

Banks, ABSs and CDSs: Information Production, Risk Bearing, and Incentive Compatibility*

Thi Ngoc Tuan Bui[†], Thi Thong Van Nguyen,[‡] and Piet Sercu[§]

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[†]ThiNgocTuan.Bui@econ.kuleuven.be, LSBE, Naamsestraat 69, B-3000 Leuven, phone +32 16 326 762, fax +32 16 326 632

[‡]ThiTuongVan.nGuyen@econ.kuleuven.be, LSBE, Naamsestraat 69, B-3000 Leuven, phone +32 16 326 761, fax +32 16 326 632

[§](Corresponding author) Piet.Sercu@econ.kuleuven.be, LSBE, Naamsestraat 69, B-3000 Leuven, phone +32 16 326 756, fax +32 16 326 632

Abstract

Purpose We discuss the microeconomic pros and cons of bankloan-backed securities and credit default swaps, that is, the passing on of bank loans or their default risk from originator to the general investor. By ‘micro’ we mean comparative advantages for banks versus other holders of the loans or risks, not the macro pros and cons of higher credit volumes.

Methodology/approach We apply standard ideas from the corporate finance literature on the choice between loans versus public-debt, related to information asymmetries and signaling at the time of origination. We also add new arguments related the possibly unhappy end of the loan.

Findings Quite apart of the by now familiar quality-preservation incentive issue we think that securitization and CDS destroy value because they move loans and risks away from the party best informed about the risk and best placed to deal with default toward worse-placed parties.

Limitations The analysis takes the volume of loans as given.

Practical/Social Implications ABSs and CDSs should be confined to the highest-quality type of paper where no information asymmetries exist, like in Europe where the traditional MBSs have not caused problems for centuries.

Originality/value of the paper To the best of our knowledge, the literature on bank loans versus public debt has not been applied to ABS/CDS before, while the issue of who is best placed to bear the risks has not even been raised elsewhere.

JEL classification: G31, G32.

Key words: Securitization, ABS, CDS, Information asymmetry, adverse selection, incentives, moral hazard

Introduction

The subprime crisis and the ensuing credit crunch had many roots and causes. This text focuses on a subset: the bankers' incentives, the information asymmetries and the ensuing conflicts of interest and agency problems that arise when flawed instruments are being introduced. The macro circumstances, which are familiar enough, we will not discuss again. At our chosen micro level we will bring up the bonuses etc only tangentially—not because we think they were unimportant but because it's again a familiar issue; in our view, there are more stories going on, and more subtle stories, than bonuses. And, to end this preamble, we recognize that most individual bankers all over the world did avoid the excesses we describe below and continued to do a good job at traditional Main Street banking; the problem was that enough of them did not do a good job from any point of view but their own monetary interests.

Our main arguments can be summarized as follows. For borrowers about whom there is a substantial information asymmetry, bank loans have long been accepted as the more rational solution relative to public debt: compared to dispersed individual investors, banks often have better incentives to produce information, to get more information, they are typically better at using it, and they are also better placed to deal with default, both *ex ante* and *ex post*. Given that banks are superior at assessing and bearing risk, it makes no economic sense, from a social perspective, to shift those risks to other parties via ABSs and CDS contracts, thus undoing all comparative advantages of bank debt. In addition, new incentive issues crop up, beside the now universally recognized problem of the issuer's care about the quality of the underlying loans. The issuer's information advantage means that buyers are likely to be overcharged, and rating agencies have been found to be more part of this adverse-selection problem than part of its solution. In the case of CDS contracts, in addition, the product is likely—and perhaps even designed—to attract relatively more overconfident noise traders than do standard corporate bonds. Lastly, in the event of financial distress, incentives to find a rational solution are absent or even reversed. These problems are not solved by forcing banks to retain a segment of each ABS issue: one also needs the ABS to be default free in the first place. This rule may look hard to enforce given the bankers' personal incentives, but banks in Denmark and Germany have pulled this off for centuries. For CDS contracts, the problems in remediation seem insurmountable, involving moral hazard, adverse selection, and inefficient renegotiations or reorganizations when the borrower does get into financial distress.

Our economic analysis starts with a description of how bankers' incentives started shifting, in the 1980s, towards the volume of dealmaking, both in the fields and at headquarters. For

our purposes, the main shift in headquarters' incentives came from securitisation of debt, the conversion of private bank loans into publicly traded instruments, and from Basle I, Basle I-bis, and the thirst for AAA instruments. Securitization brings us to a discussion of the role of banks and the pros and cons of bank loans versus public debt. The hunt for AAA instruments helped to promote the emergence of CDS contracts, which brings us again to the pros and cons of debt insurance in general and to CDSs in particular.

Incentive shifts in the fields and at HQs

Traditionally, commercial bankers were not too far from their then caricature: pinstriped, conservative nine-to-fivers who worked in their local branch for decades and received a modest share in their agency's net contribution to the bank's overall (and equally modest) corporate profits. As of the 1980s—in Europe; the change must have come earlier in the US—the incentives started shifting, and local managers' compensations became based on the deal's putative NPV rather than on the gradually realized profits, or even on the gross turnover.¹ As intended, the faster remuneration meant greater incentives to initiate deals, especially since bankers no longer staid put in one place for ages. The concomitant risk, of course, was that loan officers and branch managers might myopically focus on turnover, or on accounting profits—maximizing the difference between interest received and interest paid, which often means maximizing risk—at the cost of ignoring the too-distant-looking and hard-to-model default issues. This long-run perspective was supposedly taken care of by the credit committees at HQ, the internal vettors. But even at HQs the incentives started shifting when loans were no longer carried till maturity by the bank, as they always had been.

Instead, as we all know, loans were increasingly often put into a portfolio, and claims against that portfolio were then flogged to the public. Familiarly, when this started in New York in the 80s, these portfolios contained prime mortgage loans (mortgage-backed securities or mortgage-backed obligations), following long-standing practice in Denmark and Germany (Pfandbriefe) and the example of Fanny Mae and Freddy Mac. Equally familiarly, later on also student loans and car loans credit card loans and, in the end, anything and everything was repackaged and re-sold as collateralized debt obligations (CDOs) or asset-backed securities (ABS), including, crucially, low-quality loans.

¹At Dexia, a Belgian-French bank, bonuses were notoriously linked to just the volume of one product, which was even not making any profits to the bank.

Table 1: US Asset Backed Securities Issuance By Major Types of Credit

	auto	credit cards	equipment	home	manufactured housing	student loans	other	total
1996	33	49	12	36	8	8	20	167
1997	36	41	8	66	10	13	29	202
1998	40	43	10	84	12	10	48	247
1999	43	41	13	75	15	11	39	236
2000	67	57	11	74	11	19	41	281
2001	70	69	8	112	7	15	45	326
2002	89	70	6	151	5	28	25	374
2003	76	67	9	229	0	43	37	462
2004	67	54	8	425	0	48	49	652
2005	85	68	10	460	0	63	66	754
2006	82	67	9	484	0	67	45	754
2007	74	100	6	217	0	61	52	510
2008	36	59	3	4	0	28	9	139
2009	63	46	8	2	0	22	10	151
$\frac{2005}{1996}$	2.58	1.39	0.48	12.78	0.00	7.88	3.30	4.51
id, ppa	10	3	-7	29	-	23	13	16

Notes:

1. Source: Thomson Financial, Bloomberg, SIFMA (Securities Industry and Financial Markets Association)
2. Home Equity contains both 1st and junior lien home equity loans and lines of credit, subprime, small balance issues and servicing rights; these numbers do not overlap with mortgage-related issuance in other SIFMA statistics.
3. Auto includes truck loans and wholesale auto receivables, and as of 2008 include floorplans, motorcycles, rentals, and recreational vehicles. Prior years have not been revised to include these categories yet.
4. Equipment does not include aircraft leases.
5. Credit Cards include charge cards.
6. Data in prior quarters may be subject to revision.
7. Numbers are in USD millions.

Tables 1 and 2 summarize the evolution of the total ABS market and its subsections (like mortgages, car loans, etc.), showing, respectively, annual net issues and cumulative net outstanding values. In the ten years 1996-2005, the total volume issued rose almost fivefold, *i.e.* by 16 percent compound per year. The big items were, familiarly, home loans, followed at a great distance by credit card, car and student loans. Home loans were already biggest in 1996; but also in terms of growth rates they were the best performer, with a compound growth of almost 30% *p.a.* Outstanding volumes rose, of course, correspondingly, except that the marked drop in issuing volumes as of 2007 and especially 2008 is, of course, absent in the outstanding volumes. Figure 1 pictures the evolutions of the total issuance and outstanding volumes.

This growth resulted from fast-rising volumes of loans granted by banks, compounded by an increasing tendency to flag these loans via ABS. Worryingly, especially dubious loans were packaged and sold. Over 2000-06, *The Economist* reports, the fraction of non-investment-grade loans that banks kept themselves fell from 90% to 60% in Europe, and from 60% to a

Table 2: US Asset Backed Securities Outstanding By Major Types of Credit

	auto	credit cards	home	manu- factured housing	student loans	other	total
1996	71	181	52	15	10	76	404
1997	77	215	90	19	18	117	536
1998	87	237	124	25	25	234	732
1999	114	258	142	34	36	317	901
2000	133	306	152	37	41	403	1,072
2001	188	362	185	43	60	443	1,281
2002	222	398	287	45	74	518	1,543
2003	235	402	346	44	99	568	1,694
2004	232	391	454	42	115	594	1,828
2005	220	357	551	35	153	640	1,955
2006	202	340	581	29	184	795	2,130
2007	199	348	586	27	244	1,070	2,472
2008	138	314	396	20	240	1,565	2,672

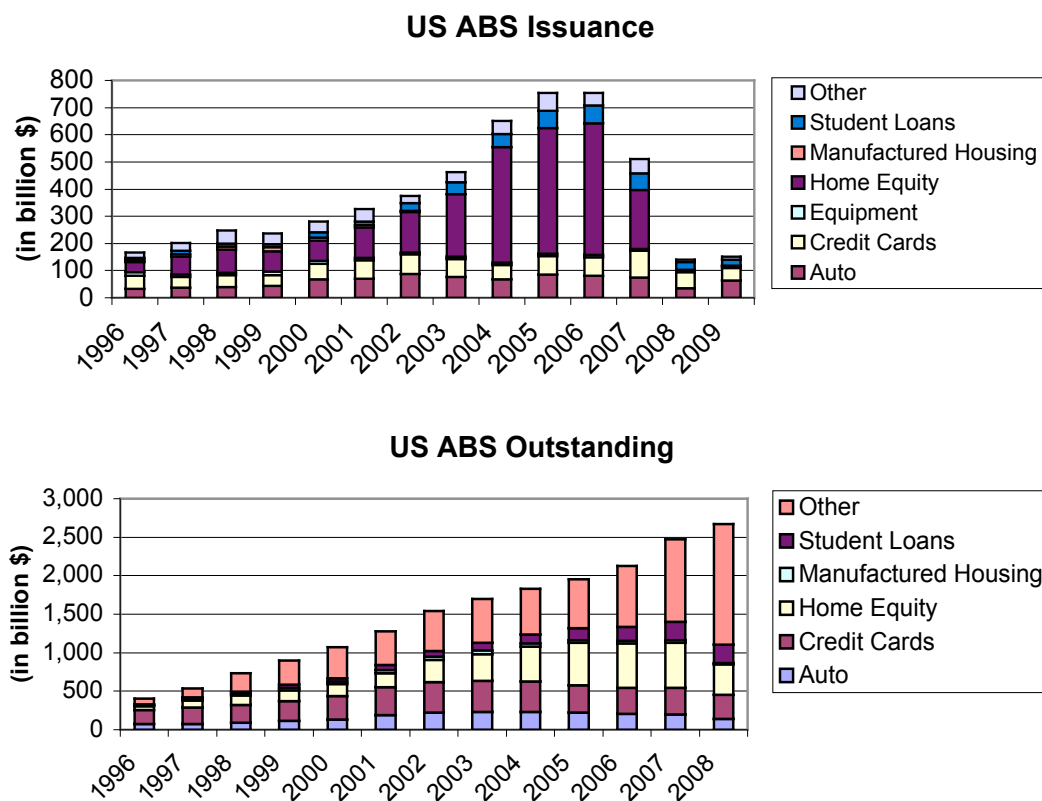
Notes:

1. Source: Thomson Financial, Bloomberg, SIFMA (Securities Industry and Financial Markets Association)

2. Data in prior quarters may be subject to revision.

3. Numbers are in USD millions.

Figure 1: US ABS Issuance and Outstanding volumes



Source See Tables 1 and 2.

mind-boggling 20% in the US. This way, bankers became too focused on deal-making and the bonuses it brought, shrugging off default issues: these were supposed to be the concern of the buyer (*caveat emptor*—let the buyer beware) and of the rating agencies that vetted the ABSs.

Let us now briefly digress about what roles banks are meant to play, in financial markets, and then judge how well ABSs do in that framework.

The orthodox logic of banking

Why don't lenders (households, insurance companies and pension funds etc.) directly deal with borrowers (mostly other households, companies and governments)? Actually, sometimes they do: family and close friends do lend to each other, occasionally; and on an economically more meaningful scale, especially big corporations and governments have been selling their bonds directly to savers for centuries. But smaller firms and households almost always work via banks that then collect the funds from savers. So what do banks add?²

There are some obvious functions. One is providing a place where (parts of) supply and demand meet. Also, banks offer diversification: they borrow from many and lend to many, so that each depositor's income is tied to a portfolio of many loans rather than to one loan or a few of them. But these functions are also offered by peer-to-peer lending websites, which are now being touted as the great alternative to the now-unloved traditional banks. We think these internet ventures are condemned to, at best, a marginal existence: a bank worth its salt offers far more. Macro textbooks like to emphasize maturity transformation, for instance: banks borrow short-term (as lenders prefer to stay liquid) and lend long-term, which entails an interest risk to the bank or, more precisely, its stakeholders. Lastly, and most crucially for our story, banks traditionally gather and process information and bear default risk.

Relative to average retail investors, traditional credit analysts are masters at reading bal-

²The literature is vast. A few seminal articles are Berger and Udell, 1995; Biais and Gollier, 1997; Campbell, 1979; Campbell and Kracaw, 1980; Chemmanur and Fulghieri, 1994; Detragiache, 1994; Diamond, 1984 and 1991; Easterbrook, 1984; Fama, 1985; Franks and Sussman, 2005; Houston and James, 1996; James (1987); Jensen and Meckling, 1976; Leland and Pyle, 1977; Lummer and McConnell (1989); Myers, 1977; Myers and Majluf, 1984; Petersen, Mitchell and Rajan, 1994; Petersen, M., and R. Rajan, 1994 and 1997; Rajan, 1992; Sharpe, 1990; Schleifer and Vishn7, 1997; Titman, 1984; and Yosha, 1995. But the list is quite incomplete. In our discussion we focus on the bank's role at the time of initiation and termination of a loan. There also is a literature on the indirect benefits of relationship banking, like monitoring, lower fears of adverse selection in the lender-borrower relation, implicit certification of the borrower's quality towards third parties. There is some controversy here: banks may also exploit their information advantage (and the resulting barrier to entry for other banks) by extracting rent from their clients; easy lending may mean soft budgets and debt overhang; and there is a shortage of lending when the bank gets in dire streets, etc.

ance sheets and interpreting them, taking into account what they already know of the sector and the economy. They also have access to private information that the borrower would never divulge to the public at large by, for instance, putting it into a prospectus. Similarly, banks often have long-standing relations with the borrower, they work with clients from the same sector and the same region, they can see the daily financial in- and outflows, and so on. In short, a bank knows so much more, and knows so much better what all that stuff means; Fama (1985) calls them quasi-insiders. They are motivated to make the effort of information gathering because the amount at stake is usually sizable. For a small investor who also wants diversification, it would never pay to personally investigate the soundness of, say, 100 separate borrowers: the amount lent by one saver to one borrower simply would be too small to justify the effort, and the costs of ever acquiring as much information even about just one borrower would be substantially higher than the cost to the bank.

A bank's comparative advantage in loan initiation and credit evaluation is a standard insight from the theory of corporate finance or financial intermediation. Less often one hears about banks also being much better at debt collection; yet this is an argument that, for our purpose, is at least as important as the standard one. Again the crucial ideas are incentives and costs. In case there is a problem, the bank again has a big amount at stake, so it will do an effort; a small, diversified lender will rarely bother. Banks also know exactly what to do in case of default, and what the legal nitty-gritty is. In addition, banks are in a stronger position: for a financially distressed household or firm, defaulting towards the house bank is costly because the borrower will probably have to come back for more loans later and because anyway the bank would add the defaulter's name to a blacklist which is then passed on to other banks. Lastly, a bank loan is easy to renegotiate, compared to, for instance, a bond issue: just two parties are involved rather than an array of investors with conflicting points of view and low incentives to actually show up at the negotiation table. This flexibility can be used to both the lender's and the borrower's advantage.

The problems with ABSs

Why is all this relevant? Let's see how investors should have reacted when offered a ABS. They should have smelled a rat, or perhaps several of them.

The most glaring problem, universally recognized now but studiously ignored then, is that bankers who immediately pass on their loans to other investors no longer have an incentive to vet the original borrowers properly. At the time it was thought that banks would never take

the risk of losing their reputation and, at one and the same stroke, also their huge market value by selling overpriced low-quality products. Let us return to that argument later. My contention at this stage is that even for a given pool of loans, a ABS is intrinsically worth less than the very same loans would have been if kept by the bank.

Think of debt collection, for instance. The trust that issued the bonds on the strength of the pool of loans has no incentive to make an effort because its equity is small and easily wiped out. Actually, a trust is not even set up to make decisions and take action. ABS holders do have an incentive, in principle, but the amounts at stake do not warrant big efforts or costs; also, there is a free-riding issue: why should one investors spend time and money at debt collection if the fellow ABS-holders that shirk are benefiting equally?³

Also the bank's erstwhile option to renegotiate when a borrower is in dire streets has been effectively killed off by the securitization: given the difficulties of getting a dispersed set of ABS holders around the table and making them agree, revising the loan rates or principals has been unheard of, thus far. Courts or governments might be able to change the terms of the contracts, but thus far they have not done so either. Borrowers, lastly, know that banks no longer care and ABS holders are powerless, all of which should not do wonders for their willingness to tighten belts or work harder or sell the family silver so as to stave off default.

Not only is the product worth less, after securitization: the new buyer is being overcharged for it. Remember, indeed, that the bank that originates the ABSs still has an information advantage over any other party bar the borrowers themselves. The buyers of ABSs should have been familiar with the agency issues and adverse-selection problems that arise when a well-informed party (the bank that grants the loan) passes-on a product to a less-informed one. After all, issuers of ABSs are like used-car dealers: they know the problems of the car, but they obviously will never tell this to prospective customers. So prospective buyers of used cars should be (and usually are) very suspicious. For ABSs, however, the buyers did not have this

³Standard economic analysis would predict that individuals would not mind the others free-riding as long as the agent himself still gains. In reality, the \$100-game phenomenon often arises. (In this game, two players receive \$100 to share; one player can propose a division, say 50/50 or 99/1, and the second says Yes or No; if the verdict is No, the game is over and the \$100 is lost. Contradicting standard economic thinking, the second player often says No when the proposal deviates far from the 'fair' outcome, 50/50.) *The Economist* (March 15 2008, p 78) describes how at the Chapter-11 negotiations of American Remanufacturers, a car-parts firm, the junior claimholders asked for more than they were contractually entitled to. Rather than reluctantly agreeing as economists would predict, the senior claimholders blew up all talks even though that meant that both parties were left with nothing. 'The two groups of lien holders "just shot each other", one lawyer said.' Unusually (and disappointingly for the lawyers) the whole thing took just eleven days. Thus, issues of fairness magnify the standard free-riding problem.

reaction; they happily bought cats in bags. Also overseers should have lifted eyebrows sky-high, upon seeing the wrong information balance and the conflict of interest: this was a system that let the risks end not in the hands of the party best placed to assess and bear the risk, but in the hands of the biggest fools, as Arnaud Boot nicely puts it. But instead of viewing this ABS fashion as the Sodom & Gomorrah of banking, as they should have, overseers regarded this innovation as a zenith of efficiency, a blessing to humanity (“the pollinating bees of Wall Street”). Actually, many of the unbewaring buyers were non-U.S. banks that wanted to join the party, and hedge/pension/mutual funds—institutions where the incentives were often as distorted as at the banks that issued the ABSs in the first place. Even though these buyers often were banks themselves, they did not have the same advantages the original lender/bank has with respect to information acquisition and default-risk handling.

Let us contrast this with a very sensible traditional banking product, the Letter of Credit (L/C). Familiarly, perhaps, an L/C is an endorsement of an importer’s trade debt by the importer’s house bank and is often used in international trade between parties that do not know each other well. This risk shifting is economically useful because the importer’s house bank knows far more about the importer than does the exporter, and is also better placed to get the money and even to bear the loss if outright default would be the eventual outcome. ‘Confirmation’ of an L/C (an endorsement of the L/C by a second bank that is well known to the exporter) is, likewise, a useful function because the confirming bank knows more about the L/C-issuing bank’s reliability, the transfer risk, etc, than does the exporter, and is in a better position to get the money and to bear a possible loss. In short, risk is being re-allocated to parties that are better placed to both assess and bear it. What ABSs achieve is exactly the opposite. The ABS holder is no good at estimating risk (and thus, gauging the fair value) and at dealing with default.

Combining an inefficient reallocation of risk analysis/bearing with adverse selection, it’s hard to see why anyone ever would be willing to buy a ABS at the price that makes also the bank happy. But many did, because rating agencies or insurance companies told them the product was fine. The raters were viewed as the ultimate guardians of the game. Their reputation would never be put at risk, academics gushed, because the destruction of the present value of their income from rating would be too high a cost. The argument was, interestingly, the same as the one advanced to explain why banks themselves would never sell bad investment products, and why audit firms—and especially large ones, like Arthur Anderson—would never consent to sloppy or dishonest work. Even after Enron, raters remained above all suspicion.

How CDS contracts got into the game

The insurers and raters got in via Basle I. As is well known, under Basle-I every \$100 of unsecured loans granted needs \$8 in bank capital (equity, reserved earnings, and some types of long-term subordinated or hybrid debt), of which \$4 in equity and retained earnings. But the risk weighting was much reduced for loans to financial institutions, for loans that were insured against default risk or, as of the mid 1990s, loans that received top ratings.

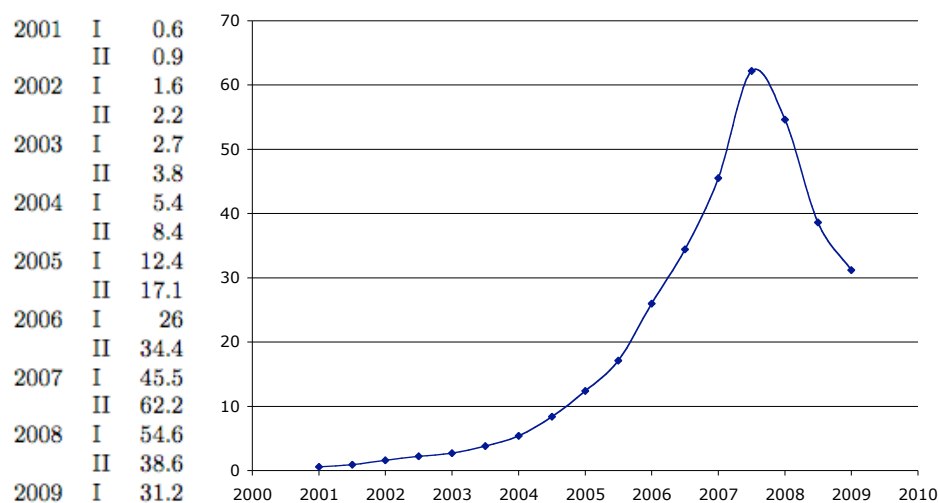
In one splendid illustration of The Law of Unintended Consequences, this made banks channel their loans and hide their risks in conduits or SIVs. These were not banks, so Basle did not apply, but this effect is tangential to our story. Also in response to Basle I, banks started buying massive credit insurance contracts, partly from standard insurers and partly from the general public, via Credit Default Swaps (CDS contracts). Technically, the buyer of CDS protection pays an insurance fee, say 3% p.a., to the seller of protection as long as the insured debt is not in default or has not expired; in case of default, however, either the insured party cedes the claim to the insurer, who has to pay the full principal value for it,⁴ or the insured party receives the difference between face value and market value of the impaired obligation. Any seller of protection can later buy protection, in turn, from another party, at a premium that reflects the recised default risk. Such a transfer brings in cash if the insured debt has gone up in quality, meanwhile, so that the original 3% amounts to more than is now needed to buy protection. Obviously, however, the transfer may also require a cash outlay—notably if the original 3% is no longer viewed as sufficient and the new insurer, therefore, needs to be bribed by an additional payment.

CDS started very small-scale and ad hoc in the 1990s, but as of 2001 the amounts (and the standardization) made the product interesting enough to be tracked by ISDA. The outstanding volumes, measured by insured amounts, are shown in Graph 2. They are impressive. ISDA does not show the market value of the underlying bonds, but a commonly-cited figure is that the CDS-insured volume amounts to three times the volume of the underlying loans themselves. Since the ISDA now reports numbers that are claimed to be net of double-counting—this was and still is an OTC product without central clearing house⁵—this means that the average loan

⁴This is the ‘swap’ part of the story, the ‘s’ in CDS. The word insurance was studiously avoided, not only for marketing purposes but also for legal and regulatory reasons, but we have no such qualms; so for brevity we often speak of insurer and insured etc.

⁵The lack of clearing also creates a default-risk issue: when a credit event arises, the holder addresses the last seller, who then has recourse to the preceding seller etc.

Figure 2: Credit Default Swap Outstanding (semi-annual)



Source⁶ ISDA; Notional amounts in trillions of US dollars, adjusted for double-counting

was ensured more than once and/or or that outsiders started gambling on default. In the Harrah case discussed below it surely was a problem. In a more notorious case, when Lehman Brothers filed for bankruptcy, it had approximately \$155 billion of outstanding debt, while the notional value of CDS protection bought in reference to that debt amounted to around \$400 billion.⁶

This protection was provided by unrelated parties which, unhindered by expertise or good information, thought the insurance income was irresistibly high. The over-insurance phenomenon should actually have been viewed as a signal of ‘underpricing of risk’, meaning underpricing of insurance. But, once more, the unbewaring buyers did not smell a rat. Are there any reasons to believe the insurers were being ripped off, and, if so, why did they not see it? Adverse selection following from information asymmetry offer one possible explanation.

CDS mispricing from adverse selection?

One of the rats that might have been smellable is the natural mispricing that arises when experts play against amateurs. The amateurs should have seen red lights flashing (asymmetric information + asymmetric expertise + divergent incentives = adverse selection = I lose). But they just saw golden profit opportunities—a stream of insurance premium income in return

⁶Wikipedia / CDS / Settlement, which refers to <http://seekingalpha.com/article/99286-settlement-auction-for-lehman-cds-surprises-ahead>.

for piffling-looking risks.

One objection to the above view may be that in reality adverse selection is unlikely to be a serious problem, or at least unlikely to be a new problem, because CDS contracts are typically written for publicly traded corporate bonds or for debt of companies with a similar stature. Thus, the objection is, pricing CDS is no more difficult than pricing corporate bonds; if we object to CDS contracts being sold to amateurs, we should also object to corporate bonds being issued to the general public. we do not buy this: a CDS *is* harder to price than a corporate bond. For instance, next to default risk also interest-risk arises because, at default, the insurer pays the face value regardless of the underlying loan's remaining time to maturity and the then prevailing term structure. Thus, a CDS is a messy type of option, not a swap. The modeling of both risk-free bonds and corporate default events are controversial; there is no premier model that, like Black-Scholes for European puts and calls, is universally accepted as a reasonable starting point. In addition, a traditional academic valuation model would typically take the law and the contracts literally, thus ignoring the moral-hazard games that can be played at times of financial distress (see next section); that is, in reality the payoff function is rather fuzzy, unlike that of a call.

Less technically, and more in line with our main line of thought, CDS contracts may also be attracting a far less critical clientele than do corporate bonds. Having to fork out a full value, as one does when buying a corporate bond, has a wonderfully sobering effect on the investor's mind. Buying a CDS, in contrast, requires no cash outlay: instead, there just is the prospect of 'easy money', the premium income, with at the back an 'unlikely' loss if default would ever occur. (The historical rate of default for investment-grade debt is 0.2%.⁷) Such a product may attract fool like candles attract moths. It might also especially appeal to low-risk-aversion players or gamblers, who are naturally keen on leverage and are, therefore, enthralled by the low or sometimes even negative initial investment offered by a CDS.

The above view is not just an unverified and unverifiable opinion; the moths-and-candles phenomenon is actually observed in studies of the now-defunct 'forward' markets for stocks, in Paris and Brussels. In a forward market, one can buy without any immediate cash outlay, and one can even entirely avoid paying the main amount by closing out before the contract expires; likewise, one can sell short without any questions asked and without having to borrow shares. In Brussels, the forward market actually co-existed with a standard 'spot' market

⁷<http://www.efalken.com/banking/html's/defaultcurves.htm>

(with $t + 3$ settlement) for the same stocks, but the forward tier had lower costs, much higher volumes, and, at least during the last decade of its life, a continuous electronic trading system; the spot section, doddily, still worked with manually kept order books, floor trading, and blackboard-and-chalk information systems. In the traditional efficient-markets view, there can be no doubt that the forward tier should be more efficient than the spot tier. Bui and Sercu (2009a, 2009b) however find that the spot market is faster at price discovery and contains far less noise, regardless of what model or measure they use. Bui and Sercu (2009c) also find that forward investors not only tend to price slowly and noisily, but also tend to overpay: relative to excessive forward discounts, excessive forward premiums are four times as prevalent, are typically larger, and tend to persist while discounts tend to vanish overnight. The conclusion that Bui and Sercu make is that the smooth organisation of the forward market attracted not so much a higher number of informed, rational players but, instead, mainly more noise traders. Similar conclusions are obtained for Paris by Foucault et al. (2008), even though the situation is somewhat different from that in Brussels. If easier access and automatic leverage appeals to fools even more than it appeals to informed traders in stock markets, the same is likely in debt markets.

Economic drawbacks of CDS contracts

Actually, mispricing of risk in the CDS market is not the sole issue, and probably not the main one either. As in the case of ABSs, the adverse-selection problem that causes mispricing (underpricing of risk) comes hand in hand with a drop in the intrinsic value, an economic inefficiency. Again, it has to do with debt collection issues and moral hazard. To get the full picture it is useful to highlight some features that make the difference between CDSs and standard credit-insurance. One such feature is that the CDS protection buyer does not need an ‘insurable interest’. In fire insurance, for instance, the insuree needs to be the owner or leaseholder etc of the house that is being insured; imagine, indeed, the perverse incentives one would get if Mr A could claim an amount of money if ever the house of an unconnected Mrs B burns down. Also, unlike in standard insurance, with a CDS one can effectively over-insure. Imagine the incentives if Mr A can insure his house three times over, and gets compensated three times if the house does burn down.

Of course, with CDSs the risk is not that the protection buyer would set fire to the company’s main plant; that least, that’s what one would hope. Rather, the problem is that the CDS creates a perfectly legal substitute of committing arson, as it were: an insured lender has

no incentive whatsoever to renegotiate when they can get the full amount from the insurers. Actually, in case of financial distress, CDS-insured lenders have every incentive to go for default and immediately get their full pound rather than negotiate and maybe get part of the money back later. *The Economist* mentions that games of this type may even be one of the reasons why CDS contracts are so much in demand: hedge funds etc buy a material amount of debt, just enough to be at the Chapter 11 table, and then buy a CDS hedge for a much larger notional. This gives them tremendous gains in case of default. Examples cited where this game was played were AbitibiBowater, a paper manufacturer, and General Growth Properties, a property investor, in mid-April 2009. Some even suspect that CDS contracts also played a role in the GM filing, June 2009 (*The Economist*, June 20-26, 2009, p71). The same names are cited in *The Financial Times*, July 23, 2009, which adds GMAC and also describes the Harrah and Unisys cases. Harrah Entertainment, a Vegas gaming company had \$20bn of debt outstanding which it wanted to reorganize via an exchange offer. There were CDS contracts outstanding for a total notional of \$30bn. If all of these had been held by bondholders, then the gains on the value of the debt after the exchange offer would have been more than wiped out by the loss in value of the CDS contracts. Clearly, however (and luckily for Harrah), enough CDS contracts were held by third parties: Harrah could eventually revise its debt, albeit with a narrow voting margin. Unisys was not that fortunate. At the time of writing, the company was also trying to exchange some of its debt for other paper. Unluckily for Unisys, about two thirds of its debt holders was estimated to have bought CDS protection. After a failed first exchange offer the company figured that, to sway the bondholders with CDS protection, it needed to offer more than 100 cent on the dollar. Its second offer consisted of 20 cents in cash, and new senior secured debt for a face value of 95 cents on the dollar, enough to lift the value of the bonds in themselves above par. Thus, Unisys paid almost 120 cents.

In short, CDS contracts allow debtholders to totally turn the tables, at the Chapter 11 negotiations. CDS-protected holders of subordinated debt could even go home with more money than senior claimholders, if the latter did not buy protection themselves. Obviously, the entire Chapter 11 or *concordat* or financial reorganisation legislation is not yet taking into account CDS. Proposals that debtholders should lose the votes attached to their claims to the extent that these claims are insured make some sense, but this rule would easily be sidestepped by placing the CDS protection with a third party that acts in concert with the debtholder. Another issue with the proposed solution is that the voting rights taken away from covered debtholders should logically revert to the protection sellers. The CDS protection

sellers themselves, of course, would have every incentive to talk and bargain, and should receive the right since they bear the related risk.⁸ But there is no clear bilateral link between seller and buyer: the sellers as a group offer protection to the buyers as a group, and since 80 percent of CDSs are rumored to be naked contracts (held without insurable interest), each unit of debt might be replaced by four units of protection sellers. There are ways out, but they are unelegant: one could think of two classes of CDSs—with versus without contingent voting rights—or one could randomly select the CDS sellers that get to vote in case of a reorganisation (in the same way as an option clearing house randomly picks one of the writers when an American option is exercised early). Even more radically, one could require an insurable interest, and steer speculators to the standard ways of punting on a catastrophe, like selling calls or buying puts or shorting stock or corporate bonds.

Even if CDS writers do eventually obtain a seat at the table, there is the usual coordination and free-riding problem. The insurance comes not from a single regular company, but from an unorganized assortment of CDS writers which are as hard to coordinate as for a bunch of bond- or ABS-holders. There were 4000 protection writers in Harrah's case. True, the average CDS writer still had a stake of millions of dollars, but a free-riding issue or a coordination issue still arises: one's motivation is still low if it is known that there are 3999 shirkers out there. That is, even if the legal issues about who votes in case of reorganisation get sorted out, a CDS-insured bank loan would still have become as inconvenient and unwieldy as a public debt issue.

Summing up: also CDS contracts shifts risk to a party that is not well informed about that risk and is very badly placed to deal with the bad events if and when they do happen. At first blush, the seller of CDS protection who buys risk-free debt with the same face value as the insured debt should get the same income as the original holder of the loan, apart from term structure risk. In reality, CDS insurance destroys value because debt collection is much worse. This is similar to what we noted about ABSs.

⁸Currently, CDS protection sellers do not have a seat at the renegotiation table. Of course, after default has occurred the CDS writers probably end up with some of the debt; but that's too late, of course: negotiations are meant to avoid default.

Concluding comments

we have described ABS and CDS contracts as products that give perverse incentive to banks and other lenders, reduce the value of loans, and shift risks to parties that cannot evaluate them and deal with them as competently and safely as banks themselves. Is there any merit in them?

Banks' standard reply is that securitization and default-risk protection disperse risks that used to be concentrated in banks, reducing their default risk and systemic threats. This would have been fine if there had not been the unintended or ignored drawbacks or moral hazard and adverse selection. Proposals to make banks hang on to a seizable portion of any ABS they launch are only part of the solution. It is hoped that banks would pay more attention to the quality of the pool, this way, but 'banks' are not persons; the true decision makers are individuals, and a lot of thinking needs to be done about re-aligning individuals' objectives with those of the bank. Stock options and employee participation plans are not the solution. It's not that bankers don't like to receive shares and see their prices rise: rather, the problem is that very few people, in a big bank, really see any connection between their own decisions and the stock price. The price is set by a load of exogenous market-wide factors and by the bank's profits, but the impact of virtually every single employee on profits is negligible. Being 'price takers', these bankers' decisions cannot logically be motivated by the stock price. What they think of is their bonus.

Anyway, loan quality is but one issue. The inefficiencies introduced wrt debt collection are not solved by making banks retain ten percent of a mortgage loan: for the bank, the amount at stake is still piffling, and there still is the issue of the loss of renegotiation as a way to solve unexpected financial distress issues. Only in the case of very safe loans, say mortgages with a very healthy haircut, are these flaws less important. For that reason, ABSs should be confined to such loans.

CDS contracts, if they are tolerated at all, should be regulated the same way as corporate bonds (apart from practical issues of standardisation and novation via clearing houses etc).

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