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Marcelo Madureira Prates

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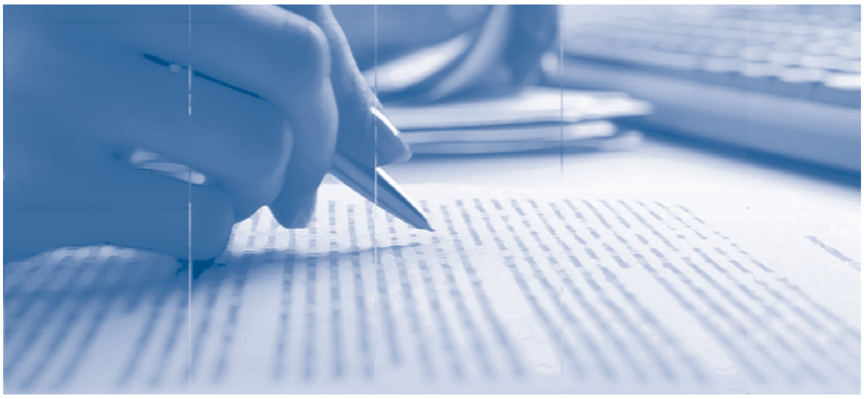

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Why Prudential Regulation Will Fail to Prevent Financial Crises. A Legal Approach*

Marcelo Madureira Prates**

Abstract

Properly regulating the financial system is not an easy mission, especially if the underlying intention is to prevent financial crises. At the first part of the paper we suggest that the difficulty of regulating the financial system results not only from its nature and dynamics, but also from the process of creating rules itself.

Besides, we stress the complexities regarding the enforcement of financial regulation, particularly in a setting of overregulation. We point out some of the troubles that the financial system supervisors may face in doing a proper oversight of all the institutions that matter and also in searching for the right measure to punish the institutions that fail to observe the relevant rules.

At its second part, we advocate that, to overcome the difficulties and hazards related to the challenging duties of regulating the financial sectors and enforcing the related rules, more attention should be paid to the consequences of financial crises, not to their causes, although it may seem counterintuitive at first sight.

We firmly believe that more important than organizing the best possible prudential regulation is having a solid and well-developed financial safety net. This could be done by answering at least three main questions: (a) how to organize a deposit insurance and resolution fund to be used as the first response to a problem in the financial system; (b) how to find a private solution instead of a public one when it comes to deal with failure in the financial system; and, very important, particularly to reduce the moral hazard that may follow the safety net, (c) how to hold executives personally liable for the losses caused by failed financial institutions.

Building a strong safety net might not only boost confidence in the financial system and contribute to its stability, but also create the right incentives to avoid reckless risk-taking, mainly if there are rules establishing that other financial institutions, creditors and even

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executives could be held responsible for the trouble caused by any failed financial institution.
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"If men could learn from history, what lessons it might teach us! But passion and party blind our eyes, and the light which experience gives is a lantern on the stern, which shines only on the waves behind us!"
Samuel Taylor Coleridge

1. Introduction

In light of the recent financial crisis, which seems to be far from its end, too much has been said regarding the regulation of the financial sectors. A lot of writings in blogs, sites, newspapers, magazines and journals, specialized or not, call for more regulation[1], although dissenters still exist[2].

Despite all the fuss, it looks like everybody is concerned only with creating new rules, which is just the first part of the regulation process. Few people seem to be worried about how these rules will be enforced and what the consequences will be if they are not observed or even fail, again, to meet their ends. In fact, enforcement seems to be a hidden side of financial regulation nowadays.

It is also interesting to stress that economists are by and large the ones thinking over financial regulation, although creating and enforcing rules are essentially a legal matter[3].

That is why in this paper we propose to discuss the subject from a legal perspective. In the first part, we will talk about the difficulties in regulating the financial system, underlining some practices that may contribute to the ineffectiveness of financial regulation.

We will also stress the complexities regarding the enforcement of financial regulation, pointing out some of the troubles that the financial system supervisors may face not only in doing a proper oversight of all the institutions that matter, but also in searching for the right measure to punish the institutions that fail to observe the relevant rules.

Trying not to emphasize only the difficulties and hazards related to the challenging tasks of regulating the financial sectors and enforcing the related rules, we will make some suggestions at the end of the paper, indicating a possible solution to

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[1] See, *e.g.*, Crotty, 2009; Dagher and Fu, 2012.
[2] See, *e.g.*, Greenspan, 2011; Howard, 2011.
[3] See Embid Irujo, 2009, pp. 21-22.

have an effective financial regulation, especially if the goal is to prevent financial crises. Again, the legal approach will prevail.

In short, the basic question that motivates this paper is: will prudential regulation be able to prevent financial crises? We dare saying that, from a legal point of view, the shorter and more direct answer is 'no'. Let us explain our reasons.

2.1. The difficulties in regulating the financial system

The first reason for being pessimistic about the effectiveness of financial regulation is intrinsic. The financial system is inherently unstable, given that the multiplier effect is in its origin and financial leverage is an inevitable part of its development[4].

It is important to recall that the banking system, a core part of the financial system, is built on confidence[5]. In order to meet reserve requirements, banks are required to hold only a part of the money they receive from depositors, being able to lend all the rest. Consequently, they always owe more money than they actually hold in their vault. Besides, banks face maturity mismatch between liabilities and assets, once they use short-term borrowing to finance long-term assets[6].

In normal times, the risks posed by these issues are manageable and confidence remains steady. But in times of distress, when depositors want to withdraw all their money simultaneously but banks' reserves are insufficient and banks' assets are illiquid, confidence ruins, overwhelmed by reality.

It is worthy quoting John Kenneth Galbraith on this matter:

> *The world of finance hails the invention of the wheel over and over again, often in a slightly more unstable version. All financial innovation involves, in one form or another, the creation of debt secured in greater or lesser adequacy by real assets. This was true in one of the earliest seeming marvels: when banks discovered that they could print bank notes and issue them to borrowers in a volume in excess of the hard-money deposits in the*

[4] It is interesting to note that the instability caused by maturity transformation is also central to Ricks's concerns about current and proposed financial regulatory frameworks. Nevertheless, Ricks advocates an approach to it that is different from the one supported in this paper.

[5] See Lastra, 1996, pp. 69-72. It is worth noting that money itself is built on confidence. See Simmel, 2004, pp. 173-178; Cozer, 2006, pp. 93-97 and 135-137.

[6] See Lastra, 1996, pp. 78-83.

banks' strong rooms. The depositors could be counted upon, it was believed or hoped, not to come all at once for their money. There was no seeming limit to the debt that could thus be leveraged on a given volume of hard cash. A wonderful thing. The limit became apparent, however, when some alarming news, perhaps of the extent of the leverage itself, caused too many of the original depositors to want their money at the same time. All subsequent financial innovation has involved similar debt creation leveraged against more limited assets with only modifications in the earlier design. All crises have involved debt that, in one fashion or another, has become dangerously out of scale in relation to the underlying means of payment.[7]

All the above said had the solely intention to stress that the financial system is naturally unstable. Instability, speculation and, therefore, risk are parts of its origin and development[8].

No regulation will ever be able to change this reality, unless a law is passed, for instance, setting the reserve requirements in 100% and prohibiting leverage. But this solution would mean destroying the existing financial system and creating a 'new' one, almost based on barter. No such proposal would be taken as a viable alternative, even though something like it has been sincerely advocated recently[9].

Remarking that rules cannot modify reality is important to stress that regulation is nothing but organizing and controlling by restriction or incentive[10]. Regulation does not have the intention of transforming the regulated fact or activity into something else. Its aim is to limit or to stimulate a fact or an activity because they are relevant not only for their stakeholders, but also to society. And its main boundary is respecting the essence of the fact or activity regulated, even if the regulation involves the "*attempt to alter the behaviour of others*"[11].

Hence, financial regulation should not be created with the intention to turn the financial system into something it is not, a stable and risk-free environment. Every

[7] Galbraith, 1993, pp. 19-20.
[8] See Galbraith, 1993. See also, Kindleberger, 2005 and Reinhart and Rogoff, 2009,
[9] See Chamley and Kotlikoff, 2012. The two economists at Boston University advocate the creation of a "*limited purpose banking*", by transforming all banks in "*mutual fund holding companies that do one thing only – issue 100 per cent equity-financed mutual funds*". See also Cochrane, 2013.
[10] For a survey about the concepts and definitions of 'regulation', see Black, 2002.
[11] See Black, 2002, p. 20.

proposition intended to limit instability and risk in the financial system poses the danger of disfiguring it instead of only regulating it.

But even if it were possible to proper calibrate rules and limit the characteristics of the financial system without transfiguring it, there would be another problem: its dynamics. And here we have the second reason for being pessimistic about the effectiveness of financial regulation.

Facts precede rules: *ex facto oritur jus*[12]. Rules depend on facts and are created to regulate these facts, either to organize, control or limit them, or just to transform them into a legal matter, giving them legal consequences.

Consequently, it is important to observe that, on the one hand, rules do not predict or anticipate facts, because rules always come after facts. And, on the other hand, during the time some facts go unnoticed by legislators, they are unregulated, *i.e.*, they do exist, they generate consequences, but not legal consequences, since no rule deals with them.

Taking these basic legal principles to financial regulation, we have that rules cannot limit creativity of financial markets or try to anticipate what new financial instrument will be created, in order to control the risks involved[13].

Rules are a response to a perceived reality. It takes comprehension and time to create appropriate rules and still more time to pass the correspondent legislation or to propose the related regulation. But few sectors, if any, are as frantic as the financial sectors, which makes it hard for financial regulation to catch up with financial innovation[14].

Of course there are other innovative sectors subject to strict regulation, in which a governmental authorization can be demanded before any innovation comes to market. Take *pharmaceuticals*, for instance. Almost every laboratory has a technical staff researching new and revolutionary drugs. But prior to receive authorization to be sold to the public, these drugs have to be tested several times, even in animals and human beings, for many years. Take also *aviation*. Planes are thoroughly projected, modeled and tested for many flight hours before they can be sold to airlines. Besides, in aviation the goal is to eliminate all possible risk, something not feasible in the financial system.

[12] See Reale, 1993, pp. 197-201.
[13] Contrary to this idea, see Embid Irujo, 2009, pp. 23-24; and also Conti, 2011, pp. 10-12.
[14] See Greenspan, 2011; Conti, 2011, pp. 11-12 and 14.

Here is the difference: it is impossible to duly test financial instruments before they hit the market, although something alike has been suggested[15]. The financial sectors are similar to no other because it is not possible to simulate real conditions unless a new financial instrument is actually put in an existing market in a specific country. There is no such a thing as a proxy financial market.

And the consequences of using new financial instruments are so unpredictable that even a big player like JPMorgan may face billionaire losses in its trading operations without being able to properly explain them and long before regulators noticed what was going on in its London offices[16].

So, financial rules are thought and created today taking into account the financial reality of yesterday, because a rule issued now cannot intend to regulate a financial instrument or situation that does not exist yet.

But even if this time barrier could be removed, regulators would face another dilemma, because every time they focus on a fact or activity, they immediately arouse the attention of the regulated institutions, which begin the race to find ways to get around the regulation[17].

Trying to avoid these problems by creating rules only with goals and principles is not a solution[18]. First, rules like those do not clearly state what is permitted and what is forbidden, making hard to assess compliance in these cases and creating many grounds for dispute. Second, such rules give a lot of discretionary power to supervisors, transferring a task that should be performed by legislators – defining the right and wrong – to unelected bureaucrats. Legal uncertainty is a result in any case[19].

Making specific rules in order to micromanage every detail of a given fact or activity is not a solution either. The reason is simple: overly descriptive rules create many loopholes that can be easily exploited to game the regulation. Even a minor renaming could create a new situation that evades many regulation's definitions[20].

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[15] See Posner and Weyl, 2012. Agreeing with the idea that new financial instruments should be tested and put through small trials, see the interview given by Stephen Cecchetti, head of the monetary and economic department of the BIS, to The Wall Street Journal on 30 Oct. 2012.

[16] Regarding the billionaire losses of JPMorgan and their consequences for banks and regulators, see Schwartz, 2012. On financial innovation, see the Special Report from *The Economist*, 25 Feb. 2012.

[17] See "Buttonwood: Rover the Regulator", 2012.

[18] Note that this solution is proposed, *e.g.*, by Howard, 2011. Although we differ with the author on this matter, we do agree with his diagnosis, as we will remark below.

[19] On the difficulties of having a "*principles based regulation*", see Black, 2010.

[20] See Black, 2010, pp. 11-12.

That is why we think the problem is not that the financial system is or has become "*too complex to regulate*"[21]. The difficulty of regulating the financial system results not only from its nature and dynamics, but also from the process of creating rules itself. It is, in fact, a matter of too unstable, too inventive and, especially, too swift to properly regulate.

But even if complexity were the only or the main cause making it difficult to regulate the financial system, the problem would not be solved by simplifying financial instruments and institutions[22]. You cannot just ask for a company, any company, to simplify its business so you can understand and, therefore, regulate it[23]. As we have said, regulation cannot and should not have the purpose to transform the regulated activity into something else.

Let us not be fooled: properly regulating the financial sectors was, is and always will be a difficult mission, especially if the underlying intention is to prevent financial crises. And now that *deregulation* is out of question, being almost unanimously considered the cause of the present financial crisis[24], more regulation has been adopted as the most likely response to deal with the fear of other crises[25]. More regulation, however, does not appear to be a good answer, particularly if it comes as *overregulation*[26].

2.2. The perils of overregulation

Diminishing the regulatory burden, asking supervisors to step back and trusting the financial sectors to refrain themselves proved not to be the best way to regulate the financial system.

As the lack of rules is considered to be in the origin of the recent financial crisis, asking for more rules is one of the inevitable reactions, if not the first and more poignant[27].

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[21] See Hu, 2012.
[22] As proposed, *e.g.*, by Johnson, 2012; and Bhidé, 2009.
[23] See Greenspan, 2011.
[24] See, *e.g.*, Dagher and Fu, 2012. Against this idea, see, *e.g.*, Tarr, 2010, pp. 21-23.
[25] See Galbraith, 1993, p. 22.
[26] See Howard, 2011. See also Lastra, 1996, pp. 143-144.
[27] See Howard, 2011.

The fear of another financial crisis, although the current one is still unfolding, has led lawmakers around the world to try to make the best possible rules to put financial institutions back in the right path and to protect the financial system from another turmoil. No situation should be left unattended. Every financial risk must be chased and eliminated or, at least, controlled[28].

Nevertheless, struggling to regulate all the situations that may lead to a financial crisis will inevitably become a cat-and-mouse chase. As mentioned above, regulation is a response to a perceived reality: rules will always come after facts. And given the dynamics of the financial system, more and more rules will be needed every day and more stacks of financial rules will be added, since no one today is in a position to advocate rescinding them.

It seems that overregulation has been chosen as the right response to the recent financial crisis and the Wall Street Reform and Consumer Protection Act (Dodd-Frank act) is its archetype. With its 848 pages, only corporate lawyers may not complain about its prolixity and complexity[29], but there are many reasons for criticism in choosing the path of complex and abundant regulation[30].

Overregulation has significant costs not only to the private businesses regulated, which will have to devote more time and money to compliance[31], but also to the regulators and supervisors themselves, at least for two main reasons.

First, it has to be taken into account that more regulation eventually leads to an additional burden for the supervisors. For every rule created, one more duty of supervision will be added and one more potential violation appears[32].

Of course financial oversight is more easily performed today with the aid of technological tools, making on-site supervision an exceptional measure. But even the most prepared and well-equipped supervisory authority will face a huge task. Since there will be an extensive and complex array of rules to enforce, supervisors will face

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[28] See Howard, 2011.

[29] For a very harsh opinion about the Dodd-Frank act, see Greenspan, 2011. On the other hand, in favor of the Dodd-Frank act, although not without some criticism, see Davidoff, 2012.

[30] See Haldane, 2012. A call for less complex regulation was recently made also by the World Bank, although based on different reasons and directed mostly to developing nations (see World Bank, 2012). Also advocating the need for simpler rules and for a "results-based regulation", see Howard, 2011.

[31] See Keating, 2011.

[32] It is interesting to note that even the proposition of the regulations required by the Dodd-Frank act is itself a burden for the supervisors. In September 2012, the Securities and Exchange Commission, for instance, had finalized only about 30% of the Dodd-Frank rule mandates, and had "*quietly removed timing estimates from its list of pending Dodd-Frank mandates, largely because the estimates were rarely accurate*". See Ackerman, 2012.

many hurdles to properly and timely assess the compliance with all relevant rules by the financial institutions.

Hence, it is important to have a well-designed supervisory structure, with a number of staff proportionate not only to the number of financial institutions under supervision, but also to the number of rules that has to be enforced. Unless this symmetry is properly accomplished, the sense of impunity may come as a result.

Having many and detailed rules, but not a close oversight, capable of timely identifying even the minor violations, is almost as effective as having no rules at all. Every infraction that goes unnoticed gives the impression that rules exist but are not enforced, weakening the credibility of the supervisory authorities and eventually of the financial regulation itself.

It is true that the risk of undetected violations, due mostly to the imbalance between the number of potential violators and the number of supervisors, exists in any regulated sector. It should not be a reason against regulating the sector in the first place. But with too many rules to enforce, the job of supervisors gets excessively difficult, increasing the risk of impunity.

Comparisons with criminal law on this matter, however, are inaccurate. Unlike criminal law, that has simple and enduring rules regulating easily comprehensible situations to almost every person, financial regulation deals with more complex and intricate situations. It is not possible to compare a crime, which almost every person can easily recognize and, if needed, call the police, with a violation of a financial rule, which even the most prepared and seasoned supervisor may face difficulties to identify.

When it comes to financial regulation, a “zero tolerance” approach is not feasible. No supervisory authority will ever have the means to identify and punish all the infractions of a given rule. That is why the sense of impunity will be the most likely, if not the first, consequence of overregulation.

The second reason for being critical towards overregulation has to do with the aftermath of oversight. It has been overlooked that the job of supervisors does not end with the confirmation of compliance with the rules or the identification of violations. What will be the consequences if a financial institution fails to observe the regulation?

On the one hand, creating new rules without setting any negative consequence if they are not observed is the same as declaring their ineffectiveness from the beginning. Rules that demand a positive or negative behavior must be followed by a sanction, or they tend to be discredited. It is not possible to count on the good will of the financial institutions on that matter.

On the other hand, administrative sanction seems to be the natural consequence to the violations of financial regulation, since criminalization should only be used to preserve the most important values for society and to prevent and punish the most serious violations (*de minimis* and *ultima ratio* principles[33]).

But a fine, the standard administrative sanction, may not be the right answer in every case, mainly if the financial institution that fails to observe a given rule also faces liquidity problems. In situations like these, a fine will only worsen the problem and may generate negative consequences not only to the violator, but also, depending on the size and relevance of the punished financial institution, to the entire financial system.

Once liquidity is a sensitive issue in the financial system, applying pecuniary sanctions against financial institutions that violate regulations may do more harm than good. The alternative is to stipulate sanctions imposing restrictions on business activities. But even this type of administrative sanction may create negative economic consequences to the punished institution, demanding a thoughtful decision from the supervisors.

In short, punishing institutions that rely on solidity and trust to do their businesses is always a defiant matter, mostly because the same power used to enforce financial regulation may also contribute to damage the value that motivated the regulation in the first place: financial stability.

As we have seen, creating a proper and effective financial regulation in order to prevent financial crises is a difficult task. And even if all the right rules could be created after all, the supervisors would face many difficulties to enforce them, let alone to identify the related violations and to timely punish them without taking the violators down or spreading collateral damages to the entire financial system.

For all these reasons, we think that the regulation of the financial system, especially if the aim is to prevent financial crises, should be focused on dealing with the consequences of the crises, not on trying to avoid their causes, although it may seem counterintuitive at first sight.

[33] See Ashworth, 2003, pp. 24-57, 66-69.

3. A possible solution: regulating the consequences of financial crises

First of all, let us be clear that we do not advise abandoning prudential rules altogether or suggest that legislators should not make laws intended to avert financial crises. What we propose is that more attention should be given to the consequences of financial crises, not to their causes[34].

We really believe that regulators should not worry too much about why the last financial crisis happened. Instead, they should try to learn how to minimize the consequences of a new crisis. Because it is not a matter of 'if' another crisis will happen; it is just a matter of 'when' the next crisis will happen, as Galbraith showed[35].

Although the facts that give rise to financial crises may differ from time to time, increasing the difficulty to have effective prudential rules, their consequences are always similar: huge losses, failure of institutions, systemic risk and large use of public money. That is why it might be easier for regulators to understand the consequences of financial crises and, therefore, to get prepared for them.

For us, more important than organizing the best possible prudential regulation is having a solid and well-developed financial safety net[36] with rules clearly stating the consequences for the troubled institutions, for their executives and creditors, and even for other financial institutions when a financial crisis comes. After all, it must be remembered that simply letting a bank or another financial institution fail is not an option[37].

The main goal behind this proposition is to avoid as much as possible the use of public money to solve financial crises, allowing the improvement of the financial safety net without giving room for moral hazard to arise.

But there is another reason in favor of this proposition. Organizing a financial safety net in order to be prepared for crises might be more objective and more

[34] Also stressing the limitations of *ex ante* regulation and the importance of resolution systems, especially to address systemic risk, see Levitin, 2011, pp. 461-480. Likewise, stating that more attention should be paid to the distinction between *ex ante* regulation, aimed at preventing financial failure, and *ex post* regulation, aimed at responding to that failure, see Anabtawi and Schwarcz, 2013.
[35] In the foreword to the 1993 edition of his *A Short History of Financial Euphoria*, Galbraith states (p. viii. See also p. 110): "*Recurrent speculative insanity and the associated financial deprivation and larger devastation are, I am persuaded, inherent in the system. Perhaps it is better that this be recognized and accepted*".
[36] Contrary to this option, see Ricks, 2012, particularly pp. 1331-1340. Instead, the author proposes an alternative regulatory framework to address the instability of the market for *money-claims*, which he regards as "*the central problem for financial regulatory policy*".
[37] See Krugman, 2010. See also Lastra, 1996, pp. 134-143; Levitin, 2011, pp. 483-487.

comprehensive than trying to ensure that banks – and only banks[38] – observe required capital and liquidity standards to be safe and sound, as Basel III rules intend[39].

On the one hand, the very notions of *capital* and *liquidity* are disputable, making it hard for regulators to accurately define capital and to set up what asset should be taken as liquid, so that it could be accepted to fulfill the standards required, *e.g.*, by Basel III rules[40].

On the other hand, either if it were possible to assure that all parts of the system, all financial institutions – not just banks – are ready to face a financial downturn, that would not guarantee that the system itself would be crises-proof[41]. Since contagion always plays an important role in financial crises, it is not possible to face a systemic threat by being individually prepared. The whole system must have its own mechanisms of defense, especially to avoid panic and to control the spreading of problems. The chief purpose of financial regulation, especially if the aim is to avoid financial crises, should be enhancing the solidity of the financial system, not only of its institutions[42].

The first step to strengthen the financial system is having an appropriate deposit insurance scheme, mainly because its only existence might contribute to avoid the spreading of distrust to the entire system or to an important part of it when an episode of distress comes up[43]. Bank depositors must be the first creditors to be protected because avoiding bank runs is crucial to limit the effects of a failure, since it sooth market expectations by safeguarding the most precious financial system asset: its image.

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[38] See Levitin, 2011, pp. 469-472.

[39] See Lastra, 1996, pp. 93-97; 181-195. In favor of the Basel III liquidity coverage ratio, see Eavis, 2012. Against the Basel III rules, especially because of their supposed pernicious impact on the global economy, see The Institute of International Finance, 2011. For a cost-benefit analysis of "*risk-constraint regulation, such as portfolio restrictions and capital requirements*", especially in relation to the prevention of money-claim panics, see Ricks, 2012, pp. 1325-1330.

[40] See Bank for International Settlements, 2012. The Report, especially in p. 6, is very critic towards the implementation of key parts of the Basel III standards by the United States and the European Union, precisely because they state a broad definition of capital and give too much room for banks to assess the riskiness of their portfolios. Acknowledging the difficulties of computing risk sensitivity and leverage ratio to apply the Basel III rules, see the interview given by Stephen Cecchetti, head of the monetary and economic department of the BIS, to The Wall Street Journal on 30 Oct. 2012. Proposing an alternative to Basel III rules on capital requirements, see Pandit, 2012. The then CEO of Citigroup advocated that instead of setting capital requirements regulators "*should create a 'benchmark' portfolio and require all financial institutions, not just banks, to measure risk against that*".

[41] See Brunnermeier *et al*, 2009, pp. 5-11.

[42] Advocating that one of the main goals of the financial regulation should be "*to ensure the stability of the overall financial system*", see United States Government Accountability Office, 2009.

[43] Similarly, advocating that "*to avoid a run on euro-zone banks a EU-wide system of deposit insurance needs to be created*", see Ferguson and Roubini, 2012.

There is no doubt that the deposit insurance scheme must be financed by the financial industry. Besides, the related fund should also serve as a *resolution fund*, helping to provide liquidity to financial institutions in distress and to deal with their liquidation[44].

With this intent, premiums should be levied on every financial institution that becomes relevant to the system. As the last crisis showed, not only banks can be systemically relevant[45]. Hence, if a financial institution, although not a bank, become relevant it should also finance the deposit insurance and resolution fund as any bank does.

The point in having institutions other than banks financing the deposit insurance and resolution fund is allowing them to resort to the fund as any bank can do, even allowing them to be bailed or rescued under extreme conditions[46]. In spite of that, only bank depositors would remain protected, as it is today.

In addition to the deposit insurance scheme attached to a resolution fund, internal solutions must be found to deal with a potential failure within the financial system. Following this path, the troubled institution should be required either to internally solve its problems or to organize its liquidation. A bail-in should be a valid option in the former situation and the resolution plan, or “living wills”, a reasonable alternative in the latter.

In a bail-in process, the supervisory authorities would have the legal authority “*to force banks to recapitalise from within, using private capital, not public money*”, thus dictating “*the terms of a recapitalisation, subject to an agreed framework*”[47]. The process would necessarily involve assets write-down and debt restructuring, always without previous deliberation of the board or the creditors of the institution.

Relying on more cooperation from the institution, there is the resolution plan or living wills, whereby the institution itself outlines a plan for its liquidation, if needs be[48].

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[44] See Schoenmaker and Gros, 2012.
[45] In fact, Levitin (2011, pp. 453-454) argues that even nonfinancial firms could be systemically relevant, since it is difficult to draw the financial/nonfinancial line in some cases.
[46] Against the idea that the safety net should be available for financial institutions other than banks, see Frost, 2012.
[47] Calello and Wilson, 2010. See also Zhou et al, 2012.
[48] See Lacker and Stern, 2012; Goodhart, 2010.

In any case, there must be explicit rules giving the supervisory authorities specific powers to act in a bail-in process and to require relevant institutions to submit resolution plans, especially to avoid challenges on the grounds of excessive discretion or arbitrariness.

Both measures seem to be valid attempts to cope with too-big-to-fail institutions[49] and to have more predictable and organized ways to deal with and even to liquidate troubled institutions during times of financial distress[50], although criticism still subsists[51].

In the process of trying to solve the problems of a troubled financial institution and to avert the possibility of a crisis, the supervisory authorities should also have the legal power to search for a solution within the financial system. With this aim, the supervisors should have the power not only to seek for a consensual market solution, but also to impose one.

Since financial institutions are the first to benefit from a stable financial system, free from institutions that may spread risk and distrust, they should take part in the process of fixing the problems of any troubled financial institution.

Of course supervisory authorities' first step to reach a market solution should be finding another financial institution interested in taking over a part of or all the businesses, assets and creditors of the troubled institution. But if no financial institution shows interest, the supervisory authorities should have the power to determine the mandatory transference of assets and liabilities from the institution under distress to one or more financial institutions.

Giving the supervisory authorities power to issue even a mandatory market solution to deal with a troubled financial institution is positive not only because it clearly states that everything will be done to find a private solution instead of a public one when it comes to failure in the financial system, but also because it makes all financial institutions responsible for the future of one another.

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[49] There is also a more radical proposition advocating that too-big-to-fail institutions should not exist in the first place, and therefore demanding to break them up. See, *e.g.*, Johnson, 2012; Jenkins, 2012. Breaking up big institutions, however, might neither be an easy task nor an effective solution: see Zweig, 2012; and Rattner, 2012. To an outright defense of "big banks", see Harrison Jr., 2012.

[50] With these aims, although not with the cooperation of the troubled institution, it could also be referred the "single receivership" resolution approach proposed by the Federal Deposit Insurance Corporation (FDIC), explained and praised by Krimminger, 2012. Criticizing the FDIC's "single receivership" approach, see Miller and Horwitz, 2012.

[51] See Levitin, 2011, pp. 467-469; Silver-Greenberg and Schwartz, 2012.

This measure could encourage cross-oversight and whistle-blowing among financial institutions, bringing to the supervisory authorities information that they would not have otherwise. Nobody knows the market better than the market itself. So, the mandatory market solution could be a valid attempt to make the market speak, even if only to avoid paying for the errors and faults of others.

But if the deposit insurance and resolution fund, the co-participation of the troubled institutions and even the participation of other financial institutions are insufficient to stem the problems and to control contagion within the financial system, it is almost certain that public money will have to be used to prevent a financial crisis from beginning or intensifying. This should be the moment to summon the executives[52] of the failed financial institutions: if they were part of the problem, they should also be part of the solution[53].

That is why we think financial institution executives must prepare professional "living wills", to be used if the deposit insurance and resolution fund, the bail-in process, the institutional living wills and the market solution are not enough to avoid the use of taxpayers' money to pay for the losses the failed institution has caused.

By preparing professional "living wills", financial institution executives would be forced to keep some amount of spare liquid assets to help covering future losses caused by the institution for which they work. This amount should be determined by a fraction of the total amount of payments they receive from the institution in a given time. Thus, the bigger the payments, the bigger the needed amount of spare assets, if not for other reasons, at least to discourage the payment of artificially inflated bonuses.

Hence, one sole condition should exist to trigger the implementation of the professional "living wills": the use of taxpayers' money to liquidate or to bail out the financial institution. Note that it should be a case not only of personal liability, but also of strict or absolute liability, since the executives should be held responsible regardless of any proof of fault[54].

[52] "Executives" in the article refers to the highest-level managers of the financial institutions, like chief officers ("C-level executives") and members of executive or management boards, and does not include members of the board of directors or other supervisory boards, which generally are not in charge of management duties or day-to-day operations.
[53] Voicing the frustration of not seeing any major banking executive pay any price in the aftermath of the last financial crisis, see Eisinger, 2012; and Cohan, 2012. See also Tett, 2009.
[54] It is necessary to stress that we are not talking about fraud on this matter. Fraud should be investigated and punished in the ambit of criminal justice.

Anyway, two limits should be set concerning the liability of the failed institution executives. First, only the assets detached in accordance with the stipulations of the professional "living wills" would be expropriated, regardless of the total amount of public money used. The intention is that executives are forced to take part in the process of failure of the financial institution, not that they lose all the money they have received from the failed institution, which could be challenged as illegal or even unconstitutional, nor that they personally pay for all the outstanding losses, which would not be feasible.

Second, there should be a time limit for this kind of responsibility. Only executives that worked for the failed institution in a determined period before the failure – 10 years, for instance – should be held responsible. Again, the intention is to summon the executives that might have contributed to the failure of the institution, not to keep all the former executives indefinitely under a legal threat.

Furthermore, clearly stating that executives could be responsible for the losses caused by the failed financial institution might create enough incentive to persuade them to avoid reckless risk-taking. As their private property becomes subject to the consequences of a failure, executives might give more attention not only to strategies intended to increase profits, but also to strategies designed to limit or control risks. Risk assessment inside the financial system might finally be taken more seriously.

As we have seen, regulating the consequences of financial crises is, in the first place, trying to find solutions to the financial system problems from within, thus avoiding the use of public money to save financial institutions or even the system itself. It is important that the regulation sends the message that taxpayers' money will only be used as the last resort, if all the other solutions fail and if systemic risk exists[55].

Nonetheless, there will be crises in which the use of public money will become inevitable, no matter what previous measures are taken to avoid or to soften the crisis[56]. Hence, a final issue must be discussed herein: should the amount of public money that could be used to cope with serious financial crises also be a regulated matter? We do not think so.

[55] Critically assessing the definitions of *systemic risk*, with a personal proposal in the end, see Levitin, 2011, pp. 443-451.
[56] Also stating the inevitability of bailouts, see Levitin, 2011, p. 490.

It would be difficult to previously define limits on the use of public money in a financial crisis, not to say to forbid the use of public money in a situation like that[57], something not realistic[58]. As remarked above, it is possible to create legal mechanisms in order to avoid or to mitigate the use of public money to save the financial system, but once it is needed, it is hard to put a limit on it, since it is difficult to foresee the depth of a financial crisis.

4. Conclusion

In this paper we suggest that regulating the financial system, especially with the aim of preventing crises, might be more a matter of dealing with the consequences that emerge from a financial crisis than a matter of trying to avoid the causes that may lead to it.

The natural instability and the dynamics of the financial system combined with the inherent limits of the process of creating rules give strong reasons to be pessimistic about the effectiveness of the regulation intended to prevent the causes of financial crises.

As we have seen, regulation is a response to a perceived reality: rules will always come after facts. Hence, financial rules are thought and created taking into consideration a reality that existed one day, but may not exist anymore. It is hard for financial regulation to catch up with financial innovation.

Trying to solve these problems by regulating all situations that may lead to a financial crisis will inevitably breed overregulation, which does not seem to be a good legal response either.

The increasing number of rules will overwhelm the supervisory authorities with work. They will have not only to properly assess if the institutions subject to the regulation observe all relevant rules, but also to identify the related violations and to timely punish violators without taking them down or spreading collateral damages to the financial system, since liquidity and stability are always sensitive matters in the financial sectors.

[57] See, *e.g.*, McConnell, 2010.
[58] See Ricks, 2012, pp. 1331.

For all these reasons, we believe that more important than organizing the best possible prudential regulation is having a solid and well-developed financial safety net. This could be done by answering at least three main questions: (a) how to organize a deposit insurance and resolution fund to be used as the first response to a problem in the financial system; (b) how to find a private solution instead of a public one when it comes to deal with failure in the financial system; and, very important, particularly to reduce the moral hazard that may follow the safety net, (c) how to hold executives personally liable for the losses caused by failed financial institutions.

Properly answering these questions and creating a legal framework directed to minimize the consequences of financial crises seem to be the more suitable, if not the only effective, legal response when it comes to financial regulation.

It is worth noting that the legal option herein proposed, apart from being a valid attempt to overcome prudential regulation limitations, has also advantages of its own.

First, because governmental interference in economic affairs should be exceptional, not usual. Financial markets should be essentially free and financial institutions should perform their business under minimum intervention. But in times of distress, when the financial system fails to properly handle the problems itself creates, freedom must be replaced by interventionism, especially if the use of public money is inevitable to cope with the crisis. In this case, the supervisory authorities should have the legal power to dictate the way to solve the problems and even to impose mandatory solutions against the will or the best interest – at least in the short term – of financial institutions and of their executives, shareholders and creditors.

Second, because unlike the causes of financial crises, which often have different triggers, their consequences tend to be similar, giving regulators more time to understand them and, therefore, to be prepared for them, making it easier to create appropriate and effective regulation.

Third, because building a strong safety net might not only boost confidence in the financial system and contribute to its stability, but also create the right incentives to avoid reckless risk-taking, mainly if there are rules establishing that other financial institutions and even executives could be held responsible for the trouble caused by any failed financial institution.

Having rules clearly stating the consequences for the troubled institution, for its executives and even for other financial institutions when a financial crisis comes might also increase the effectiveness of prudential regulation itself. Since all financial institutions and its executives become responsible for each failure in the financial system, everybody will have more interest in observing capital and liquidity standards, in creating debt more wisely and in properly assessing risk taking. It might be a matter of inverted incentives.

Forth, because although the solutions proposed in this paper are national oriented, their implementation might generate international repercussion. On the one hand, the more the countries are prepared for the aftermath of financial crises, the milder will be the impact of the failure of a cross-border institution. Besides, there will be less incentive to engage in regulatory arbitrage, since, no matter the differences among prudential regulations around the world, in the end the legal consequences for troubled institutions will be the same or at least similar in any country. After all, it has to be taken into account that although global financial institutions are international in life, they tend to be national in death[59].

On the other hand, it is difficult to think of any effective transnational solution in the ambit of financial regulation without the creation of a transnational rule-maker or, at least, of a transnational supervisory authority, something that does not seem to be practicable anytime soon, if ever[60].

In short, regulating the consequences of financial crises might be the best legal option even to have a more effective prudential regulation[61], which eventually will help to prevent the very causes of financial crises.

[59] See Goodhart, 2010, p. 182. See also Shirakawa, 2009.
[60] See Embid Irujo, 2009, p. 119.
[61] See Levitin, 2011, p. 480.

References

Ackerman, Andrew (2012). "SEC Gives Up on Web Schedules for Dodd-Frank Rules". *WSJ Blogs: Real Time Economics* 17 Sep. 2012. Web. 16 Oct. 2012 <http://blogs.wsj.com/economics/2012/09/17/sec-gives-up-on-web-schedules-for-dodd-frank-rules/>.

Anabtawi, Iman and Steven L. Schwarcz (2013). "Regulating Ex Post: How Law Can Address the Inevitability of Financial Failure". *92 Texas Law Review (Forthcoming); UCLA School of Law, Law-Econ Research Paper No. 13-07* 4 Jun. 2013. Web. 13 Sep. 2013 <http://ssrn.com/abstract=2271587>.

Ashworth, Andrew (2003). *Principles of Criminal Law*. 4th ed. Oxford: Oxford University Press, 2003. Print.

Bank for International Settlements (2012). Basel Committee on Banking Supervision. *Report to G20 Finance Ministers and Central Bank Governors on Basel III Implementation*. Basel: BIS, October 2012. Web. 29 Oct. 2012 <http://www.bis.org/publ/bcbs234.pdf>.

Bhidé, Amar (2009). "In Praise of More Primitive Finance". *The Economists' Voice* Volume 6, Issue 3, Feb. 2009. Web. 5 Dec. 2012 <http://www.bhide.net/financial_crisis_2008/bhide_praise_of_primitive_finance.pdf>.

Black, Julia (2002). "Critical Reflections on Regulation". *CARR Discussion Paper nº 4*. London: LSE, January 2002. Web. 9 Nov. 2012 <http://www2.lse.ac.uk/researchAndExpertise/units/CARR/pdf/DPs/Disspaper4.pdf>.

Black, Julia (2010). "The Rise, Fall and Fate of Principles Based Regulation". *Law, Society and Economy Working Papers 17/2010*. London: LSE, 2010. Web. 4 Dec. 2012 <http://www.lse.ac.uk/collections/law/wps/WPS2010-17_Black.pdf>.

"Buttonwood: Rover the Regulator" (2012). *The Economist* 8 Sep. 2012. Web. 25 Oct. 2012 <http://www.economist.com/node/21562220>.

Brunnermeier, Markus K. et al (2009). *The Fundamental Principles of Financial Regulation*. Geneva, London: ICMB, CEPR, 2009. Web. 15 Nov. 2012 <http://scholar.princeton.edu/markus/files/geneva11.pdf>.

Calello, Paul and Wilson Ervin (2010). "From Bail-out to Bail-in." *The Economist* 28 Jan. 2010. Web. 3 Oct. 2012 <http://www.economist.com/node/15392186>.

Cecchetti, Stephen (2012). Interview by Brian Blackstone. *WSJ Blogs: Real Time Economics* 30 Oct. 2012. Web. 1 Nov. 2012 <http://blogs.wsj.com/economics/2012/10/30/qa-biss-cecchetti-on-basel-iii-and-banking-regulations/>.

Chamley, Christophe and Laurence Kotlikoff (2012). “A Proposal to End Europe’s Debt Crisis”. *Financial Times: Opinion* 13 Jun. 2012. Web. 9 Nov. 2012 <http://www.ft.com/cms/s/0/b10257ea-b53f-11e1-ab92-00144feabdc0.html>.

Cochrane, John H. (2013). “Stopping Bank Crises Before They Start”. *The Wall Street Journal: Opinion* 23 Jun. 2013. Web. 21 Oct. 2013 <http://online.wsj.com/news/articles/SB10001424127887324412604578513143034934554>.

Cohan, William D. (2012). “How to Crash an Economy and Escape the Scene”. *Bloomberg View* 21 Oct. 2012. Web. 22 Oct. 2012 <http://www.bloomberg.com/news/2012-10-22/how-to-crash-an-economy-and-escape-the-scene.html>.

Conti, Vittorio (2011). “Rethinking Regulation and Oversight to Learn the Lesson from the Crisis”. *Paolo Baffi Centre Research Paper Series nº 2011-106*, November 2011. Web. 5 Dec. 2012 <http://ssrn.com/abstract=1918765>.

Cozer, Cristiano de Oliveira Lopes (2006). *Natureza e Propriedades da Moeda: Contribuição para o Estudo do Direito Monetário no Brasil*. Brasília: Faculdade de Direito da UnB, 2006. Web. 7 Dec. 2012 <http://hdl.handle.net/10482/4993>.

Crotty, James (2009). “Structural causes of the global financial crisis: a critical assessment of the ‘new financial architecture’”. *Cambridge Journal of Economics* Vol. 33, Issue 4, 2009, pp. 563–580. Web. 1 Feb. 2013 <http://cje.oxfordjournals.org/content/33/4/563.short>.

Dagher, Jihad and Ning Fu (2012). “Lender Regulation and the Mortgage Crisis”. *VOX* 26 Jun. 2012. Web. 23 Oct. 2012 <http://www.voxeu.org/article/lender-regulation-and-mortgage-crisis>.

Davidoff, Steven M. (2012). “Despite Its Problems, Dodd-Frank Is Better Than the Alternatives”. *The New York Times: Deal Book* 16 Oct. 2012. Web. 17 Oct. 2012 <http://dealbook.nytimes.com/2012/10/16/despite-its-problems-dodd-frank-is-better-than-the-alternatives/>.

Eavis, Peter (2012). “One Rule Regulators Are Rounding On”. *The New York Times: Deal Book* 31 Jul. 2012. Web. 17 Oct. 2012 <http://dealbook.nytimes.com/2012/07/31/one-rule-regulators-are-rounding-on/>.

Eisinger, Jesse (2012). “As Banking Titans Reflect on Their Errors, Few Pay Any Price”. *The New York Times: Deal Book* 1 Aug. 2012. Web. 17 Oct. 2012 <http://dealbook.nytimes.com/2012/08/01/few-repercussions-in-the-conversion-of-a-former-wall-st-titan/>.

Embid Irujo, Antonio (2009). *El Derecho de la Crisis Económica*. Zaragoza: Prensas Universitarias de Zaragoza, 2009. Print.

Ferguson, Niall and Nouriel Roubini (2012). “The Perils of Ignoring History: This Time, Europe Really Is on the Brink”. *Spiegel Online: International* 12 Jun. 2012. Web. 18 Oct. 2012 <http://www.spiegel.de/international/europe/the-germans-have-learned-nothing-from-history-a-838429.html>.

Frost, Tom C. (2012). “The Big Danger With Big Banks”. *The Wall Street Journal* 15 May 2012. Web. 26 Oct. 2012 <http://online.wsj.com/article/SB10001424052702304371504577406023330005352.html>.

Galbraith, John Kenneth (1993). *A Short History of Financial Euphoria.* New York: Whittle Books & Viking Penguin, 1993. Print.

Goodhart, Charles (2008). “The Regulatory Response to the Financial Crisis”. *CESifo Working Paper No. 2257,* March 2008. Web. 1 Feb. 2013 <http://ssrn.com/abstract=1113002>.

Goodhart, Charles (2010). “How Should We Regulate the Financial Sector” *in* Turner, Adair, et al. *The Future of Finance: The LSE Report*, London: London School of Economics and Political Science, 2010. Chapter 5, pp. 165-186. Web. 3 Dec. 2012 <http://harr123et.files.wordpress.com/2010/07/futureoffinance-chapter51.pdf>.

Greenspan, Alan (2011). “Dodd-Frank Fails to Meet Test of Our Times”. *Financial Times: Opinion* 29 Mar. 2011. Web. 31 Oct. 2012 <http://www.ft.com/intl/cms/s/0/14662fd8-5a28-11e0-86d3-00144feab49a.html>.

Haldane, Andrew G. (2012). *The Dog and the Frisbee*. Speech given at the Federal Reserve Bank of Kansas City’s 36th Economic Policy Symposium, “The Changing Policy Landscape”, Jackson Hole, Wyoming 31 Aug. 2012. Web. 4 Dec. 2012 <http://www.kansascityfed.org/publicat/sympos/2012/ah.pdf>.

Harrison Jr., William B. (2012). “In Defense of Big Banks”. *The New York Times: The Opinion Pages* 22 Aug. 2012. Web. 25 Oct. 2012 <http://www.nytimes.com/2012/08/23/opinion/dont-break-up-the-big-banks.html>.

Howard, Philip K. (2011). “Results-Based Regulation: A Blueprint for Starting Over”. *Common Good: Blog* 2 Dec. 2011. Web. 18 Oct. 2012 <http://www.commongood.org/blog/entry/philip-k.-howard-on-the-need-for-results-based-regulation>.

Hu, Henry T.C. (2012). “Too Complex to Depict? Innovation, 'Pure Information,' and the SEC Disclosure Paradigm”. *Texas Law Review*, Vol. 90, Nº 7, June 2012, pp. 1601-1715. Web. 26 Oct. 2012 <SSRN: http://ssrn.com/abstract=2083708>.

The Institute of International Finance (2011). *Measuring the Cumulative Economic Impact of Basel III*. Presentation by Philip Suttle at the 9th Annual Risk Capital Conference. Frankfurt 19 Sep. 2011. Web. 1 Nov. 2012 <www.iif.com/download.php?id=wT7xSI3009Q=>.

Jenkins, Patrick (2012). “Bank Investors Should Push for Simplicity”. *Financial Times: Inside Business* 23 Jul. 2012. Web. 25 Oct. 2012 <http://www.ft.com/intl/cms/s/0/d005b01e-d4df-11e1-b476-00144feabdc0.html>.

Johnson, Simon (2012a). “Too Big to Handle”. *Project Syndicate* 24 Oct. 2012. Web. 26 Oct. 2012 <http://www.project-syndicate.org/commentary/the-growing-consensus-against-big-banks-by-simon-johnson>.

Johnson, Simon (2012b). “Under Pressure, Biggest Banks Rely on 3 Myths”. *The New York Times: Economix* 2 Aug. 2012. Web. 18 Oct. 2012 <http://economix.blogs.nytimes.com/2012/08/02/under-pressure-megabanks-rely-on-three-myths/>

Keating, Frank (2011). “Banking in a Time of Over-Regulation”. *The Wall Street Journal: Opinion* 30 Aug. 2011. Web. 31 Oct. 2012 <http://online.wsj.com/article/SB10001424053111904875404576532871460271158.html>.

Kindleberger, Charles P. (2005). *Manias, Panics and Crashes: a History of Financial Crises*. 5th ed. New Jersey: John Willey & Sons, 2005. Print.

Krimminger, Michael H. (2012). “Why the F.D.I.C.’s Approach to Financial Failures Makes Sense”. *The New York Times: Deal Book* 17 Oct. 2012. Web. 18 Oct. 2012 <http://dealbook.nytimes.com/2012/10/17/why-the-f-d-i-c-s-approach-to-financial-failures-makes-sense/>.

Krugman, Paul (2010). “The Fire Next Time”. *The New York Times: Opinion* 15 Apr. 2010. Web. 5 Nov. 2012 <http://www.nytimes.com/2010/04/16/opinion/16krugman.html>.

Lacker, Jeffrey M. and Gary H. Stern (2012). “Large Banks Need 'Living Wills'”. *The Wall Street Journal* 12 Jun. 2012. Web. 25 Oct. 2012 <http://online.wsj.com/article/SB10001424052702303665904577454930776158186.html>.

Lastra, Rosa Maria (1996). *Central Banking and Banking Regulation*. London: Financial Markets Group, London School of Economics, 1996. Print.

Levitin, Adam J. (2011).“In Defense of Bailouts”. *The Georgetown Law Journal* Vol. 99, Issue 2 (2011), pp. 435-514. Web. 21 Oct. 2013 <http://georgetownlawjournal.org/files/pdf/99-2/Levitin.pdf>.

McConnell, Mitch (2010). *Financial Reform Must Not Lead to More Taxpayer-Funded Bailouts*. US Senate Republican Leader Press Release 13 Apr. 2010. Web. 4 Feb. 2013 <http://www.mcconnell.senate.gov/public/index.cfm?p=PressReleases&ContentRecord_id=b23f36f0-2250-427f-9164-9bbe6ec074ec>.

Miller, Harvey R. and Maurice Horwitz (2012). “A Better Solution Is Needed for Failed Financial Giants”. *The New York Times: Deal Book* 9 Oct. 2012. Web. 18 Oct. 2012

<http://dealbook.nytimes.com/2012/10/09/a-better-solution-is-needed-for-failed-financial-giants/>.

Noyer, Christian (2012). “The Next Step for Europe Is Financial Union”. *The Wall Street Journal* 11 Jun. 2012. Web. 26 Oct. 2012 <http://online.wsj.com/article/SB10001424052702303901504577460741943418980.html>.

Pandit, Vikram (2012). “Apples v Apples – A New Way to Measure Risk”. *Financial Times: Opinion* 10 Jan. 2012. Web. 30 Oct. 2012 <http://www.ft.com/intl/cms/s/0/90bb724a-3afc-11e1-b7ba-00144feabdc0.html>.

Posner, Eric A. and E. Glen Weyl (2012). “A Proposal for Limiting Speculation on Derivatives: An FDA for Financial Innovation”. *The University of Chicago, Institute for Law and Economics Working Paper Nº 594,* Mar. 2012. Web. 29 Oct. 2012 <http://ssrn.com/abstract=1995077>.

Rattner, Steven (2012). “Regulate, Don’t Split Up, Huge Banks”. *The New York Times: The Opinion Pages* 31 Jul. 2012. Web. 25 Oct. 2012 <http://www.nytimes.com/2012/08/01/opinion/sanford-weills-glass-steagall-distraction.html>.

Reale, Miguel (1993). *Lições Preliminares de Direito*. 20th ed. São Paulo: Saraiva, 1993. Print.

Reinhart, Carmen M. and Kenneth S. Rogoff (2009). *This Time is Different: Eight Centuries of Financial Folly*. Princeton: Princeton University Press, 2009. Print.

Ricks, Morgan (2012). “A Regulatory Design for Monetary Stability”. *Vanderbilt Law Review*, Vol. 65, Number 5 (October 2012), pp. 1289-1360. Web. 13 Sep. 2013 <http://ssrn.com/abstract=1933890>.

Schoenmaker, Dirk and Daniel Gros (2012). “A European Deposit Insurance and Resolution Fund”. *CEPS Working Document* nº 364, May 2012. Web. 5 Dec. 2012 <http://www.ceps.eu/book/european-deposit-insurance-and-resolution-fund>.

Schwartz, Nelson D. (2012). “A Shock From JPMorgan Is New Fodder for Reformers”. *The New York Times: Deal Book* 10 May 2012. Web. 19 Oct. 2012 <http://dealbook.nytimes.com/2012/05/10/a-shock-from-jpmorgan-is-new-fodder-for-reformers/>.

Shirakawa, Masaaki (2009). *The Central Bank from the Viewpoint of ‘Law and Economics’*. Lecture given at the Faculty of Law, University of Tokyo, Tokyo, 21 Oct. 2009. Print.

Silver-Greenberg, Jessica and Nelson D. Schwartz (2012). “‘Living Wills’ for Too-Big-to-Fail Banks Are Released.” *The New York Times* 3 Jul. 2012. Web. 15 Oct. 2012. <http://www.nytimes.com/2012/07/04/business/living-wills-of-how-to-unwind-big-banks-are-released.html>.

Simmel, Georg (2004).*The Philosophy of Money*. Ed. David Frisby. Translated by Tom Bottomore and David Frisby from a first draft by Kaethe Mengelberg. 3rd enlarged ed. London: Routledge, 2004. Print.

"Special Report: Financial Innovation" (2012). *The Economist* 25 Feb. 2012. Web. 15 Oct. 2012 <http://www.economist.com/node/21547999>.

Tarr, David G. (2010). "The Political, Regulatory and Market Failures that Caused the US Financial Crisis". *Policy Research Working Paper nº 5324*. Washington: World Bank (Finance and Private Sector Development Team, Development Research Group), May 2010. Web. 1 Feb 2013 <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1617128>.

Tett, Gillian (2009). "More prison sentences may renew financial credibility". *Financial Times* 4 Sep. 2009. Web. 22 Oct. 2012 <http://www.ft.com/cms/s/0/fa9c2874-98e9-11de-aa1b-00144feabdc0.html>.

United States Government Accountability Office (2009). *Financial Regulation: A Framework for Crafting and Assessing Proposals to Modernize the Outdated U.S. Financial Regulatory System. Report to Congressional Addressees.* Washington, DC: GAO, January 2009. Web. 1 Nov. 2012 <http://www.gao.gov/new.items/d09216.pdf>.

World Bank (2012). *Global Financial Development Report 2013: Rethinking the Role of the State in Finance*. Washington, DC: World Bank, 2012. Web. 4 Feb. 2013 <http://www.worldbank.org/financialdevelopment>.

Zhou, Jianping et al (2012). "From Bail-out to Bail-in: Mandatory Debt Restructuring of Systemic Financial Institutions". *IMF Staff Discussion Note* 24 Apr. 2012. Web. 10 Sep. 2013 <http://www.imf.org/external/pubs/ft/sdn/2012/sdn1203.pdf >.

Zweig, Jason (2012). "Breaking Up Is Hard to Do". *The Wall Street Journal: The Intelligent Investor* 27 Jul. 2012. Web. 18 Oct. 2012 <http://online.wsj.com/article/SB10000872396390444840104577553192043480890.html>.

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