Lorenzo Sasso

Matching legal and economic capital in banking capital regulation

I. Introduction

The recent financial crisis exposed important shortcomings in financial supervision, both in particular cases and in relation to the financial system as a whole. In the attempt of assessing the causes of the global financial crisis, financial institutions have been criticized for being excessive risk-taking and not holding enough capital to reflect the true risks they were taking. Global financial markets have become in the last years more liquid and have taken over the role of banks acting as intermediaries between savers and borrowers. A consistent part of the borrowing is now packaged into securities that are sliced and sold through a myriad of financial intermediaries. This growth in liquidity in the market has induced banks to risk-taking policies and pushed prompted segments such as subprime mortgages in order to originate loans solely for the purpose of securitizing them – the so called 'originate to distribute' model. Similarly, the role of Credit Rating Agencies (CRA) have been re-assessed for their perceived contribution to the subprime mortgage "meltdown" and for failing to change their ratings until after that meltdown was well under way.[1] While there are several areas of intervention in which the regulator may

[1] 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*", See *Report of the FSF on Enhancing Market and Institutional Resilience*, 7 April 2008, available at: http://www.financialstabilityboard.org/publications/r_0804.pdf; see also 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, available at www.**cesr-eu**.org/data/document/**CESR**_08_277.pdf and The European Securities Markets Expert Group (ESME) Report to the European Commission, Role of Credit Rating Agencies, June 2008, available at http://ec.europa.eu/internal_market/securities/esme/index_en.htm; CGFS (Committee on the Global Financial System), *Ratings in Structured Finance: What Went Wrong and What Can Be Done to Address Shortcomings?*, 2008, CGFS Paper 32; FSA (U.K. Financial Services Authority), *The Turner Review: A Regulatory Response to the*

operate to improve the effective management of systematic risk that do not exclude a more intrusive role of the supervisors or an international regulatory coordination, I will focus on capital adequacy requirements for financial institutions and risk assessment.

For more than thirty years, financial services regulators have sought to determine and enforce capital adequacy ratios as the principal free market mechanism for underpinning prudence, viability, risk management and credit-worthiness in banking and assurance's activities. A principle based regulation and a less rigid distinction between equity and debt was developed for banks and financial institutions in order to permit them to accomplish their tasks and sustain their investments limiting at the same time their risks of exposure. A large part of this reflect innovations in the capital markets and the introduction of new features and types of hybrid capital instrument. However, although most concepts of accounting for hybrid financial instruments aim at a principles-based, rather than rules-based, conceptually sound approach, none could be applied without voluminous application guidance.[2]

Nowadays the regulation contains up to seven tiers and sub-tiers of capital,[3] as FSA has created new sub-divisions in response to minor variations in the characteristics of capital instruments and this has arguably undermined the essential character of regulatory capital. Recently, at the aim of strengthening the resilience of the banking sector and the financial system as a whole, the Group of Governors and Heads of Supervision have proposed specific amending to the capital requirements for prudential regulation. These commitments included building high-quality capital, strengthening risk coverage, mitigating pro-cyclicality and discouraging leverage, as well as strengthening liquidity risk requirements and forward-looking provisioning for credit losses.[4]

Bank capital requirements are designed in many legal frameworks to guarantee banks' financial stability and provide a safety net for the protection of depositors from the risk of bank failures. The required levels of capital are considered minimum standards, that is, they should still concede a certain playing field to banks and not undermine their creativity in the development of innovative risk management practices. Another important regulatory task consists in counterbalancing business cycles rather than accentuating them. The market dysfunction to be combated occurs because banks tend to take excessive risks during economic booms instead of accumulating the necessary reserves to face an economic downturn. Ideally, a well designed regulatory system should see capital rising during periods of high profitability and falling during recessions. However, a certain amount of precaution needs to be taken while enacting new public policies. Regulators need to be aware of the incentives that they create in the financial system. The fact should not be ignored that regulatory initiatives may have unforeseen consequences.

Global Banking Crisis, London, 2009.

[2] In GENPRU 2.2 there are now over 270 rules and guidance together with six annexes.

[3] 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.

[4] In EU the Capital Requirements Directives (2006/48/EC and 2006/49/EC) have been recently amended in October 2008 (CRD II, IP/08/1433) and July 2009 (CRD III, IP/09/1120) and they were discussed in February 2010 for further possible changes (CRD IV, IP/10/197). 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. Finally, in the second half of 2010, the CEBS is carrying out a Quantitative Impact Study to aid the assessment of the aggregate of the proposed revisions.

The paper will discuss some failures and counterproductive incentives produced by the law that have facilitated the so called regulatory capital *arbitrage* effect. At the same time, the paper proposes a functional approach to deal with regulatory capital arbitrage. This approach, which is more relying on market mechanisms and responds to the *'substance over form'* principle, aims to match the regulatory capital to the investors' relevant risks and claims so as to unify legal capital and economic capital. However, before examining it, I will point out some rationales for the usefulness of having capital adequacy requirements on the banking system.

a. Why do we have capital adequacy requirements on the banking systems?

The change in capital rules affects banks' equilibrium financial decisions. Nevertheless, since economic research has not produced a theory of optimal prudential regulation, there is no indication whether this change is desirable. For instance, lower leverage and higher bank safety are not always appealing if they imply a big sacrifice in lending efficiency and growth potential. In the literature on capital adequacy, researchers tend to agree that capital adequacy requirements are necessary to control the moral hazard problems. These problems occur when those who take the risks, come to believe that they will not have to carry the fully burden of losses. Capital, like collateral, counteracts the tendency of banks to take additional risks at the expenses of the debt-holders, because it increases the shareholders' sensitivity to downside risk of liquidation. Thus, capital adequacy requirements are indirectly justified by the desire to prevent financial crises.[5] However, the assumption that adequate capital is necessary to prevent excessive risk taking does not by itself provide an argument for capital adequacy requirements. In the absence of capital adequacy regulation, reputation may ensure that banks do not take excessive risks in a situation of moral hazard.[6] After all, it should not be for the regulators to determine how much risk banks can assume nor to set out the particular way that they assess such risks so long as any loss from adverse outcome is internalised among themselves and their professional investors.

For the same reasons, economists have criticised the deposit insurance since its appearance in the 1930s in the US states to enhance financial stability and protect small unit banks located in poorer areas. The deposit insurance (Fondo Interbancario di Tutela dei Depositi FITD) 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. Because banks rely on customer deposits that can be withdrawn on little or no notice, banks are prone to a bank run, where depositors seek to withdraw funds quickly ahead of a situation of possible bank's insolvency. Critics of deposit insurance say this safe provision would encourage both depositors and banks to take on excessive risks. This is because without deposit insurance, banks would be in competition for deposits and depositors would prefer safe banks over risky banks to guard their money. Conversely, with the existence of deposit insurance, depositors do not fear for their deposits

[5] A large literature investigates the effect of capital adequacy requirements on risk taking, see Hellman, Murdock and Stiglitz [2000, 147-165]. Although research showed that the incidence of financial crises may be socially optimal in a system where regulation does not exist, see Allen and Gale [1999, 1245-1284].

[6] Bhattacharya [1982, 371-384], Klein and Leffler [1981, 615-641].

safety and banks can continue to take on excessive risks. (Hellman, Murdoch and Stiglitz 1998) The supervisor should in principle be in a position to assess the relative risk of the provision of such insurance and charge an appropriate levy or premium for so doing. In practice however, this has never happened in the past because of the impossibility to accurately measure 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. Some commentators have argued that the introduction of a risk-related bank levy is all that is needed to provide incentives for bankers to be appropriately prudent. However, this ignores the role and importance of the externalities.

The properly famous Modigliani and Miller theorem states that, under some carefully structured assumptions, the value of a firm should be independent of its capital structure.[7] The basic intuition is that, as equity capital increases proportionality, the risk premium on debt should fall away *pari passu*. Nevertheless, this does not happen in the real world because of taxation law, which allows passive interests on debt to be deductible for tax and because of the costs of insolvency which, in the case of big bank, would be mostly social and therefore externalised rather than internalised. For this reason and to the extent that a social cost exists in bank's financial crack, although it is difficult to quantify, it has been argued that society has the right to impose regulations on capital, liquidity and margins that should reduce the risk of insolvency in the markets.[8]

More than normal firms, banks are shown to have a rationale to redeem or rollover financing in their normal course of business, reflecting an ongoing need to borrow and raise new funding. This necessity is due to their much stronger incentive to maintain credit quality, since their competitiveness relies on a high credit rating. Furthermore, banks present a capital structure different from the other normal firms as a result of the particular activities that such companies carry on, which embrace a certain degree of risk management and a major concern for solvency and liquidity.[9] Fundamentally, the function of financial institutions is considered to be the heart of the economy: they invest their funds to pump through the economy and sustain the markets. They are vital for the health and financial stability of the markets. Banking capital regulation is essentially justified by the necessity of providing a safety net for the protection of depositors from the risk of bank failures. Because bank failures can contaminate other financial institutions and, ultimately, the economic system as a whole, it is generally accepted that a core purpose of financial regulation is to mitigate against systemic risks, like a global credit crunch. Such risks are externalities, their cost to the economy as a whole is greater than the cost to a firm whose actions are creating the risk. Therefore, concerns about systemic risk and negative externalities that can arise from a bank's failure and asymmetric information on its financial wealth are the main rationale for capital adequacy requirements and they are all related to market confidence and consumer protection.[10]

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[7] Modigliani, F.; Miller, M. (1958). "The Cost of Capital, Corporation Finance and the Theory of Investment", *American Economic Review* 48 (3): 26 1—297.

[8] Goodhart [2010, 179-183].

[9] Humphreys and Ireland [2006, 141-145]; Vasan [2006, 9-10]; Financial Times, *Scramble to exploit "hybrid" financing, Companies rush to new lucrative funding device,* 6 February 2006, p. 18; Financial Times, *Banks hope to cash in on rush into hybrid securities,* February 6 2006, p. 25.

[10] 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.

II. Hybrid financial instruments and regulatory capital arbitrage

Banks and financial institutions attempting to lower the cost of capital or to boost their risk-based capital ratios have but two options for achieving that end under the 1988 Basel Capital Accords. The first is to increase the measures of regulatory capital counting as equity (tiers of capital) and the second is to decrease the regulatory measures of total risk counting as debt and appearing in the denominators of the total risk-weighted assets ratios. Evidence has suggested that in some growing circumstances banks have attempted successfully 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 bank's capacity to absorb future unexpected losses. In particular, they 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 or issue hybrid securities to reduce (increase) substantially its regulatory measure of risk (or equity provision), with little or no corresponding reduction (increase) in its overall economic risks (or equity provision) is a process termed "regulatory capital arbitrage". The intuitive consequence is that very likely these artificial capital transactions can mask deteriorations in the true financial conditions of banks.

The regulatory capital arbitrage activity has been fuelled by the growth of hybrid financial instruments and securitization techniques and it is very common phenomenon especially among the largest banks. Regulatory capital arbitrage is the direct consequence of the law's failure to match the regulatory capital with the relevant economic risks and claims so as to unify legal capital and economic capital. In fact, sometimes large differences exist between underlying economic risks and the notions and measurements of risk implicit in regulatory capital standards. Regulatory capital arbitrage exploits this fact. Furthermore, sometimes the legal intervention trying to re-address this problem has produced instead wrong incentive among the parties that had the consequence to even enlarge the problem. This section looks at the interaction between the Basel Capital Accords and the accounting standards - on the one side, and between the Basel Capital Accords and the financial analysis of the credit rating agencies (CRA) for risk assessment - on the other. The section carries out an analysis of the regulatory concerns.

a. Classification of hybrid financial instruments

The first source of regulatory capital arbitrage comes from the attempt of the regulatory bodies to classify equity and debt claims in the corporate financial structure. The financial instruments' classification problem is due to the existing differences between the same principles-based set of standards issued by the International Accounting Standard (IAS) and US Financial Accounting Standard (FAS) Boards and between these standards and the capital adequacy requirements provided by the Basel Accords. Many hybrid financial instruments have developed in the markets as a consequence of the inadequacy of the typical equity or debt instrument. This has further complicated the regulators' task. While accounting disciplines are

targeted to a dichotomous classification, the capital adequacy requirements for banking regulation seem to recognise a continuum in the capital structure accepting a flexible classification. This is implicit in the choice of having several tiers of capital. The UK Company Act 2006 defines equity share 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"*.[11] 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 dividend or capital is not fixed (or deferrable).

In accountancy, 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.[12] The European accounting rules makers have chosen not to make the definition of equity conceptually based, but simply based on an arithmetic calculation: that is, knowing assets and liabilities, equity can be inferred. The purpose of this choice is the desire to include the totality of classes of shares without entering in difficult legal definitions. Indeed, some items included in the equity of the balance sheet are merely "accounting figures", not being capital instruments in their own right, as they are not based on contracts. Some of them are based on statutory requirements, such as retained earnings. Others, such as currency translation adjustments or gains and losses that have been recognised directly "in equity", are neither based on contracts nor statute. Under current IFRS, these items are not recognised in the income statement (revaluation reserve, cash flow hedging reserve etc.). They are simply figures that exist as a result of certain accounting conventions. However, since there is a claimant to these amounts, at least upon liquidation, they still do form capital *interests* that are attached to a capital instrument. On the other hand, recognizing 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 on their intensity. The claims of the company's assets generally feature a combination of certain criteria such as term, type of return and existence of voting rights and their corresponding attribute: fixed term vs. perpetual life, fixed vs. variable return and existence of positive or negative covenants. Shares and bonds strongly differ in the intensity of their claims. However, in between these two distinct categories, there is a myriad of hybrid financial instruments that mix characteristics which are generally associated with straight equity and straight debt, making their classification into a dichotomous structure of capital very difficult.[13]

Difficulties in classifying claims into the equity-debt scheme arise especially when the single characteristics point into different directions. For example, capital claims which 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 which give the right to a fixed return as the ordinary bonds while having no maturity or rights in liquidation as the ordinary shares. So doing, it is possible to replicate any typical characteristic of equity or debt with hybrid financial instruments while obtaining a different classification.

Godfrey J., Chalmers K. and Navissi F., *The Systematic Risk Effect of Hybrid Security Classification*,

[11] s. 548 (ex s. 744 of the CA 1985).

[12] IASB, F. 49(c).

[13] Connors and Woll [2002, 175 and 181].

1. The definition of capital in banking prudential regulation

The capital requirements for banking prudential regulation show a more flexible approach to the equity-debt classification. A broad range of various types of capital, quasi-capital or reserves capital available to a bank other than the traditional concept of ordinary paid–up shares could be treated as capital or as a proxy for capital in a winding up. These additional resources can be used under the condition that the company maintains a minimum of core capital with characteristics normally ascribed to the holders of ordinary share capital. To achieve the distinction between the different types and characteristics of acceptable capital, Basel Accords distinguishes between three tiers of capital, with a further differentiation between the components in the tiers of capital: core capital and innovative Tier one, upper and lower Tier two, or supplementary capital and upper and lower Tier three capital.[14] Recently, in light of the latest financial crisis the Basel Committee proposed significant changes to simplify Tier two capital, in particular the removal of the upper and lower tiers and their replacement with a single set of criteria which resemble those currently applicable to lower Tier two capital only and the elimination of the Tier three capital.[15]

These tiers broadly reflect the extent to which instruments meet the key underlying principles of capital with Tier one being the highest quality form of capital. In considering the relevant characteristics for regulatory capital, various mechanisms have evolved to provide loss absorbency of the principal amount of a hybrid instrument depending on the actual situation of an institution. These include subordination, availability or permanence of the instrument, flexibility to cancel coupon/dividend payment, full access to waived payments, principal write-down features, convertibility into higher forms of capital and the fact that the instruments must not be taken into account for the purposes of determining whether the institution is insolvent.[16] Therefore, to be considered as Tier one capital, financial instruments should contain provisions for cancellation of dividend payments and deferred dividends should be non-cumulative, so that the issuer is given discretion over coupon payments without risk of investors invoking default and triggering legal insolvency.[17] They should be also issued with no maturity or have a

[14] Basel Committee on Banking Supervision, 2001, *The New Basel Capital Accord*, Bank for International Settlements, available at http://www.bis.org. In UK, the FSA deals with characteristics of capital in GENPRU 2.2.5G. In USA, the Federal Reserve deals with characteristics of capital in "Federal Reserve System, Capital Adequacy Guideline for Bank Holding Companies", 2004, 12 C.F.R. Part 225, App. A, section II.A. Table II-5 applies to bank holding companies with consolidated assets of $ 150 million or more. The others are listed in Part 225, App. B of the same guideline.

[15] BCBS, *Strengthening the resilience of the banking sector*, Consultative Document, December 2009. Contra, see the proposals of the CEBS, Guidelines on Hybrid Capital Instruments, December 2009 and the FSA, *Strengthening Capital standards 3,* CP, December 09/2009. See CEBS, Report on a quantitative analysis of the characteristics of hybrids in the European Economic Area (EEA) 13 March 2007; Proposal for a common EU definition of Tier I hybrids, 26 March 2008; CEBS CP27, Implementation Guidelines regarding Hybrid Capital Instruments, 22 June 2009 and the related responses arrived for the end of September 2009; see also the FSA's DP 07/6, Definition of capital, December 2007; the feedback paper FSO8/5, July 2008.

[16] See art. 63(a) para. 2 of the EU Directive 2006/48/EC.

[17] See FSA Proposals, paragraph 3.34 suggesting no more than one step-up over the life of the instrument is accepted only if they result in an increase over the initial rate that is no greater than, either: 100 basis points, less the swap spread between the initial index basis and the stepped up index basis; or 50 per cent of the initial credit spread,

minimum maturity of 30 years, subordinated to all depositors and senior only to ordinary shares.[18]

In order to enlarge the range of potential instruments that could be issued as Tier 1 capital and facilitate banks' fund raising, the CRD Directive, following CESB's indication, proposes as Tier 1 capital some additional capital absorbing losses on a "going concern" basis also known as innovative Tier one capital.[19] This capital mainly consists in hybrid financial instruments that can be issued to the market up to 15 per cent of the total Tier one capital.[20] The hybrid financial instruments issued as innovative Tier one capital are forms of capital that do not fully meet the requirements for permanency and absence of fixed servicing costs that apply to Tier one capital.[21] Thus, the dividends paid on these innovative instruments are cumulative in cash or kind. In addition, they are often redeemable instruments and a pure call or any feature in conjunction with a call, which might lead to the instrument being redeemed, is permitted after a minimum of five years from issue.[22] Innovative tier one capital is considered as debt for tax purposes.[23] Thus, the company can deduct the passive interests paid on this capital and maintain the same earning per share.[24] Finally, the criteria for Tier one innovative capital also address instruments issued indirectly via special purpose vehicles (SPV).

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less the swap spread between the initial index basis and the stepped up index basis. Contra, see Basel Proposals, para. 77 that suggested to include in Tier 1 capital only instruments with no step-up clauses.

[18] See art. 57(a) of the EU Directive 2006/48/EC. Unlike CEBS and FSA, the Basel Committee proposed to amend the CRD and include in the Tier one capital only undated instruments. Therefore Tier one capital typically includes: (a) ordinary share capital issued and fully paid, (b) perpetual non-cumulative preference shares and (c) internally generated capital, such as retained earnings, disclosed reserves and minority interests in the equity accounts of consolidated subsidiaries. See Basel Proposals, para. 15

[19] Unlike the Basel Proposals, which have not yet been "calibrated", the CEBS Guidelines and FSA Proposals are framed in terms of three buckets of non-core Tier 1 capital with maxima set at 50 per cent or 35 per cent (if 15 per cent of innovative capital exists) of total Tier 1 capital after deductions. See the FSA Proposals, paragraphs 3.21 and 3.27.

[20] This 15 per cent being a sub-limit of the 50 per cent limit on perpetual non cumulative preference shares. The 15 per cent sub limit means that a firm cannot count as part of its tier one capital resources both 15% of innovative Tier one capital and 50% of perpetual non cumulative preference shares. According to the FSA, such a security other than a share which fully meets the criteria required for non innovative tier one capital, does not exist nowadays in the market.

[21] The CRD Directive recognises instruments with a minimum 30-year maturity as eligible to qualify as innovative Tier one capital. In fact, consistent with the view of some credit rating agencies and accounting organisms, as long as there are strong mechanisms to ensure that capital is available when needed, there is not a real difference between long dated and perpetual capital instruments. One disadvantage of dated capital from a prudential perspective is that it could lead to capital being replaced at a higher cost than the current cost of capital. Although the current rules require amortisation over the last five years for lower tier two instruments, amortisation periods can be avoided by including a call date immediately before the start of the amortisation period. Amortisation also fails to prevent a cash outflow that would occur if dated capital matures during a period of financial stress.

[22] *See* Basel Committee on Banking Supervision, *International Convergence of Capital Measurement and Capital Standards*, updated to April 1998.

[23] BAM12040 - Regulatory framework: Innovative Tier 1 capital, *see* the web site of the HM Revenue and Customs at http://www.hmrc.gov.uk/manuals/bamanual/bam12040.htm

[24] In banking, the Basel Committee agreed that deeply subordinated, perpetual debt, with interest rate step-ups after 10 years, can constitute up to 15% of total tier 1 capital. However, in their recent proposal the Committee asked for the bracket of 15 per cent innovative capital to be eliminated. See, BCBS, *Strengthening the resilience, cit.*, December 2009.

The other two tiers of capital are Tier two and Tier three capital, which include features that conform less closely to the underlying principles, are limited to a proportion of the Tier one capital held. Tier one capital, being core capital, had to amount to at least 50 per cent of all the available capital that can be taken into account in assessing a bank's acceptable capital for capital adequacy purposes or 4 per cent of the entire risk weighted assets of a bank, although also this ratio may change with the overhaul of banking regulatory capital.[25] Tier two capital is subdivided into "upper Tier two" and "lower Tier two" capital. The upper Tier two includes undisclosed reserves, asset revaluation reserves, general provisions/loan loss reserves, hybrid capital instruments like mandatory convertible debt and perpetual cumulative preference shares, term subordinated debt and intermediate term preference shares. The characteristics of these securities consist of the same features presented by the Innovative Tier one instruments. They must be perpetual, which means without any fixed term, although a call provision can be included in the terms of contract. In practice, they normally cannot be redeemed within a minimum of five years from issue. However, their dividend must be cumulative, that is, servicing costs cannot be waived at the issuer's option, although they may be deferred.[26]

While the upper Tier two capital is perfectly loss-absorbing (since the holders of these securities have no right to the payment of their dividends or the repayment of their capital), the lower Tier two can only absorb losses in the event of insolvency and cannot protect the bank against winding up. Lower Tier two capital includes fixed-maturity preference shares or subordinated debt with a minimum initial maturity of five years.[27] Although the main focus of the new Basel Proposals is on Tier one capital, significant changes are also being proposed to Tier two capital in relation to the financial crisis. The upper and lower sub-categories of Tier two capital are to be eliminated. Instead, there will be "one set of entry criteria"[28] and "Tier two capital should correspond to capital which… absorbs losses on a gone concern basis".[29] Tier three capital consists of fixed maturity subordinated debt with a minimum maturity of two years. Tier three debt is not amortised and it ranks *pari passu* with "lower Tier two" debt capital. Given its short maturity and limited role, as trading book capital requirements are typically small, Tier three is a relatively less important form of bank capital. For this reason, the BCBS proposals suggested this kind of capital to be eliminated.

2. Distinguishing financial instruments with characteristic of equity: IASB's and FASB's classification approach

Entities have long struggled with the question of whether instruments they issue to raise capital should be reported as liabilities or equity when those instruments possess characteristics of both debt and equity. The current accounting requirements governing the classification of financial instruments as liabilities or equity under both IFRS and U.S. GAAP have been criticised 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

[25] In UK, the FSA included these two requirements in GENPRU 2.2.29R and 2.2.31G.

[26] See GENPRU 2.2.159R to GENPRU 2.2.181R.

[27] See GENPRU 2.2.159R to GENPRU 2.2.174R and GENPRU 2.2.194R to GENPRU 2.2.196R.

[28] Basel Proposals, paragraphs 72 and 78.

[29] Basel Proposals, paragraph 70.

involving those instruments. Responding to these concerns, in February 2006, as part of their Memorandum of Understanding, the IASB and FASB Boards agreed to undertake a joint project on financial instruments with characteristics of equity to improve and simplify the financial reporting. A final standard is expected to come out in the first half of 2011.

According to the international accounting standards, it is IFRS 7 (previous 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.[30] Its 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.[31] Therefore, IAS 32 shifts the view from equity interests to equity instruments. It defines equity instrument as *any contract that evidences a residual interest in the assets of the company after deducting all its liabilities*.[32] In contrast, a financial liability is defined as any liability that is the 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. 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 there is a contractual obligation of the issuer 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.[33]

This definition excludes the economic compulsion. Despite the lack of a contractual obligation to deliver cash or another financial asset, sometimes the terms and conditions of an instrument may interact in a way that the entity is economically compelled to act in a certain way without having a contractual obligation. For example, an entity may be economically compelled to exercise a right to repay a liability that is legally a perpetual instrument if the terms and conditions contain a clause that the interest rate payable on this instrument will quintuple at a certain point in time. However, since IAS 32 covers only contractual obligations, the financial instrument would be classified as equity. [34]

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 transaction 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 recognised as a financial liability, but as equity. Conversely, if a variable number of equity instruments is delivered or if delivery is against reception of a variable amount of cash, the instrument is a financial liability.[35] The reasoning underlying this rule is that the financial position of the contract holder is, due to the

[30] Reg. (CE) n. 2237/2004, in Official Journal 31st of December 2004.

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

[32] IAS 32 para 11.

[33] IAS 32 para 11.

[34] IAS 32 para 20

[35] IAS 32 para 16(a) and 16(b).

exchange relation being fixed, somewhat similar to that of a present holder of equity instrument. 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.

The other exception concerns puttable financial instruments. Although they are 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.[36] The rationale of 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.[37] These financial instruments entitle their holders with the right 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 put right, there are no other obligations.[38]

In contrast with the IASB' principles stated in IAS 32, the FASB Accounting Standard Codification 480 (previous FAS 150) restricts the definition of equity, leaving the liability category as a default basket for most of the hybrid financial instruments. FASB employed two perspectives from which hybrid instruments are differentiated: the solvency perspective and the valuation perspective. Both perspectives provide an excellent basis for discussing the accounting for complex instruments. The solvency perspective reflects the presence or absence of contractually specified claims on assets. Therefore, debt holders can file for a company to be put in liquidation in order to access the assets and satisfy their debt, whereas shareholders cannot. The valuation perspective reflects the presence or absence of an ownership relationship or residual claim. Following this reasoning, common shareholders have a residual claim, which means they are paid only after everyone else, while debt holders have a fixed claim that give them a priority in case of liquidation of the company. In other words, the two main bases for sequencing and disaggregating claims, so as to enable financial statement users to distinguish obligations from non-obligations and residual claims from non residual claims, are the contractual specificity of their payoff, that is almost completely unspecified in the common stock, whereas it is specified in detail in the debt and their order of priority in the event of bankruptcy. According to the first criterion, common equity is the ultimate residual claim and all

[36] See IASB paper, *Amendments to puttable financial instruments and obligations arising only on liquidation,* February 2009. The amendments are effective for annual periods beginning on or after 1 January 2009.

[37] In the consolidated financial statements, the financial instruments held by minority interests are not in the group's most subordinated class of instruments. This is because, if the group were to liquidate, the claims of minority interest holders to the net assets of the subsidiary have to be satisfied before the parent's share of the net assets of the subsidiary can be distributed to claimants to the assets of the parent. Therefore, in all cases, it is classified as a financial liability in the consolidated financial statements.

[38] 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.

other claims reduce the value of common equity and increase the mean and the variance of the return on common equity. According to the latter criterion which follows the insolvency risk assessment, since a firm can become insolvent only as a result of its obligations, those are liabilities while non-obligatory claims are equity.

Thus, perpetual instrument are typically classified as equity, because its life does not have a specified limit that 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. Ownership instruments that are redeemable for cash or another asset at the option of the holder or upon the occurrence or nonoccurrence of an event as puttable shares, are classified as temporary (mezzanine) equity by SEC registrants[39] and otherwise as permanent equity. Mandatorily redeemable instruments that embody an unconditional obligation requiring the issuer to redeem the instrument for cash or other assets on a specified or determinable date or upon an event that is certain to occur are classified as liabilities.[40] Under the new IASB and FASB joint-approach, however, the mandatorily redeemable financial instruments would be classified as equity rather than as liabilities, while generally the puttable instruments that do not represent fully membership interests could no longer be classified as equity in their entirety.

Under IAS 32, a derivative that will be settled by the issuer exchanging a fixed functional currency amount of cash or another financial asset for a fixed number of its own equity instruments is typically classified as equity. 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." Conversely, under existing U.S. GAAP, no specified-for-specified criterion is associated with the assessment of whether contracts over 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.[41] Nevertheless, if the only variables that could affect the settlement would be inputs to the fair value of a fixed-for-fixed forward or option on equity shares, such as the strike price of the instrument, the term of the instrument, expected dividends or other dilutive activities, stock borrow cost, interest rates, stock price volatility, the entity's credit spread, and the ability to maintain a standard hedge position in the underlying shares, ASC 815-40-15 permits equity-classified contracts to embody adjustments to the exercise price. The proposed specified-for-specified criterion appears more restrictive, since it only permits adjustments that ensure that the counterparty receives a specified percentage of total shares that were outstanding on the issuance date.

The accounting rules for hybrid instruments generally distinguish between compound financial instruments and hybrid instruments. A compound financial instrument consists of multiple components of which at least one is a liability and another is equity, while hybrid instruments present inseparable equity and debt components. IAS 32 deals with compound instruments by the "decomposition method". It requires the component parts to be accounted for and presented separately as financial liabilities, financial assets or equity instruments in accordance with the substance of the contractual arrangements. The split between the liability and equity components of a compound financial instrument is made at issuance and is not

[39] see ASC 480-10-S99.

[40] see ASC 480-10-25-4.

[41] See ASC 480-10-55-33

subsequently revised, even when exercise of the conversion option becomes more likely.[42] The company must, on initial recognition, measure the fair value of the compound instrument as a whole, measure the fair value of the liability component and assign a value to the equity component by deducting from the fair value of the whole instrument the amount separately determined for the liability component.[43] On conversion of a convertible, the company derecognises the liability component and recognises it as equity. The original equity component remains as equity, although it may be transferred from one line item within equity to another. There is no gain or loss arising on conversion at maturity.

Compound financial instruments separation is required in all cases in the balance sheet of a company, while for hybrid financial instruments, it is only required where certain conditions are met. In fact, a hybrid financial instrument has characteristics of a liability and equity but does not have distinct components that are straight debt or common equity. Preference shares provide a perfect example of hybrid financial instrument following the distinction between financial liabilities and equity made by IAS 32. When a hybrid security is mixed with a detachable feature as in the case of a redeemable preference share convertible at a fixed price, the instrument has to be accounted for as a liability (preference share) and as equity for its equity put option element. Where separation is required, an embedded derivative is accounted for at fair value, unless it is functioning as a hedge.[44]

Under existing U.S. GAAP, some convertible debt instruments are classified as liabilities in their entirety and others are bifurcated into liability and equity components, in particular, convertible debt with a beneficial conversion feature and convertible debt that the issuer may elect to settle in cash upon conversion.[45] Similarly to IASB, existing U.S. GAAP ASC 480-10 does not include the concept of economic compulsion in distinguishing between liabilities and equity. However, the IASB's and FASB's boards have decided that debt instruments that are convertible, at the holder's option, into a specified number of instruments that will be classified as equity in their entirety upon issuance should be separated into a liability component and an equity component. Other debt instruments that are convertible into a variable number of shares should be classified as liabilities in their entirety.

Even if globally accepted, the approach of breaking compound financing instruments into components that are classified separately at issuance has generated disagreement among the scholars of accounting and law.[46] The worries come from the lack of reliability of some compound instrument valuations, especially when a financing instrument includes two or more options that interact. For inseparable compound financing instruments, both the probability that the instruments will pay off in a given form and its other valuation parameters change over time, causing the relative values of components to change, often in a negatively correlated fashion. Furthermore, although the majority of this instrument's value is usually classified as a liability under both systems, empirical studies have underscored the fact that both firms and investors

[42] IAS 32 para 28.

[43] Thereafter, the fair value of the compound instrument as a whole is its nominal value. The liability component is recognised at fair value calculated by discounting at a market rate for a non-convertible debt the cash flows receivable (interests received during the years) plus the repayment of the bond at the end.

[44] The same requirement applies according to the American financial accounting standards. Compare with Barth, Landsman, and Rendleman [1998, 73–102]; Barth, Landsman, and Rendleman [2000, 455–479].

[45] Depending on whether the criteria in ASC 415-40-15 are met.

[46] Lewis, Rogalski and Seward [1999, 5-27].

view convertible debt primarily as equity in certain circumstances.[47]

Instrument	Current U.S. GAAP	Current IAS 32	Proposed New Classification Model
Common share	Equity	Equity	Equity
Perpetual preferred share	Equity	Equity	Equity
Share issued by a subsidiary that is a limited-life entity	Equity	Liability	Equity
General partnership interest when (1) the general partner takes an active role in the management of the partnership and (2) the instrument must be redeemed if the general partner retires	Equity	Liability	Equity
Ownership instrument that is redeemable at the option of the holder (puttable shares), other than upon retirement or death	Equity (mezzanine equity for public companies)	Liability	Liability (fair value of put option) and equity (remainder)
Options, rights issues, and warrants settled by delivering a specified number (fixed number under IAS 32) of shares for a specified price (fixed price under IAS 32)	Liability or equity (depending on whether the criteria in ASC 815-40-15 (formerly EITF Issues 07-5[8] and 00-19[9]) are met)	Equity	Equity
Perpetual preferred share convertible into a specified number (fixed number under IAS 32) of ordinary shares	Equity	Equity	Equity
Debt convertible into a specified number (fixed number under IAS 32) of shares	Typically liability	Liability and equity	Liability (fair value of debt) and equity (remainder)
Debt that is convertible, but not into a specified number (fixed number under IAS 32) of shares	Typically liability (depending on whether the criteria in ASC 815-40-15 are met)	Liability	Liability (in its entirety)

b. The inclusion of credit rating for risk assessment in the banking capital regulation

The second source of regulatory capital arbitrage originates from the wrong incentives created by the law in attempts to define minimum capital requirements for prudential regulation. In 1988, the Basel Committee on Banking Supervision **(**BCBS**),** which was entrusted with the creation of minimum standards for internationally active banks, published the *Capital Accords* (Basel I). Basel I was intended to achieve an harmonisation of the minimum capital standards for banks imposed in each country, so that the banks of anyone country would not enjoy a

[47] Patel, Emery and Lee [1993, 181–192].

competitive advantage by having a weaker capital requirement than might be required in another country.[48]

BCBS established a capital requirement of 8 per cent as a one-size fits-all measure focused on credit risk. However, this approach has been termed as providing a crude and simple methodology for assessing capital adequacy. The main criticism was that it failed to take into consideration contemporary key insights of corporate finance, in particular in the form of concentration risk, hence abstains from the relative absolution from capital requirements of the books of banks with well-diversified portfolios. In particular, criticism was raised against the equal risk-weighting given to all credits whether of high or low credit quality, because the approach was limited to only four risk "buckets" (of 0, 20, 50 and 100 per cent respectively). While a 100 per cent risk-weight means a full capital charge equal to 8 per cent of that value, a 50 per cent risk-weight implies a capital charge of 4 per cent of that value.[49]

That has had some unintended and unexpected consequences: banks were into riskier businesses. This simple structure encouraged transactions mainly benefitting from arbitraging bank capital. Banks found various ways to avoid exceeding the 8 percent benchmark, while assuming risk incommensurate with the 8 per cent benchmark in real economic terms, most notably in the form of securitisation and derivatives transactions. In addition, it compromised the effective and more advanced regulation of banks. Thanks to securitisation, a financial institution is able to sell a part of its loans, in particular that of better quality, and with the proceeds, lend to riskier borrowers so as to increase the expected returns of its portfolio with no change in capital requirements.[50] By focusing mainly on the 8 per cent benchmark, regulators increasingly undervalued the significance of a bank's operating environment, opportunities for regulatory capital arbitrage, and its risk profile, i.e. asset quality, loan valuation, and loss recognition.

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".[51] This is achieved through the requirement of more capital for holding risky positions. Linking capital charges to the riskiness of exposures tends to preclude banks from taking excessive risks.[52] Pursuant to this revised framework, Basel II sets forth a "three pillar" framework

[48] This was in order to achieve the so-called "level playing field".

[49] For a multi-faceted critique of the Basel proposal, including a collection of authorities critical of the use Committee's proposed use of private credit rating agencies, see U.S. Shadow Financial Regulatory Committee, A Proposal for Reforming Bank Capital Regulation, Statement No. 160 (Mar. 2, 2000). See Edward I. Altman & Anthony Sanders, An Analysis and Critique of the BIS Proposal on Capital Adequacy and Ratings (Jan. 2000).

[50] Greenbaum and Thakor 1987 and Pennacchi 1988 [Jackson 1999 and Jones 2000]

[51] 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.

[52]

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 "standardised approach" is based on set parameters, under which transactions would, in general, be ascribed risk weightings based in turn on external assessments of risk relevant to the counterparty. The external assessment is carried out by the authorised credit rating agencies (CRA). As an alternative, risk assessment in a number of categories of exposures could evolve, with the permission of the competent authority (dependent upon a satisfactory outcome of the supervisory review process), to an approach based either partly or wholly on a bank's own assessment of risk, called the "Internal Ratings Based approach".[53] The standardised approach constitutes a mere refinement of the Basel I method of measuring credit risk via the utilisation of sophisticated and commonly accepted credit ratings of authorised CRA. By contrast, the IRB approach represents the measurement of credit risk via the bank's own internal rating systems, subject to the explicit approval of the bank's supervisor.[54]

In light of the ongoing financial crisis, the involvement of the CRA in banking capital supervision have been put under discussion.[55] The function of the credit rating agency is to transmit information to uninformed investors concerning the default risk of the issuers. This role has a twofold effect that consists in moderating some principal-agent problems. By providing information on the rated security, credit ratings are aimed at reducing information asymmetries. So doing, ratings can solve collective action problems of dispersed debt investors by helping them to monitor performance, with downgrades serving as a signal to take action. At the same time, by rating a security and the credit-worthiness of an issuer, they cap the amount of risk that the agent can take on behalf of the principal. However, during the years, the role of the CRA has evolved due to the great importance that the rating acquired on the financial markets also thanks to an increase of the ratings-based regulations. In fact, the rating, which has been conceived as an opinion of financial journalists, is today considered as a real seal of approval giving rise to favourable regulatory treatment.[56]

In particular, Basel II is considered as an example of the regulatory involvement of CRA in the development of capital standards.[57] In fact, the standardised approach entails an explicit recognition of the CRA in the financial markets and increases the importance of obtaining a favourable credit rating: if the bank's commitments to its obligors are highly rated by a recognised or registered CRA, it will be required to hold less regulatory capital.[58] In addition, reliance on ratings often reflects regulatory requirements in most countries. 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

[53] See McKnight [2007, 327-340].

[54] This was estimated by CEBS to be at around EUR 213 billion as of 31 December 2006— representing around 11.5 per cent of total eligible own funds. See March 2007: Report on a quantitative analysis of the characteristics of hybrids in the European Economic area (EEA).

[55] Hunt [2009a, 146-7].

[56] Partnoy, F., *How and Why Credit Rating Agencies Are Not Like Other Gatekeepers*, Legal Studies Research Paper 07-46, 2006, University of San Diego School of Law.

[57] Jackson, [2001, 314].

[58] Partnoy F., *Overdependence on credit ratings was a primary cause of the crisis,* Fondazione Eni Enrico Mattei Nota di Lavoro, No. 27/2009.

Commissioners which monitors the financial condition of insurers in US States. Finally, 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. Conversely, rating downgrades not only make investors unwilling to purchase the affected finance products, but also put great pressure on the balance sheets of the banks basing their risk management practices on external credit rating. Therefore favourable credit rating have two primary advantages for the bank: they render an issue of capital appealing to the market (investors) and they make the balance sheet of banks appear safer, increasing their shares value and empowering their capacity of raise additional debt. This provides a great incentive in engaging in creative financial engineering that is to structure and package credits into innovative finance products just to obtain a higher credit rating without spending time to verify the quality of the underline assets.[59]

From a macro economic point of view, it has been said that the Basel II "standardised approach" may create wrong incentives. The riskiness of assets varies over the business cycle and risk assessments based on external evaluation of the credit rating agencies reflect this pro-cyclicality. The pro-cyclicality in ratings create a similar pro-cyclicality 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 will hold too much capital or under-lend during the downturn when macroeconomic stabilisation requires an expansion of lending.[76] The problem of pro-cyclicality is enhanced by the difficulty for CRA to completely evaluate and detect all the risks related to the hybrid instruments and securitized credits fuelled in the markets. This has arisen the question whether the implementation of the standardised approach is beneficial to the financial markets. The availability of the standardised approach may in effect encourage complacency among Basel II financial institutions, so as to easily defer the fundamental judgments involved with credit risk measurement to the external CRA. This may be done either because it is economically less efficient to set up a complex and comprehensive internal rating model, or because the standardised approach may in fact produce higher ratings than an internal model that is subject to the supervisory approval.

From a solvency perspective, hybrid instruments are the way to achieve a better rating (in relation to a better solvency situation) and the better-quality equity capital classification possible without diluting shareholders capital. The law does not impede it, since voting right is not a key characteristic of regulatory capital and so long as the hybrid capital fully meets the characteristics of capital relevant to the tier concerned they can be part of the risk capital. After all, promoting a zero failure regime requiring firms to hold capital at an excessive high level would be a wide too unfair regulatory burden for banks and financial markets. However, properly loss-absorbent capital is generally relatively expensive, because the company should compensate the investors for their risk. For this reason, the price of an instrument should be a good indicator for the transfer of risk to the investor. It is essential that every financial instrument is priced to reflect the risk it incurs, so that investors may decide their investments with the perception that a higher return carries a higher risk. The majority of these instruments present complex features that may change the evolution of the security over time and consequently the credit quality of the issuer, leading to uncertainty.

The failure of rating agencies to correctly price structured debt and predict defaults has prompted many commentators to ask whether the rating system for such securities is fundamentally flawed. Some have suggested that the failure reflects a basic difference in the

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quality of data used to develop ratings. This was due to the fact that most of the data available for structured debt ratings is based on non public, non standard, unaudited information supplied by the originator or nominal issuer. But also to the inadequate historical data and, in some cases, inappropriate computer-driven simulation models adopted to determine the risk, of default and losses.[60]

Nevertheless, the recent structured finance failures are only the last of a series of failures to foresee severe financial problems.[61] The CRA's slow reaction to market events has raised the question of whether regulators and market participants should rely on credit ratings at all. After all, ratings have little informational value as indicators of absolute risk and rarely appear to affect market prices. Instead, market-based indicators linked to share price and credit default swap spreads are much more forward-looking than ratings in the case of failing firms. In truth, the market-based indicators although they provide valuable point-in-time information for trading purposes, they can be extremely volatile and susceptible to mark manipulation. Therefore, they could never be reliable signals for the initial sale of a security or for the analysis of specific securities for longer-term investment.[62]

By contrast, ratings are intended to be "through the cycle" indicators. Their methodology has two aspects: a focus on the permanent component of default risk and a prudent migration policy. Based on the first aspect, agency ratings disregard short-term fluctuations in default risk. By filtering out the temporary component of default risk, they measure only the permanent, long-term and structural component. The second aspect concerns the enhancement of rating stability by a prudent migration policy. According to it only substantial changes in the permanent component of default risk lead to rating changes and, if triggered, ratings are partially adjusted to the actual level in the permanent component of default risk. Thus, they react very slowly. It can therefore be asserted that while CRA's methodologies are ideal to evaluate bond issues, they are hardly appropriate for the complex structured products that have been fuelled in the last years in the markets.[63]

At the same time, the pressures to maintain market share and increase profits appear to have prompted CRA to relax their own criteria and to avoid hiring new staff or investing in costly new databases and rating models. Many criticisms moved against the CRA were attributable to their conflicts of interest — particularly relating to the "issuer pays" business model — that were not properly managed. In fact, CRA are paid by the issuers and by the investors. Thus, in theory, it is to the issuers they should show their commitment. On the institutional side, few investment banks controlled much of the deal flow and often "shopped around" for the highest ratings on their lucrative issuance deals, including by playing one rating agency against another when informally consulting them on structures to achieve high ratings. However, the problem is not that CRA provide undue assistance to issuers of hybrid products, because CRA are obliged to inform issuers of the details of the techniques used to assign ratings

[60] For example, there was a failure to appreciate default correlation within and across pools of assets due to common underlying economic factors such as the housing market or to contemplate declines in housing prices.

[61] See for examples sovereign issuers, as in Latin American debt crises and the 2001 collapse of Argentina and established corporations Enron, WorldCom, Parmalat and Lehman Brothers, which the three large rating agencies were rating with a high investment-grade rating until the day it filed for bankruptcy, on September 15, 2008.

[62] See the FER (Financial Economists Roundtable), *Reforming the Role of the Statistical Ratings Organizations in the Securitization Process*, Statement released the December 2008, Philadelphia.

[63]

and to answer questions of clarification about such methodologies.[64] After all, more information is better than less, The problem arises when CRA and issuers jointly apply a rating that CRA, at bottom, believe is too high.[65]

Indeed, CRA are traditionally private companies monitored by decentralized market forces; thus, they normally need to remain competitive to preserve a place in the financial markets, However, so far, debt issuers have been rated by three or more main agencies and it is not surprising to note a tendency for the CRA's standards and assessments to become systematically lax in order to attract additional fees. From 2004, CRA introduced the application of fixed percentages to assess hybrid instruments for capital adequacy requirements so that less time is spent debating the "mechanics" of ratio calculations, both internally and externally.[66] However, fixed equity credit percentages suggest an *indifference point* between hybrid equity and common equity that may not always be appropriate. Therefore, CRA increasingly need to make careful qualitative judgments as to the relative importance of financial ratios and capital structure in their ratings analysis.[67] The danger is that an excessive proliferation of hybrid instruments would undermine the effective risk capital, especially if then the issued hybrid capital reveal to be not what it seems (for ex. loss absorbent as supposed). At the same time, it could also hinder new recapitalizations becoming a bather to entry for new potential investors. Therefore, it has become urgent matter to agree on how loss absorbency should be achieved in practice in order to better price hybrid capital's issues.

c. Summary of this section and analysis of the problem

Regulatory capital arbitrage raises a number of important policy concerns. Such activities tend to erode regulatory capital standards, and could impair regulatory discipline that is needed to limit systemic risk within the banking system and moral hazard associated with the bank safety net. The regulatory capital arbitrage operates in two ways through the use of the broadly called hybrid financial instruments and securitization structures. Firstly, hybrid securities pose a financial reporting challenge mainly due to the lack of harmonization in the international accounting standards. Balance sheet constitutes one of the most important pieces of information that the market has at its disposal to evaluate a company. Whereas in a world with no regulation, such as the one of M&M theorem, the classification of financial and administrative claims along an equity-debt continuum would depend only on the firm's reporting incentives and would be probably more consistent with the economic substance of each security; in real regulated world, the companies issue hybrids to benefit from regulatory advantages. Therefore, balance sheet classifications, if blurred or not relevant, can alter the investor perceptions of firms' risks,

[64] See IOSCO, Code of conduct. Fundamentals for Credit Rating Agencies, December 2004, section 3.5 and 3.7, accessible at www.iosco.org/l ibrary/pubdocs/pdf/IOSCOPD180.pdf

[65] Partnoy F., *Overdependence on credit ratings was a primary cause of the crisis,* Fondazione Eni Enrico Mattei Nota di Lavoro, No. 27/2009.

[66] Moody's Ratings, *Moody's equity credit basket system*, 2003; Standard & Poor's, *Hybrid Capital Handbook: September 2008 Edition,* September 15, 2008; Standard & Poor's, Corporate Ratings Criteria 2006: *Equity Credit: What It Is And How You Get It,* 2006.

[67] Report on Credit Rating Agencies, No easy Regulatory Solutions, Public Policy Journal of the World Bank, October 2009, at 1-8.

impeding a full evaluation of the firm's credit risk position and consequently distorting the supervisors' understanding of the systematic risk.

Secondly, the banking capital regulation has been unable to provide the right incentives for banks to maintain a sound level of capital and disclose the real credit risk to the market. Instead, the law has produced a strong incentive in issue loans only for the purpose of securitize these credits and re-invest the liquidity in higher return projects without caring of the correlated higher risk involved. The key issue of the increase of these hybrid products is probably not that too little regulatory capital is being required against these retained risks, because the underlying securitized assets tend to be of relatively high quality and a low capital requirements may be appropriate for these risks. Rather, a more serious concern is that by encouraging banks to securitize their highest quality assets, regulatory capital arbitrage may tend to reduce the average credit quality of the remaining un-securitized assets in the banking book to the point where the 8 per cent regulatory capital standard is no longer sufficient and reported regulatory capital ratios may misrepresent a bank's true financial condition. Distortions to reported regulatory capital ratios also may compromise market discipline, since these ratios are a key source of public information used by counterparties, investors, and other market participants when evaluating the conditions of banks.

Unfortunately, because of the lack of harmonization in the accounting standards and the large discrepancies between the true economic risks of assets and the regulatory measures of risk embodied within the Basel Accords, it has been impossible to fully evaluate the credit risk overall wealth of a firm and correctly price its financial instruments. At the same time, the regulatory capital arbitrage has produced a distortion in the investors and supervisors' perception of the firms' credit risks and therefore it has complicated the assessment and the recognition of the systemic risks. Unless these economic and regulatory measures of risk are brought into closer alignment, the underlying factors driving regulatory capital arbitrage are likely to remain unabated. Without addressing these underlying factors, supervisors may have little practical scope for limiting this phenomenon other than by, in effect, imposing more or less arbitrary restrictions on banks' use of risk unbundling and repackaging technologies, including securitization and credit derivatives. Such an approach, however, would be counterproductive other than politically unacceptable. In fact, the use of hybrid capital and securitization has improved banks' financial condition and the overall efficiency of the financial system. These financial instruments, which facilitate the regulatory capital arbitrage, are widely perceived as a ``safety valve" for mitigating the adverse effects of regulatory capital requirements that are quite arbitrary and exceed levels commensurate with an activity's underlying economic risks. Hybrid financial instruments reduce the cost of capital and allow a bank to undertake those low-risk activities that, while highly profitable on a risk-adjusted basis, yielded insufficient rates of return on the regulatory capital needed to support the business. Furthermore, economic research has showed that regulatory capital arbitrage is not the only reason why banks undertake securitization transactions. Finally, financial innovation and the ``unbundling" of credit risks is widely believed to have contributed to the closer integration of domestic credit markets, improved interest rate and credit risk management tools, and increased competition in the financial services industry during the last decades.

III. A functional approach to define the regulatory capital of banks

The basic insight behind regulatory capital arbitrage follows from the observation that, when capital standards are not based on any consistent economic soundness standard as, for example, the probability of insolvency, through hybrid instruments, securitization and other techniques it is often possible to restructure portfolios to have basically similar risks, but much lower regulatory capital requirements.[68]

Financial service authorities and other regulatory bodies heavily rely on accounting numbers as controls over regulations. Banks and financial institutions' compliance with the Basel capital adequacy requirements is measured and controlled through the use of accounting principles. Basel accords and international financial reporting standards principally interact at two levels, firstly in determining valuations of financial assets and liabilities and the level of provisions and, secondly, in establishing disclosure requirements.

a. Loss absorbency as the key relevant criterion to classify

The need for clear balance sheet structures from the investor's point of view seems to be a strong supporting argument for maintaining a twofold capital structure. Although in considering the classification of hybrid capital claims and the complex classification rules that have been developed by different institutions, the usefulness of the equity-debt split may be in doubt, The "true" empirical capital structure is to be depicted or mirrored by the capital structure as reported in the financial statements and the balance sheet in particular. Any balance sheet classification can only be deemed as faithful representation if it accurately communicates relevant information on the claims to .he company's assets. To present a relevant and reliable picture of the company, the balance sheet structure needs to reflect the structures of real word phenomena being reported.

With time, economic circumstances may change in a way that makes an existing twofold basic structure of the balance sheet no longer fit with economic reality. For this reason, it has been argued whether a strictly twofold capital structure of the credit side of the balance sheet is still the best representation of empirical capital structures or even a faithful representation at all, since the empirical capital claims are multi-dimensional.

Up to now, changes in empirical capital structures have sometimes led to corresponding adjustments in the definitions of the basic elements of "equity" and "liabilities" for accounting purposes. It might have been necessary to replace the elements themselves. Although innovative concepts, such as a threefold capital structure including equity, debt and "mezzanine" have been discussed,[69] they usually have been disregarded for practical reasons.[70] Despite some potential

[68] See Merton R.C., *Financial Innovation and the Management and Regulation of Financial Institutions*, NBER Working Paper Series No. 5096, April 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 Cumming C., *The economics of securitization*, Federal Reserve Bank of New York Quarterly Review 12 (3), (1987), at 11–23.

[69] This idea was already proposed long time ago, *see* Paton [1922, *passim*].

[70] Implementing a third class of capital or a no-split approach would require addressing questions that reach beyond a stand-alone revision of the current standards. See the report of the American Accounting Association's Financial Accounting Standards Committee [2001, 387-400].

benefits emerging from empirical studies,[71] a threefold capital structure would require a more fundamental revision of several aspects of current accounting law and, at the same time, they would not guarantee a complete homogeneity within each category. Amongst others, it would include revisiting the elements of financial statements and the concept of income determination and distribution. Traditionally, the dividing line in the balance sheet has been used to determine the dividing line in the income statement as well, with payments on liabilities being included in the determination of income and payments on equity instruments being displayed as distribution of income.[72]

However, a classification whether twofold or multiple, must imply a choice, which is not necessarily arbitrary, but which will illustrate one situation instead of another. At this aim, an equity-debt binary distinction can be extremely useful so long as a single relevant criterion is applied. In the context of prudential regulation of financial institutions, loss absorbency is likely to be the key relevant criterion. A functional approach to classify financial instruments in such a case would be making the regulatory capital loss absorbent both on a going and gone concern basis in order to reflect with priority the solvency of the firm. Additional information regarding the capital structure can be included in the notes to accounts.

A classification driven by several criteria may result in blurred classifications and create wrong incentives for managers to exploit the advantages of a particular classification. Arbitrary classifications may arise when in the process of separating claims into the equity-liability scheme the single characteristics of a security point into different directions. For example, a security has the financial expectation to participate in firm's gains and losses, which is associated with ordinary shares, but is at the same time repayable at a fixed date, which is generally associated with bonds. In situations in which firms' classification decisions are voluntary, it may not be feasible for investors to assess the underpinning economic substance of a firm's capital structure. A single relevant criterion to classify hybrids, which follows the economic substance of the financial instruments, should reduce information asymmetry and provide investors with information that enables more confident and more accurate systematic risk assessments.

b. Economic capital measures for a better understanding of the trade-off between risk and reward in the banks' regulatory capital.

In assessing the challenges posed by regulatory capital arbitrage, it is also important to note that the Basel Capital Accords regulation and its shortcomings have given rise to incentives that, while facilitating the supply of liquidity and the spread of risk also distorted banks' behavior in the markets. The standardised approach, which involves the CRA's external assessment of risk relevant to the counterparty, has revealed to be one of the causes for the deleterious "originate to distribute" model, which has fuelled securitization structures and off-balance sheet leverage in the market. The excess of this practice has gradually undermined the level and quality of the capital base. In other words, the wrong incentives created by the regulatory involvement of credit

[71] Hopkins [1996, 45-46], the author shows how analysts examined more carefully the attributes of hybrid securities as the mandatorily redeemable preference shares when they were classified in the mezzanine instead of either debt or equity.

[72] The approach would also involve consequential changes related to other issues currently under review by the IASB (e.g. consolidation, performance reporting.)

ratings and the subsequent increase in financial innovations have generated a form of credit rating inflation that have undermined the quality of credit ratings. In addition, the recent financial crisis has showed that the pro-cyclical riskiness of assets is reflected in CRA's ratings, which create a similar pro-cyclicality in capital charges that in turn can cause systemic disruption. Accordingly, the capital of banks increases when the overall economic is growing and decrease in the opposite case when the capital would be most needed. At first sight, the intuition would be to increase the risk-weights for the high-ratings given to the securitisation at a point in which this transaction may not be more convenient than a direct financing. However, this would be basically to contradict the CRA's own judgement on firms' credit worthiness, which does not seem the way followed by the European legislator.[73] Moreover, it would practically not solve the threat of systemic risk.

To address these deeper concerns, one could seek alternative approaches to capital setting standards. In the area of market risks that is risks on assets held in trading accounts, regulators have developed various portfolio approaches to the establishment of capital requirements. Unfortunately, the development of capital standards based on portfolio models is extraordinary complex, because they rely on analyses of the correlations in performance of many different types of assets while, for new types of credits, there is not historical data available. In addition, it may be that the appropriate way to measure credit risk will vary from institution to institution. A final approach to setting capital requirements is to rely more on market mechanisms and less on formulaic capital requirements. An interesting proposal suggested is to require commercial banks to issue publicly traded subordinated debt on a periodic basis.[74] Subordinated debt would insulate depositors' funds from losses, but regulatory authorities could also use the market values of any bank's subordinated debt to obtain an independent assessment of the solvency of the bank. Under this approach, regulators could take in the event of sudden downturns appropriate supervisory action in value with respect to the issuing bank. Alternatively, a similar proposal criticising the regulatory incorporation of credit ratings has suggested that regulators rely instead in market movements of interest rates on debt.[75] Whereas the Basel Committee seeks to incorporate discrete assessments of individual borrowers as reflected in the views of CRA, proponents of mandatory subordinated debt incorporate market values of securities issued by the banks themselves.[76] The main problem for capital regulators to rely solely on market prices for financial assets is that the prices of a firm's equity and debt are affected by market factors that are not directly relevant to its solvency. In fact, market prices reflect factors other than credit risk that can render them extremely volatile as demonstrated in certain situations of unjustified panic selling. Thus, using them as a pure measure of credit risk could be problematic.[77]

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[73] Regulation (EC) No 1060/2009 of the European Parliament and of the Council of 16 September 2009 on credit rating agencies

[74] See Van Der Weide M.E. and Kini S.M., *Subordinated Debt: A Capital Markets Approach to Bank Regulation*, 41 B.C.L. Rev. 195 (2000); US Shadow Financial Regulatory Committee, *A Proposal for Reforming Bank Capital Regulation*, Statement No 160 (Mar. 2, 2000), at 16-17.

[75] See Partnoy F., *The Siskel and Ebert of Financial Markets: Two Thumbs Down for the Credit Rating Agencies*, 77 Wash. U.L.Q. 619 (1999).

[76] Jackson H.E., The Role of Credit Rating Agencies in the Establishment of Capital Standards for Financial Institutions in a Global Economy, in *The Challenges Facing Financial Regulation 311* (Eilis Ferran & Charles A. E. Goodhart eds., Hart, 2001.

[77] Hunt J.P., *One Cheer for Credit Rating Agencies: How the Mark-to-Market Accounting Debate Highlights the Case for Rating-Dependent Capital Regulation*, 60 S.C.L. Rev. 750 2008-2009.

Some commentators have pointed out that nowadays banks have to comply with other types of risks in addition to credit risk, market risk and operational risk, that can account for instabilities in the financial system.[78] These are liquidity risk and warehousing risk as well as reputational risk and concentration risk that seem to raise even more concern.[79] Global financial markets are much more liquid than was the case thirty years ago. In the future, public policies aiming at bank solvency will have to strive at taking them increasingly into account. Therefore, capital regulation is deeply linked with concerns about systemic risk.[80] However, if maintaining a minimum of liquidity on a decentralised basis should be a standard practice within well-run banks, more liquid assets could contribute to risk-taking by banks. Moreover, liquid assets of today may not be liquid tomorrow when needed.[81]

Looking at financial innovations – from the perspective of physiology rather than pathology – one sees them as the force driving the global system towards its goal of greater economic efficiency. In particular, innovations involving derivatives can improve efficiency by expanding opportunities for risk sharing, by lowering transaction costs and by reducing asymmetric information and agency costs. Therefore derivatives present a fundamental means for controlling risk through hedging. In addition, in contrast to equity capital which is available for all purposes, hedging is a form of risk control that is very targeted. Managers hedge their firms against changes in commodity prices, interest rates, currency exchange rates and so on, specifying the kind of risk and the exact amount of that risk. A common accounting application is to use ratios to measure the financial health and riskiness of companies. One such ratio, leverage measured by assets-to-equity capital, is often pointed to as an indicator of risk. However, the leverage ratio has increasingly become less meaningful. Since accounting as a structure is directed toward value allocations, it is an ineffective structure for identifying risk allocations. For example, if the managers decide to enter into a swap contract in which they agree to hedge certain kind of risk, this change in the risk exposure of the equity does not appear in the balance sheet because the value of a swap when the firm enters into it is zero and therefore cannot be listed as a liability and as an asset. Many exposures of the firms nowadays are off-balance-sheet contractual arrangements because they do not find a place in the accounting system. However, although such contracts have no initial value, they can have an immediate and enormous impact on the risk exposure of those assets and liabilities that are on the balance sheet. While accounting performs well at valuation, it is totally inadequate to deal with risk allocation and it will have to change in order to address these problem in the future. Current accounting practices are focused on valuation, which is inherently a static measure of financial conditions. Focused on exposures, risk accounting is inherently a dynamic measure of financial condition

[78] Credit risk is the risk of default by a creditor or counterparty and is assessed by the CRA; market risk arises from on- and off-balance sheet positions due to changes in market prices; operational risk refers to losses resulting from inadequate or failed internal processes, people and systems, or from external events,

[79] Goodhart C.A.E., *Financial Regulation, Credit Risk and Financial Stability,* National Institute Economic Review, n. 192, April 2005, at 119-125.

[80] A clear example of this in the United Kingdom is the action that the Bank of England took in relation to the troubled financial institution Northern Rock in 2007.

[81] Goodhart C.A.E., *The regulatory response to the financial crisis*, J. Financial Stability, Vol. 4, No. 4, 2008, at 351-358.

because it indicates how the individual balance sheet values are likely to change in response to changes in the underlying financial-economic environment.[82]

Therefore, a first main objective for the regulator consists in providing banks with the right incentives to decrease their leverage and to redefine key aspects of their business model to ensure that regulatory capital risk management is adequately incorporated into that overall strategic decision-making process.. However, the Basel II 'use test' arguably requires that the regulatory capital and performance management criteria for measuring risk within the business are one and the same. In this way, it may be difficult to relate the market pricing that drives financial trading to risk-adjusted return measures. Similarly, the Basel Capital Accords have frequently discouraged the true hedging of portfolio credit risks by banks, and sometimes penalised such hedging with additional capital requirements. This reflected the very limited differentiation of credit risks under the Basel Accords - including no recognition of diversification or the term structure of credit risk, and only partial recognition of collateral protection – and the completely separate regulatory bank capital treatments of banking book credit risk, trading book specific risk, and counterparty risk, which preclude offsetting long credit risk positions of one risk type against short positions in another.

For example, IAS 39 allows component of financial items to be hedged, but not components of non-financial items with the only exception of foreign currency risk. It also does not allow net positions to be hedged, although companies often hedge net positions. The value of the purchased option, which is the premium paid by the firm to benefit from the protection, is treated as a speculative trading position according to IAS 39, while being a cost for the firm – the cost of hedging. These inconsistencies between hedge accounting and risk management activity need to be removed. The investors want to be able to have a better understanding of the performance of the entity's risk management activities and the effect of risk management on an entity's future cash flows. Therefore, as a principle-based approach, the accounting regulator should eliminate the distinction financial vs. non financial items; and look at whether a risk component can be identified and measured, as opposed to determining what can be hedged by type of item. Furthermore, the use of hedge accounting should be extended to net positions in order to improve the link to risk management. Similarly, the time value premium paid by the firm should be recognised as a cost of hedging because as such it will largely reduce inappropriate volatility in P&L and will be more consistent with risk management practices. Finally, the volatility of earnings and therefore of the regulatory capital could easily benefit from the relaxation of the strict hedge designation and documentation requirements, and complex effectiveness testing in connection with hedge accounting under IAS 39. A strict quantitative test and the drastic accounting consequences of failing this test present a clear obstacle for companies to hedge accounting. All these wrong incentives provide the potential for more unexpected movements in fair value gains and losses flowing through into the income statement, resulting in volatility both in the income statement and in the capital account. This again raises issues about capital recognition. Regulators and investors will need to understand these movements in order to be able to appreciate the quality of a bank's earnings.[83]

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[82] Merton R.C., *Financial Innovation and the Management and Regulation of Financial Institutions*, NBER Working Paper No. 5096, April 1995.

[83] The IASB and FASB have a joint project to improve accounting for financial instruments and a shared objective of improving comparability internationally on the accounting for financial instruments. Some progresses have been made in the area of hedge accounting and the IASB has prepared an Exposure Draft in December 2010 that contains proposals on the accounting for hedging activities and will receive comments on that until March 2011. Available at

While economic capital measures can provide a better understanding of the trade-off between risk and reward, Basel II does not recognise the impact of portfolio diversification and this effect can be very difficult to actually build into economic capital models. It is, however, a vital consideration in making strategic risk-based decisions and cannot therefore be ignored in running the business and assessing performance. Attempts by regulators to restrain regulatory capital arbitrage, per se, without addressing these more fundamental shortcomings would do little to encourage more effective hedging of true economic risks by banks.[84] Both Basel II capital evaluations and performance evaluations could then be used to aid frontline tactical decisions such as pricing and lending. Advanced measurement approaches could bring greater basis point precision into the setting of loan rates, for example. Ultimately, the numbers could help to define risk limits and policy by client, product, country and economic sector rather than trusting to gross exposures. This could give the global supervisors more chances to prevent systemic risk. Another crucial advantage of a more coherent approach to strategic risk management is the presentation of a more informed, assured and consistent message to clients, investors, regulators and rating agencies. Indeed, Basel II Pillar 3 disclosure could be set to provide more transparency and clarity in relation to risk and capital management if the regulatory capital requirements were brought into line with the way the business is managed. This would imply a re-alignment of the reporting processes and key performance indicators with the new Basel II criteria.[85]

At this aim, both Basel and International Financial Reporting Standards (IFRS) have moved closer together, however, conceptual differences continue to exist particularly with regards to the issues of valuation and provisioning. A major difference between Basel II and IAS 39 in this area relates to the basis of recognizing losses. Regulators will 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 will be required to take a forward-looking approach to establish provisions for latent losses in their portfolio that have not yet crystallized.[86] This approach is, however, hard to reconcile with the approach being taken by accounting standards setters. IFRS 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 an asset and

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http://www.ifrs.org/Current+Projects/IASB+Projects/Financial+Instruments+A+Replacement+of+IAS+39+Financial+Instruments+Recognitio/Phase+III+-+Hedge+accounting/edcl/ed.htm (accessed in December 22, 2010).

[84] BCBS, *Strengthening the resilience of banking sector*, Consultative document, December 2009.

[85] See paragraphs 40-52, BC183-BC208 and IE1-IE3 of the IASB's Exposure Draft, December 2010 and IFRS, *Overview of tentative decisions on hedge accounting project*, October 2010, available at http://edit.iasb.org/NR/rdonlyres/E8B1C37A-5932-4D18-A34B-C60531320CB4/0/IFRS9hedgeaccountingtentativedecisionstodate.pdf (accessed in December 22, 2010).

[86] 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, *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

therefore change the value to be placed on the asset.[87] However, in certain circumstances, IAS 39 provides that for investments in debt securities classified as available for sale, a previously recognized impairment loss may be reversed through earnings if, in a subsequent period, the amount of the impairment loss decreases and the decrease can be objectively related to an event occurring after the impairment was recognized (e.g., an improvement in credit rating).[88] A recovery of an impairment loss is reversed by crediting earnings and debiting the carrying amount to the investment. Like U.S. GAAP, impairments on investments in equity instruments that are classified as available for sale cannot be reversed. However, subsequent recoveries of previously recognized losses could have a positive effect on Tier I capital under Basel capital regulation. Therefore, current systems that do not allow securities to be "written-up" after impairment has been recognized may need to be evaluated and adjusted, as necessary.

The provisioning issue is not the only issue of concern. The use of fair value accounting for financial instruments under IAS 39 could pose a significant problem if the current link between the financial statements and the regulatory capital regime is maintained. Under IAS 39, gains and losses on revaluation are taken to the income statement or to reserves. These gains or losses could therefore feed through into the quantum of capital for regulatory purposes, directly affecting the level of Tier 1 capital. This could lead to considerable volatility in the capital base of banks and investment firms, which is unrelated to the underlying strength of banks across the EU. Under the current Basel regime, banks may not count "mark-to-market" profits as part of regulatory capital. The 1993 Capital Adequacy Directive allows such profits to count as Tier 3 capital – which may only be used to support the trading book.

The application of IAS 39 could have perverse and counter-intuitive results, seen from the regulatory perspective. IAS 39 permits any financial asset or liability to be restated to fair value and the gains or losses to be taken to the income statement (and hence to capital).[89] Under this option, banks that experience a deterioration in their rating would see a fall in the market value of their liabilities, and would be able to show an accounting gain in their income statement. This would not, of course, reflect the amount that the bank would be contractually due to repay. Other factors, such as a change in interest rates could also affect the valuation of liabilities. If the results of these changes in value were included in regulatory capital, this could further affect the volatility of the capital base, again in a manner that is not related to the underlying strength or performance of the firm in question. Regulatory capital – especially Tier 1 – is supposed to have a degree of permanence. It is hard to see such purely accounting gains as satisfying any test of permanence.

Other interface issues between IFRS and regulatory capital include the securitization, special purpose entities and off-balance sheet entities. IFRS rules may require vehicles that have previously been deconsolidated for accounting and regulatory purposes to be consolidated, resulting in potentially significant capital and earnings implications for many banks. This may also affect the willingness of institutions to engage in securitization as a technique of balance

[87] Paragraph 59 of IAS 39 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.

[88] Paragraph 61 of IAS 39.

[89] This revision benefited from extensive consultations. Nonetheless, some issues remain contentious, notably the use of the fair value option and macro-hedging [ECB (2004), *The Impact of Fair Value Accounting on the European Banking Sector – a Financial Stability Perspective*, Monthly Bulletin, February 2004.]

sheet management. Regulators will need to decide whether to follow the accounting treatment or to diverge from it.[90]

For cost and efficiency reasons, and for the sake of good order, it is important that standard setters intensify their efforts to align the definitions underlying the two approaches to valuation and provisioning sufficiently to enable preparers of regulatory returns and formal statutory accounts to rely on the same underlying data. However, the regulation to be effective must be implemented functionally. A proposed regulation to force market-to-market collateral requirements on all OTC derivatives, but not on loans and other traditional investments, could actually cause a shift back towards structures like parallel loans which were the functional predecessors to swap. Parallel loans have total principal exposure, especially in cross-border trades, as well as aggregate gross interest exposure in term of default by either party. Swap, which have no principal exposure, only have net interest exposure. So, by focusing and putting restrictions on derivates but not treating other functionally equivalent alternatives that way, regulation formed with all good intent and the purpose to reduce those default exposures which can induce systemic events can actually increase that exposure. Since the equivalent economic position can be implemented in several legal ways, it is very difficult to provide a comprehensive regulation that includes all those ways and regulate only part of them could be counter-productive. Therefore, to be effective in the longer run, organization of regulation must be more along functional lines instead of institutional ones. All the instruments that serve an equivalent economic function but are not equivalent in their institutional definitions will have to be treated the same.

IV. Conclusions

The paper has discussed the challenges to regulators posed by ongoing financial innovation through regulatory capital arbitrage. Such arbitrage effect undermines the quality of the regulatory capital, eroding prudential capital standards and creates a distortion in the regulatory capital ratio measures. The development of these hybrid instruments have increased as a consequence of wrong incentive produced by the banking capital regulation. Financial innovation has proved to be able to blur any kind of classification based on legal claims or credit risk as evaluated in the standardised approach. It is essential that regulatory measures of risk are aligned with a bank's true economic risk. At this aim, the equity-debt classification for prudential regulation needs to follow one single relevant criterion that is the loss absorbency and the accounting standards need to be able to reflect the real risk of the firm to the investors and regulators. Only matching the economic and legal capital, the investors will be able to correctly price the financial instruments and understand the risks and returns of a firm. This regulation needs to be implemented with a functional approach in order to treat transactions with the same economic purpose similarly and correct potential distortions created by the regulatory capital arbitrage.

[90] See the interpretation of SIC 12 and the IAS 27 and 39. See also the recent US amendments of FAS 166 and 167 on securitization accounting.