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The demise of the US investment banking from a Minskian perspective

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Abstract. This research analyses the causes behind the de-facto demise of the US firms dedicating their activity exclusively to securities business, in the wake of the financial crisis of 2008, focusing on the firms´ risk mismanagement and bad lending practices, that increased fragility and risk exposures in the US securities sector.
These practices emerged when leading firms became gradually convinced of the goodness of financial instruments of their own design, as they engaged in proprietary trading activities and trading of financial products with residual liquidity, increasingly shifting their use from hedge to speculative purposes.
In this way, leading financial operators able to take unrestricted risk and highly leveraged positions in unregulated markets are the cause behind volatility in asset prices, and they are ultimately responsible of the cyclical boom and bust dynamics of the market-based economy.
Keywords: Financial crisis; financial instability hypothesis; institutional political economy; Minsky.

[es] La desaparición de la banca de inversión estadounidense desde una perspectiva de Minskiana

Resumen. Esta investigación analiza las causas detrás de la desaparición de los bancos que dedicaban su actividad exclusivamente a la banca de inversión de EEUU, a raíz de la crisis financiera de 2008, centrándose en la mala gestión del riesgo y las malas prácticas crediticias de dichas empresas, que aumentaron la fragilidad y la exposición al riesgo en el sector.
Dichas prácticas surgieron cuando los principales bancos con actividad en títulos de valores se convencieron gradualmente de la bondad de los instrumentos financieros de su propio diseño, y comenzaron a dedicar recursos y parte de su actividad al trading por cuenta propia, al negocio de productos financieros con liquidez residual, e instrumentos cuyo uso cambió de cobertura a fines especulativos.
De esta forma, los principales operadores financieros capaces de asumir riesgos irrestrictos y posiciones altamente apalancadas en mercados no regulados son la causa de la volatilidad en los precios de los activos y, en última instancia, los responsables de los auges y la caídas cíclicas propias de la economía de mercado.
Palabras clave: Crisis Financiera; Hipótisis de inestabilidad financiera; Economia política institucional; Minsky.

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1. Introduction

There is consensus in the literature that the 2008 financial breakdown did not need to occur. If it did it was because of a cumulus of factors that have well been researched in the literature by now, like deficient regulation, the role of credit rating agencies, or the shadow banking system, to mention just a few (FCIC 2011; Blinder and Vick 2014;

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Crotty 2009; Cooper 2008; Dymski 2010). Less attention however was given to banks' bad lending practices at top management level, deficient financial risk management, particularly liquidity and counterparty or credit risk.

This article focuses on these aspects that led to the financial crisis in 2008, with a particular focus on the investment banking activity (commercial banking related to credit extension is treated insofar it relates to real estate subprime mortgage originations). We assess the financial risks that accumulated in banks' balance sheets, and their mismanagement, as the result of operating in structured finance and derivative based on the subprime mortgage market. We apply Minsky´s theoretical framework to show that banks balance sheets became increasingly more fragile because of the bad banking practices that led to the concentration and accumulation of extreme risk exposures for major investment banking (IB) firms[2]. In this sense we follow Minsky´s insight arguing that in the framework of our currently existing capitalist economy with asset ownership, recurrent crises are not only likely to occur but will inevitably occur, and they are created by agents taking positions in the financial markets.

We intend to contribute to the existing literature by placing the investment banking sector at the center of the analysis, in their central role, as operators taking risk positions with leverage in unregulated markets. Our approach favors a change of perspective with respect to mainstream economic theory where banks act as neutral ´conveyor belt´ institutions who assign recourses efficiently among savers and investors. On the contrary, we believe securities firms are central agents in the economy, who take decisions that modify products and behavior and have market power to influence asset prices in oligopolist markets.

Second, we argue that securities firms deviated from the traditional investment banking activity, which consists in diversifying or transferring financial risk among customers for commission fees, i.e. offering intermediary services and not risking proprietary capital. The fact that prime investment bank (IB) firms started to trade for their own account and assume the risk exposures themselves, is what eventually led to their demise in 2008. Securities firms accumulated vast positions in subprime market related trades in their search for more lucrative business (yield), precisely because they eventually believed the goodness of the financial innovation of their own design.

The rest of the paper is structured as follows: section 2) presents the theoretical framework approaching a Minsky-Keynesian perspective of financial instability. Section 3) briefly assess the main changes in the regulatory landscape and the size of the IB securities business at the beginning of the 2000s. Section 4) analyses what we termed bad lending and banking practices that ignored and/or minimized financial risks and led to accumulation and concentration of risk exposures in the firms´ balance sheets. We focus both on the operations as well as on the operators in the market, i.e. the leading investment banking firms. Section 5) analyses the balance sheet structure of the leading IB firms with significant operations in the US securities business, to account for the determinants of systemic fragility. Finally, section 6) concludes.

2. Theoretical framework: the Minsky-Keynes perspective of financial instability

There are many economic theories that aim to explain the functioning of capitalist market-based economies where leading IB firms in the securities business sector operate. In our view, the heterodox post-Keynesian and Minskian perspectives provide the best understanding of the financial crises. This section briefly revises his contributions and builds the theoretical framework for the analysis of the systemic fragility in the balance sheet of the leading IB firms, based on a Minsky-Keynesian approach.

Minsky and Keynes put forward a theory that allows for instability to exist and explain its origins. Their approach stands for an outright refutation of mainstream economic theories according to which the economy can be steered towards a general equilibrium and stationary state. Both argued strongly against these theories, exposing them as unable to explain why crises occur and therefore unable to give a proper explanation of the functioning of capitalist market economies. Keynes had argued in his General Theory (1936) that anomalies are usual events because the current economy is liable to fluctuations. Minsky takes on this point to develop an explanation of why such fluctuations in the form of deep depressions, are not only likely to occur but will inevitably occur, given the characteristics of our capitalist market based economic system. For him, instability is not an anomalous accident precisely because the market economy is crisis prone, and this is the result of indebtedness´ tendency to outrun the ability of cash flows to validate debt commitments (Minsky 1976, 1986a; 1992ab; Dymski 2002, 2010; Hein and Stockhammer 2011; Keynes 1936; Kregel 2007; Papadimitriou and Wray 1998; Whalen 2008a, 2011ab).

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[2] IB firms here do not refer exclusively to pure securities firms prior to the crisis, like Lehman Brothers, Bear Stearns etc., but also to commercial banks who owned securities trading desks, such as: Bank of America, Citibank or foreign banks with significant presence in the US securities business, like Deutsche Bank, UBS, etc. However, we analyse these institutions only from their securities business activity perspective. We use the terms ´investment banks´ and ´securities firms´ interchangeably.

Minsky's theoretical proposal holds two central assumptions. First, that crises are endogenous to capitalism insofar financial stability is only a stage of a journey towards instability (McCulley 2009; Minsky 1982, 1986b, 1992b, 1996; Wray 2009, Papadimitriou and Wray 1998; Whalen; 2008b; 2011a; 2011b). Both phases interact with feedback loops in a cyclical pattern that swings from strength to weakness and vice versa. Second, there is a structural relationship between the balance sheets of all economic agents, who become catalysts and propagators of financial instability and, eventually, of a default chain.

In this sense, Minsky follows the Keynesian paradigm shift tradition by rejecting the view that problems arise due to specific institutional weaknesses in the banking system and argues instead that the current capitalist market economies are fundamentally flawed, where profit seeking activity implies the transition from robustness to fragility of the financial units. This idea is at the core of Minsky´s Financial Instability Hypothesis (FIH) which essentially says that stability is destabilizing, due to a procyclical tendency to herd behaviour in the financial markets. Investors increase their risk exposures and leverage during the good times with a tendency to extrapolate indefinitely a context of stability, which leads to a conversion of financial units from hedge to speculative and finally to Ponzi. It is during this time of stability when investor´s behaviour leads to instability and financial fragility, which ends in what was defined as a Minsky moment (Whalen 2008a, 2008b; McCulley 2009). This led Minsky to conclude that stability can never be a permanent state of the economy but just a temporary phase towards instability.

Thus, Minsky´s insight puts forward the premise that we live in a capitalist economy with a highly sophisticated and complex financial system, characterised by inherent systemic fragility. This is the normal functioning of the capitalist economy, more precisely agents taking risk positions in financial markets that move asset prices upwards or downwards, and develop endogenously fragile and crisis prone financial structures, as a result of the way in which investment and positions in the stock of capital-assets are financed (Minsky 1976, 1986ab, 1991, 1992b, 1996; Dymski 2002; 2010; Kregel 2007; Papadimitriou and Wray 1998).

Minsky uses the terms ´robust´ and ´fragile´ to define the state of the financial units at any point in time and argues that there is a continuum between them. The fact that capitalist and financially complex economies shift from robustness to fragility and vice versa is an empirical evidence, and Minsky is trying to explain the reason this occurs. In more precise terms he identifies three determinants of robustness-fragility pattern that financial structures follow: 1) the mix of balance sheet liability components that Minsky names hedge, speculative and Ponzi units; 2) liquidity of various asset classes, i.e the weight of cash or near cash assets in the portfolios and 3) the extent to which ongoing investment is financed by debt, i.e leverage for financial institutions (Minsky 1976, 1986a, 1991, 1992b; Wray 2009, Crotty 2009; Dymski 2002; 2010: Kregel 2007; Papadimitriou and Wray 1998).

The Minsky-Keynes approach consists thus in perceiving the future as radically uncertain, in a world with long-term gestation of capital assets, private ownership of these assets and complex financial systems (Dymski 2002, 2010; Keynes 1936; Kregel 2007; 2008; Minsky; 1982; 1986a; 1991; 1996, Whalen 2008a; 2011b). We believe that Minsky´s framework (see figure 1) which builds on the Keynesian General Theory is useful to explain the behaviour of agents in financial markets and the boom and bust prone capitalist economy dynamics.

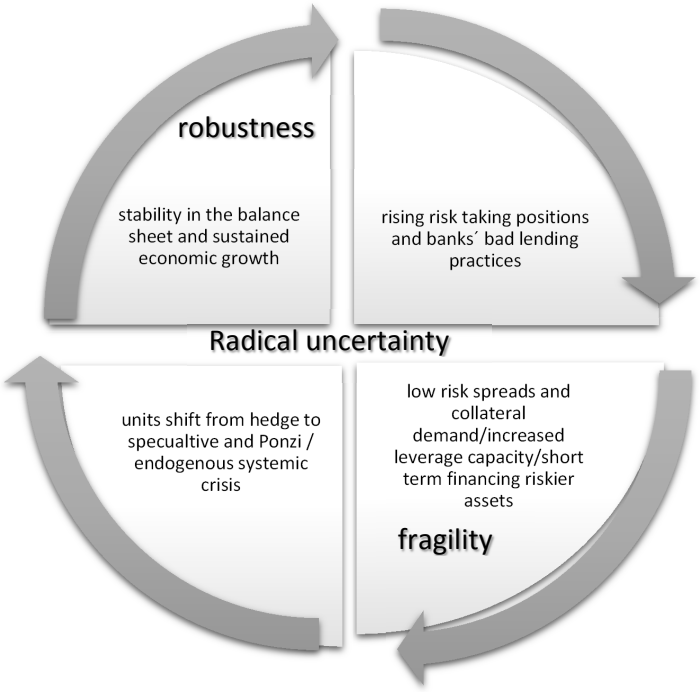

Figure 1. Shift from robustness to fragility in Minskian framework

The role of financial innovation is key to this scheme since, in times of expansion, can lead to an increase in the supply of credit and a reduction in safety margins. For Kreagel (2008), in the traditional Miskyan process, bank profitability depends on the ability to evaluate borrowers' credit quality and hedge the risk of taking short-term loans and granting long-term loans. On this occasion, rating agencies will replace banks in their role of risk managers while the business model is transformed into an originate-to-distribute framework. The new securities are made up of different tranches and those ranked higher with respect to credit quality are thought to act as a safety buffer for the tranches most exposed to defaults of subprime mortgages. The idea behind the safety buffers is to protect the returns of an investment project by accounting for the margin of error in initially estimated returns.

During economic expansions, errors are penalized less, since it is the expansion itself and not an improvement in the assessment of risks that validates the positive evaluation of the projects. Therefore, financial fragility increases around the slow and imperceptible erosion of these safety buffers, during the period of relative stability when there is a joint overestimation of credit quality and undervaluation of risk . As long as the bubble expansion exceeds default rates, problems are diluted, although the underlying problems will get bigger and bigger. When safety buffers reach very low levels, even the smallest deviation from expectations creates conditions in which companies have to change their strategy in order to meet fixed payment commitments, which translates into late payments, emergency loans and forced asset sales in the context of possible collateral foreclosures. The result is a downward pressure on prices and an increase in the weight of real debt. Lower prices increase the need to sell and reinforce excess supply, making it more difficult for the investor to pay off their debt in full from the sale of their assets.

3. The securities business at the beginning of the 2000s

At the beginning of the 21st century the leading firms involved in the securities business in the US had acquired a dominant oligopolistic position in the financial system, as a result of several key changes in the regulatory landscape. More precisely, two bills were passed at the end of the 90s that represented a point of no return for the sector´s development and implied the repeal of the Glass Steagall Act (GSA) regulation that separated securities business from commercial banking activities and deposit taking from the 1930s. (Carpenter and Murphy, 2010; Geisst, 2012; Goldberg and White 2003; Macey, 2000; Minsky 1986a). On the one hand, Gramm-Leach-Bliley Act (GLBA) passed in 1999 to accommodate the merger between Citicorp and the financial giant Traveler´s Group which was prohibited by the previous regulation and paved the way for commercial banks to fully immerse in the securities business (FCIC 2011; Partnoy 2013; Blinder and Vick 2014; Cohan 2012). And on the other hand, the Commodities and Futures Modernization Act (CFMA) that did not allow regulation of certain types of derivatives, ignoring Commodity Futures Trading Commission demands on the need to enhance transparency in OTC derivative markets. The Commodity Futures Trading Commission believed that the derivative industry had to be regulated, considering the Long-Term Capital Management episode, whose demise, due to energy derivatives, had severe consequences to financial stability at the end of the 90s.

Both GLBA and CFMA were the logical outcome of the self-regulation dogma, underpinned on two fundamental pillars. First, the regulator´s belief that interference creates distortion in the markets, that derivatives create liquidity and will make markets more complete. And second, that the banking institutions are the best fit to assess the risk profile of their positions so regulators should not intervene. The ideology-interest relationship that dominated the direction of US federal agencies had a great influence on the development of the securities sector (FCIC 2011, Roubini 2011, Blinder and Vick 2014).

Top management at the Federal Reserve did not hide that their priority was concerned with the development of the mortgage market and they were convinced of the self-regulatory capacity of the financial entities that granted the loans. Alan Greenspan declared that continuously supervising the subsidiary credit firms of the big banks could create an ¨unequal playing field¨ with respect to those independent entities that were not supervised, while recognizing the lack of means to exercise that supervision3. As such, the action of the regulator in repealing GSA (through the passage of GLBA or CFMA at the end of the 90s) was coherent with its pro-banks' ideological stance.

The resulting regulatory framework was the expression of the power balance between the financial sector and the political sphere that had been created over two decades of increased expansion of the investment banking sector. The substantive change brought about by a set of norms and regulations was that a small number of large commercial entities joined the core of large investment banks, forming the "Wall Street Complex", a powerful oligopolistic group of banks that would dominate the development of investment banking activity in the US (Partnoy 2013, Blinder and Vick 2014; Goldberg and White 2003; Cohan, 2012; Dymski 2011).

[3] See Greenspan´s intervention before the The Financial Crisis Inquiry Report in 2010, available at: https://fcic-static.law.stanford.edu/cdn_media/fcic-testimony/2010-0407-Greenspan.pdf

Table 1 shows their strength in 2001, at the beginning of their new expansionary phase. A mere eleven banks owned more than 80% of the underwriting business, both stock and debt, mergers and acquistions (M&A) and advisory, and 60% of the syndicated loan business. They controlled 76% of all five markets, among the most significant of the sector´s activity.

Table 1. Leading banks in securities sector per type of business in 2001 (% of total in each market and US$ bn.)

Bank	Syndicated Bank Loans (%)	Global Debt U/W and Private Placements (%)	Global Equity U/W and Private Placements (%)	M&AAdvisory Completed (%)	MTNs Arranged (%)	Total managed transactions (%)
Citigroup	13,2	12,7	11,4	9,8	9,8	10,8
JP Morgan Chase	24,4	8,9	3,4	8,8	8,2	10,4
Merrill Lynch	1,8	10,9	14,3	12,3	9,3	9,6
Goldman Sachs	2,1	7,1	14,2	15,4	5,6	8,4
Morgan Stanley	1,0	6,7	10,4	12,9	7,7	8,2
Credit Suisse	2,0	9,0	10,3	8,8	6,0	7,0
UBS	1,6	6,6	6,9	4,4	7,2	5,6
Deutsche Bank	4,0	6,1	4,0	2,5	7,5	5,3
Lehman Brothers	1,6	7,1	4,3	3,5	6,1	5,0
Bank of America	11,3	4,5	1,3	1,4	3,1	3,8
Bear Stearns	0,2	3,9	0,9	1,9	2,2	2,2
Total 11	63,1	83,5	81,4	81,5	72,7	76,3
Total 11 *	1.330	2.811	349	3.965	4.772	13.228
Total industry *	2.109	3.369	428	4.866	6.566	17.338

* in US $bn.
Source: Thomson Financial Securities Data

4. Bad banking practices increased fragility and risk exposures in the US securities sector

At the same time that major banks involved in the securities business industry were consolidating their oligopolistic position in the financial sector particularly in US but also worldwide, they were exposing themselves to financial risks that were ignored both by the regulator, but especially by those banks´ top executives, reflecting extremely deficient risk management practices during the boom years. This way, just as Minsky had argued the more stable and safer the banks seemed to be, the more fragile their balance sheets became (Minsky 1976, 1982, 1986a, 1991, 1992b; Whalen 2008b; 2011b; Kregel 2007).

The main responsibility in the formation of the real estate credit bubble, and therefore of the banking crisis, should be placed on the bankers[4] who have incurred in bad lending practices and gross risk mismanagement. They were the ones who had the capacity and the power to take the decisions that guided the performance of financial entities, and in particular their risk policies.

The bad banking practices we analyze here refer to: (a) the products traded in the financial markets which refer to loan origination and securities issuance that we discuss in sections 4.1 and 4.2, and (b) market participants practices, i.e. leading securities firms becoming proprietary traders of products of their own design, that we analyze in section 4.3.

4.1. Degradation of the underwriting standards

In 2002 Greenspan´s vast amounts of liquidity injected in the markets helped to reduce interest rates, creating the setup for financial speculation, which eventually led to the real-estate asset price bubble. The memory of the 2000´s dot.com crisis was long gone in that context of low rates, and the sellers of permanent prosperity were preaching the great moderation, the end of volatility and of the business cycle that the financial engineering had brought with it. Greenspan´s massive expansive monetary policy did not entail any significative pressure over inflation but translated to prices in real-estate and capital markets instead (Baker 2008; Whalen,

[4] These are the group of people who hold relevant power in the entities, usually formed by the board of directors or top management, and considering that sometimes the formal power and the real power do not coincide, due to the asymmetries of information and the formal and informal organizational structures that exist within financial entities. Although in most cases top management instituted the worst banking practices, not all of them did so, which is important not only to avoid an excessive generalization, but also to demonstrate that there are no mechanical forces, like macroeconomic imbalances which force all bankers to behave in the same way.

2008b; Crotty 2009; Dymski 2002; 2011b; Jarsulic 2012). As the subprime market became more profitable and underwriting standards degraded, risk exposures to default on subprime mortgages started to increase exponentially and banks gradually engaged in bad lending practices.

Bad lending practices in this section refer mainly to loan origination, such as Adjustable Rate Mortgage (ARM) or Interest Only (IO) subprimes, and to the conditions in which they were granted: Loan-to-Value (LTV), refinancing loans, etc.

ARM and IO loans were innovations that increased fragility of balance sheet structure for borrowers, as they provided them with initial advantageous conditions of payment with the downside of accumulating large amounts of debt in a relatively short time frame. The guiding principle of such sort of innovations was to delay the payment of principal, or even part of the interest payment itself. These have been famously called ´loans designed to default´ (FCIC 2011). Just like securitizations and derivative products these could be considered as loans that, like Minsky had described, shifted borrower's balance sheet structure from hedge to speculative and eventually Ponzi (Minsky 1986a; 1991, 1992a; Papadimitriou and Wray 1998). Consequently, a bad given loan is a toxic asset just as much as a highly exotic derivative or structured product. Financial innovations were not only structured products and exotic derivatives that Wall Street had produced based on the subprime mortgage market, but also these loans extended during the bubble years.

Subprime loans with so called ¨teaser rates¨ that would adjust 2 or 3 years after origination (ARM 2/28 and ARM 3/27 respectively) had massively been issued in 2004-2005, and implied that rates would reset by 2006-2007, increasing substantially and therefore representing a major risk factor. Two and three-year teaser rates ARM represented more than 70% of securitized subprime by 2005, whereas IO type almost doubled in 2005 with respect to the previous year (Jarsulic 2012; Jorion 2009), reaching almost a third of subprime issued Mortgage-backed securities (MBS).

However, defaults were artificially avoided by refinancing loans, a form of hiding default stimulated by the continuous rise in house prices, which also permitted the subprime boom to continue well after interest rates started to rise. According to Trujillo (2011) between 2000-06 only 36% of subprime loans went to home purchasing, while the rest was refinancing previous debt. LTV of 80/100% became common practice from 2003, and stimulated credit demand with a speculative purpose (FCIC 2011; Blinder and Vick 2014; Crotty 2009; Epstein and Crotty 2009; Jarsulic 2012; Kregel 2008).

Such bad practices had been recurrently downplayed by loan originators and authorities alike, who minimized or even ignored the risks derived from these activities, based on a twofold argument: first that securitization meant diversification of risk, and second that the probability of a major default event in the real estate market is fully hedged by the existence of credit derivatives.

As we know, the first argument proved to be a fallacy as the following data show: underwriting standards gradually degraded both for loan extension (rising percentages of ARM, IO and similar over total loans extended) and for securitizations (increased percentages of MBS composed of subprime mortgages and structured finance collateral for Collateralized Debt Obligations[5] (CDOs). By 2005-06 around 90% of collateral in issued CDO was formed of structured finance products like the above or high yield loans such as subprime, as we will explain in section 4.3. To be sure, such a structure had lost all risk diversification purpose.

As for the second argument there is wide evidence that participants had been increasingly taking positions as CDS buyers for speculative purposes in order to short the subprime market (Vilariño 2008; 2011a; Dymski 2010, 2011b; Jarsulic 2012; Jorion 2009; Kregel 2008). Also, the selling counterparts were assuming the default exposures without a real obligation to set aside the needed amount of collateral, as was the case of AIG - Financial Products. This had a feedback effect on securitizations: low CDS spreads implied that mortgage bonds were safe, but at the same time, AAA bond ratings justified low CDS spreads, adding to the perception that underliers were indeed safe.

4.2. Innovation induced instability: from hedge to speculative positions in securitizations and derivatives

A second dimension of bad banking practices refers to the use of financial products vastly traded on Wall Street and related to the subprime market: securitizations (MBS and CDOs) and credit derivative products (CDS). This section briefly analyses their evolution from 2000 until the crisis and explains how their use shifted from hedge to speculative positions, to show how they contributed to increase the fragility in holders´ balance sheets.

3.1.1 MBS

Both loan extension and securitizations have increased largely between 2001-06. Table 2 below shows the amounts of extended loans by private agents as well as Government Sponsored Enterprises (GSEs), and the securitized percentages. Private agents originating loans below the GSE credit standards increased significantly, as did the securitized proportion of them. Extended loans by private agents rose from less than 700 US$

[5] Like RMBS, CMBS, ABS, CMO, CDS, etc.

bn in 2001 to almost 1,500 US$ bn in 2006, whereas the percentage of MBS over these loans grew from 35 to 70% over the same period. If we look at the type of loan extended, securitized subprime loans grew from 46% to 75%, while ALT-A (of slightly better quality) from 19% to 91%. At the same time as private securitizations were booming, GSEs activity decreased by almost 30% during the same time frame. In 2003 private agents issued MBS were just a fourth of GSEs issues, and by 2005 they overpass slightly GSEs issues, with both at around 1,000 US$ bn.

MBS were designed to take the risk out of the balance sheet, i.e. sell a given loan, but this feature did not change over time. The shift concerned the credit worthiness of the extended loans. Initially, there was no default risk associated because GSEs were the main MBS issuers on the market, and high credit standards for new loans had been imposed in order to be eligible for GSE securitizations. That had, to a large extent, prevented the originate-to-distribute model from taking shape. Credit risk became an issue of concern in the 2000´s when private (non-agency) institutions who originated high yield loans could sell and securitize them on Wall Street. They had indeed underpinned the ´originate-to-distribute´ model that led to the extreme degradation of lending standards. (FCIC 2011, Blinder and Vick 2014, Kregel 2008; Trujillo 2011).

Table 2. Mortgage loans extended and securitized, per type of loan and institution (US$ bn.)

Mortgage loans extended and securitized, per type of loan and institution								
US$ bn.			2001	2002	2003	2004	2005	2006
Private (non-agency)	Subprime	Extended credit	190	231	335	540	625	600
		Issued MBS	87	123	195	363	465	449
		MBS/total	46%	53%	58%	67%	74%	75%
	Alt-A	Extended credit	60	68	85	200	380	400
		Issued MBS	11	54	74	159	332	366
		MBS/total	19%	79%	87%	79%	87%	91%
	Jumbo	Extended credit	430	576	655	515	570	480
		Issued MBS	142	172	238	233	281	219
		MBS/total	33%	30%	36%	45%	49%	46%
	Total, private	Extended credit	680	875	1075	1255	1575	1480
		Issued MBS	241	348	507	755	1078	1033
		MBS/total	35%	40%	47%	60%	68%	70%
GSEs		Extended credit	1.433	1.898	2.690	1.345	1.180	1.040
Issued MBS		1.088	1.443	2.131	1.019	965	905	
MBS/total		76%	76%	79%	76%	82%	87%	

Notes: Jumbo origination includes non-agency prime. Agency origination includes conventional/conforming and FHA/VA loans. Agency issuance refers to GNMA, FHLMC and FNMA.
Source: Inside Mortgage Finance

3.1.2 CDO

Like MBSs, CDOs have also been initially designed to diversify risk by bundling, in theory, heterogeneous and uncorrelated assets together (Vilariño 2011a, 2011b; 2008; Ashcraft y Schuermann 2008; Jorion 2009; Kregel 2008). A tranche structure was designed to account for payments, known as equity, mezzanine and senior, so that potential future profitability and risk increased, as creditworthiness of loans in the tranche decreased. This structure is indeed efficient as long as bundled loans proceed from rather diverse sectors, but one could not pretend to distinguish among three layers of different credit quality, when up to 80% of the CDO is composed of BBB (MBS) associated to subprime loans, as was the case after 2003.

CDO issuance with doubtful collateral (i.e. structured finance and high yield loans) peaked at over 500 US$ bn newly issued CDOs in 2006. Structured finance (SF) and high-yield loans (HY) type of collateral accounted for as much as 90% of all globally issued CDOs in 2005-06 (see figure 2). Structured Finance collateral included assets such as RMBS, CMBS, ABS, CMOs, CDOs, CDS, and other securitized or structured products.

This structure annulled the heterogeneity characteristic and increased correlation in the tranche, effectively increasing the default probability. Added to this was the fake type of demand for CDOs that banks created at the end of 2006 when the subprime market stagnated. For instance, the mezzanine tranches that could not be sold to real investors because of credit rating constraints, were bundled into new CDOs that the same bank was creating and buying, giving an appearance of demand in the market. Merrill Lynch for instance, market leader in CDOs had nearly half of its own made CDOs buying significant portions of other Merrill CDOs. By 2007 67% of mezzanine CDOs were bundled into newly created CDOs usually by that same firm, up from 36% in 2004[6]. We will further develop this point in section 4.3.

[6] See ProPublica August 26th 2010. https://www.propublica.org/article/banks-self-dealing-super-charged-financial-crisis

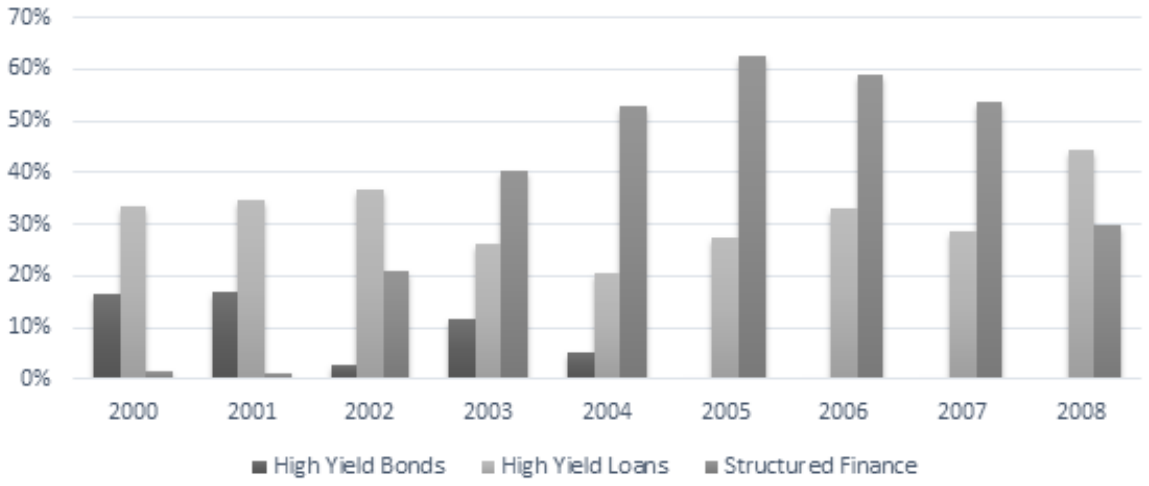

Figure 2. CDO issues per type of collateral (% of total issued amount)

Source: SIFMA Structured Finance Global CDO.

CDS

CDS contracts prior to the second half of 2004 are not recorded at BIS, the main database for these products. Their gross market value however, rose steadily until the second half of 2007 when it skyrocketed, multiplying by five by the end of 2008. That was the moment when turbulences in the subprime market strained the related MBS and CDO markets and increased demand for CDS to protect positions, which explains this sudden surge in outstanding market values (see figure 3 below).

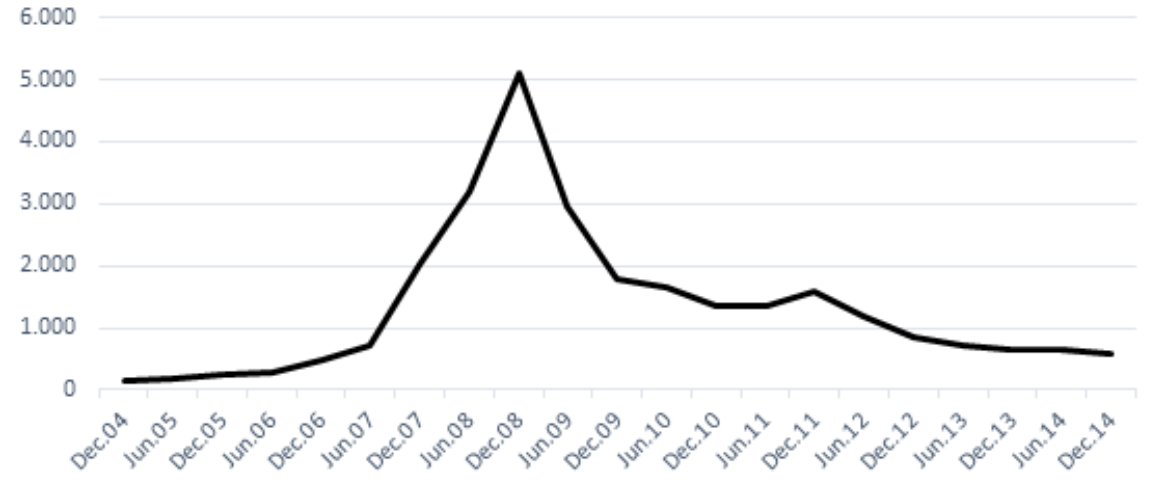

Figure 3. Total CDS at gross market value outstanding (US$ bn.)

Source: Bank of International Settlements

CDSs had initially also been used to hedge credit risk against potential defaults when substantial loans were extended to big corporations. A third party would agree to take that exposure in return for an agreed commission. However, in the 2000´s most counterparties that assumed the default risk could not provide the necessary financial guarantees, or they simply viewed risks as marginal[7]. Another example of this shift towards speculative positions were the so-called ¨naked¨ CDS, where buyers did not own the underlying assets (MBS or CDO tranches), because they were simply betting or speculating against the subprime market. Therefore, the new usages of CDS contracts shifted in the 2000´s from their function of hedging credit default financial risk to increase it by taking speculative positions and shifting it to misinformed agents in the market.

[7] See AIG Financial Products, one of the main CDS sellers (FCIC 2011).

The shift in use of the new financial instruments illustrate Minsky´s thought that, as memory of previous crisis fades away and awareness about financial risks gradually shrinks in importance, hedge units convert to speculative and finally Ponzi, increasing the systemic fragility of agents´ balance sheets (Dymski 2002; 2010; Epstein and Crotty 2009; Wray 2010, Hein and Stockhammer 2011; Kregel 2007).

4.3. Leading IB firms: from market makers to proprietary traders

However bad banking practices do not concern exclusively practices associated with loan extension and financial instruments but also to the behavior of the operators in the markets, which we analyze throughout this section. We identify a shift in the positions that prime securities dealers have taken in this respect, from market makers, intermediating trades for third parties, towards proprietary positions, where own capital was put at risk. We analyze the implications of this shift in the remaining of the section.

3.2.1. Market makers

The leading securities dealers traditionally operated as market makers such that they were in the middle of every buying and selling contract, effectively controlling entrance and exit of a trade. The final buying and selling counterparties operated via their respective broker-dealer, who acted as intermediary and did not put the firm´s capital at risk. The strategy implied running a matched book and shift the risk onto the final counterparties while charging a commission for their intermediary services.

The market for financial instruments associated to the subprime loans was structured in the following way: first, on the CDS demand side two types of buyers predominated: those shorting the MBS or CDO bonds on subprime loans, in naked positions, betting on the eventual default of subprimes, without owning the underlying bonds.[8] And those who did own the mortgage bonds but were deliberately buying the worst MBS and CDO tranches to bet against them via CDSs. They would take losses on the bond tranches which would be offset by the long position in CDS, if subprime market deteriorated, as they had hoped. This strategy gave the hedge funds power of influence over which bonds would be included in the CDO, and securities dealers could thus avoid taking proprietary positions on high-risk bonds which could hardly have been sold to regular customers. The Financial Crisis Inquiry Report estimates that until June 2007 mayor hedge funds were long $25 bn in equity MBS tranches over which they had bought $45 bn in CDS protection (FCIC 2011: 192). Magnetar was one of the leading hedge funds employing this kind of strategy[9].

Second, on the CDS supply side CDS sellers operated, providing insurance against potential default of the bonds in return for a fee. And a third type of counterparty were the MBS/CDO demand side: investors like pension funds who were long on the bonds, convinced of the resilience of the subprime real estate market. When things got even more complicated, securities dealers started to synthetize CDOs, which were indeed bonds replicating the ones chosen by CDS buyers shorting the subprime market, but did not require any new subprime issues, since by that time, even the subprime segment in the US had dried up.

Securities dealers effectively controlled entrance and exit from these trades for all types of counterparties involved, they engineered, sold and traded the products, but were not initially involved in trading for their own account.

3.2.2 Prop traders

However, as they became convinced of the goodness of their own designed products, they started to enter these markets as proprietary traders. They came to believe that the bonds they engineered mainly from subprime mortgages were truly AAA products, as safe as Treasuries but with much higher yields, ignoring potential correlations between tranches, and lack of diversification. Since these were not financial products trading on regulated markets like stocks or Treasury bonds, they do not have an observed market price, so leading securities dealers used modelling techniques to derive the daily value of the instruments, a technique called mark to market. There are many indications that dealers used this to their own advantage.

For instance, US MBS and worldwide issued CDOs did not suffer a generalized collapse (60% for CDOs and 47% for MBS), until the 2nd half of 2007, but the real estate market had decelerated its growth at the end of 2006, indicating that demand for structured products had been artificially induced (Figure 4).

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[8] Mainly represented by medium sized hedge funds like Scion Capital, Cornwall Capital, Front Point (Morgan Stanley), Harbinger Capital, other larger size investment funds as Paulson&Co, or trading desks of systemic banks like Greg Lippmann´s of Deutsche Bank (Lewis 2010; FCIC 2011).

[9] See Magnetar CDO deals documented by ProPblica available at: https://www.propublica.org/article/all-the-magnetar-trade-how-one-hedge-fund-helped-keep-the-housing-bubble

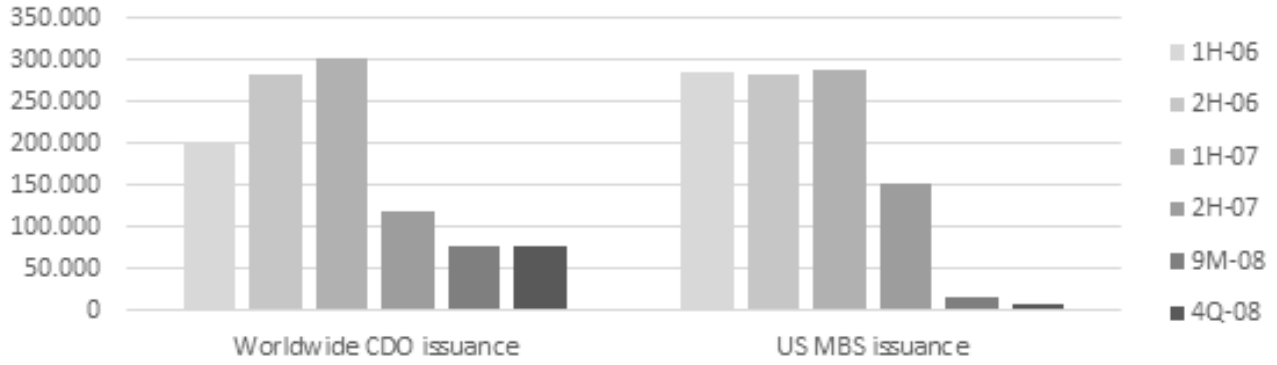

Figure 4. CDO and MBS issuance (US$ Mil.)

*2008 is split in first 3Q (through sept 30th) and 4Q
Source: AB Alert based on totals for bookrunners data

Between February and June 2007 Merrill Lynch and Citigroup had created and sold 50 billion in new CDOs (Lewis 2010: 165-70). Also, CDS spreads remained low, adding to this perception of a supposedly sound market for structured products. It was not until June 2007 that short positions of CDS buyers started to move in their favor, a shift precipitated by two major events: the collapse of one of Bear Sterns´ CDO manager funds announcing $3.8 bn in subprime losses and the main subprime lender New Century filing for bankruptcy on the 2nd of June 2007.

Data from AB alert show that exposures of some leading bookrunners in structured finance deals started to decrease at the end of 2006, indicating that they were offloading their long proprietary positions to third party investors. This was the case of Countrywide, Wachovia, Bear Stearns, Morgan Stanley, Deutsche Banks and others as the figure 5 below shows.

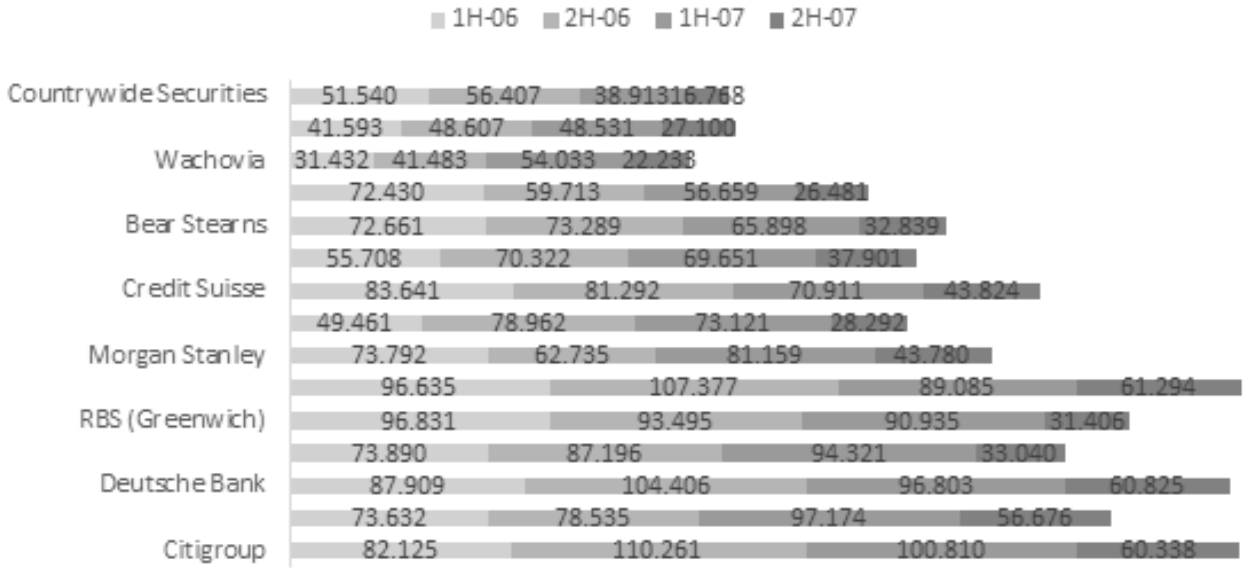

Figure 5. Top 15 bookrunners of Worldwide Structured-Finance Deals (US$ Mil.)*

* SF deals include ABS, MBS, CMBS and CDOs
Source: AB-Alert

Furthermore, leading intermediaries and market makers were looking to buy insurance on positions they could not sell, which is when spreads on CDS started to rise. Markets started shifting according to dealers´ own proprietary positions, which coincided with that of naked CDS buyers', as dealers started to mark CDSs adequately (Lewis 2010; US Senate Subcommittee 2011). That led some of the main IB dealers to become net protection buyers. For instance, by 2008 all top five CDS dealers had a net long position in CDS: Goldman Sachs held 260 US$ bn in notional value, Deutsche Bank 48, JP Morgan 35 and Morgan Stanley 33 US$ bn respectively, at gross market values (ECB 2009).

However bad banking practices did not stop here. Goldman Sachs began selling its long positions in structured products at the same time as it shorted them, being one of the first leading dealers to exit the market. The US Senate Subcommittee (2011) report explains how the investment firm engaged in selling CDO tranches to investors without disclosing they were also taking short positions on the same tranches, indicating that leading

market dealers were indeed taking advantage of their privileged position in the market. Goldman and Deutsche among other dealers have been accused of dumping their own positions to misinformed investors in order to avoid incurring in heavy losses.

But not all IB managed or intended to liquidate their long positions. In fact, some held firmly on their subprime structured portfolios until as late as August of 2007, either because they were still convinced of the market´s soundness or because they could not unwind the position at a profit. Among them was Morgan Stanley with a $16 bn long proprietary trading position in June 2007, of which it managed to sell $3 bn on to the Japanese Mizhuo Financial Group and to UBS (Lewis 2010). Merrill and City had bonds stored waiting to be packaged and sold, but never managed to offload them in due time, so they eventually had to absorb the loses themselves[10].

These were all signals that IBs were marking the products according to their own net proprietary positions, despite arguing at all times that their books are matched, i.e. they were mere intermediaries not engaged in proprietary trading.

5. Determinants of systemic fragility: analyzing the balance sheet structure in the US securities sector

According to Minsky what determines the shift from robustness to systemic fragility are the actions of relevant agents in the financial markets which could be traced by taking a close look at the evolution of their balance sheet structure. More precisely, there are three main determining factors to be accounted for: first on the asset side, the degree of liquidity of the relevant loan or securities portfolios, second, on the passive side, the way those assets are funded and third, the leverage ratio overall the balance sheet structure. We will analyze these three factors in this section to show the way the agents´ actions contributed to increased fragility and finally systemic crisis of the whole banking system in the US.

4.1. Asset side: structural illiquidity of financial instruments

The proliferation of illiquid financial products arising from financial engineering, without active markets to provide reference prices, contributed to extend discretionary behavior practices and rules, taking shape from conventions and / or ad hoc negotiations in the markets. In this way, as some authors pointed out (Crotty 2009; Geisst 2012; Epstein and Crotty 2009; Vilariño 2011ab), these were incentive-generating behaviors that tended to place unreasonable confidence on quantitative models to value on a daily basis instruments with residual liquidity which had been given attributes of quasi-infallibility.

As we have previously explained, the bottom tranches of MBS were transferred to the CDOs, while the CDSs were supposed to provide coverage in the event of default, thus creating an illusion of liquidity and minimized risk. This perception was also reinforced by their AAA ratings, so that these products were considered highly liquid and safe. However, liquidity is not an intrinsic quality of a financial instrument, but it depends both on its characteristics and on exogenous conditions subject to changes over time, such as the borrower´s ability to fulfill their payment obligations, the depth of the market where the instrument is traded and the financial and economic context. In fact, the common characteristic of the three instruments, was their structural illiquidity, since they only traded in OTC markets without a secondary active market, implying that they did not have an observed market value. As we explained in section 4.3 leading IB firms were the central counterparties to these trades for all buyers and sellers, and they were also marking the instruments to their ´true´ market value via different modelling techniques[11] (FCIC 2011; Vilariño 2000, 2008, 2011a; Jorion 2009; Dymski 2010; Epstein and Crotty 2009; Wray 2010).

The technical complexity of securitization and credit derivative products established an asymmetric relationship between the trading desks for these products and the customers (companies and investors) that demanded their services. A high level of mathematical knowledge was required in order to understand the modelling techniques based on which the virtues of these products were endorsed, however most of the dealers´ customers lacked those skills so they chose to rely on the promises of profitability and security IB firms would offer. Added to complexity, a second issue was the opacity of OTC markets that would provide leading IB firms another comparative advantage: a degree of arbitrariness of valuation techniques and control over the markets in their quality of market makers as we explained in section 4.3 (Stiglitz 2010; Dymski 2010, 2011; Wray 2010, Kregel 2008).

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[10] What is more, some of the firms who were long on the subprime bonds as late as august 2007 (like UBS, Citi, Merrill or Lehman) were forced to buy CDS to hedge their positions at exorbitant prices from firms like Cornwall, a second-class hedge fund with risk exposure to Bear Stearns, whose CDO manager fund had defaulted just months earlier. At that time however, it was still unthinkable that Bear could go bankrupt, as the general thought in the industry was that CDOs were safe at that point in time.

[11] For a detailed and comprehensive account of the main difficulties that modelling mark to market techniques for structured products and credit derivatives, see Vilariño 2000.

4.2. Passive side: short term financing and leverage

Short term financing represents a particular issue for banking institutions. They are already speculative units in Minsky´s terms, since their business model involves rolling over large amounts of short-term debt in order to finance their long-term asset holdings. IB firms´ REPO financing operations have almost doubled from 2005 until the onset of the crisis from 600 $bn to 1.200 $bn, as shown in figure 6 below.

That implies exposure to liquidity risk (also interest rate risk) is a structural feature of banks functioning process (Minsky 1986a; Jarsulic 2012; Jorion 2009) and during the years before the crisis liquidity risk had been severely ignored both by banks as well as by the regulating authorities.

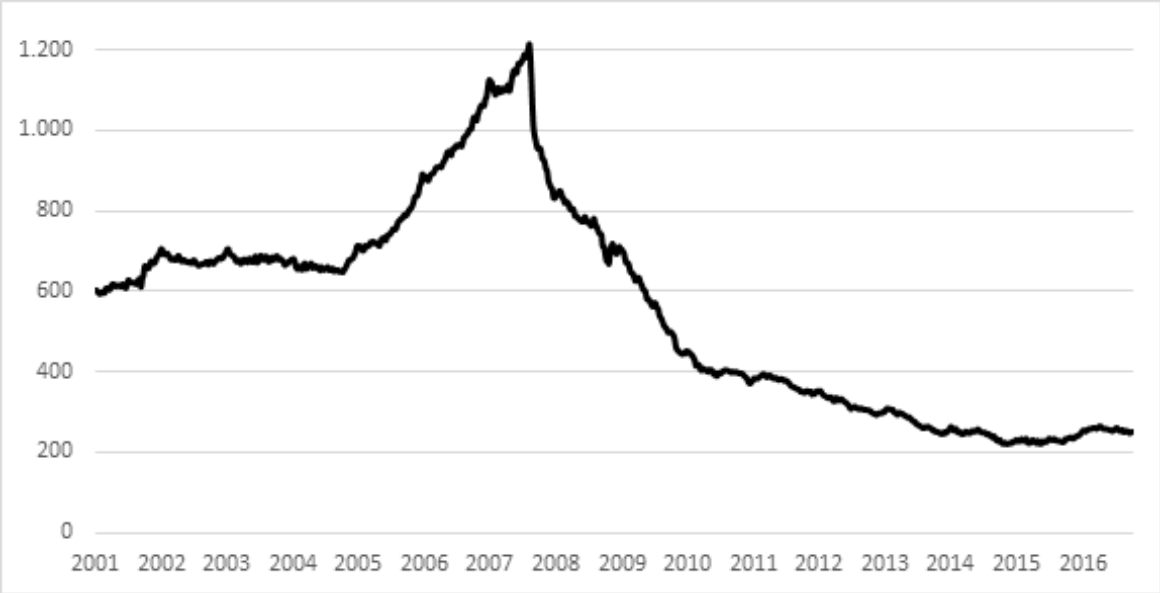

Figure 6. Funds secured by investment banks via REPO operations

Source: Federal Reserve of St. Louis

The chain of events that eventually brought Bear Sterns to its knees in March of 2008 represent a paradigm for other financial institutions that have undergone the same path before their (virtual or real) default and was initiated with a liquidity crisis that mutated into a solvency one. This sequence could be briefly described as follows:

a) When the concentration of risk in structured products and credit derivatives became clear, mistrust of short-term funding providers[12] severely increased.
b) The funding counterparties started to raise rates at which they were willing to offer new funds, to restrict the amounts of funding available, or to increase collateral demand (either demanding more liquid collateral or applying higher haircuts). Necessary funds thus became even harder to obtain.
c) That inevitably led to a decline of Bear´s stock prices and an asset ratings downgrade. Generalized mistrust meant that Bear could hardly sell long structured products asset portfolios without incurring into severe losses.
d) Mistrust morphed into panic that induced a short-term financing shortage and part of shareholders capital was withdrawn, thus forcing the bank to incur in fire-sales in order to meet payment obligations; in Minsky's terms, to try to make position by selling out position (Minsky 1986a).
e) An initial liquidity crisis rapidly morphed into insolvency, as the balance sheet had deteriorated on the asset side such that payment obligations could no longer be fulfilled.
f) Insolvency crisis was also fuelled by regulators´ delay to intervene in due time.

The third determinant of systemic fragility apart from liquidity and short-term financing was leverage. However, banks were not the only leveraged participants in the economy, households were too. 100% LTV values implied that borrowers did not contribute any of their own capital to home purchasing, implying that leveraged loans at levels of 5% or below became common in the years prior to the crisis. With a leverage ratio of 95:1 or above, any minor change in the price of the underlying asset (house prices in this case) could have triggered a chain of defaults and was a sign of extreme fragility of household balance sheets.

[12] Mainly money market funds, investment funds or mayor non-financial companies looking to place their liquidity.

Leading IB firms on the other hand, reached leverage levels as high as 30:1 which implied that a deterioration of a mere 3-4% of their asset value would have placed the firm in a critical situation (GAO 2007, 2009; Vilariño 2011b). Most financial experts measure leverage ratios as the relation between shareholders' equity capital with respect to either part of the assets, typically the risk weighted assets (RWA), or to the rest of the passive side of the balance sheet, which is generally referred to as overall debt. The ratio indicates that greater levels of debt or RWA with respect to shareholder's equity represent increased fragility in the balance sheet, and vice versa, the more capital the entity holds the more robust it is (Dymski 2010; Wray 2010, 2011; Crotty 2009; Geisst 2012; Jorion 2009; Hein and Stockhammer 2011; Kregel 2008; Vilariño 2000).

However, it is important to note that the fundamental issue when it comes to leverage is not the amount of capital that the entity holds, but the distribution of their investments according to the degree and type of risk they present. That is because the capital does not exist in form of physical cash stored in a physical deposit, but it is invested in the assets held in the balance sheet. Therefore, the quality of the assets held, and the degree of their liquidity are the most important aspects in this regard. The financial risks associated to an entity's investments are intrinsically connected with the concept of leverage. In that sense, it was clear that both the banks and their models and the attitude of the supervisors did not adequately account for the financial risks, particularly those associated with investments with little or no liquidity.

5. Conclusion

This research analyses the causes behind de facto demise of the US securities in the wake of the financial crisis of 2008 focusing on the firms risk mismanagement and bad lending practices, that increased fragility and risk exposures in the US securities sector and eventually brought all firms involved in investment banking activities on the verge of collapse.

We have documented and analyzed a series of bad banking practices from a threefold perspective: first the degradation of the underwriting standards in what refers to loan originations and conditionalities, second the shift from hedge to speculative purposes in the use of the main securitization and credit derivative products, and third the conversion of leading IB banks from market makers to proprietary traders.

We argued that leading IBs became gradually convinced of the goodness of financial instruments of their own design, as they engaged in proprietary trading activities that involved securitizations and other products with residual liquidity that shifted their use towards speculative purposes. That favored incentive-generating behaviors which tended to place unreasonable confidence on quantitative models to mark to market instruments with residual liquidity which had been given attributes of quasi-infallibility.

Bad banking and lending practices of operators increased balance sheets´ fragility, because long term structurally illiquid and highly leveraged risk positions on the asset side were mostly short term financed. That increased liquidity and default risk exposures which were downplayed and mismanaged by firms´ top executives.

We argue that leading financial operators able to take unrestricted risk and highly leveraged positions in unregulated markets are causing volatility in asset prices and they are ultimately responsible of the cyclical boom and bust dynamics of the market-based economy, as opposed to equilibrium-seeking and sustaining behaviour. Overreacting to good or bad news by buying/selling positions either to make profit or to avoid making a loss, shows that correlations are created by operators in the financial markets, and they are not an intrinsic quality of some types of operations or financial instruments, as neoclassic theory suggests.

Our view is that this erratic behaviour of non-rational agents in non-perfectly competitive and non-efficient financial markets has a significant impact on the business cycle. We need to move away from the efficient market view and understand that we live in a crisis prone capitalist economy. We need to allow for crisis to occur in our models in order to explain why they happen and derive meaningful policy action. We need to accept that finance is dysfunctional and capitalist finance inherently unstable, and therefore revisit Keynes and Minsky. That comes along with abandoning neo classical elegant and complex modelling techniques based on rational agents and perfect functioning markets, because of their inability to accept not only that crises are likely to occur, but that they will occur, as they are an endogenous feature of our market capitalist economy.

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