complex to be effective. The constant introduction of new mechanisms and parameters to calculate regulatory capital has made banking regulation more difficult to understand and enforce and therefore easier to avoid or manipulate.<sup>127</sup>

Bank capital should not be prepared to cover only *expected* but also unexpected losses, which means acknowledging the existence of *unknown unknowns*. In fact, bank capital is a function of the risk embedded in the asset side of the balance sheet and how much of that risk is transferred away from bank creditors through deposit insurance schemes and bank resolution procedures. However, while balance sheet risk is bank-specific and varies from bank to bank, the financial net is a systemic issue. To cope with it, part of the doctrine and several international organizations have underlined the utility of having a simple harmonized equity-to-assets ratio measure as regulatory capital for financial institutions.<sup>128</sup> The ratio would have the merit of being based on uncertainty and not risk (like precise risk-weight assets calculation); it would be more predictable; furthermore, it would be easier to calculate, assess and monitor for supervisors and market participants. This is the apparent direction of the newly introduced Basel III framework, which includes an international leverage ratio of a minimum Tier 1 of 3% that will be tested during the period 2013–2017, but only as a supplement to the risk-based capital ratio. However, as the same doctrine has noticed, the problem may be how much capital is enough: setting the leverage ratio too low could give bankers the incentive to engage in RCA transactions causing portfolio distortions; setting it too high could contract the lending activity of banks, as explained above.<sup>129</sup>

Assuming that systemic risk and balance sheet risk need to be dealt with by the regulator with macro- and micro-prudential regulations respectively, it seems logical – in relation to banking capital regulation – to have internationally harmonized accounting standards for the recognition and measurement of banks' capital and assets while having individual capital requirements for specific banks. As the measurement of banking regulatory capital is directly linked to the recognition and measurement of its assets and capital,

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<sup>127</sup> Fullenkamp and Rochon (2014) p. 7.

<sup>128</sup> Admati and Hellwig (2012); Blundell-Wignall and Atkinson (2010) at pp. 18-21.

<sup>129</sup> In this sense Calomiris (2012) 7 ff. *Contra* Admati, DeMarzo, Hellwig and Pfleiderer (2012) pp. 15 ff.; Hellwig (2010) at pp. 15-18. See also Alexander (2015) 240 ff.; Caruana J, How much capital is enough? BIS published works, speech prepared for the IESE Business School Conference "Challenges for the future of banking: regulation, supervision and the structure of banking", London, 26 November 2014.

accounting standards are a necessary prerequisite for ensuring that an accurate and consistent interpretation of the capital adequacy framework is applied. In this regard, the standards governing the recognition and measurement requirements of regulatory capital and regulatory assets incorporate accounting standards. Accounting standards are used in the capital adequacy framework as they establish widely accepted rules for the recognition and measurement of revenues, expenses, assets, liabilities and capital. This is important in engendering consistency in comparable financial information that is widely used, particularly by investors, depositors, regulators and others, to gain a better understanding of an institution's financial position.

### **V.1. Micro-prudential regulation and risk management**

As far as micro-prudential regulation is concerned, a different regulatory approach should be considered. In response to the phenomenon of shadow banking, which was certainly one of the major causes of the distortion of supervisors' and investors' perception of banks' real underlying risks, regulators have made a series of recommendations for expanding disclosures in order to increase transparency.<sup>130</sup>

Awakening mechanisms of market discipline is surely an important tool for counterbalancing RCA. In this sense the principles behind accounting – correct asset pricing and fair value accounting – which provide a “true and fair view” in the accounts of the company, are targeted to that goal. However, as explained above, because accounting rules are focused on valuation, which is inherently a static measure of financial conditions, they are inadequate to deal with risk allocation, which involves a dynamic measure changing in response to changes in the underlying financial-economic environment.<sup>131</sup>

As discussed above, excessive mandatory disclosure rules may push banks to engage in RCA in the attempt to optimize their cost of capital and regulatory compliance. It is quite intuitive to understand why bank managers – being information providers – have strong incentives to hide or shade information disclosures by altering accounting numbers, especially in difficult economic conditions. In this regard, some doctrine has proposed to let banks compete for mandatory and voluntary disclosure, allowing supervisors to impose higher capital buffers on those financial institutions that do not demonstrate full compliance on capital requirements with regard to their risk exposures. Therefore, capital for banks would have to comply with supervisors rather than rules.<sup>132</sup>

If we tackle the problem from a different perspective and accept that financial innovation, for which RCA is a key driver, is the result of managers' attempt to increase shares value by mitigating the cost of financial distress and taxes, and by avoiding costly external finance, we can conclude that financial innovation is a form of risk management. For instance, accounting standards interacting with corporate rules and regulation determine not only the total income realized, but also the part of that income that can be distributed as dividends or bonuses, that is *only* the net income. A revaluation of assets (at their fair value),

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<sup>130</sup> BCBS (2012) Composition of Capital Disclosure Requirements: Rules text (accessible at [www.bis.org/publ/bcbs221.htm](http://www.bis.org/publ/bcbs221.htm)); *Id.* (2014) Review of the pillar 3 disclosure requirements. Consultative document (accessible at <http://www.bis.org/publ/bcbs286.htm>); Financial Stability Board (2012) Enhancing the risk disclosure of banks, Report of the Enhanced Disclosure Task Force.

<sup>131</sup> Merton (1995) at pp. 472-473 where the Author suggests to adopt a dynamic measure of financial condition indicating how the individual balance sheet values are likely to change in response to changes in the underlying financial environment.

<sup>132</sup> Fullenkamp and Rochon (2014) p. 20 f. The idea is to add to a minimum simplified regulatory capital, a supplementary margin calculated on a bank-by-bank basis according to the bank's real risks. *Contra* see In addition, there is evidence that in the absence of stringent disclosure requirements providing a common benchmark, outsiders cannot easily compare banks based on voluntary information. As noted above, accounting and supervisory discretions affect the comparability and credibility of these disclosures.

reflected in the P&L account of a bank as well as in excessive mandatory disclosure, could probably interfere with banks' risk-management strategies. This limitation on their margin of discretion could push bank managers to establish new pay-out or asset-management policies that would impair their ability to smooth intertemporal shock and would not necessarily improve financial stability. For instance, when their portfolio can be valued objectively market-to-market or market-to-model, they could repackage it or structure it so that a more subjective and convenient evaluation is adopted.<sup>133</sup> Financial flexibility is needed by banks as a way of risk management, because assets and financial structure (the asset- and liability- side of a balance sheet) are *extremely* connected. Imposing on banks a rigid harmonized pay-out policy or assets management could be as counterproductive as embedding harmonized risk-management methods or procedures in the law.<sup>134</sup>

To tackle the distortion created by RCA and make bank capital more resilient, the regulator will need to apply a mix of regulatory strategies, including facilitating self-regulation among all market players. The regulator will have to set forth broad objectives depending on the characteristics of the market under examination, and then require the regulated actors to explore together with the supervisors processes and procedures that enable those goals to be realized.<sup>135</sup> This can be achieved only by considering regulation functional to the market (like an infrastructure) and no longer endogenous to the system. The implementation of new regulation will have to be verified not only according to neo-classical economic assumptions but also to empirically verified behavioral economics.<sup>136</sup>

Accordingly, the regulator will have to strike the right balance between disclosure and accounting rules, and financial flexibility for risk-management strategies. To this end, while it is essential for supervisors to have a full picture of the risk assumed by the market, there is no need to disclose all the information issued by banks. Supervisors could filter out that part of the information that is more concerned with systemic financial safety and less with banks' performance. Similarly, cross-country treatments of prudential filters seem to be a good tool for the realignment of the goals of accounting and corporate law to achieve the solvency purpose of prudential regulation by filtering and adjusting certain accounting items.

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<sup>133</sup> Bonaimé, Hankins and Harford (2013), pp. 4-6.

<sup>134</sup> Enriques and Zetsche (2013) at pp. 31-32; Stulz (2015) at pp. 12-13.

<sup>135</sup> See Kershaw (2015) at pp. 12 ff. where the Author takes the British Takeover Panel as an example and 39-41.

<sup>136</sup> See the prof. Pistor's introduction of the special issue *Law in Finance* (2013) at pp. 311-314 and her article in that special issue K. Pistor (2013) at pp. 315-330; Black (2013) at p. 46 where the Author proposes to create a multi-dimensional social conception of markets including not only neoclassical conceptions in order to create a cognitive framework in which to frame and develop policy responses. See also Awrey, Blair and Kershaw (2013), p. 191.

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