



EUROPEAN CAPITAL MARKETS INSTITUTE

ECMI Working Paper

**Capital Markets, Debt Finance and the EU Capital Markets
Union: A law and finance critique**

by Vincenzo Bavoso

No. 5 / October 2017



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Publisher and editor European Capital Markets Institute
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Editorial Board Cosmina Amariei, Karel Lannoo, Apostolos Thomadakis

ISBN 978-94-6138-621-2

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Abstract

Contrary to conventional wisdom, this paper contends that the excessive development of capital market finance has been one of the catalysts behind the crises and scandals that have unfolded over the past 15 years. In particular, innovative debt transactions have proven instrumental to the creation of excessive levels of risk-taking and leverage, which have had catastrophic consequences, both at the firm and systemic level.

While much regulation has been enacted in response to these crises, the way in which debt transactions in capital markets are designed and entered into remains largely unregulated. Moreover, regulators have so far neglected the role that leverage and debt creation play in the economy and their consequences for the wider social context. Moreover, the recent policy design in the EU is promoting a renewed implementation of an old design, the Capital Markets Union (CMU). This revolves around disintermediated, market-based forms of financing, which should represent an alternative to the traditionally predominant (in Europe) bank-based financing channel. This paper finds that the European policy design fails to appreciate the dangers associated with capital markets finance and its ensuing debt-creating effects. It argues that, despite some regulatory efforts, a suitable architecture for the regulation of disintermediated capital markets is still missing.

Keywords: Capital Markets Union; Debt Finance; Leverage; Financial Innovation; Financial Regulation

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*The trade of the petty usurer is hated with most reason:
it makes a profit from currency itself, instead of making it
from the process which currency was meant to serve.
Their common characteristic is obviously their sordid avarice.
Aristotle, "Politics I"*

1. Background

Contemporary financial markets are the result of a process of transformation that can be traced back to the 1970s. Intellectual shifts¹ in that decade triggered a dramatic change in politico-economic orientations, which took place initially in the US and the UK – due to governments that were highly receptive to neoclassical ideologies – and slowly expanded worldwide through the influence of global regulatory networks, chiefly the IMF and the World Bank. The first relevant change was the collapse of Bretton Woods in the early 1970s, due largely to the unilateral exit of the US. Bretton Woods had established a system of regulated fixed exchange rate and, more importantly for the purpose of this discussion, tight controls of cross-border financial flows. Capital controls were centrally regulated at national level and resulted in 'closed' financial markets, where international manipulations of currency and securities markets became nearly impossible.² Importantly, Bretton Woods coincided with a widespread acceptance of some of the tenets of Keynesian political economy, and in particular the importance of government intervention in financial regulation and supervision for the purpose of preventing crises and shocks. Eventually, the end of Bretton Woods was the first piece of the deregulation puzzle, and critically it allowed foreign participation in other countries' capital markets. This led among other things to macroeconomic imbalances³ and to increasingly globalised and interconnected financial markets.

Deregulatory policies continued throughout the 1980s, until the late 1990s. They led to some far-reaching regulatory changes, most importantly to the liberalisation of derivatives trading, chiefly through the abolition of any distinction between speculative and hedging transactions.⁴ The consequential widespread use of speculative derivatives went hand-in-hand with a process of financial innovation that, as will be discussed later, achieved little economic value apart from increasing risk-taking, leverage and complexity.⁵

¹ See for instance L. Gallino, *Finanzcapitalismo – La Civiltà' del Denaro in Crisi*, Einaudi, 2011.

² The establishment of Bretton Woods coincided with an increase in government intervention in the area of financial regulation. See B. Eichengreen, *Globalizing Capital: A History of the International Monetary System*, Princeton University Press, 2008, ch.4.

³ Y. Varoufakis, *The Global Minotaur: America, Europe and the Future of the Global Economy*, Zed Books, 2013. Varoufakis explains this with a useful discussion of what he calls the global surplus recycling mechanism.

⁴ In the US, this occurred through the enactment of the Commodities Futures Modernization Act of 2000, which liberalised common law distinctions between commercial and speculative derivatives; in the UK, the Financial Services Act 1986 abolished old prohibitions of the 1845 Gaming Act, thereby facilitating market practices related to speculative derivatives; At EU level, the European Second Banking Coordination Directive (Directive 89/646/EEC, replaced by Directive 2006/48/EC) enabled European banks to engage in investment-type activities that were not traditionally allowed in deposit-taking institutions.

⁵ For a discussion, see S. Schwarcz, "Regulating Complexity in Financial Markets", *Washington University Law Review*, Vol. 87, No. 2, 2009; and also V. Bavoso "Financial Innovation, Derivatives and the UK and US Interest Rate Swap Scandals: Drawing New Boundaries for the Regulation of Financial Innovation", *Global Policy*, Vol. 7, No. 2, May 2016.

Another prominent consequence of the deregulatory measures during the above period was the abrogation of the prohibition to combine within the same financial institution commercial and investment activities.⁶ This led to a number of mergers⁷ and to the proliferation of larger institutions, whereby commercial banks could access the more profitable investment business (largely based on fees from underwriting, securities issuance or trading in financial products), while investment banks could benefit from the capital base of commercial banks (due largely to depositors' cash). The resulting business model elicited a much greater level of risk-taking because the new universal banks could participate in risky and highly profitable capital markets activities (which, as explained later in this paper, came to be known as the securitised banking model), maintaining relatively low levels of equity capital,⁸ while relying at the same time on government backstop in case of failure. As discussed later, the profitability of this business model stemmed from high levels of leverage, which in turn guaranteed high returns for shareholders.

Regulatory and institutional changes also prompted drastic shifts in the capital base of large financial institutions. Instead of funding their activities through more traditional deposit-based capital, they moved to wholesale forms of finance, centred on capital markets activities and products. As explained later in this paper, this brought about more complex and risky forms of maturity transformation and led banks to operate under higher levels of leverage.⁹

From an institutional perspective, more general deregulatory policies contributed to the progressive exclusion of the state from the direct regulation of the financial industry. This process was epitomised at a higher policy level by the privatisation of most utilities, public services and natural resources, which has been taking place since the 1980s and is effectively still ongoing due to persisting beliefs in neoclassical ideologies. This orthodoxy prescribed a move away from state regulation which was deemed less efficient than market regulation in achieving regulatory goals. In the financial services industry this translated into the already signposted obliteration of capital controls and in the progressive reliance on market mechanisms (such as credit rating agencies for instance, or independent supervisory agencies at the EU level) to control and supervise the industry. In hindsight, it has become evident that the move away from state regulation of certain aspects of financial markets has coincided with the progressive erosion of discipline in the industry.¹⁰ Moreover, it is fair to say that failures of market discipline started to become apparent well before the global financial crisis

⁶ The repeal of the Glass Steagall Act of 1933 through the Gramm-Leach-Bliley Act 1999 nullified the separation between commercial and investment banking activities and gave way to huge financial conglomerates, and enabled them to compete for the more profitable investment business while enjoying implicit government guarantee. In the UK similarly, in the context of the 1986 'big-bang' in financial regulation, differences between commercial banks and merchant banks were obliterated, and membership to the Stock Exchange was opened to corporate members.

⁷ The trend was probably kick-started by the merger between Citibank, a commercial bank, with Travellers, a conglomerate providing mainly insurance services, and Solomon Brothers, an investment bank. This merger gave way to the present day megabank CitiGroup.

⁸ Relative low capital base to the level of risk that they were taking by virtue of their business structure. This is thoroughly explained by E. Avgouleas, "The Reform of Too-Big-To-Fail Banks: A New Regulatory Model for the Institutional Separation of "Casino" from "Utility" Banking", 14 February 2010 (<https://ssrn.com/abstract=1552970> or <http://dx.doi.org/10.2139/ssrn.1552970>).

⁹ See J. Cullen, "Liquidity, Securitisation and Mortgage Markets: A Legal and Minskyan Analysis", draft spring 2017.

¹⁰ J. Coffee "What Went Wrong? An Initial Enquiry into the Causes of the 2008 Financial Crisis", *Journal of Corporate Law Studies*, Vol. 9, No. 1, 2009.

(GFC) of 2008, possibly as early as in the late 1990s with the collapse of Long-Term Capital Management (LTCM)¹¹ and the ensuing meltdown of international financial markets.

This paper stresses that the various deregulatory policies enacted from the 1980s onward in most developed economies have contributed to the creation of more financialised economies. The process of financialisation refers to the increasing over-reliance of economic systems on financial markets, or in other words, a move away from industrial capitalism towards financial capitalism.¹² This entailed a surge in capital markets activities, epitomised in the 1980s and 1990s by the waves of takeovers, mostly funded with debt, and more recently by the surge in derivatives trading and the vast employment of securitisation.¹³ This phenomenon was also reflected in a much stronger reliance of both corporates and households on capital markets products.¹⁴ What is more important for the purpose of this present discussion is that the use of financial products, from mortgages to more complex derivatives, contributed to the build-up of unprecedented levels of leverage, not only in the financial sector, but more broadly at the social level. At the outset of the global collapse of 2008, it was widely recognised that there was too much debt in the system, and that in particular private sector debt had soared from 50% to 170% of national income,¹⁵ without at the same time having facilitated economic growth and development.¹⁶ Instead, the excessive amount of privately created debt has not funded new capital investments but the purchase of existing assets, often in real estate.¹⁷ As will be stressed later in this paper, excessive debt and leverage are the primary causes of the disproportionate risk-taking and consequential instability that has characterised the last two decades. Increasing levels of debt are explained by the development patterns of capital markets since the 1980s. Looking at the US for instance, while the level of equity issues has remained relatively stable since the mid-1990s and it has not shown substantial growth, debt issues have skyrocketed.¹⁸

It further needs to be emphasised that the liberalisation and deregulation of national financial markets contributed to their global integration. This was of course also due to the deregulatory policies that allowed financial institutions to engage in the constant innovation of new products, which in turn increased the interconnectedness between institutions and markets. Much of this innovation occurred in the realm of capital markets finance, and in particular in the context of debt finance, where

¹¹ For an account, see R. Bookstaber, *A Demon of our Own Design: Markets, Hedge Funds and the Perils of Financial Innovation*, Wiley, 2007, chapter 6.

¹² See Gallino, 2011, *op. cit.*, who emphasises how different sources of income characterise financialised economies, which shift from productive and real economy ones, to financial ones. See also L. Mitchell, "Financialism: A (Very) Brief History", *Creighton Law Review*, Vol. 43, 2010.

¹³ Not only on the part of financial institutions but also corporate and government entities that started to engage with capital market activities on a larger scale. Banks too were affected by capital markets activities as their balance sheet changed on both assets and liabilities side, as will be explained in section 3.

¹⁴ See G30 "Shadow Banking and Capital Markets: Risks and Opportunities", Washington, D.C., November 2006, p. 6.

¹⁵ A. Turner, *Between Debt and the Devil*, Princeton University Press, 2016, chapter 3. These figures and general claims relate mostly to the UK and US market, even though Turner recognises that Chinese debt too has grown at a scary pace in the last ten years.

¹⁶ *Ibid.* Turner argues that this is contrary to conventional belief grounded on the benefits of having deep financial markets, whereby financial innovation was seen as having a role for completing markets and in turn market discipline orthodoxy would allow reining in resulting complexity.

¹⁷ *Ibid.*

¹⁸ In 1996, debt issuances were about twice the size of equity. By 2014, they were five times their size. See Pragmatic Capitalism, "The Rise of the Bond Market and its Impact on Portfolio Allocations" (www.pragcap.com/the-rise-of-the-bond-market-its-impact-on-portfolio-allocations/).

long securitisation chains, combined with credit derivatives, caused a large-scale homogenisation of financial institutions' balance sheets. Their engagement with wholesale channels of finance on both the assets and liabilities side entailed a great degree of asset correlation.

Notwithstanding this process of globalisation, however, an international framework for the regulation of global financial markets remains today the greatest and most urgent policy challenge.¹⁹ It is trite to note that every crisis over the last 20 years has been followed by regulatory adjustments. Institutional imbalances between regulators and the industry, however, have remained and have probably increased. Equally, the unconstrained process of financial innovation has widened the spectrum of capital markets activities, where most new transactions and products are freely entered into by market participants and result in the creation of more system-wide debt. While it is true that post-2008, this type of innovation may have slowed down, this process, and more broadly the way in which debt capital markets function, has remained very loosely and indirectly regulated. This means that the role of leverage and debt creation (not only in the financial system but on the wider social context) that flows from these operations has been neglected by policy-makers until very recently.

Notwithstanding these regulatory and policy concerns, the current EU project to revive capital markets (Capital Markets Union or CMU) is now at the forefront of EU policy-making. This aims to strengthen disintermediated, market-based forms of financing, which should represent an alternative to the traditionally predominant (at least in continental Europe) bank-based financing channel. Section 2 of this paper article provides a critical examination of the main policy claims related to the CMU and also analyses the way in which it is going to be implemented. Building on this analysis, section 3 offers a critique of the EU policy design by looking specifically at how market-based forms of finance are likely to increase leverage. This section contends that the CMU project fails to appreciate the dangers associated with capital markets finance and in particular its ensuing debt creation effects. Section 4 reflects on the regulatory framework that surrounds the capital markets activities envisaged under the CMU, primarily identified with the securitisation market and the repo market. This analysis will show that despite some regulatory efforts, a suitable architecture for the regulation of disintermediated capital markets is still missing. A final section 5 provides some critical conclusions.

2. CMU in perspective

2.1 Bank finance vs capital markets finance – the key claims

Modern financial markets result from the combination of two main channels of finance, commonly identified with bank-based and capital markets-based. In theory the development of both channels provides an ideal combination of sources of finance that reflects the possibility for large borrowers to opt for bank-intermediated products (such as loans) or disintermediated market-based products (such as bonds or securitisation). A realistic balance between these two different financing mechanisms exists in only a very few jurisdictions, most prominently in the US and in the UK. Due to historical, legal and institutional reasons, whose analysis is beyond the scope of this paper, capital markets have developed in these countries to a much higher degree than in other developed economies (such as continental European ones or Japan), where the financial system still strongly relies on banks as the ultimate intermediary of finance.

¹⁹ See E. Avgouleas, *The Governance of Global Financial Markets: The Law, the Economics, the Politics*, Cambridge University Press, 2012.

Much of the policy-making narrative over the last decade, and particularly post-2008, puts great emphasis on the role that capital markets can play in the economy, particularly with respect to their function in facilitating capital raising and investing, risk management and price discovery.²⁰ It is commonly argued that capital markets provide a vital financing source to economic activities by expanding the investor base beyond banks. This in turn allows a diversification of funding sources that enables borrowers to choose from competing sources and terms of financing.²¹ It is also contended that capital markets facilitate the efficiency with which available finance is allocated to the most productive projects, something that is often referred to as allocative efficiency. This contention is of course grounded in the belief that through market mechanisms (such as arbitrage trading) the price of securities in capital markets responds immediately to price-sensitive information. The efficiency discourse translates into the belief that capital markets provide an accurate valuation of a corporation and its assets. Many of the policies centred on the benefits of capital markets for economic growth are based on this efficiency assumption, which sees capital markets as the ideal platform for the quickest development of business ideas and entrepreneurial risk-taking activities.²²

In the same vein, it is argued that capital markets allow a more efficient distribution of risk than banks. An efficient market should in principle enable risks to be allocated to those who are better prepared to bear them and have the appetite for them. In turn, better risk allocation would increase the capacity of the financial system to take more risks, in a way that does not have a detrimental impact on the economy or on the stability of the financial system.

Despite these theoretical claims, and some empirical evidence suggesting that the size of capital markets does lead to economic growth,²³ the development of financial markets in the EU is characterised by an overwhelming reliance on bank-based channels of finance and on relatively under-developed capital markets. As an illustration, in the EU, public equity represents 64% of GDP, whereas in the US it represents 138% of GDP; debt securities are 12.9% of GDP in the EU, against 40.7% in the US.²⁴ A comparison with the US shows also that the values of equity, corporate bonds and securitisation across the EU represent, respectively, 60%, 35% and 20% of the US counterpart.²⁵ From a different perspective, bank lending amounts to 32% of private sector credit in the US (against 20% being represented by corporate bonds, 32% by securitisation, 16% by non-bank loans), whereas the same cumulative figures for the UK, Germany, France, Spain and the Netherlands show bank lending

²⁰ European Commission, “Building a Capital Markets Union – accompanying the Green Paper”, COM 2015/63, p. 7.

²¹ In recent times, new sources of finance have emerged in the shape of equity crowdfunding and P2P lending, whose development is also part of the CMU project.

²² See *Ibid.*, p. 9 and N. Anderson, M. Brooke, M. Hume and M. Kurtosiova, “A European Capital Markets Union: Implications for Growth and Stability”, Bank of England Financial Stability Paper No. 33, 2015, p 4.

²³ See C. Kaserer and M. Rapp, “Capital Markets and Economic Growth – Long-Term Trends and Policy Challenges”, Research Report, March 2014 (http://www.europeanissuers.eu/lib/newsflash/research_paper_-_release_version_-_march_2014.pdf) where it is argued that stock and bond markets have a positive impact on economic development due to their superior capacity to allocate capital efficiently across industries by pooling capital from many investors.

²⁴ European Commission, “Building a Capital Markets Union – accompanying the Green Paper”, COM 2015/63, p. 11.

²⁵ See Anderson, Brooke, Hume and Kurtosiova, 2015, *op. cit.*, p. 6

accounting for 68% of private sector credit (against 10% of corporate bonds, 8% of securitisation and 14% of non-bank loans).²⁶

2.2 A critical overview of the EU policy direction

Some of the goals and motivations underpinning the EU Capital Markets Union reflect the more general claims illustrated in the previous section, pertaining to the qualities of market-based channels of finance and to the economic development that can be attained thanks to disintermediated financing channels. The policy discourse also takes into account some issues that are more specifically related to EU financial markets and the way in which they reacted to the 2008 crisis.

In the Commission papers it is generally acknowledged that the size and development of capital markets does not necessarily entail economic benefits and that this can depend on a number of institutional and regulatory preconditions. It is also admitted that much of the growth in debt capital markets activities in pre-crisis years was effectively not aimed at supporting any real economy activity and resulted instead in profits being kept within the financial system. The growth of debt finance transactions, such as securitisation, also brought about increased interconnectedness between markets and institutions and higher risks of contagion and systemic risks.²⁷ These concerns are also reflected in recent findings. The Bank for International Settlements (BIS) recently looked at the effects of financial sector growth on the real economy and concluded that the growth of the financial system is actually a drag on productivity growth. This means that in times of financial booms, these are not accompanied by growth and development in the real economy, also because the financial sector tends to compete with other sectors of the economy for resources. The BIS also critically stressed that credit and financial booms tend to cause greater harm to sensitive areas of the economy, particularly those revolving around innovation, research and development.²⁸ In a study focused on emerging economies, the IMF also stressed that beyond a certain level of financial development, the benefits initially experienced in the economy begin to decline while costs associated with financial volatility rise and extend to the real economy, causing instability. The IMF emphasised that financial development entails trade-offs and that risks of financial instability can be mitigated by building strong institutions and a sound regulatory and supervisory framework.²⁹

Bearing in mind the above overarching concerns related to the further integration and development of European capital markets, the Commission has developed a number of arguments that are critically illustrated in this section. Firstly, arguments related to diversification of sources of finance and the optimal allocation of funds across the EU³⁰ have been used to support the contention that the banking sector across the EU was over-burdened in the years preceding the global financial crisis. It has essentially been asserted that the over-reliance on the banking sector was the determining factor that impaired the quality of European banks' balance sheets. This in turn led, especially post-2008, to their limited lending capacity and higher costs of funding. It is also observed by the Commission that the

²⁶ Group of 30, "Shadow Banking and Capital Markets – Risks and Opportunities", Washington, D.C., November 2016, p. 6.

²⁷ See European Commission working document accompanying green paper 2015, op. cit., p. 12.

²⁸ S. Cecchetti and E. Kharroubi, "Why does financial sector growth crowd out real economic growth?" BIS Working Paper No. 490, Bank for International Settlements, February 2015.

²⁹ IMF, "Rethinking Financial Deepening: Stability and Growth in Emerging Markets", IMF Staff Discussion Note, May 2015. The IMF also specifically said that in the years before 2008 there was too much finance and some of the regulatory measures enacted post-crisis were in fact aimed at reducing certain activities and markets.

³⁰ See European Commission Green Paper, 2015, op. cit., p. 4.

story was different in the US, where the more diversified financial system, as outlined in the previous section, allowed its economy to tap other sources of finance, mostly market-based ones.³¹

This paper proposes a different narrative by arguing that the Commission's analysis fails to consider the changes in business model that affected European banks in the decades before 2008. The deregulation of financial services propelled the proliferation of large megabanks, which started to progressively engage in risky market-based activities, instead of the more traditional ones involving lending. Banks' balance sheets were particularly affected by this trend because instead of funding their activities through deposits (as traditionally had been the case), banks started to rely increasingly on wholesale market-based funding channels, represented primarily by repo transactions and securitisation. As will be discussed in closer detail later in section 3 of this paper, this funding pattern became particularly problematic due to the magnified maturity mismatch³² and the higher risks that banks became exposed to.³³ The result of European banks' increasing interaction with market-based activities was a sharp increase in the way they contributed to systemic risk.³⁴ The underlying shift in banks' funding patterns is arguably what impaired their lending capacity once the credit crunch unfolded in 2007 and the market for short-term lending between financial institutions froze.

The Commission's policy discourse stresses that banks could not adequately support demands for finance after the global financial crisis (GFC), and that this in turn worsened the economic crisis. This assessment also fails to draw a fundamental distinction between large universal banks in the EU and smaller cooperative banks that operate in some European regions. A report published in 2016 by the German Bundesbank has revealed that domestic business loans represent 8% of total assets for big banks, while they are 28% of total assets for cooperative banks.³⁵ Similarly, data from the Bundesbank have demystified the belief that all banks after the crisis stopped supporting the economy by lending to business. Again, German cooperative banks increased their lending to businesses between 2008 and 2011 by 14%.³⁶ Conversely, it has also been observed that banks that are heavily engaged with capital markets activities, both on their assets and liabilities side, are less prone to lend to business.³⁷

As a final note on this matter, it should be acknowledged that not all economic analyses agree with the Commission's approach to explain post-crisis recession. It has been strongly argued that the

³¹ See Anderson Brooke, Hume and Kurtosiova, 2015, op. cit., p. 7.

³² Think as an example about a 25-year mortgage on the one side of the balance sheet and short-term repo funding on the other, which needs to be rolled over on a daily basis.

³³ See Avgouleas, 2010, op. cit., and Y. Biondi "Empowering market-based finance: A note on bank bail-outs in the aftermath of the north Atlantic financial crisis of 2007", *Accounting Economics and Law*, 6(1), 79–84, 2016. As will be explained in section 3, this included risk of contagion because of increased correlation with other banks' balance sheet and with the shadow banking system.

³⁴ T.G. Yongoua Tchikanda, "Systemic risk and individual risk: A trade-off?", Working Paper, *Economix*, June 2016.

³⁵ Deutsche Bundesbank, Eurosystem, "Time series BBK01.PQ1601: Lending to domestic enterprises and self-employed persons/Total/Credit cooperatives", 2017 (https://www.bundesbank.de/Navigation/EN/Statistics/Time_series_databases/Banks_and_other_financial_institutions/banks_and_other_financial_institutions_details_value_node.html?tsId=BBK01.PQ1601&listId=www_s104_vjkre_15).

³⁶ Ibid. See also I. Hasan, K. Jackowicz, O. Kowalewski and L. Kozłowski, "Bank Ownerships Structure, SME Lending and Local Credit Markets", Bank of Finland Research Discussion Paper 22, 2014 (https://ideas.repec.org/p/bof/bofrdp/2014_022.html).

³⁷ P. Abbassi, R. Iyer, J. Peydro and F. Tous, "Banks that trade securities grant fewer loans", Research Brief, Deutsche Bundesbank Eurosystem, April 2016. This research observes that banks that invest in securities through proprietary trading reduce the credit supply to the real economy. It observes that in 2009 banks were able to achieve returns of 12% per annum through their securities trading activities, while the return over loan interest was around 5% per annum in the same period.

protracted economic crisis is not actually caused by a lack of bank lending to enterprises, but rather by the austerity measures enacted post-crisis, which have in turn had the consequence of killing consumer demand, and therefore businesses' need for credit.³⁸

The second strong policy claim made by the Commission, which has also become one of the flagships of the CMU project, is that market-based channels of finance would be key to improving access to finance for small- and medium-sized enterprises (SMEs) across Europe.³⁹ This is grounded in the idea that the type of private sector risk-sharing platform provided by capital markets would provide much-needed sources of funding to SMEs and at the same time it would allocate resources optimally across the EU's businesses. This has raised huge amounts of criticism, leading some commentators to counterclaim that SME finance is not a realistic goal and that the Commission was only using it to brand the CMU project.⁴⁰ Much of the critique relates to the huge information costs that are associated with small, often local businesses throughout the EU.⁴¹ The assessment of their credit and liquidity situation would be difficult to make in capital markets and it is likely that investors would have to take high (and perhaps uncalculated) risks to fund SME projects. Conversely, banks are traditionally better positioned to fund SMEs due to their preferential access to relevant data and to their ability to know local businesses. Beyond representing a more efficient allocation of financial resources, banks seem to be better at serving the interest of SMEs in EU countries.⁴² As a final point of critique, it needs to be remembered that capital markets across the EU remain highly fragmented along national borders,⁴³ due chiefly to different legal frameworks (as regards private law, insolvency law, labour law) and also cultural factors. While it is likely that large multinational corporations and financial institutions could reap the benefits of pan-European capital markets, it is very difficult to envisage SMEs as beneficiaries of the CMU project.

An overarching critique of the CMU project is that from its inception with the Green Paper, and down to the action plan and current implementation steps, there has been a strong emphasis on the need to resuscitate the securitisation market. Other avenues to develop equity-based channels of finance, such as equity crowdfunding, have remained tentative or have been lagging behind.⁴⁴ The emphasis on securitisation and corporate bonds under the CMU would inevitably result in a further increase in

³⁸ In this sense, see Varoufakis, 2013, op. cit.

³⁹ See European Commission Green Paper, 2015, op. cit., p. 9

⁴⁰ See D. Elliott, "Capital Markets Union in Europe: Initial Impressions", Brookings Institution, 23 February 2015.

⁴¹ For a specific critique on this, see P. Schammo, "Market Building and the Capital Markets Union: Addressing Information Barriers in the SME Funding Market", *European Company and Financial Law Review*, forthcoming 2017.

⁴² This is confirmed by a study conducted by the Bank of Finland which concluded that small and medium-sized firms perform better in countries with large numbers of cooperative banks. See Hasan, Jackowicz, Kowalewski and Kozłowski, 2014, op. cit. (https://helda.helsinki.fi/bof/bitstream/handle/123456789/13452/BoF_DP_1422.pdf?sequence=1&isAllowed=y).

⁴³ The level of stock market capitalisation for instance varies between the 121% of GDP in the UK to the 10% in Cyprus or Lithuania. See European Commission Staff Working Document, "Initial Reflections on the Obstacles to the Development of Deep and Integrated EU Capital Markets", Accompanying the Document Green Paper Com(2015)63, pp. 11–13.

⁴⁴ The 2017 Mid-term review outlines the progress of the various initiatives under the CMU. While a number of interesting initiatives are in place to support equity-based funding channels especially for start-ups and non-listed companies, these are still in their infancy. The project to create an EU platform for crowdfunding for instance is still evaluating regulatory divergences in different member states and it remains at a stage of dialogue between industry and member states. See European Commission, "Consultation Document – Capital Markets Union, Mid-Term Review", 2017.

the level of leverage in the EU financial sector and eventually at the social level too. The Commission seems to be aware of this dangerous trend as it has reflected on the prevalence of corporate bond issues over corporate equity issues. While this distortion is traditionally ascribed to general bias and particularly tax policies, it remains a problematic source of debt creation, which increases the fragility of the financial system as a whole.⁴⁵

3. The problems with capital market finance

3.1 A primer on debt, leverage and liquidity

As was illustrated in section 2 of this paper, the project to implement a Capital Markets Union is grounded to a great degree in the further development of market-based instruments. These, following the definition provided by the European Commission, would result in the creation of more debt products, and/or the strengthening of debt capital markets. In particular, the Commission referred to 1) debt and equity markets, 2) derivatives markets and 3) securitisation and structured finance markets.⁴⁶ This trend would be consistent with the direction that financial development and financial innovation have taken over the last two decades, whereby it was believed that financial innovation – and in particular a higher degree of financial intermediation – would achieve the overall goals of completing and diversifying markets, providing better capital allocation and thereby creating more stable financial systems.⁴⁷

In the wake of the GFC, former FSA chairman Adair Turner emphasised the problems associated with debt creation in the financial system and the function that debt contracts have in accelerating the accumulation of leverage.⁴⁸ Turner strongly argued recently that modern deregulated financial markets, deprived of adequate regulation and therefore left to operate according to their own motives,⁴⁹ tend to create debt in excessive quantities and in particular debt that does not fund any new capital investments (the real economy) but is simply directed at the purchase of existing assets. This line of thinking is consistent with new strands of research that are investigating the links between financial markets development and real economic growth. In many cases, these challenge the assumptions previously signposted, that financial development and financial deepening are conducive to economic growth. Recent studies have in fact shown that developed financial markets lead to economic growth only up to a point, after which financial activities become unrelated to the real

⁴⁵ European Commission, “Consultation Document – Capital Markets Union, Mid-Term Review”, 2017, p. 10. See also FCA, “Market-Based Finance: Its Contribution and Emerging Issues”, Occasional Paper No. 18, May 2016.

⁴⁶ Commission Staff Working Document, “Initial Reflections on the Obstacles to the Development of Deep and Integrated EU Capital Markets”, accompanying the Green Paper on Capital Markets Union, 2015, p. 5.

⁴⁷ M. Segoviano, B. Jones, P. Lindner and J. Blankenheim, “Securitization: The Road Ahead”, IMF Staff Discussion Note, January 2015.

⁴⁸ See Turner, 2016, *op. cit.*, Preface.

⁴⁹ *Ibid*, Chapter 3. Turner makes an important point on the inherent nature of debt contracts. He notes that in a debt contract the lender is due a return even if the borrower’s business fails. This means that the interest bearing contract can magnify initial inequalities. Conversely, in an equity contract the return to the investor varies depending on the success of the business project, this being a variable that is difficult to predict. Equity contracts in other words leave investors facing risks that they cannot control, whereas debt contracts offer a return that is fixed and specified in advance. This is the rationale behind religious and philosophical prohibitions of interest and usury.

economy.⁵⁰ Even worse is the effect that debt has in propelling boom-and-bust cycles, something that will be explained in closer detail later in this section.

The problem with debt markets and the creation of excessive amounts of debt is also to be found in the intrinsically private nature of most debt contracts and in the way in which in modern liberalised financial markets and banks operate and extend credit. Banks (and even more problematically shadow banks) in most instances do not intermediate existing money – which in plain economic theory should be allocated from savers to investors – but instead create money that does not exist, this being the intrinsic characteristic of the predominant system of fractional reserve banking.⁵¹ As has been observed by Turner, the credit created by banks is in most cases not directed at supporting new business investments, but more at consumption or the purchase of existing assets (with real estate being the chief culprit).⁵² The reason for this trend has to be found in the private self-interest (as opposed to welfare-enhancing, which could be the case for instance of cooperative or mutual banks) that characterises banking activities. In modern financial systems most banks are private institutions and their business strategies are driven pre-eminently by shareholders' appetite to reap returns (return-on-equity or RoE). As it is well known, however, shareholders' as well as executives' incentives are distorted by a number of cultural and psychological factors,⁵³ but most importantly by their limited liability. This allows taking up more risks because they are protected against the downside of bad investments, while they will benefit from any upside. As will be illustrated later in this paper, psychological and behavioural factors also play an important role in the way in which banks allocate their resources because this will depend on how they perceive the state of the world at any given time. As their expectations are optimistic in fact, they will allocate resources to riskier investments, while after a round of bad news materialises they will invest in safer projects trying at the same time to decrease their level of leverage.⁵⁴ While this bias clearly hinders optimal welfare investments,⁵⁵ a further problem is that these investment patterns are highly pro-cyclical and in fact accelerate the leverage cycle.⁵⁶

The capacity of banks to create new credit becomes particularly problematic for two main reasons, namely because of the intrinsically high leverage under which they operate (due to the fractional reserve system), and because of the long and complex chains of debt transactions that they trigger in the capital markets, which is referred to as the securitised banking model. These transactions in particular seem to be at the heart of the project to revive EU capital markets, since securitisation

⁵⁰ IMF, "Rethinking Financial Deepening: Stability and Growth in Emerging Markets", IMF Staff Discussion Note, May 2015.

⁵¹ For a discussion, see E. Avgouleas, "Large Systemic Banks and Fractional Reserve Banking, Intractable Dilemmas in Search of Effective Solutions", in Douglas Arner, Emiliós Avgouleas and Ross Buckley (eds), *Reconceptualizing Global Finance and its Regulation*, Cambridge University Press, 2016.

⁵² See Turner, 2016, op. cit., Introduction.

⁵³ See E. Avgouleas and J. Cullen, "Excessive Leverage and Bankers' Pay: Governance and Financial Stability Costs of a Symbiotic Relationship", *Columbia Journal of European Law*, Vol. 21, 2014.

⁵⁴ See S. Bhattacharya, C. Goodhart, D. Tsomocos and A. Vardoulakis, "Minsky's Financial Instability Hypothesis and the Leverage Cycle", London School of Economics FMG Special Paper, September 2011.

⁵⁵ One could argue, however, that private banks' job is not to increase welfare but to act in the interest of its shareholders.

⁵⁶ See Avgouleas and Cullen 2014, op. cit.; and Bhattacharya et al., 2011. As will be explained later in section 3, overleveraging and excessive risk-taking are result of optimism that follows good news together with low interest rates. This results however in catastrophic scenario, also because agents have incomplete information about the real world probability of a good state occurring.

features as the central pillar of CMU.⁵⁷ It has been widely observed that securitisation-type transactions in the pre-crisis years were conducive to increasing levels of risk-taking, higher levels of leverage and interconnectedness with the shadow banking system. Overall, securitisation did not contribute in the pre-crisis years to a more efficient allocation of financial resources, but it rather represented a way for financial institutions to extract rents from other financial intermediaries, mainly those at the end of the long and opaque transaction chains.⁵⁸

While it appears incontrovertible that modern developed capital markets lead in most cases to an increase of debt in both the financial system and in society, policy-making in the post-crisis years has not come to terms with this fundamental problem, which in fact remains neglected by mainstream economics (which has remained myopically focused on the control of inflation).⁵⁹ The excessive credit creation of the past decade is in fact a consequence of the nature of bank contracts and the way in which banks operate,⁶⁰ this in turn has resulted in the instability that, as will be discussed in the next section, is the natural outcome of any system that is allowed to create credit without controls.

The question that regulators have failed to address in the pre-crisis years (and to a great degree they still fail to do) is that banks profit from operating with a high level of leverage and, if this specific aspect of their operations is not adequately regulated, they will do so by lengthening the intermediation chain through the shadow banking sector, thereby contributing to the creation of an endless supply of credit.⁶¹ While it is clear that leverage increases returns for shareholders, policy-makers have for too long ignored the detrimental effects that this can have on the financial system as a whole, and also on other stakeholders, such as creditors, consumers or taxpayers. The expansion of credit supply increases debt and leverage, which may be profitable for the individual firm (as it leads to a quicker and cheaper asset growth), but will inevitably result in excesses of credit and eventually asset bubbles.⁶² From a policy perspective, it is worth noting that asset bubbles have the undesired effect of distorting the allocation of capital in the economy as well as the distribution of wealth. This is so because as asset prices increase due to the credit cycle (which will be analysed in the next section), market participants will tend to feed the credit cycle by supplying more credit on one side and taking it on the other. As suggested by Blair, portfolios of investments rise in value largely because of leverage-driven asset inflation,⁶³ a phenomenon that has become particularly relevant in the context of the housing market in both the UK and the US.

Regulating private credit creation has been particularly problematic from the 1980s onward, because financial institutions started to engage with shadow banking activities, both on their assets and liabilities side, increasing therefore interlinks with unregulated entities and products. Firms operating in the shadow banking system replicate to some extent functions that are typical of credit

⁵⁷ See footnote 44 on this point.

⁵⁸ See A. Turner, "The Turner Review: A Regulatory Response to the Global Banking Crisis", FSA, March 2009. And also V. Bavoso, "Filling the Accountability Gap in Structured Finance Transactions: The Case for a Broader Fiduciary Obligation", *Columbia Journal of European Law*, Vol. 23, No. 2, 2017.

⁵⁹ See Turner, 2016, op. cit., where he discusses that contrary to conventional economic policy, excessive credit growth may not lead to excessive inflation, but it may well cause crises, debt overhang and deflation.

⁶⁰ This refers again to the fractional reserve system that characterise banks, and the money creation effect associated with most loan contracts.

⁶¹ M. Blair, "Making Money: Leverage and Private Sector Money Creation", *Seattle University Law Review*, Vol. 36, 2013.

⁶² Ibid. The leverage cycle and the formation of bubbles will be analysed in the next section.

⁶³ Ibid., pp. 434-438. Blair suggests that effectively there is an illusion of value creation, up until the bubble bursts.

intermediations, without however being bound by the relevant regulatory framework that applies to banks. This refers to a number of areas, among which, reserve requirements and capital requirements. Reserve requirements relate to the amount (or rather the percentage) of money that banks receive as deposits and that should be set aside as reserve (usually deposited with the central bank).⁶⁴ This is central to the fractional reserve system that characterises most financial systems worldwide and that in turn affects the amount of money that can be created by banks through what is known as the money multiplier. The ability of banks to ‘create’ money, however, is not limited to the money multiplier, because financial innovation has crafted ways in which assets can be held without holding cash, and more generally because various forms of credit function that are alternatives to money have been introduced in the financial system.⁶⁵ One such form is represented by repo transactions, a typical feature of the shadow banking sector, which performs a critical function in providing short-term liquidity to banks as a form of near-money effectively.⁶⁶ Even though central banks have maintained residual control over the amount of money in circulation in the economy, the private sector has progressively gained a much greater role in the creation of near-money assets and generally in the creation of credit.⁶⁷

Capital requirements relate to the amount of credit that financial institutions can create and this constraint is usually achieved by limiting banks’ ability to raise funds outside their traditional deposit-taking function – what is referred to today as wholesale activities, such as borrowing and trading securities on capital markets. This area of banking regulation has been highly affected by the development of the shadow banking system and by the securitised banking model, because financial innovation has essentially allowed accessing an almost unlimited supply of credit, bypassing the banking system. This is a problem because an effective control of the relationship between debts and assets (or in other words the desired ratio between bank’s assets and liabilities) is what could limit the amount of credit created by banks and also their level of leverage.⁶⁸ The application of capital requirements has traditionally been a complex area of banking regulation, and it is centred since the late 1980s on the Basel accords (I, II and III), which determine the ratio of assets to liabilities chiefly by classifying the assets’ riskiness.

As stressed in the previous section, the increase of leverage in the financial system led to unprecedented levels of instability in the pre-crisis years, simply because the existing tools aimed at measuring and controlling leverage were either not adequate or were being bypassed. It is also worth remembering that within financial institutions leverage is instrumental to profitability, because it maximises returns on capital for shareholders and allows management to earn from compensations (bonuses and stock options).⁶⁹ It is often noted, however, that while financial institutions in the pre-crisis years kept reaping huge profits by overleveraging (so even with a small return in total assets), the picture was different as it showed that depository institutions had declining levels of leverage. This was the result of the way in which financial innovation and regulatory loopholes (mainly within the Basel framework) allowed banks to move assets and liabilities outside the regulatory perimeter,

⁶⁴ Reserve requirements are not really in place in the UK and some commentators argue that even when in place they do not really limit the power of banks to create money.

⁶⁵ See Blair, 2013, op. cit., p. 430.

⁶⁶ J. Cullen, “The Repo Market: Collateral and Systemic Risk”, in Chiu and MacNeil (eds), *Research Handbook on Shadow Banking*, Edward Elgar, 2017.

⁶⁷ Ibid. An interesting perspective on this is provided by Positive Money, “How Banks Create Money”, available at <http://positivemoney.org/how-money-works/how-banks-create-money/>.

⁶⁸ See Blair, 2013, op. cit., p. 433.

⁶⁹ See Avgouleas and Cullen, op. cit., 2014.

often in the shadow banking system, thereby creating a hidden level of leverage.⁷⁰ While of course this increased dramatically the riskiness and vulnerability of certain individual banks, it also affected the safety of the financial ecosystem as a whole, in what is referred to as the macro-prudential or systemic effect of leverage. As it turned out in fact, while the Basel framework was mainly directed at monitoring individual institutions in a micro-prudential fashion, the effects of leverage became truly systemic due to the highly contagious assets held by most banks and due to interconnectedness between regulated financial institutions and the shadow banking sector.⁷¹

The problem that seems to remain currently unsolved, and partly ignored by policy-makers, is that financial institutions are still likely to engage in strategies that aim to expand their asset base through a number of capital markets transactions. This lies at the heart of the criticism against the EU CMU, which has not taken into due consideration the unintended consequences of their policy options.⁷² While it is possible that the CMU could create new financing channels to the real economy, it has also been observed that if credit expands in the financial sector faster than the real economy, as has happened in the last two decades,⁷³ this excess of credit will contribute to increasing the price of existing assets, which in turn will lead to asset bubbles.⁷⁴

The above proposition is consistent with what Minsky postulated in the 1970s. He argued that under certain economic conditions, banks engage in asset growth strategies. They do so by resorting to financial innovation, which facilitates portfolio transformation that effectively decreases bank liquidity while increasing its leverage. Minsky argued that inflation of asset prices would be a likely consequence of these strategies.⁷⁵ It is important at this stage of the discussion to note that bank leverage was justified in the pre-crisis years because of the increase in market discipline that it would bring about (this was due of course to the undisputed reliance on neoclassical assumptions of market discipline), and by the resulting liquidity creation.

Liquidity refers to two main aspects in financial markets, namely funding liquidity and asset liquidity. The former involves the maturity transformation function that is typical of the banking business, whereby banks originate long-term illiquid assets and fund them through short-term liquid debts.⁷⁶ Asset liquidity reflects the types of assets that banks decide to invest in, and their ability to convert them into cash on short notice. It is trite to point out that assets of low quality are normally illiquid and when converted into cash they are sold at a discount. This means that in times of stress (like the

⁷⁰ See M. Simkovic, "Secret Liens and the Financial Crisis of 2008", *American Bankruptcy Law Journal* 253, 2009, p. 256.

⁷¹ See A. Haldane and R. May, "Systemic risk in banking ecosystems", *Nature*, 469, 351–355, January 2011.

⁷² See V. Bavoso, "High Quality Securitisation and EU Capital Markets Union – Is it Possible?", *Accounting Economics and the Law*, 2016.

⁷³ See Turner, 2016, op. cit., ch.1.

⁷⁴ See Blair, 2013, op. cit., p. 441.

⁷⁵ H. Minsky, "Financial Instability Revisited: The Economics of Disaster", paper prepared for the Steering Committee for the Fundamental Reappraisal of the Discount Mechanism Appointed by the Board of Governors of the Federal Reserve System, 1970, pp.13-14.

⁷⁶ See Cullen, "Liquidity, Securitisation and Mortgage Markets: A Legal and Minskyan Analysis", draft spring 2017. The next section will explain how the evolution of business models in banks and their balance sheet implied that a much higher proportion of banks' funding sources were short-term. This in turn meant that constraints on the funding liquidity of intermediaries could impact on the dynamics of asset prices and ultimately on financial shocks.

post-2008 turbulence) the sale of such assets results in a ‘fire sale’, which has the effect of worsening liquidity problems at the systemic level, as banks hold similar and contagious assets.⁷⁷

Notwithstanding the importance of liquidity in banks’ balance sheets, banks with high levels of leverage engaged before 2008 in lending practices that were too risky and therefore led to illiquidity. These business models exposed the weaknesses of the financial system because liquidity shocks suffered by an individual financial institution would affect other firms too. Acharia and Thakor point in this sense to the “schizophrenic role of leverage”, which provides individual banks with better asset choice and more liquidity on the one hand, but on the other hand propagates fragility in the financial system. This leads ultimately to a friction between the role that leverage and liquidity creation have ex ante, and the systemic risk that they create ex post.⁷⁸ Arguably, regulators have yet to come to terms with this. Policy-makers in particular are faced with the intractable dilemma of looking at the right balance between the ideal level of leverage that is optimal for individual financial institutions vis-à-vis the socially desirable level of leverage, which is likely to be much lower.

3.2 Why market-based channels of finance lead to increases in leverage

In order to understand the link between capital markets finance, increases in overall levels of leverage and instability, it is necessary to reconceptualise the operational framework of market-based finance and how financial institutions interplay within this system. Starting in the 1970s, on the back of the large-scale deregulation of financial services, capital markets’ (also referred to as market-based) channels of finance started developing and expanding. Within this evolving context, banks as well as other non-bank financial intermediators started offering banking-like products. This became particularly relevant with respect to maturity and liquidity transformation, and risk-sharing mechanisms. As progressively more traditional banking institutions started to engage with capital markets activities, their business model changed dramatically and most importantly their balance sheet shifted from a deposit-based model to a wholesale funding model.

Traditionally banks operated as intermediaries between savers, who would deposit their money in the bank, and borrowers, to whom the bank would extend credit. As this model of credit intermediation evolved, incorporating capital markets activities, large banks started operating as dealer banks, purchasing portfolios of bonds from the capital markets, and funding them by issuing money-market instruments.⁷⁹ In essence, the intermediation model changed and instead of matching savers and borrowers, dealer banks linked cash portfolio managers on one side and risk portfolio managers on the other, with the latter managing the ultimate savers’ deposits.⁸⁰ To understand how this business model works, it is useful to look at the contextual evolution of banks’ balance sheets. In particular, on the assets side, instead of more traditional loan exposures, dealer banks started having long-term asset-backed securities. The different set of risks attached to these securities were sold off to other intermediaries in capital markets (normally asset managers) via a number of derivatives contracts, such as interest rate swaps, foreign exchange swaps or credit default swaps. These risks were then sold by asset managers, who as derivatives dealers were seeking to create a market for these risks and

⁷⁷ Ibid. Cullen observes that in periods of market stress, banks that are solvent may fail due to their illiquidity and consequent cash shortfall.

⁷⁸ See V. Acharia and A. Thakor, “The Dark Side of Liquidity Creation: Leverage and Systemic Risk”, *Journal of Financial Intermediation*, Vol. 28, October 2016.

⁷⁹ See P. Mehrling, Z. Pozsar, J. Sweeney and D. Neilson, “Bagehot was a shadow banker: Shadow banking, central banking and the future of global finance” (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2232016).

⁸⁰ See Z. Pozsar, “Shadow Banking and the Global Financial Eco-system”, VoxEU, 7 November 2013.

to sell them to investors.⁸¹ The effect of this process was that dealer banks were holding assets perceived as risk-free (and therefore highly liquid). It is precisely these risk-free assets that banks were using as collateral in order to access funding in the money market.⁸²

The extensive interaction with wholesale funding enabled banks to extend their lending capacity and grow their balance sheets beyond their core liabilities.⁸³ Credit intermediation in the wholesale system allowed banks to access large sources of funding whereby the only constraint to their capacity to borrow was represented by the quantity and quality of collateral that they could post. Much of this collateral came in the form of securitised assets, either manufactured by the same bank or purchased from other banks.⁸⁴ It is well known that to increase lending, banks should increase their regulatory capital, or reduce existing risks. Both of these strategies however would be detrimental to the overall profitability of banks, particularly with respect to their return on equity. Instead, more and cheaper lending was enabled through the wholesale market, where, as discussed later in this section, the only constraint on the assets used as collateral is the haircut (in essence the risk attributed to the assets pledged).⁸⁵

Through the above system, dealer banks became in the pre-crisis years strongly interconnected with wholesale markets on their liabilities side, as they relied chiefly on short-term money market funds to finance their operations. This model of banking intermediation has been aptly defined as “money market funding of capital market lending”.⁸⁶ Even more effective is the classification of the evolved business of banks as securitised banking, which refers to the predominant pre-crisis practice that saw large banking conglomerates packaging and reselling loans on their assets side, while repo transactions were the main source of funds on the liabilities side.⁸⁷ This model was centred on the application of securitisation, which allows the origination of many assets (hundreds of mortgages together for instance). These assets were then transferred to a special purpose vehicle (SPV), which in turn issued debt securities backed by the asset pool to investors in the capital markets. This practice allowed banks to remove the loan inventory from the balance sheet, enabling therefore the origination of more loans and asset expansion generally. Under the securitised banking model, banks thus profited from loan intermediation rather than from the origination and holding of loans on their balance sheets.⁸⁸ The funding model prevalent in this system therefore was characterised by the increase in stock of securitised bonds, which in turn facilitated forms of financing based on collateral, such as repo transactions and securities lending.⁸⁹ In the pre-crisis years this represented a further

⁸¹ An example of this phenomenon is the role of a number of hedge funds in the pre-crisis years, when the market for CDS shorting the housing market was nascent. See on this Financial Conduct Authority, “Market-Based Finance: Its Contributions and Emerging Issues”, Occasional Paper No. 18, May 2016, p. 13.

⁸² *Ibid.*

⁸³ Banks were in essence taking advantage of the rise in their equity and the apparent decline in risk and leverage.

⁸⁴ Finance Watch, “A Missed Opportunity to Revive Boring Finance”, December 2014, pp. 38-39.

⁸⁵ *Ibid.*, p. 39.

⁸⁶ This is explained by Z. Pozsar, “Shadow Banking: The Money View”, Office of Financial Research, Working Paper 14-04, 2 July 2014, p. 40.

⁸⁷ See G. Gorton and A. Metrick, “Securitized Banking and the Run on the Repo”, *Journal of Financial Economics*, 104, 2012,

⁸⁸ *Ibid.*, p. 434.

⁸⁹ See N. Cetorelli, “Hybrid Intermediaries”, Federal Reserve Bank of New York, Staff Report No. 705, 2014, p. 4, arguing that this model led to the growing centrality of dealer banks in the financial system and in particular of the markets for securities lending and repo agreements.

incentive for large banks to issue as many securitised bonds as possible, and to borrow money to buy other entities' securities.⁹⁰

During this period, the extensive employment of wholesale funding channels contributed to the accumulation of high levels of leverage and to a general understatement of risks, which banks could not withstand. It also became a critical engine behind the increase of interconnectedness and systemic risk because banks were purchasing each other's securities with borrowed money, which further increased leverage and the concentration of risks in systemic institutions.⁹¹ As will be explained later in this section, this intermediation channel eventually triggered liquidity crises (and in particular, as explained in the previous section, funding liquidity), chiefly due to the reliance on short-term assets to fund long-term liabilities, and the inability, once bad news materialised, to renew short-term funding channels.⁹² Eventually credit intermediation through the shadow banking sector (securitisation and repo) replicated some of the problems traditionally associated with the regulated banking sector, namely maturity transformation and leverage, but they were magnified by the lack of transparency and regulation in the shadow banking sector and also by the opaqueness of its transaction chains.⁹³

An important aspect of the securitised banking model was the fact that the bonds issued by the SPV were layered in tranches with different seniority and subordination, whereby the first losses on the underlying pool were borne by the bottom (equity) tranche of the bond, while the top senior tranches were the most secure, and therefore rated AAA. As will be further illustrated later in this section, securitisation tranches, especially the more senior ones, became highly employed in capital markets, both as collateral, in repo transactions or in loans provided by the central bank, and as assets in other securitisations.⁹⁴ The demand for safe and liquid assets, and the contextual shortage of low-risk government bonds, which traditionally epitomise low-risk collateral, made securitised tranches highly instrumental in the functioning of market-based finance.

Repurchase agreements (referred to as repo) in particular became a central mechanism of liquidity in the evolved market-based financial system. Repos typically refer to transactions where one party (say a bank) borrows short-term funds from another party (say a money market fund) by transferring the legal ownership⁹⁵ of a certain asset, the collateral, to the lender (that in turns engages in a reverse repo). Contextually, the borrower promises to repurchase the asset at a later date. In the event of a default by the borrower and its incapacity to return the cash, the lender can sell the collateral. Two mechanisms protect the lender from losses, namely haircuts and margins. A haircut implies that the lender demands a collateral whose market value is higher than the value of the loan.⁹⁶ As periodic

⁹⁰ As observed by Y. Varoufakis, for private financial institutions, this model was very close to having access to a private ATM. See *The Global Minotaur*, Zed Books, 2013, p. 8.

⁹¹ See T. Moe, "Shadow Banking: Policy Challenges for Central Banks", *Journal of Financial Perspectives*, 3(2) 2015, p. 8.

⁹² See Gorton and Metrick, 2012, op. cit., p. 426; R. Wray "What do banks do? What should banks do? A Minskyan Perspective", *Accounting Economics and the Law*, 3(3), 2013, pp. 293 and 294.

⁹³ See Turner, *Between Debt and the Devil*, 2016, op. cit., p. 4.

⁹⁴ The slicing and repackaging of assets into AAA tranches was partly driven by the strong demand for highly rated securities to be used as collateral. This of course depended on the natural scarcity of AAA-rated bonds in the system, which led large banks to manufacture them in order to satisfy demands.

⁹⁵ Not the economic ownership too, because the borrower remains the risk bearer for assets used as collateral in the repo and continues to receive its returns. See D. Gabor and C. Ban, "Banking on Bonds: On the New Links between States and Markets", *Journal of Common Market Studies*, 54(3) 2016.

⁹⁶ As an example, a loan of £100 backed by a portfolio of bonds for the value of £110 will represent a 10% haircut.

calculations of the value of collateral are made, margin calls are used, when the collateral falls in value, in order to ensure that the repo is fully collateralised.

Two legal features made repo agreements particularly advantageous in the market-based financial system (for instance vis-à-vis secured lending). Firstly, the transfer of the collateral to the lender gives the lender immediate access to the securities in case borrower defaults.⁹⁷ Secondly, the transfer of ownership entails that lenders can dispose of the collateral and in particular can re-use it as collateral in other similar transactions (what is referred to as rehypothecation). It is also useful to draw the distinction between bilateral repos, which function on a “delivery-versus-payment” basis and where cash and collateral are exchanged simultaneously, and tri-party repos, where the parties use an agent to manage the transaction and check the suitability and the eligibility of the collateral.⁹⁸

Despite warning signs that the repo market could represent a source of uncertainty in financial markets and a channel for the uncontrolled increase in leverage, its development remained unfettered. This policy direction stemmed from the conviction that an active repo market could ensure the liquidity of government bond markets and that in order to have a well-functioning and liquid market, this should remain virtually unregulated, relying instead on mechanisms of self-discipline and on risk management regimes based on initial haircuts on collateral.⁹⁹ By the late 1990s all European repo markets had been liberalised. Most critically, at the EU level this was seen as the fulcrum of the European monetary order based on the single currency, and also the engine behind the much desired shift towards market-based finance where large European banks were increasingly funding their positions in securities markets through the repo market.¹⁰⁰

In the words of EU policy-makers, the evolving market-based financial system was to be preferred due to its efficiency, regardless of the question of stability. It was thought that financial stability could be supplemented by a liquid and transparent government debt market, where the free movement of collateral and liquidity across member states would guarantee financial stability (and at the same time facilitate the process of financial integration).¹⁰¹

Eventually, the repo market grew exponentially in the post-liberalisation years due to the increasing amount of cash held by a number of entities, including institutional investors, pension funds, mutual funds, and also states and government entities, all seeking safe investments with a good return in interest and the flexibility to use the cash.¹⁰² Moreover, the market progressively included among the accepted collateral private ABSs and securities issued by shadow banking entities. Due to the scarcity

⁹⁷ Cullen observes that in the EU repo market, title to the collateral passes immediately to the lender, accomplishing a sale of assets. This means that the lender can use the asset as it likes and it can pledge it as collateral for other transactions on its own account. In the US, however, title to the collateral does not pass to the lender even though repo contracts are not subject to standard bankruptcy procedures, due to the automatic stay provision not applying for derivatives and repos. See J. Cullen, “The Repo Market: Collateral and Systemic Risk”, in Chiu and MacNeil (eds), *Research Handbook on Shadow Banking*, Edward Elgar, 2017, p. 7.

⁹⁸ *Ibid.*, p. 6. Tri-party repo contracts are used mainly in the US.

⁹⁹ See D. Gabor, “The (Impossible) Repo Trinity: The Political Economy of Repo Markets”, *Review of International Political Economy*, 23:6, 2016, p. 981, where it is thoroughly explained that the belief was that financial stability required liquid markets which in turn depend on free repo markets.

¹⁰⁰ See D. Shirrell, “How Liquid Can You Get?”, *Euromoney*, June 1999.

¹⁰¹ See Gabor 2016, *op. cit.*, p. 983.

¹⁰² See Gorton and Metrick, 2012, *op. cit.*, p. 435. The authors observe that by 2003 the total amount of assets managed by commercial banks at global level amounted to \$49 trillion, while assets managed by institutional investors were \$47 trillion. They also highlight that among the entities above highlighted, money market mutual funds (MMMFs) play a particularly important role in the repo market.

of public securities, deemed safe, the process of manufacturing high-quality collateral through financial innovation (securitisation) was encouraged, particularly by the Fed and then by its EU counterpart. The importance of the repo market in the context of the securitised banking model can be represented by the comparison between total assets in the traditional banking system and total assets in dealer banks, with the latter relying much more heavily on repo than the former.¹⁰³ The expansion of the repo market, initially in the US and then in Europe too,¹⁰⁴ was a consequence of the synergy between the sovereign bond market and the repo market, whereby the latter would ensure liquidity in wholesale markets.

After 2008, however, the risks associated with the securitised banking model became more evident. Gorton and Metrick stressed in fact that the global financial crisis affected mostly dealer banks that had been active in the repo market, while commercial banks had actually grown their balance sheet chiefly through deposits, so when the crisis hit, their position was stronger.¹⁰⁵ They illustrate this problem by looking at Lehman's downfall in 2008, noting that like other investment banks, it was funding around half of its assets using short-term repo transactions. The opacity of the repo market, which was unregulated and relied on self-discipline mechanisms, meant that confidence and trust were critical among repo counterparties. Once confidence was lost in Lehman's ability to repay (and also in the quality of the collateral it posted), repo counterparties declined to roll-over daily funding and that made Lehman unable to operate.¹⁰⁶

The increasing concern in the post-crisis years is that instead of supporting liquidity in financial markets, market-based financial systems centred on securitisation and repo agreements are actually less liquid and lead to accumulation of leverage. The leverage cycle and its interplay with financial institutions will be discussed in the next section, but it is worth further exploring at this stage the feedback effect between market-based finance and leverage. As stated earlier, the securitised banking model allowed dealer banks to increase their asset base while maximising the use of their capital base. This trend however was accompanied by a progressive decrease in liquidity in the banks' balance sheet. It has been observed that against increases in liquidity of bank loan portfolio of 1%, the level of on-balance sheet liquidity within the same institutions decreased by around 0.23%.¹⁰⁷ This phenomenon was more apparent within US investment banks, where increasingly securitisation allowed removing assets from the balance sheet, thereby freeing regulatory space for the origination of more assets without any contextual increase in capital.¹⁰⁸ Securitisation, in other words, appears to have caused the decrease in balance sheet liquidity in the pre-2008 years. Moreover in the securitised banking model, as explained, assets on banks' balance sheets were used as collateral in repo agreements in order to borrow short-term, which made dealer banks more vulnerable.

The above analysis leads to the conclusion that the market-based securitised banking model that was prevalent before 2008 led to an amplification of liquidity risks in the financial system. This was allowed by the combined use of securitisation and repos and in particular by the way in which banks were

¹⁰³ See Gorton and Metrick, 2012, op. cit., p. 438. The authors show that the ratio of broker dealer total assets to commercial banks total assets has grown from less than 5% in 1990, to near 25% in 2007.

¹⁰⁴ See for an explanation D. Gabor, "The (Impossible) Repo Trinity: The Political Economy of Repo Market", *Review of International Political Economy*, 23:6, 2016.

¹⁰⁵ See Gorton and Metrick, 2012, op. cit., p. 438.

¹⁰⁶ Ibid.

¹⁰⁷ See E. Loutschina, "The Role of Securitization in Bank Liquidity and Funding Management", *Journal of Financial Economics*, Vol. 100:663, 2011, p. 665.

¹⁰⁸ Ibid.

reusing collateral to back several securities.¹⁰⁹ As explained by Cullen, rehypothecation in repo agreements was facilitated by the legal characterisation of the transfer of an asset, where, unlike in a secured loan, title to the security passes to the lender at the beginning of the repo agreement and remains with the lender until the debt is repaid. The lender therefore can use (rehypothecate) the same security as collateral to fund new borrowing with the consequence that the same asset is effectively used to collateralise a chain of loans, and the creation of collateral can be infinite.¹¹⁰ As explained by Gorton and Metrick, the collateral becomes a form of money multiplier and a mechanism that increases interconnectedness and correlation between different institutions' balance sheets as well as an engine for the accumulation of hidden leverage in the shadow banking system.¹¹¹

3.3 The overabundance of debt and the leverage cycle

This paper argues that the EU policy and regulatory agenda enshrined in the CMU is likely to accelerate a leverage cycle, which in turn could lead to a situation of instability similar to Minsky's hypothesis. This section illustrates the possible feedback loop between the EU policy design and a further increase of leverage in the financial system. The contextual illustration of the leverage cycle provided in this section is important not only to understand the events of 2007-08, but more importantly to evaluate the possible risks flowing from the proposed implementation of the EU CMU. This will become more evident in the next section, which provides a critical illustration of the regulatory approach endorsed by the EU to control the two main arms of a resurgent securitised banking model, namely the securitisation market and the repo market.

Geanakoplos defines leverage as the ratio of asset value to the amount of cash that is needed to purchase a certain asset. In the example of a house, where the house costs £100 and it is purchased with £20 cash and £80 of borrowed money, the leverage ratio is represented by $100/20=5$, which is in fact the reciprocal of margin.¹¹² Leverage has been recognised as a path dependence process in relation to financial stability. This is due to the way in which banks affect the leverage cycle through investment decisions and portfolio problems they face in specific periods. During good times, characterised by optimism, banks are willing to take more risks (invest in riskier projects/assets) and at the same time creditors are willing to extend finance more easily, despite the increase in riskiness.¹¹³ Both phenomena are related to the determination of borrowing rates and credit spread. Bhattacharya et al. explain that low credit spreads allow banks to borrow more, which in turn increases their level of risk-taking and therefore also the credit spread.¹¹⁴ Since expectations and optimism can build up in good times (despite the prospect of penalties due to defaults), riskier projects become more attractive to financial institutions, because the expectation of penalty for default decreases due

¹⁰⁹ See J. Geanakoplos and W. Zame, "Collateralized Security Markets", Levine Working Paper, 2010.

¹¹⁰ See J. Cullen, "Liquidity, Securitisation and the Mortgage Market: A Minskyan Analysis", Draft paper, spring 2017; J. Cullen, "The Repo Market: Collateral and Systemic Risk", in I. MacNeil and I. Chiu (eds), *Research Handbook on Shadow Banking*, Edward Elgar, 2017, p. 13, where it is also explained that using multiple repos through rehypothecation can highly increase the level of leverage.

¹¹¹ See Gorton and Metrick, 2012, op. cit., p. 430; European Commission, "A Reformed Financial Sector for Europe", COM(2014)279 final, 2014, p. 117.

¹¹² See J. Geanakoplos, "The Leverage Cycle", in D. Acemoglu, K. Rogoff and M. Woodford (eds), *NBER Macroeconomics Annual 2009*, Vol. 24, 2010.

¹¹³ S. Bhattacharya, C. Goodhart, D. Tsomocos and A. Vardoulakis, "Minsky's Financial Instability Hypothesis and the Leverage Cycle", London School of Economics FMG Special Paper, September 2011, p. 4.

¹¹⁴ They note that risk-taking is normally penalised ex-post through defaults and related penalties and ex-ante through higher borrowing rates. Ibid., p. 5.

to optimism. Creditors therefore are willing to offer low borrowing rates notwithstanding the riskier projects that debtors have invested in.¹¹⁵ This dynamic allows financial institutions to increase their leverage and also the possibility of default due to the underlying risky assets/projects. When a bad state then materialises, financial instability ensues.¹¹⁶

Geanakoplos notes that the leverage cycle is a self-reinforcing dynamic. The increase in leverage (and the coincidental decline in margins) are the consequence of good news and the perception that there are no dangers in the economy. As already explained, optimism leads lenders to become less cautious, and provide more credit while reducing margins. This availability of relatively cheap credit leads in turn to increases in the level of borrowing, which is the prime source of asset prices inflation.¹¹⁷ At this stage, due to the high riskiness of the underlying assets/projects, loss-given defaults¹¹⁸ may start kicking in, and bad news materialises. As economic prospects deteriorate, the level of leverage starts going down as higher interest rates are charged. A fall in asset price ensues and this process is further worsened in the event of a contextual increase of margins.¹¹⁹ Once asset prices fall, banks shift their investment patterns and only choose safe projects/assets, in order to balance the cost of leverage.¹²⁰ The cycle is even more problematic when an increase in margins accompanies bad news. Beyond the very highly leveraged buyers (the more optimistic ones), who are forced to sell their assets when asset prices go down, also modestly leveraged buyers are forced to sell when margins tighten in more substantial measure. This in essence is what drives prices down further and leads to the worst stage of the crisis, a fire-sale.¹²¹

In the scenario portrayed in the previous section, with dealer banks engaged in the securitised banking model, the increase in margin can have disastrous effects. As margins can increase 50% overnight,¹²² banks exposed to the repo market on their liabilities side would have to double the amount of cash that they hold against the same assets, or else sell the assets, often at very low prices, which would effectively result in massive deleveraging. As observed earlier in this paper, Gorton and Metrick provided the same explanation to understand the freezing of credit markets in 2007, which was eventually the consequence of a run on the repo market.¹²³ In Geanakoplos' illustration of the leverage cycle, the scenario of the GFC of 2008 is also the result of irrational reactions and panic among market actors that follow the emergence of the cycle, which in turn cause prices to go down further. This is

¹¹⁵ Geanakoplos clarifies that the equilibrium of supply and demand influences both interest rates and collateral rates. More specifically, the interest rate reflects borrowers' impatience, while the collateral rate reflects the volatility of asset prices and therefore lenders' uncertainty. See J. Geanakoplos, "Solving the Present Crisis and Managing the Leverage Cycle", Federal Reserve Bank of New York, *Economic Policy Review*, August 2010, p. 103.

¹¹⁶ See Bhattacharya et al., 2011, op. cit., pp.4 and 5.

¹¹⁷ J. Geanakoplos, "Solving the Present Crisis and Managing the Leverage Cycle", *FRBNY Economic Policy Review*, August 2010, p. 104.

¹¹⁸ This refers to the financial losses suffered by a bank as a consequence of defaults incurred by borrowers on loans originated by the bank.

¹¹⁹ See Geanakoplos, *FRBNY 2010*, op. cit., p. 104. Geanakoplos argues that with bad news often comes uncertainty. This is what drives lenders to lose optimism and increase the level of margins. Bhattacharya et al. argue that crashes can be made worse by an intermediary period of good news which contribute to make expectations more optimistic. See Bhattacharya et al., 2011, p. 15.

¹²⁰ See Bhattacharya et al., 2011, op. cit., p. 5.

¹²¹ See Geanakoplos, *FRBNY 2010*, op. cit., p. 105.

¹²² This is a consequence of the collapse in value of the underlying assets.

¹²³ See Gorton and Metrick, 2012, op. cit.; and A. Fostel and J. Geanakoplos, "Reviewing the Leverage Cycle", Cowles Foundation Discussion Paper No. 1918, 29, 2013.

followed by bankruptcies among the most leveraged institutions, and the complete drying up of the lending market.¹²⁴

The problems that emerged in 2008 need to also be understood, in the context of the leverage cycle, as a crisis of the assets that were being pledged as collateral. This was particularly the case with the triple-A CDO tranches that were considered safe assets in the repo market. Before 2007, these assets were in high demand as collateral in repurchase agreements, and banks could borrow 90% on the value of these assets. After 2007, and following the run on the repo mentioned in the previous section, these assets became worthless and banks could no longer rely on them to access channels of liquidity. In the context of the 2008 crisis, it is important to understand that the cycle was magnified by the impact that financial innovation had on collateral and therefore on margin requirements. Transactional innovation – and in particular the shift from plain vanilla securitisation to synthetic CDOs – facilitated the creation of new private securities that could be used as collateral in the repo market. The problem experienced in the pre-crisis years was that even if margin levels remained the same on old collateral, the process of securitising assets (and importantly, as was the case with CDOs, the securitisation of existing debt securities, already used as collateral, and disguised through a new tranching security) would allow new borrowing backed by what effectively were individually unusable assets.¹²⁵ This in turn further increased the overall level of leverage in the economy.

Financial innovation unleashed another engine within the leverage cycle, namely credit default swaps (CDSs). These insurance-like derivatives allowed pessimistic feelings – that surfaced when bad news materialised – to be magnified. This was possible due to the nature of CDSs, which allow taking asymmetric bets on the collapse of underlying assets, because the potential loss for the protection buyer is limited while the gain triggered by the event of default is virtually unlimited.¹²⁶ The practise of betting against a declining market – or what careful insiders perceive as being declining – contributes to further increasing the level of leverage at the worst stage of the leverage cycle, namely when pessimism takes over and asset prices plummet.¹²⁷

It is appropriate at this stage of the discussion to link the above-illustrated leverage cycle with the financial instability hypothesis (FIH) originally formulated by Minsky in the 1970s.¹²⁸ In many respects, Minsky's theory complements the leverage cycle and it offers a dynamic element to it by providing valuable insights on the different stages of instability that lead to a crisis. Again, this can be particularly useful, beyond the analysis of past events, to understand critically the current state of financial markets and particularly the likely consequences of current policy reforms. The financial instability hypothesis theorises the impact of debt on the behaviour of the financial system and also the way in which debt is validated in the system.¹²⁹ Minsky viewed instability as an intrinsic and endogenous character of financial systems, especially when financial development revolves around more complex

¹²⁴ See Geanakoplos, FRBNY, 2010, op. cit., p. 106.

¹²⁵ See Geanakoplos, FRBNY, 2010, op. cit., p. 112. Geanakoplos observes that a bank securitising a pool of mortgages could borrow 70% of the collective value of the pool, while it would be very difficult to borrow anything against the underlying loans in the securitised pool.

¹²⁶ This is well exemplified in the portrayal of the run up to the 2008 crisis by M. Lewis, *The Big Short*, Allen Lane, 2010.

¹²⁷ See Geanakoplos, 2010 FRBNY, op. cit., p. 113.

¹²⁸ H. Minsky, "The Financial Instability Hypothesis", Jerome Levy Economics Institute of Bard College, Working Paper No.74, May 1992; H. Minsky, "The Financial Instability Hypothesis: An Interpretation of Keynes and an Alternative to "Standard" Theory", *Challenge*, Vol. 20, No. 1, 1977.

¹²⁹ See Minsky, 1992, op. cit., p. 7.

forms of intermediation and innovation.¹³⁰ Within these financialised systems, periods of euphoria tend to lead to speculative excesses, fuelled by financial innovation and high levels of leverage, which in turn lead to distortions in the value of assets. This cycle represents of course a severe threat to systemic stability.¹³¹ Moreover, in line with what was said earlier, Minsky argued that the behaviour of financial institutions is an engine of instability, due to the uncertainty (and pro-cyclicality) of their investment patterns, and it is the vehicle that transmits instability from the financial system to the real economy.¹³² It is also worth reconceptualising the three stages of stability that Minsky identified as part of the cycle, namely the market euphoria, followed by the worsening credit quality and then eventually by the crash.¹³³

The euphoric period normally originates on the back of a previous crisis. For this reason, business grows in a prudent way at the beginning of this phase. However, as the economy grows, together with optimism, the memory of past crises fades and prudence is associated with risk-aversion. With new opportunities arising for investment and growth, these tend to be financed chiefly with debt, because banks are willing to lend more and under loosened credit conditions. This is often the beginning of a speculative fever, where banks push their lending capacity to the limit in order to achieve asset growth, to the limit of capital regulation. Asset prices start to surge. At this stage though, existing debt exposures are validated by the current cash-flow, so in essence leverage proves still both sustainable and highly profitable for the individual firm. What endangers the stability of banks is the role of financial innovation, and the introduction of financial transactions that further facilitate the creation of more debt.¹³⁴ Securitised credit is a typical example as it allows banks to create artificial layers of credit without a corresponding increase of capital in their balance sheet.

The degree to (and speed with) which the above phase can lead to a crisis depends, according to Minsky, on the type of financial unit used by market actors. Financial units can be classified as hedge, when they are asset-based and the cash flow expected from the assets meets future payments (both principal and interest). These units remain stable notwithstanding macroeconomic changes.¹³⁵ Financial units defined as speculative do not only rely on asset-based cash flow, but on refinancing their position through debt contracts. In essence as they cannot repay the principal out of their cash flow, they need to continuously roll over their liabilities. These units are therefore vulnerable to deteriorating market conditions.¹³⁶ Units defined as Ponzi do not generate sufficient cash flow to meet repayments on interest or principal and are therefore forced to either borrow more (which further increases their leverage) or sell their assets, under the expectation that asset prices will keep increasing. These investment units are of course the most sensitive during the cycle once margins tighten and asset prices plummet.¹³⁷

¹³⁰ See Minsky, 1992, op. cit.; and H. Minsky, "Capitalist Financial Processes and the Instability of Capitalism", *Journal of Economic Issues*, Vol. 14 No. 2, 1980.

¹³¹ See Minsky, 1980, op. cit., p. 517; and H. Minsky, "Financial Instability Revisited: The Economics of Disaster", Prepared for the Steering Committee for the Fundamental Reappraisal of the Discount Mechanism Appointed by the Board of Governors of the Federal Reserve System, January 1970, p. 6.

¹³² See Minsky, 1992 op. cit.

¹³³ *Supra* Minsky 1970, op. cit., pp.9 and 10.

¹³⁴ *Ibid.*, pp. 10-13.

¹³⁵ See Minsky, op. cit., 1992.

¹³⁶ *Ibid.*

¹³⁷ *Ibid.*

The predominance of one of these three investment patterns in the financial system determines, according to Minsky, the intensity of the boom period and the degree to which credit agreements can be managed. The greater the boom and the expansion of the financial system in this phase, the higher is the chance of an asset bubble. Minsky observed that as credit quality worsens in the second phase of this cycle, the liability structure of financial arrangements becomes increasingly characterised by leverage. As explained earlier, leveraged positions are exploited in this boom phase because they allow the reaping of magnified returns on equity. At the same time, asset prices keep moving up, also due to the stock market becoming inflated by investors' appetite for risk. As the financial system as a whole becomes more leveraged in this phase, the investment unit that characterises each market actor will determine their resilience to shocks, but importantly also the stability of the system as a whole.¹³⁸ This is so because the pattern of financial expansion that occurs in this phase is highly characterised by increased indebtedness relative to real assets and the underlying cash flow. Moreover, the complexity and sophistication that go hand-in-hand with this pattern of financial growth increase interconnectedness and also the general difficulty of managing and supervising credit arrangements. This represents a threat to financial stability.¹³⁹

As indicated earlier in this section, the strength of the crash is determined by the type of financial units developed during the boom phase and by the structure of credit arrangements therein. Once the cycle turns, credit terms also change with higher interest rates and tighter margin requirements. Banks become reluctant to extend the credit that is necessary for investment units to settle payments. At this early stage of the crisis, many hedge units are pushed into the speculative group, while the latter are sucked into the Ponzi group. As refinancing becomes unavailable to units with a fragile (highly leveraged) structure, this causes a chain of bankruptcies, followed by a widespread contraction in output and a fall in stock market as well as asset values.¹⁴⁰

The essence of Minsky's hypothesis is that instability and crises in the financial sector are endemic as well as inevitable. This is particularly the case in financialised economies, like the US and the UK, characterised over the past three decades by the creation of uncontrolled levels of private debt.¹⁴¹ Financial crises are followed by collapses in the value of assets and disruptions to other areas of the economy. This paper contends that the CMU is likely to lead to an increased level of financialisation in Europe. To assess and corroborate this, it is necessary in the next section to analyse the regulatory infrastructure that has been put in place at EU level and its prospects of preventing, under the CMU framework, the recurrence of a cycle of the kind analysed earlier in this section.

4. The regulation of market-based finance under the CMU

The account provided in sections 2 and 3 of this paper shows that securitisation and the repo market were in the pre-crisis years the engines of the Anglo-American type of financial capitalism, both being at the heart of the securitised banking model analysed earlier. This description however does not reflect how financial markets work at present, because the securitisation market has been moribund

¹³⁸ See Minsky, 1992, op. cit. and Minsky 1970, op. cit., pp. 45-51.

¹³⁹ See J. Cullen, *Executive Compensation in Imperfect Financial Markets*, Edward Elgar, 2014, ch. 4; See Minsky, 1970, op. cit., pp. 51-53.

¹⁴⁰ See Minsky, 1992, op. cit.

¹⁴¹ See A. Turner, *Between Debt and the Devil*, Princeton University Press, 2016.

since 2008 (especially in the EU, and to some extent in the US too),¹⁴² and equally the volume of repo transactions has been limited.¹⁴³ The reduced capacity of EU financial markets (and generally of modern globalised financial markets) to function under current market constraints¹⁴⁴ provides a valuable perspective from which to appreciate the policy design aimed at developing market-based channels of finance.¹⁴⁵

Given the strong policy drive to expand market-based channels of finance, in spite of the risks experienced in the run-up to 2008, it is interesting to reflect on the proposed regulatory infrastructure at the EU level and to appraise whether this is likely to prevent or mitigate the possibility of a leverage cycle, and of ensuing financial instability. In a recent study, the IMF concluded that financial development involves both benefits and costs, which are related to financial instability. The IMF observed that these risks can be mitigated through sound regulation and strong institutions and supervisory structures.¹⁴⁶ This is in line with the suggestion of Geanakoplos in the context of the leverage cycle, namely that due to the dynamic of the cycle and the way in which market actors interplay with it, government intervention is needed. This arguably is the case regardless of whether banks act rationally, because it is precisely their rationality that drives the cycle, in a ‘tragedy of commons’ fashion.¹⁴⁷ When market-players act irrationally (as is the case during fire-sales for instance), the consequences of a crisis can be more severe, and the role of regulatory intervention becomes even more relevant.¹⁴⁸ This echoes the observation by Bhattacharya et al., who point out that, at different stages of the cycle, market players act on the basis of incomplete information.¹⁴⁹

¹⁴² See Bavoso, *Accounting Economics and the Law*, 2016, op. cit. It needs to also be remembered that securitisation in the US functioned post-2008 mainly thanks to government subsidies.

¹⁴³ See Financial Conduct Authority, “Market-Based Finance: Its Contributions and Emerging Issues”, Occasional Paper 18, May 2016.

¹⁴⁴ These are explained in Bavoso, *Accounting Economics and the Law*, 2016, op. cit.

¹⁴⁵ While securitisation features as a centrepiece within the CMU action plan, the EU has traditionally sought to foster an active repo market. See D. Gabor, “The (Impossible) Repo Trinity: The Political Economy of Repo Markets”, *Review of International Political Economy*, Vol. 23, No. 6, 2016. Market-based channels of finance also critically include more recent developments, such as P2P securitisation and new structured sovereign bonds, aimed primarily at creating safe assets for the repo market.

¹⁴⁶ IMF, “Rethinking Financial Deepening: Stability and Growth in Emerging Markets”, IMF Staff Discussion Note, May 2015. The IMF also specifically said that in the years before 2008 there was too much finance and some of the regulatory measures enacted post-crisis were in fact aimed at reducing certain activities and markets.

¹⁴⁷ It was explained earlier in this paper that leverage increases profitability, and in particular return on equity, for the individual firm, and it is therefore rational for shareholders and management to implement strategies that are aimed at leveraged-based asset growth. In financial markets where resources are finite and where trades are characterised as zero-sum-games, this leads to a tragedy of commons where individual actors’ self-interest is contrary to the welfare of the system as a whole (the common good of all market participants). The tragedy of commons was first theorised by G. Hardin, “The Tragedy of Commons”, *Science*, Vol. 162, No. 3852, December 1968.

¹⁴⁸ See Geanakoplos, FRBNY 2010, op. cit., p. 117.

¹⁴⁹ See Bhattacharya et al., 2011, p. 27. They observe that agents have incomplete information about the real world probability of a good state occurring and, as Bayesian learners, they try to infer it by observing past realisations.

The rest of this section focuses on a critical examination of the regulatory framework under which the CMU would function. The analysis is centred on the STS proposal¹⁵⁰ under the CMU, and on the reform of repo transactions under the EU SFT Regulation.¹⁵¹

4.1 Securitisation under the EU Capital Markets Union

A project to revive the securitisation market in Europe has been ongoing since at least 2014, when the Bank of England and the European Central Bank kick-started a debate on how to develop securitisation in the EU. This led to the EU proposal for a Regulation on securitisation, also labelled the STS (Simple, Transparent and Standardised) Regulation, which is currently in the final stage of negotiations before being adopted later in 2017.¹⁵²

Regulatory efforts have sought to firstly, define sustainable high-quality securitisation that would achieve the beneficial functions of the transaction while reducing asymmetry of information and excessive risk-taking, and secondly, design a regulatory regime for products that comply with the definition and are thus based on a different risk calibration. The proposal therefore revolves around the creation of a label (the STS), whereby transactions that comply with the requirements of simplicity, transparency and standardisation, would receive better prudential treatment. Overall, the requirements seek to make risks easier to assess for investors through standardised disclosure and transparency processes.¹⁵³ The idea of simplicity promoted by the Commission is also instrumental in the aimed alignment of interests between investors and originators of securitised products. More specifically, as regards the three criteria: i) simplicity requires the underlying exposures to be homogeneous and it prohibits re-securitisations, and restricts the use of derivatives for hedging purposes only; ii) transparency requires compliance with transparency and disclosure requirements; and iii) standardisation requires the transfer of assets to the SPV to be a true sale, which means that synthetic transactions fall outside the umbrella of STS.¹⁵⁴

While a detailed analysis of the STS Regulation has been conducted elsewhere,¹⁵⁵ the question to answer here is: To what extent will the forthcoming regulation create a sustainable securitisation market? One initial reflection in this respect relates to the system designed to verify compliance with the STS criteria. Interestingly, the Commission opted for a private notification process,¹⁵⁶ instead of a public certification system. This, in other words, empowers originators and sponsors in securitisation transactions to ensure compliance with the STS label and leaves investors to exercise due diligence before buying securitised bonds. The process is not, however, complemented by an adequate supervisory framework because the EU supervisor (ESMA) is only assigned a coordination role under the regulation, while national authorities are tasked with the monitoring of market developments and imposing sanctions.¹⁵⁷ Nor is ESMA empowered in the area of standardisation, because the

¹⁵⁰ EU Regulation (COM(2015)472 final) Laying Down Common Rules on Securitisation and Creating a European Framework for Simple, Transparent and Standardised Securitisation, and amending Directive 2009/138/EC, 2011/61/EU, and Regulation (EC) 1060/2009 and 648/2012.

¹⁵¹ EU Regulation 2015/2365 on Transparency of Securities Financing Transactions and of Reuse and amending Regulation (EU) No. 648/2012.

¹⁵² See footnote 150.

¹⁵³ STS proposal 2015, p. 7.

¹⁵⁴ *Ibid.*, p. 7.

¹⁵⁵ See V. Bavoso, *Accounting Economics and the Law*, 2016, op. cit.

¹⁵⁶ STS Regulation, Art. 14.

¹⁵⁷ STS Proposal, 2015, p. 8.

Commission preferred to leave this function in the hands of industry associations.¹⁵⁸ The Commission's approach in this respect raises doubts, due to the limited ability of market players to recognise systemic risks and in particular to identify the systemic effects of their actions.

These concerns are also rooted in the incomplete definition of simplicity under the STS regulation, which is likely to leave market actors with too much freedom to manoeuvre and innovate. Concerns stem from two specific lacunae in the proposal. The Commission has completely failed to elaborate the problems related to tranching, which remains a practice accepted under the regulation. In the pre-crisis years, tranching allowed banks to originate assets of poorer quality, which would receive a triple-A rating due to the complex correlation formulae underpinning the bundling process, the credit enhancement mechanisms and, of course, the way in which assets were sliced and repackaged under different risk and return assumptions. Moreover, combined with the use of CDSs, entered by banks to hedge certain exposures or to speculate on certain assets, tranching led to homogeneity between banks' asset portfolios, or in other words a high degree of correlation between their balance sheets. A high correlation in turn led to interconnectedness, heightened systemic risks and contagion between different tranche holders.¹⁵⁹ All in all, the increased complexity flowing from tranching is at odds with the overarching aims of simplicity and transparency.

The second lacuna in the proposal is the ambivalence towards synthetic transactions. While from a first reading of the regulation synthetics seem to fall outside the perimeter of the STS label,¹⁶⁰ this stance may be reconsidered in the near future and synthetic transactions may be gradually included in the framework. This comes as a result of strong pressure from market participants, and especially banking lobbies, that insisted that despite the risks associated with synthetic transactions, they are often the only efficient way to securitise risky assets, such as loans to SMEs.¹⁶¹ It is worth remembering that synthetic CDOs became, due to their peculiar legal structure, extremely popular between 2000 and 2007 as they allowed the transfer of risk of more assets than under traditional securitisation and also the securitisation of assets with a less predictable cash-flow.¹⁶² The chief drawback of these structures was the much greater level of leverage they created, together with the increased correlation of banks' balance sheet.¹⁶³

The regulatory agenda set out by the Commission is identified in this paper as a wider problem affecting the way in which the STS Regulation is implemented, and more broadly the institutional framework of the CMU. The Commission Green Paper stressed that market-driven solutions would be preferred and that regulatory changes would only be considered if necessary. The existence of ESMA (and of ESAs more generally) of course means that on paper the Commission's stance is correct and that there is no need to establish a new pan-European authority to supervise capital markets. Questions on the effective powers of ESMA, however, have been raised, especially due to the budgetary constraints under which it operates and the relevant supervisory powers that it has not so

¹⁵⁸ STS Proposal 2015 p. 8.

¹⁵⁹ See Bavoso, *Accounting Economics and the Law*, 2016, op. cit., p. 17; Finance Watch 2014 p. 35.

¹⁶⁰ This is because they do not involve a true sale of assets between originator and SPV, which is required under the standardised criterion, but instead create a synthetic exposure to the underlying assets. This is achieved through a credit default swap between the originator, acting as protection buyer, and the SPV, acting as protection seller. See V. Bavoso, "Financial Innovation and Structured Finance: The Case of Securitisation", *Company Lawyer*, 34(1), 2013.

¹⁶¹ See Bavoso, *Accounting Economics and the Law*, 2016, op. cit.; See also STS Proposal 2015, p. 15.

¹⁶² See V. Bavoso, "Filling the Accountability Gap in Structured Finance Transactions: The Case for a Broader Fiduciary Obligation", *Columbia Journal of European Law*, 23(2) 2017, p. 373.

¹⁶³ *Ibid.*

far exercised.¹⁶⁴ The Commission has not clarified this point in the various CMU consultation documents and doubts therefore remain on the capacity of ESMA to adequately face the task of supervising fully integrated EU capital markets. On the contrary, the notification system embedded in the STS Regulation and the role attributed within it to market actors and residually to national authorities show that the capital markets union is likely to develop in a regulatory landscape permeated by the belief in market discipline. This is highly reminiscent of the laissez-faire environment that led to the abuses of capital markets finance in the pre-crisis period and to uncontrolled increases of leverage.

In line with the critique expounded earlier in this section, on the role of government institutions in preventing and managing different phases of the leverage cycle, it is difficult to envisage how the CMU project can deliver the announced goals and benefit the real economy, without the steering function that is typically associated with government institutions. The risk with the present framework is that it confers too much power to market actors and their truncated rationality is likely to lead to an increase in financialisation and to the same practices that led to massive increases of leverage in the financial system.

4.2 Repo transactions under the SFT Regulation

Section 3 of this paper highlighted some of the problems that emerged in the context of the securitised banking model and it emphasised in particular the importance of the repo market. Despite being strongly interlinked with securitisation, there is little or no reference of repo transactions in the CMU framework and how they ought to be regulated. Nor did the Commission clarify in the STS Regulation the linkages between securitisation and the shadow banking system and the level of leverage transmitted between the two. Admittedly, the EU paid little attention to the repo market – referred to as securities financing transactions – in the pre-crisis period, despite it being much larger than the securitisation market.¹⁶⁵

This regulatory void was partly filled with the enactment in 2015 of the Securities Financing Transactions (SFT) Regulation in the EU.¹⁶⁶ This was primarily aimed at reducing risks and increasing transparency in repo-type transactions. The Regulation is grounded on two main strategies. The first one is represented by limits on the reuse of financial instruments received as collateral by the transaction counterparties. These are subject in particular under Article 15 of the regulation to two conditions: 1) the providing counterparty has been informed by the receiving counterparty of the risks and consequences related to either granting a right of use of collateral, or concluding a title transfer collateral arrangement; and 2) the providing counterparty has granted prior express consent to a security collateral arrangement that enables a right to use, or it has agreed to provide collateral by way of title transfer collateral arrangement.¹⁶⁷

The second strategy is represented by reporting requirements embedded in Articles 4 and 13 of the Regulation. Article 4 sets the general terms of the reporting obligations that counterparties in SFTs have to comply with, and together with the necessary formalities, it highlights the role of trade

¹⁶⁴ See K. Lannoo, “Which Union for Europe’s Capital Markets”, CEPS/ECMI Policy Brief, No. 22, CEPS/ECRI, Brussels, February 2015, p. 6 and P. Schammo (2011), “The European Securities and Markets Authority: Lifting the Veil on the Allocation of Powers”, *Common Market Law Review* 48(6) 2011.

¹⁶⁵ D. Gabor and J. Vestergaard (2015), “Capital Markets Union: The Systemic Issues Buried Deep in the Market Infrastructure Plan”, FEPS Policy Brief, April 2015, p. 3.

¹⁶⁶ Regulation EU 2015/2365.

¹⁶⁷ Art.15 (1) a and b.

repositories and the coordination role of ESMA for their registration.¹⁶⁸ Article 13 sets out details of the disclosure requirements of UCITS management and investment companies as well as AIFMs to their investors, as regards the use they make of SFTs.

From this overview it appears that the Regulation is focused on the disclosure of information provided to counterparties in repo transactions. While this is certainly a step in the right direction to tackle problems of counterparty credit risk and systemic risk, it is also appropriate to critique the effectiveness of these provisions for two reasons. The first one relates to the Regulation's assumption that counterparties act rationally if provided with adequate information. As discussed earlier in this paper in the specific context of the leverage cycle, and as evidenced by the behaviour of financial institutions in the pre-crisis years, this assumption is rather illusory. The second concern relates to the supervision and enforcement of the Regulation's provisions, which will essentially depend on member states implementing relevant regimes through their national authorities, with ESMA, again, playing merely a coordination role.

From a different angle, the question of minimum requirements for haircuts has been left out of the SFT Regulation. The Commission acknowledged in the Regulation's preamble that sound regulation of haircuts in repo transaction would prevent excessive leverage and concentration of risk among financial institutions, but this task was left to the Financial Stability Board (FSB) through a framework for SFT haircuts. The FSB published in 2015 a Regulatory Framework for Haircuts on Non-centrally Cleared SFTs in order to establish a globally applicable regime for haircuts on non-cleared transactions, including repos.¹⁶⁹

The FSB framework is centred on two main provisions, namely, i) incorporating qualitative factors into new or existing methodologies used by repo counterparties to calculate haircuts; and ii) applying *de minimis* through-the-cycle haircut floors to non-centrally-cleared repos, where financing against collateral, other than government securities, is provided to non-bank entities. Crucially, this framework excludes from its application i) centrally-cleared SFTs provided to banks and broker-dealers subject to adequate capital and liquidity regulation; and ii) repo transactions carried out by central banks.¹⁷⁰

The first element of the FSB framework aims to limit the potential pro-cyclical fluctuations in haircuts. It seeks to limit the capacity of haircut to contribute to financial instability through the dynamics of margins in the leverage cycle, which was described earlier in this paper.¹⁷¹ The second element of the framework is designed to set limits on the amount that non-banking entities can borrow against different types of securities in repo transactions. This provision should serve to limit increases in leverage outside the regulated banking system and at the same time reduce the pro-cyclicality of leverage.¹⁷² With respect to the haircut floors within this provision, they vary according to the category of the security pledged, its market risk and historical performance. They range between 0.5% applied to short-term corporate debt, 6% for main index equities, and to higher haircuts for securitised debt,

¹⁶⁸ Art. 4 (4)(5) and Art. 5.

¹⁶⁹ FSB, "Transforming Shadow Banking into Resilient Market-Based Finance: Regulatory Framework for Haircuts on Non-Centrally Cleared Securities Financing Transactions", November 2015.

¹⁷⁰ Ibid.

¹⁷¹ Ibid, p. 5.

¹⁷² Ibid, p. 7.

and 10% applied to other assets within the scope of the framework.¹⁷³ Critically, so called collateral upgrades¹⁷⁴ are also covered within the floors.¹⁷⁵

The FSB's recommendations on minimum haircuts will rely on market participants establishing internal processes and procedures in accordance with the framework, while the monitoring of margin requirements will be coordinated by the relevant regulators together with the Basel Committee and IOSCO.¹⁷⁶

Finally, it needs to be remembered that in tri-party repo transactions the collateral cannot be rehypothecated outside the triparty venue. This entails that the management of these repos through an agent bank can provide regulators with information that would not be available in bilateral repos. This contention is substantiated by empirical evidence on the stability of tri-party repos during the GFC.¹⁷⁷ Much of the repo market, however, is characterised by bilateral transactions, especially in Europe where they amount to 70%, while in the US they are between one-third and one-half of the market.¹⁷⁸ Regulators, as a consequence, have chosen central clearing counterparties (CCP) to manage repo transactions and to provide the market with the necessary level of transparency. At the EU level, this already happened for derivative transactions under EMIR (European Market Infrastructure Regulation),¹⁷⁹ and in the repo market CCPs will perform the role of intermediaries, guaranteeing the transaction's performance in the event of counterparty failure. In essence, counterparty credit risk is transferred to CCPs, which in turn are protected by taking collateral from each counterparty in the repo and by collecting a default fund from its members, for losses that exceeds the transaction's margins.

It seems clear that the initiatives to regulate haircuts should mitigate risks related to the pro-cyclicality of margin valuations, especially in periods of market stress. Moreover, more complex securities, such as securitised bonds, will be under higher margin requirements and this should provide the market with a better degree of stability and predictability. The limits on rehypothecation too are likely to reduce leverage and volatility in the financial system.¹⁸⁰

Doubts remain, however, over the effectiveness of these measures. It was argued earlier in this paper that in order to monitor leverage in the securitised banking system, policies should be put in place that create a sufficient level of transparency of haircuts among the entities operating in the shadow banking system, and of course adequate haircuts in the repo market. This paper contends, along with a number of other academic works,¹⁸¹ that more direct and intrusive regulation of the repo market is

¹⁷³ Ibid., p. 8.

¹⁷⁴ Where a repo counterparty resorts to rehypothecation to circumvent a haircut, by borrowing securities against other securities that attract higher haircut as collateral.

¹⁷⁵ Ibid., p. 10.

¹⁷⁶ FSB, 2015, op. cit.

¹⁷⁷ See A. Copeland, A. Martin and M. Walker, "Repo Runs: Evidence from the Tri-Party Repo Market", Federal Reserve Bank of New York, Staff Report No. 506, July 2011.

¹⁷⁸ See Cullen, 2017, op. cit., p. 19.

¹⁷⁹ Regulation EU No 648/2012 on OTC Derivatives, Central Counterparties and Trade Repositories.

¹⁸⁰ See Cullen, 2017, op. cit., p. 21.

¹⁸¹ Among others, V. Constancio, "Challenges for the European banking industry", lecture delivered at the Conference on European Banking Industry: What's next?, University of Navarra, Madrid, 7 July 2016; and most interestingly M. Ricks, *The Money Problem: Rethinking Financial Regulation*, University of Chicago Press, 2016, in which a proposal for restricting money and quasi-money creation powers to the state and to licenced insured

needed in order to achieve the level of financial stability that is desired by the European Commission. This argument is based on two main problems, identified earlier: i) the loose institutional structure of EU capital markets regulation, in which ESMA does not seem in the foreseeable future to be granted the powers (and funding) that are necessary to supervise pan-EU capital markets; and ii) the overarching regulatory technique permeating this area of capital markets, which still revolves around disclosure mechanisms and market discipline assumptions.

5. Conclusion

This paper proposes a different perspective on the EU policy aimed at further integrating European capital markets through the CMU. At the heart of this critique is the realisation that through the CMU the Commission is seeking to resuscitate a number of practices and credit channels that were prevalent in the pre-crisis years. In particular, a careful reading of the Commission Green Paper shows that debt transactions, and in particular securitisation, are central to the envisaged functioning of EU capital markets. This is also confirmed by the implementation stage of different segments of the CMU, where an agreement has recently been reached to revive securitisation through the STS Regulation,¹⁸² while more socially-oriented channels of finance, such as equity crowdfunding for instance, have not been pursued with the same eagerness. Overall, as was discussed earlier in section 2, the real economy and SME tags that have been (self)attributed to this project are to a large degree a means to make it more appealing to a diverse range of stakeholders.

Section 2 of this paper explained that, notwithstanding its claims, the CMU is very likely to lead to more financialised economies, to increased debt in the financial system and inevitably to higher levels of leverage. Moreover, the push to revive both securitisation and the repo market – bearing in mind that both have remained stagnant after the GFC – shows that there is a real possibility to see a new emergence of the securitised banking model, the risks of which are explained in section 3. Despite the introduction under the new Basel III framework¹⁸³ of a set of standards aimed at reducing leverage in the financial system, there are legitimate concerns that these alone will not be sufficient to significantly reduce risk and instability.

Firstly, the leverage ratio (LR) introduced with Basel III will cap the total amount of leverage that banks can achieve and will require banks with a large share of low risk-weighted assets to have additional loss-absorbing capacity. Importantly, the LR is a non-risk-based capital measure, defined as Tier 1 capital over a bank's total exposures, including also off-balance sheet exposures.¹⁸⁴ It is expected that this will increase the resilience of large banks as it will provide a measure to contain aggregate risk and a protection against losses in the financial system that is not part of the risk-based capital framework. The risk insensitivity of the LR, however, means that assets with the same nominal value but different riskiness are treated equally and face the same capital requirements under the LR. It has been observed in this respect that the move away from risk-based capital may allow banks with low

banks is brought forward (which would as a consequence make much of the current shadow banking system illegal).

¹⁸² See "The EU Reaches Agreement on Reviving the Securitisation Market" (https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union/capital-markets-union-action-plan_en).

¹⁸³ Represented chiefly by the Basel III framework which included new leverage ratio together with new liquidity requirements under the Liquidity Covered Ratio and the Net Stable Funding Ratio; see BCBS, "Basel III Leverage Ratio Framework and Disclosure Requirements", BIS, January 2014.

¹⁸⁴ Ibid.

risk-weighted assets to increase their risk-taking beyond a desirable level, thereby offsetting the benefit of holding more capital under the LR.¹⁸⁵ Ultimately, the LR requirements will not work in isolation and will have to be judged in the broader context of the overall prudential framework under which financial institutions operate.

Similarly, the liquidity reforms embedded in the Basel III Accord, namely the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR) are conceived to improve the ability of banks to absorb shocks arising from financial stress and reduce the possibility of spill-overs from the financial system to the real economy.¹⁸⁶ While these measures represent clear improvements from the pre-2008 regulatory environment, their effectiveness relies on the overall liquidity of the financial system. This in turn is closely linked to the general availability of collateral, especially for short-term borrowing. The demand for safe assets as collateral, however, contrasts with a general and long-standing scarcity of collateral, which is expected to increase in the foreseeable future, according to BIS estimates.¹⁸⁷

The above remark is linked to the critique of the STS framework, presented in section 4. One of the objectives of a revived securitisation market is precisely the re-establishment of a private system of collateral creation, which would grease short-term wholesale markets and the financial system as a whole. This paper expounded a number of concerns related to the way in which the STS framework is implemented. These pertain to the incomplete definition of what simple securitisation should be and at a higher level to the regulatory arrangements surrounding the STS securitisations. Therefore, if general conditions of liquidity do improve in the financial system, due to the introduction of more collateral, it would be legitimate to question the real quality of the underlying assets pledged as collateral.¹⁸⁸

The above remarks, and the concerns about the viability of the post-crisis financial architecture bring the discussion back to some of the criticism made by Lord Turner. He questioned the state of the financial system, particularly its debt creation effect and the belief that market discipline would suffice in ensuring adequate control systems and the reining in of excessive risks.¹⁸⁹ As discussed throughout this paper, policies directed at increasing private-sector debt and leverage seem to remain undisputed. Turner reflects in his work on the inevitability of this pattern of credit-intensive growth, which, he argues, does not support productive capital investments.¹⁹⁰ This conclusion is shared in some way by Geanakoplos who refers in his work to eight reasons why the leverage cycle is bad for the real economy. These relate to three main areas of concern, namely the large debt and the ensuing bankruptcies in the leverage cycle; the swings in asset prices that characterise the leverage cycle (leading to bubbles and bursts); and the inefficient government intervention that normally follows a cycle.¹⁹¹

¹⁸⁵ For a full critique, see M. Grill, J. Lang and J. Smith, "The Leverage Ratio, Risk-Taking and Bank Stability", Special Feature, *EBA Staff Financial Stability Review*, 2015.

¹⁸⁶ For a specific critique of these two frameworks, see J. Cullen, "Liquidity, Securitisation and Mortgage Markets: A Legal and Minskyan Analysis", draft spring 2017.

¹⁸⁷ Bank of International Settlements, "Asset Encumbrance, Financial Reform and the Demand for Collateral Assets", Committee on the Global Financial System Paper No. 49, 2013.

¹⁸⁸ For a full critique on the STS framework, see Bavoso, *Accounting Economics and the Law*, 2016, op. cit.

¹⁸⁹ A. Turner, *Between the Debt and the Devil*, Princeton University Press, 2016.

¹⁹⁰ Ibid.

¹⁹¹ J. Geanakoplos, "Leverage, Default and Forgiveness: Lessons from American and European Crises", *Journal of Macroeconomics*, 39, 2014, p. 320. Briefly, the eight reasons are: 1) the externalities on real economy if leveraged investors internalise only their private loss from a bankruptcy; 2) the debt overhang that destroys

In a recent speech on sustainable finance at the European Parliament, Vice-President Dombrovskis highlighted the commitment to focus on long-term goals and those serving the interest of the real economy. He emphasised the importance of embedding sustainable goals into financial regulation and stressed that efficient capital markets can contribute to sustainable societies.¹⁹² Dombrovskis added one important caveat: the essential need for a financial stability dimension to ensure that capital markets can adequately internalise risks and make the financial system more resilient. For this to happen, he called for a deeper re-engineering of the financial system.¹⁹³ In light of the critique put forward in sections 3 and 4, this paper contends that the necessary re-engineering of the financial system is not likely to occur under the EU Capital Markets Union.

productivity, regardless of the occurrence of bankruptcy; 3) the seizing of collateral destroys part of its value in the process; 4) swings in asset price have effects on the leverage cycle and foreclosures have pecuniary externalities for other borrowers; 5) assets prices can have profound effects on economic activities; 6) fluctuations in asset prices during the cycle lead to undesired redistribution of wealth and income inequality; 7) the leverage cycle is bigger when the heterogeneity of agent valuation of the assets is greater; and 8) the inevitable government intervention to the crisis tends to be ineffective.

¹⁹² See Vice-President's Valdis Dombrovskis speech on sustainable finance at the European Parliament, Brussels, 6 June 2017 (https://ec.europa.eu/commission/commissioners/2014-2019/dombrovskis/announcements/vice-presidents-valdis-dombrovskis-speech-sustainable-finance-european-parliament_en).

¹⁹³ Ibid.

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